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**Report on normative tools and actions on sustainable soil management
(GSPPA: XI/2023/6)**

Executive Summary

- The mandate of the Global Soil Partnership (GSP) is to improve governance of the limited soil resources of the planet to guarantee healthy and productive soils for a food-secure world, as well as support other essential ecosystem services, in accordance with the sovereign right of each State over its natural resources.
- To fulfil this mandate, the GSP promotes the adoption of sustainable soil management (SSM) through various actions, including the development of normative tools for their uptake at all levels, particularly at national level.
- The Voluntary Guidelines for Sustainable Soil Management (VGSSM), which were endorsed at the 155th Session of the Food and Agriculture Organization of the United Nations (FAO) Council in December 2016, continue to be the main tool to advocate for sustainable soil management (SSM).
- The implementation of the VGSSM is now complemented by the Protocol for the Assessment of Sustainable Soil Management (SSM Protocol). This protocol, through a system of simple indicators and detailed instructions, assesses whether soil management practices are compliant with the VGSSM, as well as their impact on soil health.
- The implementation of [The international Code of Conduct for the sustainable use and management of fertilizers](#) (Fertilizer Code) continues to be a priority for the GSP, particularly during the fertilizer crisis in 2022. The GSP advanced its usage through various activities, such as a global survey on the implementation of the Code and other actions at national level, the development of several [projects on soil fertility management](#) and the organization of the [Global Symposium on Soils for Nutrition](#) (GSPPA: XI/2023/7).
- Several activities have been implemented to raise awareness and improve soil governance at the international and national levels, including the continuous update of the SoiLEX platform, the organization of webinars on soil governance and the development of a legal guide on SSM.

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- The Green Path of the Recarbonization of global soils (RECSOIL) initiative, is being implemented in four pilot sites in Costa Rica, Ecuador, Mexico and Togo. Initial activities to identify the stakeholders to be involved in the project and selection of intervention areas have begun in Ghana, Kazakhstan, Kenya and Uzbekistan. There is growing demand from countries, but the Secretariat faces financial limitations in accommodating such requests.
- The implementation of the [Global Soil Doctors Programme](#) continues in many countries in collaboration with national promoters or with ongoing FAO projects. The GSP Secretariat provides certified training, technical support, soil doctors kits and posters tailored to the needed languages. However, there are financial limitations to meet the constantly increasing demands.

Suggested actions by the GSP Plenary Assembly

The Plenary Assembly may wish to:

- express appreciation for the efforts made in the implementation of the VGSSM and invite members to adopt the VGSSM and use its SSM Protocol to assess if a given soil management practice complies with the definition and principles of SSM;
- acknowledge the progress made in the implementation of the Fertilizer Code through several projects and through the Global Symposium on Soils for Nutrition;
- invite countries and partners to adopt the Fertilizer Code and to support its implementation at the national level to address the fertilizer crisis;
- acknowledge the efforts made in raising public awareness on soil governance, especially through the SoiLEX platform;
- acknowledge the progress made in the development and scaling up of RECSOIL implementation worldwide and invite resource partners to provide financing to advance it on the ground;
- acknowledge the development and implementation of the Global Soil Doctors Programme and its positive impact on the awareness of farmers and extension technicians on sustainable soil management; and
- invite members and partners to promote the Global Soil Doctors Programme and to contribute financial and in-kind resources for its implementation, to ensure the sustainability and scaling-up of the programme.

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6.1 Compliance to the Voluntary Guidelines for Sustainable Soil Management, including the SSM Protocol

1. Improving soil governance at all levels is part of the core mandate of the GSP. The partnership supports the development of specific national soil legislation and policies based on the VGSSM principles.
2. The implementation of the [VGSSM](#) has been a priority for the Secretariat and efforts to advocate for their adoption at national level are ongoing. The VGSSM continue to be translated into other languages by interested partners.
3. The implementation of the VGSSM is now complemented by the [SSM Protocol](#), which was endorsed by the eighth GSP Plenary Assembly at an ad hoc session in September 2020.
4. The SSM Protocol constitutes a fundamental tool to assess if interventions implemented in the field, such as the improvement of productive systems, innovative technologies, ecosystem restoration and carbon sequestration interventions, are compliant with the definition of SSM.
5. The SSM Protocol is now complemented by the SSM Protocol User Manual that was endorsed at the eighteenth working session of the Intergovernmental Technical Panel on Soils (ITPS) and includes detailed instructions for its application in the field.
6. The SSM Protocol User Manual was validated and revised through a regional Technical Cooperation Programme (TCP) project implemented in Latin America and the Caribbean: [Regional cooperation project for climate management of agricultural ecosystems with emphasis on water and soil](#). The assessed practices were recorded in a temporary database and the GSP Secretariat is exploring the best structure to make it compatible with the [World Overview of Conservation Approaches and Technologies \(WOCAT\) database](#) on sustainable land management and thus take advantage of its wider use for SSM.
7. Efforts are being made to disseminate the SSM Protocol and its user manual so that they are widely applied in all FAO and GSP projects that have an impact on soils. It has also been included as an essential part of the RECSOIL initiative.
8. The [SoiLEX platform](#) was launched in 2021 and since then has been continuously updated thanks to the support of national focal points and experts. Three new legal instruments have been added to SoiLEX: the Cuban Soil Law, the English translation of the German Soil Act, and the Black Soil Protection Law of China. Other instruments are under review and will be added to the platform.
9. Following the success of the [special issue published in 2022](#), the Soil Legislation Working Group was invited to participate in a second special issue on soil governance in ELSEVIER's *Soil Security* journal. This special issue will be published as open access by the end of the year and will be a very useful tool to advocate for better soil governance.
10. In cooperation with the German Environment Agency, the webinar: [Enhancing soil governance: regional and national examples of soil legislation development](#) was held on 9 March 2023. The webinar brought together 847 participants from more than 140 countries and was focused on the implementation of legal instruments for soil protection and SSM in different countries and regions. Particular attention was paid to the recently enacted Black Soil Protection Law of China and to the Mexican Soil Strategy.
11. Two documents are under development to support efforts on soil governance: a comparative analysis of regional and national regulatory frameworks on the protection and sustainable management of soils, and a legal guide for the development of legislation on SSM.

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12. Together with the FAO Division of Inclusive Rural Transformation and Gender Equality, the GSP developed a technical guide for policymakers and field practitioners: [Addressing gender equality in sustainable soil management](#), that was launched on 16 June 2023, as part of FAO's observance of the World Day to Combat Desertification and Drought with the theme *Her Land. Her Rights*.
13. The [SOILCARE project](#), funded by the Global Environment Facility (GEF), is being implemented in eight Caribbean Small Island Developing States (SIDS) and aims to facilitate the use of national and regional soil data and knowledge in informed soil policy development and decision-making. This project also includes the application of the SSM Protocol. The [first training](#) on its application took place from 16 to 20 January 2023 in Saint Augustine, Trinidad and Tobago, attended by 17 participants from Antigua and Barbuda, Barbados, Grenada, Guyana, Haiti, Jamaica, Saint Lucia and Trinidad and Tobago.

6.2 Response to the fertilizer crisis via *The international Code of Conduct for the sustainable use and management of fertilizers*

14. With the fertilizer crisis in 2022, the adoption and implementation of *The international Code of Conduct for the sustainable use and management of fertilizers* (Fertilizer Code) has become more important than ever, and the Secretariat has implemented a number of actions to address this crisis. The Secretariat's response to the fertilizer crisis covers the following areas: soil nutrient mapping, fertilizer quality assessment, development of local fertilizer recommendations, nutrient use efficiency, capacity development of extension officers, farmers and agrodealers, and the documentation and extension of alternative soil nutrient sources including biofertilizers, biostimulants and other sources.
15. The Fertilizer Code was endorsed by the 41st Session of the FAO Conference in June 2019. Since then, the Fertilizer Code has been translated into the six FAO official languages. A [promotional video](#) has been developed in the six languages and widely disseminated in related events and social media.
16. A global implementation plan was developed and focuses on four main components: i) dissemination of the Fertilizer Code; ii) capacity development for the implementation of sustainable fertilizer management; iii) establishment of a holistic approach to sustainable soil and nutrient management; and iv) strengthening enabling environments focusing on policy development.
17. The [National Survey on the Use and Management of Fertilizers](#), launched in 2021, has been responded by 150 participants from 61 countries. Results have been analysed, disaggregated by gender, sector, country, and region, to better understand fertilizer use and management and the gaps and challenges for their sustainable use. The survey allowed for information to be collated about fertilizer assessment, research, capacity building, awareness raising and regulation frameworks. The main conclusions of the survey's report (to be published soon) include the need to enhance the adoption of the Fertilizer Code and to develop a roadmap towards the sustainable use of fertilizers at national and regional levels.
18. As part of the efforts to promote the sustainable use and management of fertilizers, and position the crucial role of soils in the public eye during the current fertilizer crisis, the ITPS published the Letter: [Soils, where food begins: how can soils continue to sustain the growing need for food production in the current fertilizer crisis?](#)
19. The GSP Secretariat and the ITPS are part of FAO's Technical Advisory Group on Methane (TAG), contributing to the Global Methane Pledge, which aims to reduce the emissions of methane and mitigate climate change.

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20. The [Global Symposium on Soils for Nutrition](#), held in July 2022, addressed and supported the dissemination and implementation of the Fertilizer Code, specifically under Theme 1: *Sustainable soil management for food security and better nutrition*, and Theme 2: *Impacts of soil nutrient management on the environment and climate change*. Detailed information is included in the document (GSPPA: XI/2023/7).
21. Following the main recommendation of the outcome document of the Global Symposium on Soils for Nutrition, the International Network on Soil Fertility and Fertilizers (INSOILFER) was launched in June 2023 (see GSPPA: XI/2023/7). The previous [International Network on Fertilizer Analysis](#) (INFA) is embedded into the INSOILFER network as one of the four components. The INFA has continued its work of measuring and monitoring the quality and safety of organic and inorganic fertilizers to reduce or avoid severe environmental contamination and health problems, thus supporting the principles of the Fertilizer Code. The INFA works with more than 160 laboratories in 84 countries to harmonize methodologies to assess the quality and safety of fertilizers and to strengthen capacities of laboratories on fertilizer analysis. For more information on the progress see the document GSPPA: XI/2023/9.
22. The global soil nutrient and nutrient budget map will allow informed decisions to be made at the national level on fertilizer recommendations and use planning. For detailed reporting on the progress and the timeline see GSPPA: XI/2023/9.
23. The *Sustainable soil management for nutrition-sensitive agriculture in sub-Saharan Africa and South East Asia* ([Soils4Nutrition](#)) project, financed by the Government of Germany, focused on the selection and testing of sustainable soil management practices to improve the micronutrient content of soils and crops. To this end, significant efforts were made to build capacity on sustainable soil management for farmers, national agricultural research and extension staff. The Soils4Nutrition project, implemented in Bangladesh, Burkina Faso and Malawi, contributed to the Technical Guidelines on Soils for Nutrition, national fact sheets for the three beneficiary countries and an [educational module on Soils4Nutrition](#) as part of the Global Soil Doctors Programme.
24. Two projects, financed by the Government of China, are being implemented in [Rwanda](#) and [Uganda](#), focusing on building national capacities on the sustainable use and management of fertilizers and soil fertility. Soil and fertilizer information databases were established, soil laboratory equipment was delivered to strengthen the capacity on soil and fertilizer testing, online and in-person trainings were organized to train multiple stakeholders, and demonstration trials were established to promote good soil and fertilizer management practices.
25. As part of the response to the fertilizer crisis, the Government of the United States of America made a financial contribution of USD 20 million to FAO to support Guatemala, Honduras and Zambia on soil mapping to support data-driven integrated soil nutrient management at local and national scale through the project entitled *SoilFER - Soil mapping for resilient agrifood systems in Central America and sub-Saharan Africa*. The Secretariat has been working in an inclusive manner with the governments and all stakeholders working on this issue in partner countries, to ensure that appropriate use is made of the experiences already developed and that the greatest possible impact on sustainable soil management is achieved with this project. This project started its activities in May 2023 and has the potential for scaling-up in other countries and regions.

6.3 RECSOIL: Recarbonization of global soils

26. The Recarbonization of global soils ([RECSOIL](#)) initiative was established in 2019 and officially launched on 17 June 2020 through a webinar to observe the World Day to Combat Desertification.

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27. It is an initiative to scale-up the adoption of SSM practices, centred on soil organic carbon (SOC): increasing SOC stocks while boosting soil health and halting soil degradation.
28. In RECSOIL, there are two paths, the Green Path, and the Carbon Credit Path. The Green Path is entirely focused on enhancing soil health and the provision of ecosystem services by increasing SOC stocks and minimizing greenhouse gases (CO₂, CH₄ and N₂O) emissions. In the Green Path, the compliance with the VGSSM is critical and there are no carbon credits associated with it. The compliance with the SSM Protocol is compulsory to measure and verify the implementation of SSM and for the provision of ecosystem services. Additionally, [A protocol for measurement, monitoring, reporting and verification \(MRV\) of soil organic carbon in agricultural landscapes](#) (GSOC-MRV Protocol) is applied to quantify the SOC stocks and to reduce greenhouse gas (GHG) emissions.
29. With the launch of the [Global Soil Organic Carbon Sequestration Potential map](#) (GSOCseq), the identification of areas with potential for implementing RECSOIL on the ground was made possible. The Secretariat is therefore testing the RECSOIL initiative in Costa Rica, on an area of about 400 hectares managed by 20 dairy farmers. The overall goal is to adopt the programme at national level by including RECSOIL and its protocols into the National Payment for Ecosystem Services scheme. Similarly, the Secretariat is providing technical support to Mexico to prepare and submit a project proposal entitled RECSOILMEX to the Green Climate Fund (GCF). Mexico has also started piloting RECSOIL in Jalisco and Michoacán to adjust the tools to the national context. The pilot project will involve about 50 farmers in horticultural systems.
30. The RECSOIL initiative is also being piloted in cooperation with the FAO [Forest and Farm Facility](#) in Ecuador, Ghana, Kenya and Togo. In Ecuador, the farmers' association includes about 2 000 producers and covers about 3 000 hectares of organic cocoa production. The main threat is the presence of cadmium in the soil, for which SSM measures are being proposed. In Togo, RECSOIL is being applied on an area of 250 hectares, involving some 200 smallholder farmers. The main cropping system is a rotation between maize and soybean, with the use of fire for thinning, which causes loss of soil fertility and biodiversity.
31. From January to March 2023, the RECSOIL project has trained 51 technicians from Costa Rica, Ecuador, Mexico and Togo on the use of spatial analysis tools, data collection and harmonized soil sampling. Trainings in Ghana and Kenya will follow in the coming months. Training of laboratory personnel has also begun with the support of the GSP's Global Soil Laboratory Network (GLOSOLAN) for the use of standard operating procedures and quality assurance of analytical data.
32. Some GSP partners are also implementing the RECSOIL initiative through projects not implemented by FAO but with technical support from the GSP Secretariat. The Cambodian Department of Agricultural Land Resources Management of the General Directorate of Agriculture, in collaboration with the French Agricultural Research Centre for International Development (CIRAD), is implementing a pilot carbon and ecosystem services farming project in Cambodia, called Dei Meas (Golden Soils), in line with the RECSOIL initiative. A similar experience is being implemented in Argentina and Paraguay in the Gran Chaco region by the Asociación Argentina de Productores en Siembra Directa (Aapresid), Fundación ProYungas and Fundación Moisés Bertoni, applying the RECSOIL toolkit.

6.4 Global Soil Doctors Programme

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33. The [Global Soil Doctors Programme](#) is a farmer-to-farmer training initiative that aims to support farmers to enhance their capacities and knowledge on SSM. The programme has been designed to support national and local extension services and to fill gaps by training the leading farmer(s), or Soil Doctor(s) in a community who can then train other producers in the community. The programme focuses on methods and tools for detecting soil degradation problems and providing sustainable soil management solutions.
34. The programme was [launched in October 2020](#) and a global survey targeting potential promoters of the programme provided a better understanding of the financial and technical requirements for implementation. Based on the results, a facilitation and implementation roadmap tailored to each country's local context was prepared.
35. The Global Soil Doctors Programme includes a set of educational materials composed of 28 [posters](#) on different topics, including soil science concepts and recommended practices, 20 [field exercises](#) on physical, chemical and biological soil properties, and an [educational soil kit](#).
36. The new [Global Soil Doctors Programme webpage](#) was launched in March 2023 and provides information, documents and tools needed for the [implementation of the programme](#) by any [stakeholder](#). The links to download the [educational material](#) in different languages and a map detailing the [implementation sites](#) are also available on the website.
37. Five specific modules have been developed, available in the [Training Modules](#) section, according to the interest of the promoters and farmers participating in the programme. These are: i) *What is soil*; ii) *What are soil salinity and sodicity*; iii) *Soils4Nutrition*; iv) *Soil recarbonization*; and v) *Soil fertility*.
38. Through collaboration with national promoters and ongoing FAO projects, educational materials have been translated into Chinese, French, Portuguese, Russian and Spanish, and local languages such as Bengali, Chichewa, Dioula, Fulah, Kazak, Mossi and Tumbuka.
39. The programme is being implemented in nine countries in Bangladesh, Bolivia, Chile, China, Colombia, Costa Rica, Ecuador, Kazakhstan, Mexico, Malawi and Togo. To date, 110 trainers and 403 soil doctors have been trained.