Food and Agriculture Organization of the United Nations

GLOBAL SOIL PARTNERSHIP

Global Soil Partnership
Action Framework 2022-2030

Healthy soils for a healthy life and environment: from promotion to consolidation of sustainable soil management

Prepared by the Open-Ended Working Group (OEWG)

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Contents

Acronyms

CBD	Convention on Biological Diversity
CFS	Committee on Food Security
COAG	Committee on Agriculture
EduSOILS	GSP capacity development platform
FAO	Food and Agriculture Organization of the United Nations
GFFA	Global Forum for Food and Agriculture
GIP	Global Implementation Plans
GloSIS	Global Soil Information System
GLOSOB	Global Soil Biodiversity Observatory
GLOSOLAN	Global Soil Laboratory Network
GSASmap	Global Map of Salt-Affected Soils
GSOC-MRV protocol	Protocol for measurement, monitoring, reporting and verification of soil organic carbon in agricultural landscapes
GSP	Global Soil Partnership
INBS	International Network on Black Soils
INFA	International Network on Fertilizer Analysis
INSAS	International Network on Salt-affected Soils
INSII	International Network of Soil Information Institutions
INSOP	International Network on Soil Pollution
IPCC	Intergovernmental Panel on Climate Change
ITPS	Intergovernmental Technical Panel on Soils
KPI	Key performance indicator
NETSOB	International Network on Soil Biodiversity
NGO	Non-governmental organization
NSP	National Soil Partnership
OEWG	Open-ended Working Group
PT	Proficiency test
RECSOIL	Recarbonization of global soils initiative
Rev-WSC	Revised World Soil Charter
RSP	Regional Soil Partnership
SDG	Sustainable Development Goal
SEEA	System of Environmental Economic Accounting
SHI	Soil Health Index
SoiLEX	Database on soil related legal instruments and soil governance
SOILSTAT	GSP system for monitoring, forecasting and reporting periodically on the status of global soil resources

SOP	Standard operating procedure
SSM	Sustainable soil management
TOR	Terms of Reference
UN	United Nations
UNCCD	UN Convention to Combat Desertification
UNEP	United Nations Environment Programme
UNFCCC	UN Framework Convention on Climate Change
VGGT	Voluntary Guidelines on Responsible Governance of Tenure of Land, Forestry and Fisheries
VGSSM	Voluntary Guidelines for Sustainable Soil Management
WG	Working group

Introduction

The Global Soil Partnership (GSP) was established in December 2012 when Members of the Food and Agriculture Organization of the United Nations (FAO) endorsed its Terms of Reference (ToRs) at the 145th FAO Council.

As stated in the ToRs, the GSP aims to promote sustainable soil management (SSM) and to improve the governance of the world's soil resources. The GSP is an interactive, responsive, and voluntary partnership, open to governments, regional organizations, institutions, and other stakeholders at various levels (see details on the GSP's governance and functions in Annex 1).

In 2019, FAO Members and partners agreed to review the progress made by the GSP to date in order to envisage a new consolidation phase (see the report of the 7th session of the GSP Plenary Assembly). The stocktaking exercise (semi-evaluation) noted that the GSP was instrumental in positioning soils on the global agenda, including on the 2030 Agenda for Sustainable Development and similar international agreements. It made a series of recommendations (see Annex 2), including the need to move from pillars to a more outcome-oriented framework and to explore the institutionalization of the Partnership into a statutory body within the FAO.

In response to these recommendations, a new action framework for the GSP for 2022-2030 focused on healthy soils was drafted by the GSP Secretariat and the Intergovernmental Technical Panel on Soils (ITPS) and presented to the 9th GSP Plenary Assembly (PA). At this session, the GSP's PA recommended the establishment of an Open-ended Working Group (OEWG) to review and finalize the new GSP Action Framework 2022-2030 following an inclusive process and submit it for consideration by the 10th GSP PA.

This framework was developed by the OEWG (see annex 5) and was submitted to the 10th GSP PA and the 28th session of the Committee on Agriculture (COAG) for their consideration and endorsement. Upon endorsement, the GSP PA may designate an ad-hoc technical working group to complete the work on indicators and develop a reporting system to be submitted to the 11th PA.

Moreover, and in accordance with the outcomes of the GSP institutionalization process, the ToRs of the GSP shall be revised accordingly and submitted for approval by the FAO Council or, if applicable, the Conference, including prior submission to the Programme Committee and Finance Committee.

The role of healthy soils in addressing global challenges

The current era is characterized by massive global phenomena such as food insecurity and malnutrition, poverty, climate change, biodiversity loss, land degradation, pollution, the modification of water and nutrients cycles, and widespread disease outbreaks. Society needs to adapt to, and mitigate, these phenomena, in addition to restoring degraded land, soil and natural systems to make them more resilient and sustainable. The role of healthy soils in human and environmental health also needs to be reinforced. Healthy soils provide safe and nutritious food and support healthy populations and ecosystems. The "One Health" approach must therefore include actions related to SSM.

The improvement of soil governance and adoption of SSM play a major role in addressing these global challenges. The ITPS defines healthy soils as those with the ability to sustain the productivity, diversity, and environmental services of terrestrial ecosystems[1], in line with the UN Sustainable Development Goals (SDGs). While in their natural state soils vary in their levels of biodiversity, fertility and productivity, all healthy soils function within the environment in which they have evolved in the provision of ecosystem services. The health of all soils can be maintained under sustainable management. Unhealthy soils are less resilient and have lost their natural levels of biodiversity, fertility and/or productivity. Moreover, they are no longer resilient to further degradation, and thus are no longer able to provide vital ecosystem services.

The ecosystem functions and services provided by healthy soils are essential to addressing and minimizing the impacts of these global challenges. Soil is the foundation of the global food system and the main source of nutrients that enables the world´s cropping systems and by extension, livestock systems to produce calories, protein and a number of other nutrients and bioactive compounds. After oceans, soil is the largest active store of carbon and a crucial determinant of the climate system. Healthy soils also regulate the global water cycle, including water storage and filtration. Soils store water enabling life to exist, even during dry periods, and also acts as a buffer against flooding. Above and belowground biodiversity is vital to ensure healthy soils and the ecosystems upon which we humans and many other organisms depend on. Soil biodiversity contributes to the cycling of nutrients and carbon, helps regulate the occurrence of pests and diseases, and serves as a source of pharmaceuticals. Furthermore, soils provide building materials, fuel and fiber and numerous minerals. They underpin human infrastructure, safeguard ecosystems functions, are part of and contribute to the beauty of landscapes and preserve our cultural heritage.

As reported in the Status of the World's Soil Resources report (SWSR)[2], the world's soils are at risk, with one third of the world's soils in poor or very poor condition and suffering from one or multiple degradation processes, including but not limited to: erosion, the loss of soil organic carbon (SOC) and biodiversity, pollution, acidification, nutrient imbalance, salinization and sodification, soil sealing, waterlogging and compaction. In addition, soils are under increasing pressure from a continuous rising demand for food, feed, fiber, biofuel and other raw materials and feedstock needed to feed a growing global population. The impacts of climate change and extreme weather events, like droughts and floods, are exacerbating soil degradation processes. Simultaneously, unsustainable food and land management systems are also contributing to greenhouse gas emissions (GHGs) and climate change.

To ensure healthy and sustainable soil resources and address current global challenges, greater efforts are needed to halt and reverse soil degradation and to increase investment in soil assessment and monitoring, and SSM.

[1] FAO, 2020. Intergovernmental Technical Panel on Soils | Soil Letters #1. Towards a definition of soil health. Rome, Italy. Also available at https://www.fao.org/documents/card/en/c/cb1110en

[2] FAO and ITPS. 2015. Status of the World's Soil Resources (SWSR) – Main Report. Food and Agriculture Organization of the United Nations and Intergovernmental Technical Panel on Soils, Rome, Italy

The new GSP Action Framework

Following the recommendation of the GSP stocktaking exercise, a consolidation phase is proposed to be guided by a new Action Framework that focuses on addressing the global societal and environmental challenges by improving soil health and mitigating soil threats by scaling up global SSM.

This Action Framework acknowledges and builds on the key achievements and results of the GSP over the last ten years (for more details on key achievements see Annex 3). It also recognized the role of the many existing international commitments and initiatives (see Annex 4), which partially recognize the role of soils in addressing global challenges but whose implementation is still rudimentary.

The commitment of many countries in the world to the cause of soil health, security and function was confirmed at the Global Forum for Food and Agriculture's (GFFA) 14th Berlin Agriculture Ministers' Conference in January 2022. The agreed communiqué by the 68 agriculture ministers stressed that healthy soils are key in addressing and combating the wide-ranging global challenges of our times, in particular the production of sufficient nutritious and safe food, adaptation to and mitigation of climate change, and the halting and reversal of biodiversity loss. The Communiqué adopted at the 14th GFFA calls for actions to restore soil health and for all nations to adopt SSM. The GSP's proposed new Action Framework is aligned to this call for action by translating it into concrete actions on the ground.

However, in many of the international commitments mentioned above, soil is not adequately anchored (e.g. through measurable specific targets and indicators) and therefore does not allow for the recognition of its' full potential and the need for protection and conservation. The GSP must therefore act as a global voice to give adequate recognition to healthy soils and promote their sustainable management, conservation, rehabilitation, and restoration in line with these agreements. The GSP must fill the current gap in the assessment and monitoring of soil status and trends and develop specific measurable and harmonized targets and indicators. To achieve these goals, the GSP must work in close cooperation with the existing conventions, partnerships, and initiatives to ensure that soil is recognized on all dimensions.

i. Vision

A world in which soils are healthy and resilient, ensuring the sustained provision of ecosystem functions and services for all, leaving no one behind.

To this end, the GSP must work to **improve and maintain the health of at least 50 percent of the world's soils by 2030**.

ii. Mission

To facilitate improved governance of the planet's limited soil resources and guarantee the provision of healthy soils for a food secure world, as well as support other essential ecosystem functions and services, in accordance with the sovereign right of each State over its' natural resources.

Effective soil governance requires the involvement of all stakeholders – politicians, practitioners, scientists, publics and private entities, as well as consumers – many of whom are not always aware of the medium or long-term impact of their activities on soils nor of the existing legal instruments that regulate their activities. Improved soil awareness, on every level, is therefore a key requirement for strengthening soil governance. Continuous awareness raising

on soils and their functions and improved soil education and literacy on SSM are a sine qua non conditions for achieving the GSP's mission.

iii. Ambition

To contribute to unlock the potential of healthy soils and scale-up SSM approaches to meet local needs and respond to the daunting array of global challenges. This overall ambition will require very decisive changes this decade based on action at national and local levels.

A clear ambition shared by all GSP members and partners, with quantifiable goals, targets and indicators will enable the state of soils to be assessed and monitored and the progress made by individual members and partners in achieving the vision of healthy soils to be recognized. This will lead to the identification of priority areas of work and regions where further commitment, collaboration and investment are needed to address the various threats to soil health that are unevenly distributed. Activities to promote and maintain soil health must be implemented by all GSP members and partners, ensuring that no region or country is left behind.

iv. GSP action areas

To further develop the GSP towards a flexible action-oriented or outcomes-oriented approach[3], by renaming and refining the existing pillars into "action areas" which can be dynamic and responsive towards the needs of stakeholders and global challenges. This approach will give continuity to the foundational work of the GSP and allow the GSP Action Framework 2022-2030 to align with the global agendas listed in Annex 4 in a productive manner.

An action-oriented strategy will generate increased knowledge and awareness that facilitates greater societal engagement and participation, as well as Resource Mobilization by clearly setting out how and to what extent healthy soils can contribute to addressing key global challenges. In this regard, the GSP must provide the necessary expertise, participation, and solutions.

Figure 1 depicts how the vision, mission and ambition of this Action Framework can be achieved, by articulating actions to halt and reverse soil degradation through SSM and achieve healthy soils that contribute to address other environmental challenges by encompassing all the cross-cutting aspects represented by the pillars. The Action Framework is based on six action areas to be developed and implemented by the GSP networks:

- Sustainably manage and restore soils for the provision of ecosystem services.
- Strengthen soil governance.
- Promote knowledge and literacy on soils.
- Promote awareness raising and advocacy on soil health.
- Assess, map, and monitor soil health in a harmonized way.
- Foster technical cooperation including among genders and youth.

[3] Further details on the recommendations of the stocktaking exercise and justification can be found in Annex 2.

v. Targets and indicators

The development and collection of quantifiable information on the impact of the GSP on the status and trends of soil health and on people's lives, as well as on the capacity of countries to collect data and information to assess and monitor soils, would provide a real measure of the impact of the GSP on SSM and soil governance. The quantification of impacts would also facilitate Resource Mobilization efforts, increase ownership and multiply the reach of the Partnership's activities.

The development and adoption of targets and indicators in line with international agreements particularly the three Rio Conventions and the SDGs and others more specific to the status of soils and the adoption of SSM will allow for a more comprehensive assessment and monitoring of soil health and its' contribution to all global environmental challenges. Concrete targets addressing the cross-cutting nature of soils and their relevance to the achievement of the conventions' goals will allow all parties of the Rio Conventions to expand on established national to global monitoring related to soils and measure the positive impacts of soil health-related synergies resulting from interaction with the other bodies.

In addition, to ensure the sustainability of the positive impact of SSM and GSP actions on the ground, it is necessary to consolidate soil governance within responsible land governance. To this end, the GSP should seek to reinforce cooperation with the Committee on World Food Security (CFS) and work towards the integration of the Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests (VGGT) and the Voluntary Guidelines for Sustainable Soil Management (VGSSM) as land tenure constitutes a prerequisite for promoting the adoption of good practices.

The selection of feasible indicators has been a challenge for the soil science community and requires both an in-depth analysis based on national commitments and capacities as well as a focus on harmonization and comparability across countries to communicate the global scope of the challenge and the progress being made to address it.

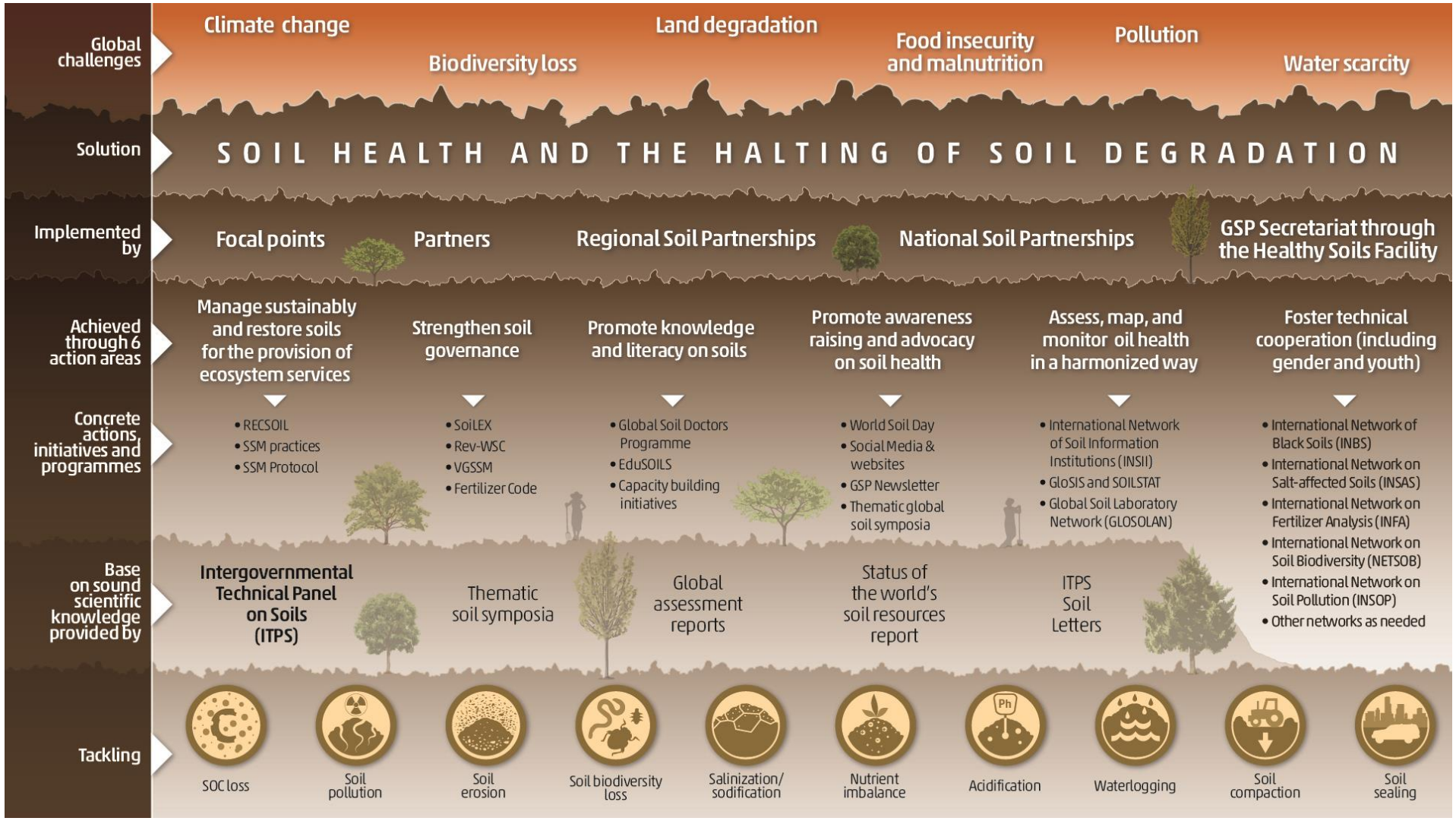

Figure 1. GSP Action Framework

This Action Framework will establish key performance indicators (KPIs) for the GSP (See table 1). KPIs are the critical quantifiable indicators of progress toward an intended result and will be used to gauge the long-term performance of the GSP and its' actions. KPIs provide a focus for strategic and operational improvement, create an analytical basis for decision-making and help focus attention on what matters most. The KPIs will be further developed by a dedicated technical working group and with the support of the ITPS and all GSP technical Networks.

The establishment of baselines for the targets and indicators should be rooted in existing information including the 2015 Status of the World's Soil Resources report (SWSR), the State of knowledge of soil biodiversity – Status, challenges and potentialities, the Global Assessment of Soil Pollution and the global data products including the Global soil organic carbon map, the Global map of salt-affected soils, the Global soil organic carbon sequestration potential map, and other products under development. Regional and national-specific aspects and challenges will require stronger engagement within the Regional Soil Partnerships (RSPs), and thus support coordination between such partnerships and the GSP Secretariat needs to be strengthened. In countries where the lack of data has prevented such comprehensive analyses and data products, special efforts will be made to support the collection and generation of soil data. The establishment of baselines should go hand-in-hand with the development of national soil monitoring systems.

Table 1. Suggested soil health targets and key performance indicators and metrics[4] for the GSP Action Framework 2022-2030

Actions	Targets (By 2030)	KPI#	Key Performance Indicators (KPIs)	Metrics
Manage sustainably and restore degraded soils for provision of ecosystem services	Facilitate equality and inclusion of all people including youth and Indigenous People, in particular the poor and vulnerable people in accessing sustainable soil management practices.	1	E.g. Number of farmers adopting SSM practices.	E.g. Number of beneficiaries implementing SSM under GSP programmes, projects and initiatives.
	Enhance implementation of sustainable soil management practices to achieve sustainable food production systems and healthy/resilient ecosystems.	2	E.g. Adoption of SSM in national programmes. E.g. Enhancing soil organic carbon stocks and soil health, whilst reducing greenhouse gas emissions from soils.	E.g. Number of countries that have included SSM in their national programmes. E.g. Total land area (ha) where RECSOIL is being implemented.
	Enhance the restoration of degraded[5] soils and prevent any form of degradation of healthy soils.	3	E.g. Proportion of degraded soils under SSM measures over total degraded soils.	E.g. Land area (ha) under SSM practices within GSP programmes, projects and initiatives.
	Ensure the protection and sustainable management of black soils in all black soils' countries.	4	E.g. Proportion of black soils under protection measures over total black soil area.	E.g. Total Area under black soil protection measures.

[4] Kindly note that the KPIs and metrics provided are examples to guide the GSP Plenary Assembly and FAO Governing Bodies in the adoption of the targets, as well as to facilitate the subsequent work of the technical working group that will work on the final definition of the targets.

[5] Soils are degraded when affected to some extent by the main ten soil threats (soil organic carbon loss, soil biodiversity loss, pollution/contamination, erosion, compaction, acidification, nutrient imbalance, salinization/sodification, sealing, or water logging) as described in the Status of the World's Soil Resources report and are therefore unable to provide all their ecosystem functions and services compared to their full potential when healthy.

Strengthen soil governance	Mainstream soil health into national policies and align country actions with the Revised World Soil Charter and the principles of the Voluntary Guidelines for Sustainable Soil Management	5	E.g. Development of national and regional legal instruments focused on soil health and the prevention of soil degradation.	E.g. Number of countries technically supported to include rev-WSC and VGSSM principles into national policies and strategies.
	Strengthen the sustainable use and management of fertilizers in alignment with the International Code of Conduct for the Sustainable Use and Management of Fertilizers (Fertilizer Code).	6	E.g. Implementation of the Fertilizer Code.	E.g. Number of countries technically supported to include the Fertilizer Code principles into national policies and strategies. E.g. Number of companies in the fertilizer industry reporting alignment with the provisions of the Fertilizer Code.
	Enhance and align soil health monitoring in support of UN Rio Conventions.	7	E.g. Formalization of cooperation between the FAO/GSP and other relevant intergovernmental processes and monitoring frameworks.	E.g. Official agreements between FAO/GSP and the UN Rio Conventions.
Promote knowledge and literacy on soils	Enhance national technical capacities on sustainable soil management and soil health.	8	E.g. Capacity development programmes/courses on SSM.	E.g. Number of participants trained through the GSP's capacity development programmes, including EduSOILS and the Global Soil Doctors programme (gender disaggregated data).
	Improve the availability of knowledge on the state of world's soil.	9	E.g. Global assessments reports on the state of world's soils and soil threats.	E.g. Number of languages in which global assessments and reports are translated.
Promote awareness raising and	Substantially increase public awareness regarding the importance	10	E.g. Observance rates of WSD.	E.g. Engagement in GSPs awareness raising campaigns, contests, social

advocacy on soil health	of healthy soils for healthy food and ecosystems, and for sustainable development.			media, and public initiatives on soil health.
	Expand global advocacy for soil health in international agreements.	11	E.g. International agreements, communiqués, strategies, or partnerships focused on soil health.	E.g. Number of countries embracing international agreements, communiqués, strategies, or partnerships focused on soil health to which the GSP specifically provides inputs.
Assess, map, and monitor soil health in a harmonized way	Significantly improve soil data quality and availability to measure and monitor soil health for evidence based and data driven decision-making.	12	E.g. Number of countries monitoring the soil condition and trends through operational national soil information systems, which follow the GSP harmonization guidance (nomenclature, soil sampling and analysis, and metadata) validated through GLOSOLAN's Proficiency Testing (PT) exercises.	E.g. Number of countries participating in the development of harmonized country-driven global data products and connected to the Global Soil Information System (GloSIS). E.g. Number of reference laboratories that participate in the GLOSOLAN PTs and organize national and regional PTs.
Foster technical cooperation conducive to gender parity and youth engagement	Strengthen all GSP Technical Networks: GLOSOLAN, INFA, INSII, INBS, INSAS, NETSOB, INSOP, and any other network established by the GSP.	13	E.g. Representation status in the GSPs Technical Networks.	E.g. Number of members/countries in each network.
	Positioning the ITPS as the authority providing scientific advice on soils to the GSP, FAO, the UN Rio Conventions and other relevant UN multilateral environmental agreements (MEAs).	14	E.g. Consultation with the ITPS on soil issues from the GSP, FAO, the UN Rio Conventions and relevant MEAs.	E.g. Number of UN Conventions meetings attended by ITPS members. E.g. Number of key publications published under the guidance of the ITPS.

In addition to the targets and indicators describe above, the 2030 Agenda on Sustainable Development includes targets and indicators that are relevant to monitor soil health and for which countries are already generating information. These indicators can help to understand in broad terms the state of soils. Table 2 presents an overview of targets with an obvious impact on soils. These are already being compiled and will therefore be leveraged by the GSP, which will complement them with more specific targets and indicators (Table 1) designed to help countries maintain, improve and/or restore soil health, while monitoring the impact of GSP actions.

SoilSTAT aims to promote information on indicators, showcase the role of soils with reliable data, in an international and trans-disciplinary indicator setting. The above mentioned working group will be tasked with creating indicators to analyze the current and required soil indicators in international policies, and to develop an operational soil indicator system.

Table 2. Sustainable Development goals (2030 Agenda on Sustainable Development) with targets and indicators relevant to soil health

International targets	Indicators
1.4. By 2030, ensure that all men and women, in particular the poor and the vulnerable, have equal rights to economic resources, as well as access to basic services, ownership and control over land and other forms of property, inheritance, natural resources, appropriate new technology and financial services, including microfinance	1.4.2. Proportion of total adult population with secure tenure rights to land, with legally recognized documentation and who perceive their rights to land as secure, by gender and by type of tenure
2.4. By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding, and other disasters to progressively improve land and soil quality	2.4.1. Proportion of agricultural area under productive and sustainable management
3.9. By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination	3.9.3 Mortality rate attributed to unintentional poisoning
6.3. By 2030, improve water quality by reducing pollution, eliminating wastage, and minimizing the release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally	6.3.2. Proportion of bodies of water with good ambient water quality
13.2. Integrate climate change measures into national policies, strategies and planning	13.2.1. Number of countries with nationally determined contributions, long-term strategies, national adaptation plans and adaptation communications, as reported to the secretariat of the United Nations Framework Convention on Climate Change
15.3. By 2030, combat desertification, restore degraded land and soil, including land affected by desertification, drought, and floods, and strive to achieve a land degradation-neutral world	15.3.1. Proportion of land that is degraded over total land area
17.16. Enhance the global Partnership for sustainable development, complemented by multi-stakeholder partnerships that mobilize and share knowledge, expertise, technology, and financial resources, to support the achievement of the sustainable development goals in all countries, in particular developing countries	17.16.1. Number of countries reporting progress in multi-stakeholder development effectiveness monitoring frameworks that support the achievement of the SDGs

Soil Health Index and reporting mechanism

This framework proposes the development of a globally unified approach to soil health based on progress made in national soil indicator programmes, research, and including already agreed indicators of the Protocol for the assessment of sustainable soil management (SSM Protocol). Within this Action Framework, it is proposed to include the development of a Soil Health[6] Index (SHI), as a composite index including the indicators endorsed in the SSM Protocol to provide a proxy on the soil health status at global level.

The Global Soil Information System (GloSIS), and the Global Soil Biodiversity Observatory (GLOSOB), will be the main global data platforms to provide soil data and statistics for data driven indicators (3 and 5) sets, whereas SoilSTAT provides official national soil statistics for agreed indicators, following existing UN standards. These statistics are derived from indicators provided by GloSIS and GLOSOB.

GloSIS acts as a hub for soil data services. Data from GSP members and partners, in particular national data on indicators can either be provided through conventional data transfer or web services. The data, information and statistics for other indicators will be collected, compiled, and provided by the GSP Secretariat, which will coordinate the global data exchanges and service developments, while the RSPs and the relevant GSP Technical Networks will support national partners in the regions, through a regional coordination and quality control mechanism. The SoilSTAT will be the main platform to govern the data flow, monitoring and reporting of the indicators and monitoring the progress made in the implementation of this Action Framework. To facilitate such ambitions, the existing SoilSTAT concept will be adapted by INSII, amended, and designed to include the indicators of this Action Framework.

[6] The Intergovernmental Technical Panel on Soils (ITPS) defines soil health as “the ability of the soil to sustain the productivity, diversity, and environmental services of terrestrial ecosystems”.

Annex 1. GSP governance and functioning

The GSP is an interactive, responsive, and voluntary partnership, open to governments, institutions, and other stakeholders at various levels. FAO Members are GSP members by default. Non-governmental organizations (NGOs) and the private sector can become GSP partners after an application and approval process. This structure may be revised according to the result of the evaluation of the institutionalization process.

The GSP governance, as presented in the Rules of Procedure, has a strong regional foundation through the RSPs. National governments and GSP partners appoint a focal point to liaise and coordinate with the Secretariat and participate in the Partnership. The Secretariat of the GSP is hosted by FAO.

The ToRs of the current GSP, state that the work of the GSP is based on the following five pillars of action:

1- Promote the sustainable management of soil resources for soil protection, conservation and sustainable productivity;
2- Encourage investment, technical cooperation, policy, education, awareness and extension in soil;
3- Promote targeted soil research and development focusing on identified gaps, priorities, and synergies with related productive, environmental and social development actions;
4- Enhance the quantity and quality of soil data and information: data collection, analysis, validation, reporting, monitoring, and integration with other disciplines; and
5- Harmonization of methods, measurements and indicators for the sustainable management and protection of soil resources.

i. Decision-making

The decision-making of the GSP takes place during the annual GSP PA where focal points, delegates and representatives from partners come together to discuss and agree on the global soil agenda. All GSP members and partners are invited to express opinions and vote on general decisions. Only FAO Members can decide on issues related to intergovernmental processes.

ii. Scientific advice

All activities carried out by the GSP are overseen and implemented with the scientific guidance of the ITPS. The ITPS is well established and has been very active from the first expert panel in 2013 (2013-2015) to the present (third expert panel, 2018-2021). Its main task is to provide scientific and technical advice on global soil issues to the GSP.

In addition, the GSP Technical Networks also provide scientific advice to the Plenary Assembly within their respective areas of expertise.

iii. Implementation

From global to national level

At the global level, each of the five pillars has its own global implementation plan (GIP) and has a working group with a chairperson and regional representatives. The stocktaking exercise revealed that progress in executing the GIPs has not been the same for all pillars. The current pillar GIPs were designed based on an initial estimate of the funding that might become available through the Healthy Soils Facility[7]. This initial funding estimate did not materialize, and implementation was therefore slow. In addition, changes and new priorities have been introduced over the years according to the outcomes of global symposia and emerging issues. The pillar structure and their implementation plans have proven to be useful for the instalment of the GSP Framework and general objectives but have limited the execution of activities and the mobilization of resources. The current pillar organizational structure can be seen as an obstacle to engaging stakeholders less familiar with UN structures, procedures, and language, who considered the GSP structure to be overly formal and rigid.

The pillars address cross-cutting issues that allow progress towards the ambition of the GSP. However, the global symposia, as well as global assessments such as the SWSR's report, and the emergence of new global challenges, have helped to identify GSP priority action areas, including the soil threats, and the role of soils in different nexuses, such as with water, climate change, food security, and poverty (see also Figure 1). The pillar's GIPs continue to constitute important background documents and a reference for priorities and potential actions, as they were developed by GSP members and partners. Currently, almost all pillars are represented by Technical Networks and initiatives with a lighter governance and more active implementation. Therefore, the GIPs will not need to be updated in the future, but the priorities they set are to be integrated into the work plans of the Technical Networks and initiatives as mentioned in Figure 1 that articulate the implementation of the cross-cutting issues covered by the pillars.

The GSP Secretariat has become the driver of implementation at the global level, through the mobilization of financial resources and the suggestion of priorities to the GSP PA. In the future, to improve transparency and the consideration of regional needs in the prioritization of actions, it would be preferable to establish a steering committee. Its role, composition and duration would be discussed and decided on the basis of the outcome of the institutionalization of the GSP and subsequently included in the updated ToRs as deemed necessary.

The establishment of the RSPs and, subsequently, the National Soil Partnerships (NSPs) have provided an effective mechanism for attracting key institutions and experts with an interest in contributing to advancing the objectives of the GSP at regional and national levels. At regional level, expert groups have been successfully established around the Pillars, with varying progress and activities between regions. However, these RSPs have faced certain technical capacity and funding-related constraints, as insufficient funds have materialized through the Healthy Soils Facility to finance the RSPs, which has significantly limited the execution of their implementation plans.

During the upcoming new phase of GSP implementation, the role and impact of RSPs must be clearly defined. Regional implementation plans should be updated, taking into account the

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functioning of the global GSP networks to which many PSR experts already contribute to avoid overlap, and a funding strategy should be designed through the Healthy Soils Facility.

Technical Networks

In 2015, the ITPS published the first Status of the World's Soil Resources (SWSR) report to highlight the top ten global soil threats. Every year, the ITPS leads the organization of thematic global symposia and outcome documents are produced to tackle diverse soil threats. In parallel, global data products are developed following a bottom-up approach to collect national data and information and to have a spatial representation of the distribution of different soil threats. These global data products constitute key components of the GloSIS.

The previous implementation process has been strongly influenced by the global symposia, and the networks which have been created:

- the International Network of Soil Information Institutions (INSII);
- the Global Soil Laboratory Network (GLOSOLAN), including its regional and national branches and the initiative on soil spectroscopy;
- the International Network on Black Soils (INBS);
- the International Network on Salt-affected Soils (INSAS);
- the International Network on Fertilizer Analysis (INFA);
- the International Network on Soil Biodiversity (NETSOB), and
- the International Network on Soil Pollution (INSOP, under creation at the time of writing).

These networks have made it possible to expand the technical capacity of the GSP to more concrete issues, to deepen and fill some knowledge gaps, and to open the network to a wider range of actors not necessarily officially appointed. Thus, the GSP has become a network of networks. These Technical Networks implement the decisions taken by the GSP's PA in their respective fields, facilitated by the GSP Secretariat in close collaboration with the ITPS.

iv. Financing

The Healthy Soils Facility Trust Fund, established in response to the request of the GSP Plenary Assembly in 2013, should remain the main operational arm to which all resource partners contribute ensure the fulfilment of the GSP Action Framework 2022-2030.

In addition, FAO Members and GSP partners provide financial and in-kind contributions to the GSP for the implementation of all activities.

Should the outcome of the evaluation of the institutionalization of the GSP recommend a new scheme for the GSP, a proposal to revise the GSP's ToRs shall be presented within the relevant formal bodies of FAO, including the COAG, and be submitted for approval by the FAO Council or, if applicable, the Conference, including prior submission to the Programme Committee and Finance Committee. Revisions submitted for approval may include changes to the roles, funding mechanisms and interaction between GSP's partners.

Annex 2. Main findings and recommendations of the GSP stocktaking exercise

The stocktaking exercise noted that the GSP has made substantial progress way since its formal establishment by the FAO Council at the end of 2012, while reaching a juncture where it needs to recalibrate its strategy migrating from what could be called a global positioning phase highly justified thus far, to full priority to concrete actions including the use of tools developed in this early phase on the ground to assist countries in reaping the full benefits of SSM practices. It included five recommendations that are considered in this Action Framework:

- **Recommendation 1**: The Secretariat and the ITPS should embark on the formulation of a revamped GSP Action Framework entitled: "Healthy Soils to meet SDGs, Biodiversity and Climate Change Goals," including transforming the current pillars into outcome areas for soil health.
- **Recommendation 2**: Recognize two distinct functions within the Secretariat: a Programme unit and a Resource Mobilization unit in order to formulate and support the implementation of a portfolio of projects and interact with resource providers more systematically.
- **Recommendation 3**: Undertake consultations involving the relevant departments up to the senior leadership of FAO, on the prospects for elevating the GSP to a more formal statutory body or subcommittee under the aegis of the COAG, and submit the necessary background documents for consideration by COAG and further organs as appropriate.
- **Recommendation 4**: Revamp the present regional and national structural arrangements, building closer links to FAO's own decentralized structures, and establish centres of excellence.
- **Recommendation 5:** The GSP should also prepare firmer Partnership Framework Agreements with key international conventions and organizations, especially UNCCD, UNEP, UNCBD and UNFCCC.

Annex 3. Key outcomes and impacts of the Global Soil Partnership

Since its inception, the GSP has succeeded in positioning soils on the global agenda, raising awareness and advocating for the importance of SSM for the maintenance of ecosystems functions and the provision of ecosystem services, and the urgent need for action to reverse soil degradation.

The first actions of the GSP were the proposal and associated work for the designation of WSD on 5 December by the United Nations General Assembly (UNGA), and to declare 2015 as the International Year of Soils. Both proposals were submitted by the Kingdom of Thailand and were fully supported by FAO and UN Members.

In addition, a variety of initiatives have been put in place and products have been produced, such as:

- awareness raising, including the annual celebration of WSD;
- advocacy on soil governance, including the development of the SoiLEX platform;
- capacity building on digital soil mapping and modelling, SSM and laboratory analysis, among others;
- development of normative tools such as the revised World Soil Charter (WSC) and the VGSSM;
- resource Mobilization for the implementation of SSM at country level;
- development of technical tools, such as the technical manual on SOC management or the protocol for the assessment of SSM practices;
- provision and harmonization of soil data and methods of analysis, performed by the INSII and GLOSOLAN;
- establishment of soil information systems at national, regional and global levels;
- organization of global symposia focusing on action areas;
- preparation of global assessments on soil biodiversity, soil pollution, and the baseline for global soil condition assessments and its impact, namely the SWSR, and;
- implementation of SSM on the ground.

The GSP has enabled an unprecedented global effort to develop and supported the technical capacities and awareness at national, regional, and global level. To date, 168 countries have nominated a focal point, and around 550 NGOs, universities, research centers, farmers associations, and private sector groups, have joined as GSP members. The GSP has mobilized over 2 500 experts from around the world through the Technical Networks GLOSOLAN (780 laboratories), INSII (114 members), INSAS (630 members), NETSOB (881 members), INBS (100 members), INFA (155 members) and has reached around 1 000 farmers and extension service staff through the Global Soils Doctors Programme. More than 5 000 participants have benefited from multiple training sessions on digital soil mapping and modelling, and soil laboratory procedures, soil spectroscopy, quality control and laboratory health and safety. Participation in WSD campaigns has expanded from 42 events celebrated in 29 countries in 2014 to 781 events held across 125 countries in 2021. In 2021, media coverage of WSD reached 1.15 billion individuals worldwide with over 630 press articles published. The “new normal” driven by the COVID-19 pandemic made it possible to reach a total of 24 255 participants in

83 webinars and meetings in 2021. The nine FAO soils websites peaked at over 3 million page views, while the GSP newsletter boasted 36 000 subscribers. GSP members and partners have contributed to the joint development of over 60 technical and normative tools and documents.

Annex 4. International commitments and initiatives related to soils

Many existing international commitments and initiatives partially recognize the role of soils in addressing global challenges. These include:

i. International binding agreements:
   - The Committee on World Food Security (CFS) (1974).
   - The Basel (1989), Rotterdam (1998), and Stockholm (2001) Conventions (BRS).
   - The Convention on Biological Diversity (CBD) (1993).
   - The UN Convention to Combat Desertification (UNCCD) (1994).
   - The UN Framework Convention on Climate Change (UNFCCC) (1994).
   - Alpine Convention (1995).
   - Minamata Convention (2013).
   - The Paris Agreement (2015).

ii. International non-binding agreements:
   - Voluntary Guidelines on Responsible Governance of Tenure of Land, Forestry and Fisheries (Committee on Food Security, VGGTs) (2012).
   - 2030 Agenda for Sustainable Development and the Sustainable Development Goals (SDGs) (2015).
   - Global Action Plan on Antimicrobial Resistance (World Health Assembly) (2015).
   - Koronivia Joint Work on Agriculture (UNFCCC) (2017).
   - Declaration towards a Pollution-Free Planet (UN Environment Assembly) (2017).
   - UN Global Campaign on Sustainable Nitrogen Management (2019).
   - UN Decade on Ecosystem Restoration (2021-2030).
   - UN Food System summits (2021).
   - The Communiqué of the Global Forum for Food and Agriculture (2022).

In addition, there are multiple international partnerships and initiatives covering various aspects of soil health. The GSP, as a network of networks, should strengthen identification and cooperation with all these initiatives and develop a mechanism for mutual communication that favors the exchange of experiences and interests.

Annex 5. Members of the Open-ended Working Group

Regional representatives (listed in alphabetical order)

NAME	COUNTRY	INSTITUTION
Tarik BENABDELOUAHAB	Morocco	Chef du Département de l'Environnement et des Ressources Naturelles (Division Scientifique) à l'Institut National de la Recherche Agronomique
Hans BRAND	The Netherlands	Policy Coordinator Food Security (FAO and Multilateral Cooperation), Department of European, International and Agro-economic Policy (EIA), Ministry of Agriculture, Nature and Food Quality
Sarah BURR	Australia	Director, National Soil Policy Section, Department of Agriculture, Water and the Environment
Samuel Jose FRANCKE CAMPAÑA	Chile	Director of the National program for the Management of Watersheds and Soil and Water Conservation, CONAF
Luiz Fernando CARVALHO LEITE	Brazil	General Coordinator of Soil and Water Conservation - Ministry of Agriculture, Livestock and Food Supply
Gaius EUDOXIE	Trinidad and Tobago	University of West Indies
Elena HAVLICEK	Switzerland	Federal Office for the Environment (FOEN), Soil and Biotechnology Division
Dave KNAEBEL	United States of America	National Program Leader – Soil Biology, USDA – Agricultural Research Service – Office of National Programs
Pavel KRASILNIKOV	Russian Federation	Acting Dean of Soil Science Faculty, Lomonosov Moscow State University
Paul MAKUFA	Democratic Republic of Congo	Laboratoire de Pédologie de l'Université de Kinshasa
Traore MAMOUDOU	Burkina Faso	Institut de l'Environnement et de Recherches Agricoles (INERA)
Klaas MAMPHOLO	South Africa	Ministry of Agriculture
Botle Esther MAPESHOANE	Lesotho	National University of Lesotho
Gina NILO	Philippines	Assistant Director, Bureau of Soils and Water Management
Mahendra PERSAUD	Guyana	Plant Breeder/Chief Scientist, Guyana Rice Development Board
Bashiru Ademola RAJI	Nigeria	University of Ilorin Kwara state
Harifidy RAKOTO RATSIMBA	Madagascar	L'Université d'Antananarivo
Helena SOINNE	Finland	Senior Scientist, Natural Resources Institute of Finland, LUKE
Thanawat TIENSIN	Thailand	Permanent Representation of Thailand to FAO
Bob TURNOCK	Canada	Agriculture and Agrifood Canada
Nicole WELLBROCK	Germany	Head of Soil protection and forest health, Thünen Institute of Forest Ecosystems

Chairs of the Regional Soil Partnerships

Rainer BARITZ	Germany	Chair European Soil Partnership
Victor CHUDE	Nigeria	Chair African Soil Partnership
David LINDBO	USA	Chair North American Soil Partnership
Pablo MONTALLA	Philippines	Chair Asian Soil Partnership
Rachid MOUSSADEK	Morocco	Chair NENA Soil Partnership
Sol ORTIZ	Mexico	Chair Latin American and the Caribbean Soil Partnership
Peter WILSON	Australia	Chair Pacific Soil Partnership

Chairs of the GSP Technical Networks

Jorge BATLLE	Spain	Chair INSAS
Wesley Karl FELDMANN	Malawi	Chair INFA
Luca MONTANARELLA	Italy	Chair of the GSP Plenary Assembly/Chair INSII
Miriam OSTINELLI	Argentina	Chair GLOSOLAN
Rosa POCH	Spain	Chair of the ITPS
Peter de RUITER	The Netherlands	Chair NETSOB
Ivan VASENEV	Russian Federation	Chair INBS

Representatives of GSP partners

Jamal ANNAGYLYJOVA	Convention on Biological Diversity (CBD)
Cristina GRANDI	IFOAM Organics International
Patrick HEFFER	International Fertilizer Association (IFA)
Christopher HEGADORN	Committee on World Food Security (CFS)
Barron ORR	United Nations Convention to Combat Desertification (UNCCD)
Chris PEREIRA	Convention on Biological Diversity (CBD)
Laura Bertha REYES	International union of Soil Sciences (IUSS)