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**Progress report on the implementation of the Plan of Action (2020–2030)
for the International Initiative for the Conservation and Sustainable Use
of Soil Biodiversity by the Food and Agriculture Organization of the
United Nations****

Note by the Secretariat

The present progress report on the implementation of the Plan of Action (2020–2030) for the International Initiative for the Conservation and Sustainable Use of Soil Biodiversity has been prepared by the Food and Agriculture Organization of the United Nations. It is provided in the form and language in which it was received by the Secretariat of the Convention on Biological Diversity.

* CBD/SBSTTA/27/1.

** The present document is being issued without formal editing.

I. Introduction

1. The International Initiative for the Conservation and Sustainable Use of Soil Biodiversity was formally established in 2006¹ as a cross-cutting initiative under the programme of work on agricultural biodiversity of the Convention on Biological Diversity (CBD). Its objective is to enhance the recognition of the essential services provided by soil biodiversity across all production systems and its relevance to land management, including through the exchange of information, the promotion of public awareness and education, and the strengthening of capacity-building.
2. In its decision 14/30, the Conference of the Parties (COP) to the CBD invited the Food and Agriculture Organization of the United Nations (FAO) to collaborate with the Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA) in reviewing the International Initiative for the Conservation and Sustainable Use of Soil Biodiversity and updating its plan of action. The COP further invited FAO to collaborate with the Open-ended Working Group on the Post-2020 Global Biodiversity Framework to ensure the inclusion of soil biodiversity in targets and indicators. In response, FAO and its Global Soil Partnership (GSP) provided support to the CBD Secretariat in conducting the review of the Initiative and in preparing a new plan of action, together with strategies to enhance its implementation.
3. At its fifteenth meeting, the COP to the CBD adopted decision 15/28 on Biodiversity and Agriculture,² through which it endorsed the Plan of Action (2020–2030) for the International Initiative for the Conservation and Sustainable Use of Soil Biodiversity (Plan of Action). This milestone decision recognizes the essential role of soil biodiversity in delivering ecosystem services, supporting sustainable agriculture, enhancing food security, and contributing to climate change adaptation and mitigation. The Plan of Action is recognized as an instrument to support the implementation of the Kunming-Montreal Global Biodiversity Framework (KMGBF).
4. The Plan of Action emphasizes the importance of integrating ecological, economic, cultural, and social considerations into soil biodiversity strategies. It calls for the active involvement of a wide range of actors, including Indigenous Peoples and local communities, women, youth, and knowledge holders, whose traditional practices and innovations can strengthen local and global responses. The initiative also encourages Parties to tailor implementation to their specific contexts while maintaining a shared commitment to safeguarding soil life.
5. Through decision 15/28, the COP invited FAO, including through the framework of the Global Soil Partnership (GSP), to facilitate the implementation of the Plan of Action. The Plan of Action comprises four main elements: (a) Policy coherence and mainstreaming; (b) Encouraging the use of sustainable soil management practices; (c) Awareness-raising, sharing of knowledge, technology transfer and capacity-building and development; (d) Research, monitoring and assessment. These four elements encompass a total of 49 activities.
6. The present document provides an overview of the progress achieved in the implementation of the Plan of Action outlined in decision 15/28, as facilitated by FAO and its GSP. Section (II) provides an overview of progress on global actions, while section (III) focuses on key elements and activities of the plan of action and section (IV) presents progress on supporting voluntary guidance, tools, organizations and initiatives relating to the conservation and sustainable use of soil biodiversity.

II. Progress on global actions

7. In response to the global actions outlined in the Plan of Action, FAO, through its GSP, launched the International Network on Soil Biodiversity (NETSOB)³ within the framework of the official celebration of World Soil Day on 5 December 2022, following the recommendation of the

¹ Decision VIII/23.

² Decision 15/28.

³ <https://www.fao.org/global-soil-partnership/netsob/en/>

Global Symposium on Soil Biodiversity.⁴ The objective is to improve scientific knowledge and practical evidence on the sustainable use and conservation of soil biodiversity, while also contributing to awareness-raising and the development of guidance materials, training programmes and other tools that promote the sustainable use and conservation of soil biodiversity. As of 2025, NETSOB is composed of 1 181 experts from 140 countries, with its membership expanding by 20 percent in that year. NETSOB aims to promote collaboration with a wide range of stakeholders, initiatives and relevant organizations to translate voluntary global commitments into practical, science-based solutions that enhance the conservation, restoration and sustainable use of soil biodiversity.

8. In 2022, NETSOB commissioned a global survey on current initiatives, objectives, and methods for soil biodiversity assessment in response to the gaps identified in the *State of Knowledge of Soil Biodiversity - Status, Challenges and Potentialities* report,⁵ with the aim of harmonizing soil biodiversity monitoring approaches and learning about existing initiatives. This survey identified knowledge, technical, technological, and policy gaps in participating countries and established different levels of needs to ensure adequate monitoring and sustainable use of soil biodiversity. Nearly 2 700 respondents from 131 countries provided information on current monitoring activities. The results of this survey were presented to the scientific community at an FAO-sponsored workshop during the 3rd Global Soil Biodiversity Conference on 14 March 2023.⁶ The [results of the survey](#) were submitted as part of a special issue in the *Soil Organisms Journal* and serve as a baseline for responding to Decision 15/5 Global Biodiversity Monitoring Framework contained in document CBD/COP/DEC/15/5.⁷

9. In response to Global Action (a), the Global Soil Laboratory Network (GLOSOLAN), in collaboration with NETSOB, is developing globally harmonised standard operating procedures (SOPs) for the assessment of soil biological indicators. Training programmes are also implemented to build national capacities on the implementation of these SOPs. The GSP's International Network of Soil Information Institutions (INSII), composed of nationally mandated institutions and GSP partners, is actively engaged in the development of the Global Soil Information System (GLOSIS). These institutions possess the technical capacity to generate and exchange national soil data and information. Through INSII, Member countries are supported in the adoption and implementation of harmonized soil sampling methodologies, digital soil mapping techniques, and the establishment of national soil databases.

10. At the Ministerial Dialogue and Breakfast on Soil Biodiversity held during COP 15, FAO and its GSP launched the Global Soil Biodiversity Observatory (GLOSOB) to monitor and forecast the status of soil biodiversity, in response to Global Action (c). GLOSOB is intended to serve as the global source of standardized reference data and information on soil biodiversity, with the objective of guiding evidence-based decision-making and providing technical knowledge for the harmonized measurement, mapping and monitoring of soil biodiversity.

11. To support Parties in monitoring the abundance and diversity of multiple soil taxa, while considering differing national capacities and technical capabilities, as indicated in the Global Action (d), GLOSOB employs a tiered approach. This approach is based on a minimum set of essential biodiversity variables (EBVs) and progressively incorporates higher levels of complexity and technological requirements.⁸

⁴ FAO, 2021. Keep soil alive, protect soil biodiversity. Global symposium on soil biodiversity, 19–22 April 2021 – Outcome document. Rome, Italy. Available at <https://openknowledge.fao.org/items/9259dd78-c4f8-4ec5-a82e-13d4f84f29ed>

⁵ FAO, ITPS, GSBI, SCBD, and EC. 2020. State of knowledge of soil biodiversity – Status, challenges and potentialities, Report 2020. Rome, FAO. Available at <http://www.fao.org/documents/card/en/c/cb1928en/>

⁶ <https://www.globalsoilbiodiversity.org/gsb3-announcement>

⁷ COP 15 Decision 15/5

⁸ FAO, 2024. [Concept note: Global Soil Biodiversity Observatory pages 10-15](#). Available at: <https://openknowledge.fao.org/server/api/core/bitstreams/6c0914e2-53a4-417d-8dcb-cc38b1f02685/content>

12. As part of the implementation plan of GLOSOB, and in response to the Global Action (e), the GSP in collaboration with the Global Soil Biodiversity Observation Network (Soil BON), the Global Soil Biodiversity Initiative (GSBI) and other relevant partners are co-developing and delivering targeted training to Members and specialized institutions to support the measurement and monitoring of soil biodiversity. The first capacity-building workshop was held in May 2025 at the University of Coimbra, Portugal, and attended by 11 laboratory staff from national reference laboratories from seven countries from Central and North America, the Caribbean, and Central Asia. Participants were trained on the use of SOPs for soil biological parameters and standardized methods for soil biodiversity sample collection. This training initiative also considered the establishment of benchmark and hotspot sites to facilitate soil biodiversity monitoring and inform evidence-based decision-making.

13. FAO promotes ecosystem-based approaches to conserve, restore, and sustainably manage agricultural lands and soils, thereby fostering the sustainable use and conservation of soil biodiversity as a strategic response to multifaceted global challenges. These efforts contribute directly to Global Action (f) of the Action Plan. Through initiatives such as NETSOB and GLOSOB, FAO strengthens scientific collaboration and policy integration to monitor and protect soil biodiversity. These actions are embedded within broader frameworks, including the GSP and the FAO Strategic Framework 2022–31, which aim to enhance soil health, restore degraded lands, mitigate climate change, and support resilient agrifood systems. Specifically, the GSP's Recarbonization of Global Agricultural Soils (RECISOIL) initiative⁹ promotes the adoption of sustainable soil management practices to combat the loss of soil organic carbon, sequester carbon in soils, improve nutrient cycling, and reduce greenhouse gas emissions, thereby contributing to climate adaptation and mitigation. By mainstreaming biodiversity across agricultural sectors and promoting nature-based solutions, FAO supports the restoration of degraded lands and soils and the enhancement of ecosystem services essential for food security, food safety, and water resilience. Furthermore, FAO integrates disaster risk reduction into agricultural planning, recognizing the critical role of integrated land, soil and water management in reducing vulnerability to climate-induced hazards.

14. FAO is co-leading with the United Nations Environment Programme (UNEP) the United Nations Decade on Ecosystem Restoration 2021-2030 (UNDER) that pursue restoration of degraded ecosystems – including degraded soils and their multifunctionality. By promoting the utilization of restored areas, in particular restored agricultural areas, for food production, UNDER supports avoiding expansion to natural areas where feasible. UNDER is promoting restoration efforts at global, national and local levels through respectively its global task forces on finance, best practices, science, youth and monitoring and through its flagship initiatives.

15. In response to Global Action (i), FAO and its GSP contribute to raising awareness of the importance of soil biodiversity, and of its essential functions and services for resilient and productive agrifood systems. This is achieved through regular publications, social media outreach, and other communication channels, with the aim of engaging a wide range of stakeholders, including civil society organizations, research institutions, subnational governments, municipalities and other local authorities, as well as traditional authorities representing Indigenous Peoples and local communities. Farmers' awareness is also enhanced through the Global Soil Doctors Programme.

16. FAO promotes the adoption of good agricultural practices, including integrated pest management and soil fertility management, by supporting Parties in implementing the Voluntary Guidelines for Sustainable Soil Management,¹⁰ the International Code of Conduct on Pesticide Management¹¹ and the International Code of Conduct for the Sustainable Use and Management of

⁹ <https://www.fao.org/global-soil-partnership/areas-of-work/recsoil/recsoil-home/en/>

¹⁰ FAO. 2017. *Voluntary Guidelines for Sustainable Soil Management*. Food and Agriculture Organization of the United Nations, Rome, Italy. Available at <https://openknowledge.fao.org/server/api/core/bitstreams/5d66c466-4040-4493-a85f-58470f0bb771/content>

¹¹ FAO & WHO. 2014. *International Code of Conduct on Pesticide Management*. World Health Organization and Food and Agriculture Organization of the United Nations, Rome, Italy. Available at <https://openknowledge.fao.org/server/api/core/bitstreams/4aa015cc-f644-4a1a-88dc-d0c2272fca05/content>

Fertilizers,¹² in alignment with the Global Action (I) of the Plan of Action. These measures are designed to prevent and mitigate potential adverse impacts of fertilizers and pesticides on soil biodiversity.

17. Furthermore, the Commission on Genetic Resources for Food and Agriculture continues to raise awareness of the critical roles of soil microorganisms and invertebrates in bioremediation and nutrient cycling. This work is carried out under the Commission's Work Plan on the Sustainable Use and Conservation of Microorganism and Invertebrate Genetic Resources for Food and Agriculture,¹³ which also covers other functional groups, including genetic resources for use as biocontrol agents. In response to findings published by FAO in 2024,¹⁴ the Commission emphasized the need to promote the conservation and sustainable use of soil microorganisms and invertebrates and to ensure their due consideration in local, national, regional and international policies and policy-development processes. At its most recent session, in March 2025, the Commission called for the development of tools and technical guidance to support countries' efforts to strengthen overall soil health by improving understanding and conservation of organisms involved in bioremediation and nutrient cycling.

III. Progress on key elements and activities

18. FAO and its GSP provide technical support to Parties, other Governments and relevant stakeholders to facilitate the implementation of the Plan of Action. The initiatives and activities undertaken by FAO and its GSP, including those implemented in collaboration with national authorities, often address multiple components of the Plan of Action in a cross-cutting manner. For clarity, these activities are presented according to the four main elements of the Plan of Action to which they primarily contribute. The specific activities under each element are referenced in the corresponding footnotes.

A. Element 1: Policy coherence and mainstreaming

19. In response to CBD notification No. 2025-044 – Invitation to submit information on the inclusion of additional headline, component and complementary indicators for the monitoring framework for the Kunming-Montreal Global Biodiversity Framework (KMGBF),¹⁵ FAO has submitted a proposal for expanding the inclusion of soil organic carbon (SOC) in KMGBF targets. Currently, SOC is included as Target 10 indicator 10.CY.2 *Soil organic carbon stocks*, and FAO has provided strong evidence that SOC has direct relevance to Target 2 (Ecosystem restoration), Target 8 (Climate mitigation), and Target 11 (Ecosystem services).¹⁶ FAO has advocated for the inclusion of agricultural land and soil restoration and sustainable management as part of the United Nations Convention to Combat Desertification (UNCCD) 2018–2030 Strategic Framework. In this regard, FAO is supporting the implementation of Decision 19 of the UNCCD COP 16 on *Avoiding, reducing and reversing land and soil degradation of agricultural lands*.¹⁷

20. FAO, through its Legal Office and the GSP's soil legislation working group, is developing a legal guide on sustainable soil management to support Parties develop or strengthen national legal instruments that promote sustainable soil management and contribute therefore to the protection and conservation of soil biodiversity. To enhance access to policy instruments, FAO has also developed

¹² FAO. 2019. *International Code of Conduct for the Sustainable Use and Management of Fertilizers*. Food and Agriculture Organization of the United Nations. Rome, Italy. Available at

<https://openknowledge.fao.org/server/api/core/bitstreams/a8edc4fb-1614-426b-b21c-440fff19c46b/content>

¹³ Available at <https://openknowledge.fao.org/server/api/core/bitstreams/00bcb6f-7658-4350-bef4-33af322a1916/content>

¹⁴ Csorba, C., Hackl, E., Reichenauer, T., van der Putten, W. & Sessitsch, A., 2024. *Sustainable use and conservation of soil microorganisms and invertebrates contributing to bioremediation and nutrient cycling*. Background Study Paper, No. 74. Commission on Genetic Resources for Food and Agriculture. Rome, FAO.

<https://doi.org/10.4060/cd0147en>

¹⁵ <https://www.cbd.int/notifications/2025-044>

¹⁶ In response to [CBD/COP/DEC/15/28](#), Activities 1.1, 1.5, 1.11

¹⁷ [ICCD/COP\(16\)/24/Add.1](#)

SoiLEX,¹⁸ an open-access online database of soil-related policies and legal instruments, designed to support countries in identifying and developing effective national legal frameworks. Moreover, NETSOB has developed a white paper on the economic policies related to the conservation and sustainable use of soil biodiversity. The manuscript is currently under review.¹⁹

21. As part of GSP efforts to mainstream soil biodiversity in different avenues and facilitate access to information, two open-access papers have been published.²⁰ a Q&A article in the journal *One Earth*²¹ and a position paper in the *Nature Ecology and Evolution* journal.²²

22. FAO also promotes coordinated spatial planning through the updating of the *Guidelines for integrated land use planning*.²³ The new guidelines were developed through an inclusive consultative process that was organized at global and regional levels and involved different stakeholders who deal with integrated land use planning issues. In response to emerging issues and demands, the updated guidelines include several features to support a more dynamic, integrated, and inclusive planning process. The focus of the guidelines is on the optimization of land and water use across different planning scales, participation by and consultation with stakeholders, multidisciplinary technical support, coordination with multiple sectors at different decision-making levels and the use of multiple tools. The updated guidelines provide tools and guidance to support countries in addressing several recent decisions taken at the COPs to the three Rio conventions, such as the ones related to the indicator SDG 15.3.1 (land degradation neutrality) under the UNCCD, the target 1 of the KMGBF under the CBD, and the land use, land use change and forestry (LULUCF) of the United Nations Framework Convention on Climate Change (UNFCCC), which encourages countries to consider a more central role for integrated land use planning and to support efforts to address the interlinked challenges underpinning the SDGs. These decisions also encourage Parties to foster and support integrated land use planning as an enabler of synergies, complementarities, and policy coherence among the three conventions. The GSP is also addressing soil sealing and urbanization through the organization of the Global Symposium on Soil Sealing and Urban Soils in October 2025 and will focus on identifying approaches to reduce the loss of soil and soil biodiversity due to urban expansion. Moreover, the GSP has included soil sealing as part of its global monitoring system.²⁴

B. Element 2: Encouraging the use of sustainable soil management practices

23. FAO continuously promotes the adoption of the Voluntary Guidelines for Sustainable Soil Management.²⁵ These Guidelines provide generally accepted, scientifically based, and practically proven principles to support sustainable soil management and offer guidance to all stakeholders on translating these principles into practice. To facilitate the identification and scaling up of biodiversity-friendly sustainable soil management practices, NETSOB is compiling contributions on current best practices for the conservation and protection of soil biodiversity. The resulting compendium will be published by FAO.²⁶

24. The GSP and its NETSOB facilitate access to information, tools, and enabling conditions for soil biodiversity conservation and sustainable management, including technologies, innovations, and funding opportunities. Regular updates are widely disseminated to a network of over 10 000

¹⁸ <https://www.fao.org/soils-portal/soilex/en/>

¹⁹ In response to [CBD/COP/DEC/15/28](#), Activities 1.1, 1.5, 1.10 and 2.3

²⁰ In response to [CBD/COP/DEC/15/28](#), Activities 1.1, 1.5, 1.7, 2.3, 3.4, 4.2, and 4.6

²¹ [https://www.cell.com/one-earth/fulltext/S2590-3322\(24\)00592-X](https://www.cell.com/one-earth/fulltext/S2590-3322(24)00592-X)

²² <https://doi.org/10.1038/s41559-025-02754-z>

²³ COAG/2024/18. Update on the Guidelines for Integrated Land Use Planning. Available at <https://openknowledge.fao.org/server/api/core/bitstreams/8e2fc4bc-086d-4294-95ba-f69ce18f03e9/content>

²⁴ In response to [CBD/COP/DEC/15/28](#), Activity 1.12

²⁵ FAO. 2017. *Voluntary Guidelines for Sustainable Soil Management*. Food and Agriculture Organization of the United Nations. Rome, Italy. Available at <https://openknowledge.fao.org/server/api/core/bitstreams/5d66c466-4040-4493-a85f-58470f0bb771/content>

²⁶ In response to [CBD/COP/DEC/15/28](#), Activities 1.3, 2.1, 2.4, 2.7, 4.15

stakeholders worldwide and provide information on training opportunities, conferences, field projects, calls for collaboration and resource mobilization initiatives.

25. In order to support Parties to identify potential financial resources to implement the Initiative, the GSP Secretariat has drafted a template for Parties to apply for projects funded by the Global Environment Facility (GEF).²⁷

26. In April 2022, the GSP launched the International Network on Soil Pollution (INSOP)²⁸ with the overall aim of stopping soil pollution and achieving the global goal of zero pollution. To this end, INSOP works to improve knowledge on the full cycle of soil pollution, from assessment to remediation, as well as on the effect on environmental and human health and the provision of soil ecosystem functions and services. FAO, through INSOP, is developing a science-based framework for ecological and human health risk assessment to be integrated into the *Technical Manual on Soil Pollution Assessment, Mapping, Monitoring and Risk Communication*. This framework will provide Parties and projects with clear and practical guidance to conduct risk assessments and implement mitigation and remediation measures, thereby supporting the remediation and restoration of polluted soils and promoting the sustainable use and conservation of soil biodiversity. INSOP also promotes the exchange of experiences and technologies for the sustainable management and remediation of polluted soils. The use of soil biodiversity for the remediation of polluted soils (bioremediation) and as indicators of contamination are key aspects INSOP is working on. FAO is implementing a pilot project to develop tools and recommendations for preventing and mitigating soil pollution, with a focus on cadmium (Cd) pollution in cocoa plantations in Bahia, Brazil and Trinidad and Tobago. This two-year project aims to develop conceptual site models, assess pollution risks, and identify nature-based solutions for bioremediation and management practices to reduce Cd uptake by cocoa crops.²⁹

27. FAO and its GSP is implementing the RECISOIL initiative, as a mechanism for scaling up sustainable soil management focused on soil organic carbon sequestration in the agricultural sector. This initiative includes a soil health monitoring system based on the application of indicators specified in the protocol for measurement, monitoring, reporting and verification of soil organic carbon in agricultural landscapes (GSOC-MRV Protocol),³⁰ the Protocol for the Assessment of Sustainable Soil Management,³¹ and an annual monitoring through visual soil assessment. Some 225 producers from six countries (Armenia, Costa Rica, Ghana, Mexico, Togo and Uzbekistan) are involved in the pilot projects and benefit from capacity building on sustainable soil management and incentives for the provision of ecosystem services. In addition, the initiative is being implemented in Argentina, Belgium, Cambodia, France and the Russian Federation through GSP partners with almost 1 000 farmers being engaged.³²

28. FAO has adopted the Conceptual Framework for Integrated Land and Water Resources Management, which promotes sustainable, integrated land, soil and water management practices that support the achievement of land degradation neutrality, water security and overall, the 2030 Agenda through the transformation into more efficient, inclusive, resilient and sustainable agrifood systems. Through the Framework, FAO aims to provide policy guidance and technical assistance to Member countries and support strategic interventions and innovations on efficient and sustainable use and restoration of land, soil and water resources.³³

²⁷ In response to [CBD/COP/DEC/15/28](#), Activity 2.3

²⁸ <https://www.fao.org/global-soil-partnership/insop/en/>

²⁹ In response to [CBD/COP/DEC/15/28](#), Activities 1.8, 2.2, 2.4 and 2.5

³⁰ FAO. 2020. A protocol for measurement, monitoring, reporting and verification of soil organic carbon in agricultural landscapes – GSOC-MRV Protocol. Rome. Available at <http://www.fao.org/documents/card/en/c/cb0509en>

³¹ FAO & ITPS 2020. Protocol for the assessment of Sustainable Soil Management. Rome, FAO. Available at <http://www.fao.org/global-soil-partnership/resources/highlights/detail/en/c/1370578/>

³² In response to [CBD/COP/DEC/15/28](#), Activities 2.7, 2.9, 4.3, 4.9 and 4.15

³³ In response to [CBD/COP/DEC/15/28](#), Activities 2.9 and 2.10

C. Element 3: Awareness-raising, sharing of knowledge, technology transfer and capacity-building

29. NETSOB is preparing a white paper on *Soil Biodiversity and One Health*, which examines the interlinkages between soil biodiversity, human health, nutritious and healthy diets, and exposure to pollutants. Authors also include members from FAO, the UNEP, [World Health Organization](#) (WHO), and World Organization for Animal Health (WOAH) as part of this joint initiative of the United Nations Quadripartite collaboration on One Health. The paper outlines priority areas for research, investment, policy development, and targeted initiatives, with a view to strengthening the integration of soil biodiversity considerations into the One Health approach.³⁴

30. The Intergovernmental Panel on Soils (ITPS) is preparing the second edition of the *Status of the World's Soil Resources report* for future publication within the next months. This report will contribute to increase understanding of the causes and consequences of soil biodiversity decline in specific agroecosystems, other managed ecosystems and natural environments as well as the impacts of sustainable soil management practices and trends in their adoption worldwide.³⁵

31. The GSP's Global Soil Doctors Programme is a farmer-to-farmer training initiative aimed at promoting sustainable soil management and raising farmers' awareness of soil health and related threats. The programme is currently being implemented in 27 countries, with 758 Soil Doctors' Trainers and 2 067 Soil Doctors (champion farmers) trained and certified to date.³⁶ Collectively, these Soil Doctors are expected to reach more than 15 500 farmers in their communities, providing on-site guidance on soil condition assessment and sustainable management practices to prevent and address soil degradation. Soil biodiversity educational posters and field exercises have been developed by NETSOB to facilitate soil biodiversity assessment, management and monitoring.³⁷

32. World Soil Day (WSD), officially established by the 68th session of the United Nations General Assembly, is celebrated annually on 5 December to raise awareness of the importance of healthy soils and to advocate for their sustainable management. The 2020 WSD campaign was dedicated to soil biodiversity, underscoring its essential role in addressing soil threats, maintaining soil functions, and sustaining the provision of ecosystem services.³⁸ Since then, all WSD campaigns have continued to highlight soil biodiversity as a cross-cutting theme.³⁹

33. FAO, together with the Secretariats of the CBD and UNCCD, UNEP, and the United Nations Educational, Scientific and Cultural Organization (UNESCO), is working to mainstream soil health and biodiversity into global initiatives on land degradation neutrality, ecosystem restoration, and sustainable development, with the GSP serving as the coordinating platform. This joint effort promotes a multidisciplinary approach to soil management, strengthens multi-stakeholder participation, and fosters synergies across United Nations agencies to maximize impact and coherence.⁴⁰

D. Element 4: Research, monitoring and assessment

34. NETSOB coordinated a special issue of the journal *Soil Organisms* to highlight recent advances in soil biodiversity research. The issue explores the state, threats, valuation, and monitoring frameworks for soil biodiversity, and presents findings from a global survey on the status of soil biodiversity initiatives and efforts. A total of nine articles, addressing knowledge and data gaps, threats and challenges, and methodological approaches, have been accepted and are in the process of publication.⁴¹

³⁴ In response to [CBD/COP/DEC/15/28](#), Activities 1.8, 3.1 and 3.2

³⁵ In response to [CBD/COP/DEC/15/28](#), Activities 3.2, 3.3 and 4.11

³⁶ <https://www.fao.org/global-soil-partnership/soil-doctors-programme/implementation-sites/en/>

³⁷ In response to [CBD/COP/DEC/15/28](#), Activities 3.1, 3.2, 3.3, 3.4 and 3.7

³⁸ <https://www.fao.org/world-soil-day/about-wsd/campaign-materials/en/>

³⁹ In response to [CBD/COP/DEC/15/28](#), Activity 3.6

⁴⁰ In response to [CBD/COP/DEC/15/28](#), Activity 3.9

⁴¹ In response to [CBD/COP/DEC/15/28](#), Activities 4.3, 4.6

35. Standard operating procedures (SOPs) for assessing soil biological indicators and the GLOSOB's EBVs are being developed by the Global Soil Laboratory Network (GLOSOLAN),⁴² under the guidance of NETSOB. SOPs on microbial biomass,⁴³ soil respiration⁴⁴ and selected soil enzyme activities⁴⁵ have already been published, while further protocols are under development. Additional SOPs on litter decomposition; nematode sampling, extraction and identification; microarthropod sampling, extraction and sorting; soil aggregates; and enzyme acid phosphatase are currently under development.⁴⁶

36. The GSP adopted a new Action Framework 2022-2030 at its tenth Plenary Assembly that includes a system of targets and key performance indicators to assess the impact of its activities on soil health and society. In this regard, the Plenary Assembly also mandated the Intergovernmental Technical Panel on Soils (ITPS) to develop a Global Soil Health Indicator System (GSHIS). A multidisciplinary working group was established to design the set of indicators and metrics to monitor progress on the Action Framework as well as the design of the GSHIS,⁴⁷ which were endorsed by the thirteenth GSP Plenary Assembly.⁴⁸ The GSHIS classifies soil health based on the main ten threats to soil functions – erosion, compaction, acidification, contamination, sealing, salinization and sodification, waterlogging, nutrient imbalance, and losses of soil organic carbon and biodiversity – are present or absent in a given location (“convergence-of-evidence” approach).

37. FAO and its GSP are supporting Parties and other Governments to generate standardized datasets on soil degradation⁴⁹ through initiatives such as the Global Soil Information System (GloSIS) and its country-driven global data products, such as the Global Soil Organic Carbon map,⁵⁰ the Global Soil Organic Carbon Sequestration Potential map,⁵¹ the Global Black Soil Distribution map⁵² and the Global Map of Salt-Affected Soils.⁵³ Two other global data products are under development, namely the Global Soil Nutrients and Nutrient Budget maps and the Global Soil Erosion map. These efforts support the creation of georeferenced databases and visual maps that inform national and regional decision-making and facilitate comparisons across ecosystems. The GSP is also supporting countries to digitize legacy soil data and develop national pedodiversity maps (soil maps), such as the Soil Atlas of Asia.⁵⁴ As part of the development of GloSIS as a federated system, 22 national soil information systems are in the pipeline to be fully integrated with GloSIS during 2025, including 13 in Asia, eight in the Caribbean (Antigua and Barbuda, Barbados, Belize, Grenada, Guyana, Haiti, Jamaica, and Saint Lucia), and one for Azerbaijan. Work on the integration of the Soil Information System for Latin America and the Caribbean (SISLAC) into GloSIS is also underway and is expected to be completed in 2025.

⁴² <https://www.fao.org/global-soil-partnership/glosolan/en/>

⁴³ FAO. 2024. Standard operating procedure for soil microbial biomass (carbon): chloroform fumigation-extraction method. Rome. <https://doi.org/10.4060/cc9423en>

⁴⁴ FAO. 2023. Standard operating procedure for soil respiration rate. Rome.

<https://openknowledge.fao.org/server/api/core/bitstreams/e9f3525e-d101-4fee-9330-ba166eafa90d/content>

⁴⁵ de Carvalho Mendes, I. 2025. Standard operating procedure for soil enzyme activities – β -glucosidases, arylsulfatase, N-acetyl- β -glucosaminidase, dehydrogenase, phosphomonoesterases. Rome, FAO. <https://doi.org/10.4060/cd2462en>

⁴⁶ In response to [CBD/COP/DEC/15/28](#), Activities 1.2, 1.11, 2.3, 3.4, 3.10, 4.2, 4.5 and 4.9 and 4.12

⁴⁷ FAO. 2025. Progress in Developing the GSP Action Framework Key Performance Indicators (KPIs) and Global Soil Health Indicators System - GSPPA: XIII/2025/5 Add.1. Available at <https://openknowledge.fao.org/items/4b153437-baee-4edd-a2bb-c707de7378dc>

⁴⁸ In response to [CBD/COP/DEC/15/28](#), Activities 4.9, 4.10 and 4.12

⁴⁹ In response to [CBD/COP/DEC/15/28](#), Activity 4.10

⁵⁰ <https://www.fao.org/soils-portal/data-hub/soil-maps-and-databases/global-soil-organic-carbon-map-gsocmap/en/>

⁵¹ <https://www.fao.org/soils-portal/data-hub/soil-maps-and-databases/global-soil-organic-carbon-sequestration-potential-map-gsocseq/en/>

⁵² <https://www.fao.org/global-soil-partnership/gbsmap/en/>

⁵³ <https://www.fao.org/soils-portal/data-hub/soil-maps-and-databases/global-map-of-salt-affected-soils/en/>

⁵⁴ European Commission, JRC and FAO. 2023. Soil Atlas of Asia. Luxembourg, European Union & Rome, FAO. Available at: <https://openknowledge.fao.org/handle/20.500.14283/cc6094en>

38. The GSP's International Network on Soil Fertility and Fertilizers (INSOILFER)⁵⁵ is working to enhance knowledge and improve access to biofertilizers, biostimulants, and other alternative solutions for crop nutrition. These efforts aim to promote viable, cost-effective, and sustainable approaches to increasing crop yields while supporting the development of commercial applications based on soil biodiversity. INSOILFER's work contributes to the broader objective of fostering sustainable soil management practices that harness the potential of soil organisms to improve agricultural productivity and ecosystem health.⁵⁶

IV. Progress on supporting voluntary guidance, tools, organizations and initiatives relating to the conservation and sustainable use of soil biodiversity

39. The Voluntary Guidelines for Sustainable Soil Management and the revised World Soil Charter, published by FAO, are publicly accessible to all Parties and relevant stakeholders through the FAO Soils Portal,⁵⁷ the GSP website⁵⁸ and the FAO Biodiversity Knowledge Hub.⁵⁹ In support of their wider uptake, FAO actively promotes the translation of these key normative instruments into national languages. To date, the Voluntary Guidelines have been translated into 11 languages. The GSP also facilitates their dissemination through workshops, webinars, high-level forums, and a range of knowledge products developed and published by the Organization.

40. Other key documents developed by the Convention and other relevant initiatives and stakeholders may also be disseminated through this platform, contributing to a centralized hub of knowledge on soils. In addition, documents, guidelines, and tools specifically addressing soil biodiversity will be made available through the GLOSOB website, which is currently under development.

⁵⁵ <https://www.fao.org/global-soil-partnership/global-soil-partnershipinsoilfer/en/>

⁵⁶ In response to [CBD/COP/DEC/15/28](#), Activities 4.2, 4.15 and 4.16

⁵⁷ <https://www.fao.org/soils-portal/en/>

⁵⁸ <https://www.fao.org/global-soil-partnership/resources/publications-new/normative-documents/en/>

⁵⁹ <https://www.fao.org/biodiversity/en>