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Item 9 of the provisional agenda*

Biodiversity and agriculture

Biodiversity and agriculture

Note by the Secretariat

I. Introduction

1. The present note has been prepared by the Secretariat to facilitate the work of the Subsidiary Body on Scientific, Technical and Technological Advice in developing advice and recommendations on biodiversity and agriculture under the programme of work on agricultural biodiversity and related cross-cutting initiatives, for consideration by the Conference of the Parties to the Convention on Biological Diversity at its seventeenth meeting. The note contains a review of progress in the implementation of the Plan of Action (2020–2030) for the International Initiative for the Conservation and Sustainable Use of Soil Biodiversity and recommendations for the Subsidiary Body based on reports from key implementing partners, including the Food and Agriculture Organization of the United Nations (FAO).
2. The International Initiative for the Conservation and Sustainable Use of Soil Biodiversity was established as a cross-cutting initiative within the programme of work on agricultural biodiversity in decision [VI/5](#) and its framework for action was endorsed in decision [VIII/23 B](#), as a basis for implementation. The objectives of the framework for action are to promote awareness-raising and knowledge-sharing, capacity-building, collaboration and the mainstreaming of soil biodiversity conservation into land and soil management practices as an integral part of agricultural and sustainable livelihood strategies.
3. The Plan of Action (2020–2030) for the International Initiative was adopted by decision [15/28](#) as an instrument for supporting the implementation of the Kunming-Montreal Global Biodiversity Framework on a voluntary basis and in accordance with national circumstances and priorities. Its overall objective includes mainstreaming soil biodiversity science, knowledge and understanding into public policies, fostering coordinated action to invest in soil biodiversity assessments and promoting investment in soil biodiversity research, monitoring and assessment. 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; and (d) research, monitoring and assessment.

* [CBD/SBSTTA/27/1](#).

4. In the same decision, the Conference of the Parties invited Parties to provide, on a voluntary basis, information on their activities and results from the implementation of the Plan of Action, in alignment with the Framework, as appropriate, and requested the Executive Secretary to compile the submissions and make them available for consideration by the Subsidiary Body at a meeting held before the seventeenth meeting of the Conference of the Parties.

5. Pursuant to that decision, the Secretariat issued notification No. [2025-067](#) to invite Parties to submit the information mentioned above through an online questionnaire that consisted of 10 questions and was divided into three sections: (a) general information; (b) overview questions; and (c) status of implementation of the Plan of Action. Parties were also invited to provide information on relevant policies, regulations or frameworks, as well as linkages with national biodiversity strategies and action plans, targets of the Framework and indicators provided in decision [16/31](#).

6. Section II below contains an analysis of the submissions received. It is followed by an analysis of synergies in the implementation of the Framework and the Plan of Action (sect. III), a summary of progress reported by key partners in the implementation of the International Initiative (sect. IV) and a draft recommendation for consideration by the Subsidiary Body (sect. V).

II. Summary and analysis of the responses to the questionnaire on the status of implementation of the Plan of Action (2020–2030) for the International Initiative for the Conservation and Sustainable Use of Soil Biodiversity

7. In response to notification No. [2025-067](#), the Secretariat received submissions from 35 Parties.¹ A synthesis of the responses will be made available as information document CBD/SBSTTA/27/INF/7.

8. Overall, Parties are supportive of the work conducted under the International Initiative. Some Parties highlighted the role of soil biodiversity in mitigating climate change and soil degradation. Examples included actions indirectly linked to soil biodiversity carried out under the other two Rio conventions, for example, the alignment with national commitments under the land degradation neutrality targets, which can contribute to the resilience and ecological functionality of soils. Other examples related actions linked to soil biodiversity to national plans for energy and climate change.

9. Parties also noted in their submissions that the implementation of the strategic plan of the Convention on Wetlands of International Importance especially as Waterfowl Habitat was an important pillar for maintaining the hydrological function of soils, reversing the loss of soil biodiversity and combating land degradation and desertification through the conservation, wise use and restoration of wetlands. A Party mentioned the importance of Ramsar sites in that regard.

10. The majority of Parties lack actions linked to fungal biodiversity in any national policy or strategy. A Party highlighted the lack of experts and limited available knowledge on the subject. Others reported that such national policies or strategies were under development. A few Parties mentioned other types of actions, for example, that only rare and endangered fungal species were protected or that information on fungi was under the responsibility of other authorities.

11. A few Parties indicated that they were addressing fungal biodiversity in their national policy or strategy. Examples included fungal biodiversity described indirectly through national collections, the IUCN Red List of Threatened Species, atlases and catalogues of species, including fungi with food and medicinal uses. Such actions contribute to taxonomy, research and monitoring. Others reported specific measures, such as the protection of rare and endangered fungus species. Some Parties reported that fungi were covered under the forest programmes or other environmental

¹ Albania, Armenia, Australia, Austria, Bangladesh, Bolivia (Plurinational State of), Brazil, Cambodia, Canada, Chile, Colombia, Cook Islands, Ecuador, Ethiopia, European Union, Fiji, Finland, Gabon, Germany, Guinea, Hungary, India, Japan, Mexico, Netherlands (Kingdom of the), Peru, Poland, Russian Federation, Spain, Sweden, Switzerland, Tajikistan, Togo, Ukraine and Yemen. See www.cbd.int/notifications/2025-067 for the original submissions.

legislation. One Party mentioned that fungi were recognized as an independent kingdom, that certain restrictions applied to their extraction in protected areas and in privately owned areas identified as key for the conservation of biodiversity. Regarding sustainable use, an example of the usage of mycorrhizae in the production of agricultural inputs was provided.

12. Regarding the status of implementation of the Plan of Action, the responses from Parties were grouped according to the four elements of the Plan, as described below.

A. Element 1: policy coherence and mainstreaming

13. Parties mentioned the importance of engaging key stakeholders, for example, from agricultural, health and environmental sectors, as well as indigenous peoples and local communities, in mainstreaming soil biodiversity into and across economic sectors and developing coherent policies by linking socioeconomic and environmental issues.

14. Some Parties considered the partnership among the Secretariat of the Convention, FAO and the Global Soil Partnership as the best way to achieve the goals related to soil biodiversity. Many national soil strategies support actions conducted through global networks, such as the Global Soil Partnership, and within regions, for example, through the Pacific Soil Partnership, the Coalition of Action 4 Soil Health and the 4 per 1000 Initiative.

15. Submissions contained mentions of initiatives associated with climate solutions, such as projects conducted in cooperation with FAO and the Global Soil Partnership. One example provided by a Party was the Recarbonization of Global Agricultural Soils mechanism, which also helped with reducing greenhouse gas emissions through sustainable soil management. Parties also mentioned the relevance of projects supported by other organizations and entities, such as the Global Environment Facility, the World Bank, the United Nations Development Programme and the Asian Development Bank.

16. Regarding coherence between soil biodiversity and health policies, Parties shared examples of national health and environment plans in which the importance of a healthy soil for human health is recognized. Under those plans, soil contamination is addressed under waste management and industrial pollution, and remedial actions include the development of guidelines for the risk assessment of polluted soils, the identification of bioremediation measures and the identification and recovery of contaminated areas. Other examples included the development of legal measures to set standards for sustainable nutrients in agricultural soils and for the use of phytosanitary products. Examples of comprehensive legislation on the prevention of invasive alien species and their control were also provided.

17. It is important to note that many Parties reported that soil biodiversity had not yet been fully taken into account in the bioremediation of contaminated soils or in biocontrol. Some Parties mentioned actions taken under national regulations on soil contamination, the remediation of contaminated soils and groundwater, and threats to soil biodiversity presented by hazardous or toxic chemicals, and they highlighted the importance of preventing contamination by substances that put human and environmental health at risk.

18. Examples of the development of laws promoting a circular economy by recycling waste and recovering polluted soil were provided, for example, promoting ecosystem restoration for areas degraded by industrial or mineral extraction activities by reviewing the legal framework for site rehabilitation and developing standards and best practices for restoration.

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

19. Parties mentioned the importance of the provision of guidance, practical support and advice to landowners and farmers to support the adoption of practices that promote soil health. Examples of good practices included low tillage, cover cropping, long-term ground cover, holistic grazing management, the use of organic amendments and improved nutrient management and recycling, as well as optimizing the use of and reducing reliance on pesticides or fertilizers.

20. Some Parties highlighted the need to strengthen the capacities of farmers and agricultural extension workers. In addition, strong evidence-building with solid practical application, combined with access to financial services and a capacity-building component for farmers, was fundamental to increasing the adoption of sustainable practices.

21. Parties shared examples of support to farmers who committed to sustainable practices and generated environmental benefits, such as improving soil structure, reducing erosion and desertification, increasing soil carbon content and reducing soil emissions. Other examples included payments for environmental services and restoration activities, by which community beneficiaries were incentivized to adopt effective land management practices that contributed to maintaining healthy soils and soil biodiversity.

22. Some Parties reported on progress towards the reduction of nitrogen fertilization and excess of nutrients achieved through the establishment of standards for sustainable nutrient management in agricultural soils and the recognition of the role of agroecology in increasing soil fertility and biodiversity.

23. Parties shared examples of laws aimed at protecting soil biodiversity by promoting the restoration of damaged soils through the restoration of plant communities and by reinforcing existing restoration programmes in areas damaged by wildfires and other natural disasters. Wildfires were in fact mentioned as one of the main threats to forest biodiversity and soil ecosystems, and Parties reported major efforts to prevent the risk of soil erosion on land affected by large fires, through hydrological and forestry actions. Examples included the promotion of community-based restoration and knowledge transfer.

24. A Party mentioned the importance promoting silvopastoral systems² and transhumance,³ recognizing that extensive livestock farming was essential for improving landscape and ecological connectivity, the prevention of wildfires, the regulation of the water cycle and the improvement of soil quality. The benefits of enhancing extensive livestock farming include seed dispersal, soil improvement, pasture maintenance and support for pollinating insect populations.

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

25. Parties shared examples of programmes that facilitated awareness-raising and knowledge-sharing through agricultural knowledge and innovation systems. In addition, some examples of projects aimed at increasing knowledge and engaging citizen science to map soil biodiversity were provided.

26. Some submitters mentioned programmes promoting awareness and capacity-building related to sustainable forest and land management through training, technical assistance and environmental education initiatives, especially among indigenous peoples and local communities.

27. In addition, Parties mentioned efforts to raise awareness of the importance of soil health and biodiversity and of knowledge-sharing regarding soil status, the causes of soil biodiversity decline, and practices to maintain and improve soil health.

28. Many Parties mentioned activities carried out and events held on the occasion of the celebration of World Soil Day,⁴ to raise awareness of the importance of maintaining living soil, organized by Governments, universities, research groups and organizations. World Soil Day is

² FAO defines “silvopastoralism” as a type of agroforestry systems with a combination of trees and grazing of domesticated animals, including in rangelands (see www.fao.org/agroforestry/about-agroforestry/overview/en).

³ The United Nations Educational, Scientific and Cultural Organization defines “transhumance” as the seasonal movement of people with their livestock between geographical or climatic regions. Each year, in spring and autumn, men and women herders organize the movement of thousands of animals along traditional pastoral paths (see <https://ich.unesco.org/en/RL/transhumance-the-seasonal-droving-of-livestock-01964>).

⁴ Designated as 5 December by the General Assembly in its resolution [68/232](#).

considered an opportunity to expand stakeholder engagement in soil-related themes, including biodiversity.

D. Element 4: research, monitoring and assessment

29. Regarding research and innovation, Parties provided examples of innovation that linked soil biodiversity with other topics, such as food production, bioproducts, bioeconomy, water and environment, and the restoration and decontamination of polluted soils. One example was support for research on critical gaps in soil science, such as soil hydrology, soil carbon dynamics, soil nutrient uptake, soil biology and soil-root interface.

30. Another example provided by Parties was cross-sectoral research that included linkages between soil and water within agricultural, forestry and livestock system management in areas experiencing water scarcity and seasonality in precipitation. This kind of approach could lead to reduced water scarcity by improving soil fertility and quality.

31. Regarding monitoring, one Party mentioned the development of a national biodiversity target related to agricultural landscapes that was aimed at: (a) ensuring the maintenance of the physical, chemical, hydrological and biological qualities and processes of arable land; (b) reducing the concentration of pollutants to levels that did not threaten ecosystem functions, biodiversity and human health; and (c) preserving important ecosystem services for agricultural landscapes.

32. Apart from the example in paragraph 31 above, more emphasis was given to the physical and chemical aspects of soils than their biological aspects. However, Parties reported that policies, legislation and other instruments for land-use planning, restoration, soil conservation and sustainable use could support the implementation of the International Initiative. In addition, measures adopted in relation to wildfires, climate change, invasive alien species, erosion, health and pollution control could support the monitoring of soil biodiversity. Examples were given of regional and national legislation that provided a common framework for developing soil monitoring, some of which was focused on soil biodiversity monitoring. However, it is important to note that global protocols and global indicator methodologies for soil biodiversity monitoring are still under development.

33. For the monitoring of soil biodiversity through national targets and indicators, only a few Parties indicated having indicators in place; the majority had none, or the indicators were under development. A few Parties mentioned other circumstances, for example, indicators covered by other strategies or indirectly addressed under other indicators. Among the existing monitoring structures, some Parties reported having in place soil monitoring systems or monitoring soil through forest monitoring systems. The measurement of soil biodiversity was reported as being performed through various analytical methods, such as molecular biological methods and environmental DNA analysis, which included amplicon sequencing for bacteria and fungi.

34. Other Parties indicated that they envisaged the development of species indicators, for example, an earthworm indicator that would take the land management practices into account or reports on parameters related to soil biodiversity, such as living biomass and organic material. Some systems included the monitoring of species trends and common habitat types, as well as the specific monitoring of pollinating insects, invasive alien species and soil biodiversity. Other Parties indicated having in place indirect indicators related to physical and chemical soil degradation, such as erosion, desertification and salinization.

35. Parties also shared information on soil biodiversity assessed through the monitoring of soil erosion. Although biological information was not directly integrated, information on soil erosion conditions related to the potential of soils to hold biodiversity and the risk of biodiversity loss. Examples also included the estimation of soil organic carbon, a concept closely associated with soil biodiversity.

36. Regarding the assessment of soil biodiversity, Parties recognized the importance of collecting and conserving microorganisms of importance for agriculture and food systems, as well as the

contribution of indigenous peoples and local communities in that process. Inventories of traditional knowledge related to agricultural biodiversity also included information on plants and traditional practices used by local people. The link between national forest and soil inventories maintained in collaboration with academic institutions that indirectly supported data collection and the monitoring of soil biodiversity was also mentioned as an example.

37. One Party mentioned the need to promote and increase knowledge on soils as an important source of genetic resources. Some Parties reported having inventories of soil organisms and microorganisms relevant to various sectors, including agroforestry, livestock, health and food.

E. Analysis of barriers, gaps and opportunities

38. In their submissions, Parties identified the lack of information and knowledge, the lack of capacity and resource limitations, policy and institutional constraints and the lack of research at the national level as the main barriers to further implementing the International Initiative. Other barriers that were mentioned included weak inter-institutional and intersectoral coordination to address soil biodiversity comprehensively and limited national research focused on the ecological role of soil biodiversity, beyond the development of bioproducts.

39. The gap analysis shows that many Parties currently lack a coordinated national approach to managing soil biodiversity. Data, analyses and actions are fragmented among various stakeholders, such as governmental agencies, international organizations, non-governmental organizations and academia. There is a need for standardized monitoring systems with soil biodiversity indicators. Improved data are also needed to support monitoring and measure progress, and the information thus acquired can support decision-making by Governments, researchers and land managers.

40. Many Parties also mentioned knowledge gaps as a barrier to the implementation of the Plan of Action (2020–2030). Soil biodiversity is still largely unexplored, and taxonomic expertise is declining. Such expertise is however urgently needed to expand reliable molecular biological methods, as it is essential for verifying the accuracy and relevance of those methods and for populating and validating underlying databases.

41. With regard to the analysis of opportunities, Parties saw an opportunity in linking the implementation of the Plan of Action with the national biodiversity strategies and action plans and the monitoring framework for the Kunming-Montreal Global Biodiversity Framework. Many also saw value in linking the implementation of the Plan with national strategies for the agricultural sector. Another important opportunity lies in enhancing capacity, technology and the use of tools to implement the Plan. Some actions have been implemented for agricultural soils, but not for urban areas.

42. A wide range of activities included in national biodiversity strategies and action plans support the development and implementation of policies for the conservation, sustainable use and restoration of biodiversity. While not specifically focused on soil biodiversity, such policies and activities can contribute to its protection and sustainable management. However, no national targets or indicators dedicated exclusively to monitoring soil biodiversity were mentioned in the submissions.

43. Having a harmonized system for monitoring soil biodiversity and standardized soil testing protocols could enhance the coordination of national soil data management and effective monitoring of soil biodiversity. The harmonized management of soil data could provide a basis for developing soil biodiversity indicators to support informed decision-making. Once developed, the inclusion of indicators for soil biodiversity in the monitoring framework for the Kunming-Montreal Global Biodiversity Framework would be a good step forward to stimulate action and raise awareness of the importance of soil biodiversity, and the enhanced integration of soil biodiversity indicators into legislation would be helpful.

44. There is room for strengthening institutional capacities and integrating data systems related to soil biodiversity, in particular in the context of climate change. Plans for climate change adaptation and mitigation could incorporate sustainable soil management measures and biological aspects.

45. Sustainable practices and capacity-building related to soil biodiversity are in many cases project-based. There are opportunities for developing national soil strategies to establish soil governance and enhance inter-institutional coordination.

46. There are also opportunities for the inclusion of policy and regulatory frameworks on sustainable management of soil resources and soil biodiversity in public instruments and policies across sectors, for example, forestry, livestock and agriculture. Many of the policies that regulate land use, pest prevention and forest and agricultural health have a direct impact on soil health and biodiversity. The national biodiversity strategies and action plans can create opportunities for mainstreaming soil biodiversity into other sectoral plans, such as ecosystem restoration and agricultural plans, policies and strategies, including for agroforestry, agroecology and soil conservation.

47. A few Parties mentioned opportunities to promote a circular economy through the recycling of nutrients and the development of the bioeconomy with the use of microorganisms and mycorrhizae as agricultural bioinputs. Another opportunity is to take soil biodiversity into account when providing bioremediation and biocontrol solutions. Parties also highlighted that investment in research and risk analysis was needed to evaluate the impact of the introduction of non-local microorganisms and strains into the environment.

48. Parties mentioned opportunities to develop policy on fungal biodiversity. They recognized the importance of fungi and the need for specialized studies on the diversity and function of fungi in soil ecosystems, as well as their integration into sectoral policies.

49. Other identified opportunities included strengthening research, technical cooperation and the integration of traditional knowledge into sustainable soil management strategies.

50. In addition, the development of technical tools specifically targeted at soil biodiversity would strengthen implementation, such as the identification of innovation and research priorities to modernize the collection, storage, analysis and visualization of soil data; the development of soil biodiversity digital tools and provision of training for getting access to soil information; the development of instruments to provide financial and technical support to farmers to support the adoption of sustainable practices and innovative learning approaches to key stakeholders.

III. Synergies between the implementation of the Kunming-Montreal Global Biodiversity Framework and the Plan of Action (2020–2030) for the International Initiative for the Conservation and Sustainable Use of Soil Biodiversity

51. Most Parties reported in their submissions that the conservation and sustainable use of soil biodiversity had been directly or indirectly reflected in their national biodiversity strategies and action plans and aligned with the Framework. Some reported that the updating of their national biodiversity strategies and action plans was still under development, and others that alignment with the Framework was not possible, owing to the limitation on data and research on the matter. A few Parties provided different responses, for example, that implementation was aligned with other strategies.

52. Parties reported that the Framework and the International Initiative were mutually supportive, and that many targets of the Framework contributed to the conservation and sustainable use of soil biodiversity, and vice versa. They commented that the monitoring framework for the Kunming-Montreal Global Biodiversity Framework lacked targets on soil biodiversity; however, there were actions that supported soil biodiversity through various other targets of the Framework.

53. The majority of Parties reported that the implementation of good practices of sustainable soil management and spatial planning in a participatory manner were under development. Such actions may thus contribute to the achievement of Target 1 of the Framework.

54. With regard to Target 2 of the Framework, some Parties mentioned that while soil biodiversity was not addressed as a stand-alone theme, many actions, including the restoration of degraded lands, ecosystem restoration and reforestation, improved soil health. One Party highlighted that the International Initiative needed to be linked to the restoration process, including biocentric restoration, and its phases, such as bioremediation. Some Parties also mentioned actions to reverse soil degradation trends in protected areas, wetlands, grasslands, forestry ecosystems and agricultural landscapes as beneficial to soil biodiversity.

55. With regard to Target 3, Parties mentioned that the identification and inclusion of areas to protect rare and endangered fungus species, carbon-rich ecosystems, such as wetlands, including peatlands, grasslands and seagrass meadows could contribute to the effective conservation of soil biodiversity.

56. With regard to Target 4, one Party reported that soil taxa were included in reports on wild species, despite data deficiencies for most species. This highlights the need for more taxonomy research in and monitoring of soil biodiversity. Accurate taxonomy is essential, for example, to identify pests and beneficial species, support integrated pest management strategies, monitor soil biodiversity and preserve specimens and genetic material for long-term ecological studies.

57. With regard to Target 5, examples were given of how Parties were promoting the conservation and sustainable use of the fungus kingdom by imposing certain restrictions on the extraction of fungi in areas identified as key for the conservation of biodiversity.

58. With regard to Target 6, Parties reported on the alignment with the strategies to prevent, control or eradicate invasive alien species, as those efforts could be relevant to soils and invasive alien species might directly or indirectly affect the relationship between plants and soil organisms.

59. With regard to Target 7, Parties mentioned regulations on contaminated soils and remediation with ecological considerations. Other examples concerned reduction in soil pollution through the optimal management of nutrients and pest control products, as well as industrial water and waste management. Those actions support soil health, soil biodiversity and the provision of ecosystem functions and services.

60. With regard to Target 8, Parties provided examples on how climate change mitigation, adaptation and disaster risk reduction efforts that support carbon sequestration and promote resilience could also support the conservation of soil biodiversity and its multiple ecosystem functions and services, such as the hydrological function of soils, which increases soil resilience to drought, floods, wildfires and other disasters.

61. With regard to Target 9, on the sustainable management of wild species to benefit people, submissions included examples of the sustainable use of fungi for food and medicinal purposes.

62. With regard to Target 10, Parties provided examples of agroecological and regenerative practices for soil management and means to address challenges to sustainable agriculture that also had co-benefits for soil health and soil biodiversity, such as practices that favoured agroforestry and agroecology, as well as silvopastoralism and transhumance, to improve ecological connectivity.

63. With regard to Target 11, Parties reported that, to support soil health and the increase of organic soil carbon, there was a need to support agricultural producers in adopting on-farm practices that increased vegetation cover and agricultural biodiversity. Those practices could prevent erosion and drought and increase resilience to floods and other disasters. Some Parties mentioned that soil health actions were taken under forest policies and linked to wildfire resilience.

64. With regard to Target 12, some Parties mentioned that soil health was linked to human health. One Party reported that the linkage was recognized in its latest strategic plan for health and environment.

65. With regard to Target 13, one Party provided an example of regulations pursuant to the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization related to access to genetic resources from wild soil taxa and the fair and equitable sharing of benefits, as well as traditional knowledge associated with soil genetic resources.

66. With regard to Target 14, Parties mentioned the alignment of environmental resilience with other strategies, such as those related to agriculture and food systems, restoration, health, water security and climate. However, some Parties underscored that one of the main barriers to implementing the International Initiative was the weak inter-institutional and intersectoral coordination of efforts to address soil biodiversity in a comprehensive manner.

67. With regard to Target 15, beyond one Party recalling that sustainable management was an important issue for both farm businesses and the general public, there was no other mention of businesses. The Party in question also provided an example of a programme that included industry, farmers and other land managers and concerned new and more advanced soil science to improve soil health, with a view to increasing productivity, profitability and resilience and to assisting in mitigating climate change.

68. There was no mention of linkages in relation to Target 18, even though positive incentives for the conservation and sustainable use of biodiversity could also support the conservation of soil biodiversity.

69. With regard to Target 19, on financing, Parties mentioned the importance of the Global Environment Facility, the World Bank and the Asian Development Bank, among others, in supporting the development of related projects. One Party mentioned the introduction of innovative schemes, such as payments for ecosystem services to maintain soil health. However, the majority of Parties mentioned the lack of capacity and resource limitations as important barriers to implementing the International Initiative.

70. Target 20 is key for the implementation of the International Initiative. Parties provided some examples on how they were strengthening capacity-building and development through cooperation with international organizations. However, the majority of Parties highlighted the need to improve capacity in order to implement the Initiative successfully.

71. Advances on Target 21 may also contribute directly to soil biodiversity, since there is a need to ensure that knowledge is available and accessible to guide actions towards soil biodiversity conservation, restoration and sustainable use. Parties mentioned various examples of how they were promoting soil biodiversity through communication, awareness-raising, education and research. However, they also identified knowledge gaps related to soil biodiversity, a lack of taxonomic expertise and limited research on the ecological role of soil biodiversity conducted at the national level as barriers to the implementation of the International Initiative.

72. With regard to Target 22, one Party mentioned work conducted at the national level on an inventory of traditional knowledge related to agricultural biodiversity, which included soil improvement among the multiple uses for plants, identified through traditional knowledge, for example, plants that were used as fertilizer or as soil protector to avoid erosion. Parties also highlighted the important contribution of indigenous peoples and local communities in collecting and conserving microorganisms of agriculture and food systems. Another example was how research on traditional water and agropastoral system management could help to address water scarcity in the dry season, thereby improving fertility and soil quality.

73. While many of the examples given by Parties illustrated how the targets of the Framework contributed to soil biodiversity, but it is important to highlight that soil biodiversity can directly contribute to pollution reduction, nutrient cycling, carbon sequestration, hydrological cycle and soil

health. The conservation and sustainable use of soil biodiversity is an important means to achieve the Framework as a whole.

IV. Status of implementation by main partners

74. In paragraph 8 of decision [15/28](#), various entities were invited to support the implementation of the Framework with regard to soil-related targets and actions, including their monitoring and reporting. The present section provides a summary of the status of implementation reported by the main partners.

A. Food and Agriculture Organization of the United Nations

75. In response to decision [15/28](#), FAO reported on the soil-related activities either implemented or under way with regard to the Plan of Action. The FAO report will be made available as an information document, and a summary of the most relevant actions is provided below.

76. FAO is actively facilitating the implementation of the Plan of Action through the Global Soil Partnership and has established the Global Soil Biodiversity Observatory to support the monitoring and forecasting of soil biodiversity status, in close cooperation with countries, including relevant ministries of agriculture and environment, as appropriate.

77. The promotion of sustainable soil management practices that enhance soil biodiversity is a core function of the Global Soil Partnership. Through the dissemination, translation and adaptation of the revised World Soil Charter and the Voluntary Guidelines for Sustainable Soil Management, the Partnership supports countries in identifying and applying locally adapted sustainable soil management practices through several initiatives, notably the Recarbonization of Global Agricultural Soils mechanism. To date, more than 10 countries are actively implementing the mechanism to increase resilience and restore degraded agricultural land.

78. The Global Soil Partnership, through its Intergovernmental Technical Panel on Soils and in collaboration with international initiatives, such as the Global Soil Biodiversity Initiative and the Soil Biodiversity Observation Network, developed and submitted an implementation plan for the Global Soil Biodiversity Observatory. The plan, which includes a tiered approach with multiple indicators and metrics for monitoring soil biodiversity, was endorsed by FAO members. A capacity-building programme to support countries in measuring biological indicators has been established, and the first training sessions were conducted in May 2025.

79. The Global Soil Partnership International Network on Soil Biodiversity is currently preparing a white paper on the link between soil health and the One Health approach. Contributors include experts from the organizations members of the Quadripartite collaboration on One Health: FAO, the United Nations Environment Programme, the World Health Organization and the World Organisation for Animal Health.

80. Through its International Network on Soil Pollution, the Global Soil Partnership is developing a risk assessment methodology focused on the impacts of pollution on soil functions and ecosystem services, along with site-specific remediation approaches for polluted soils. This will be included in the forthcoming technical guidelines for assessing, mapping, monitoring and communicating risks of soil pollution. A related pilot project is being conducted to assess and reduce ecological and human health risks associated with cadmium pollution in cocoa plantations through ecosystem-based approaches and bioremediation.

81. In addition, through the Global Soil Doctors Programme, the Global Soil Partnership is fostering peer-to-peer learning and knowledge exchange on soil biodiversity conservation and sustainable use through digital tools and capacity-building at the field level.

82. Moreover, FAO is developing an updated version of the guidelines for integrated land-use planning to promote sustainable and efficient land resource management through regional consultations and a multi-stakeholder participatory approach.

83. At its twentieth session, held in March 2025, the Commission on Genetic Resources for Food and Agriculture addressed issues directly relevant to soil biodiversity through its work on microorganisms and invertebrates associated with food and agriculture. The Commission recommended that FAO continue to develop tools and guidance to support countries in strengthening soil health and improving the ex situ conservation of organisms involved in bioremediation and nutrient cycling. In 2024, the Commission had already recommended, *inter alia*, to foster public outreach and awareness-building by means of stakeholder education campaigns and initiatives promoting sustainable agricultural practices and the protection of soil organisms.⁵

84. At its twentieth session, the Commission also recommended that FAO, in consultation with relevant organizations and initiatives, conduct a review of policy, normative and institutional frameworks related to the monitoring, conservation and sustainable use of microbial biostimulants, as well as microbial and invertebrate biocontrol agents, and offer training on biological control to countries upon request.

85. The Commission also agreed to consider taxonomic characterization and collection infrastructure work on microorganism and invertebrate genetics in the context of the forthcoming review of its multi-year programme of work. At its next session, scheduled for 2026, the Commission's Intergovernmental Technical Working Group on Microorganism and Invertebrate Genetic Resources for Food and Agriculture is expected to advise the Commission on future activities in the field of microorganism and invertebrate genetic resources.

86. Beyond soil biodiversity, the Commission also recommended that FAO invite, subject to the availability of resources, FAO members, stakeholders and potential partners, including the Secretariat of the Convention, to a meeting to consider next steps in the establishment of a global pollinator platform that would build on the International Initiative for the Conservation and Sustainable Use of Pollinators and other relevant initiatives. The Commission further recommended that FAO support countries in addressing access and benefit-sharing considerations, emphasizing the need for open exchange of genetic sequence data and biomaterials.

B. Global Soil Biodiversity Initiative

87. In response to decision [15/28](#), the Global Soil Biodiversity Initiative submitted a progress report on its recent activities, which will be made available as an information document, a summary of which is provided below.

88. The Global Soil Biodiversity Initiative is currently undergoing a strategic realignment to strengthen its capacity to engage across science, policy and capacity-building arenas. The members of the Initiative have contributed to targeted training efforts with FAO, including recent workshops in Portugal focused on practical soil biodiversity assessment. Those activities are designed to support the implementation of the Plan of Action through applied knowledge and skills development.

89. The Global Soil Biodiversity Initiative partners are developing a proposal for harmonized soil biodiversity methodologies and indicators, contributing to ongoing international discussions on monitoring progress towards the Framework targets and supporting reporting needs. A comprehensive report will be released by the Initiative later in 2025, highlighting contributions to the implementation of the Convention, scientific advances, stakeholder engagement and training initiatives across regions.

90. The forthcoming fourth Global Soil Biodiversity Conference, to be held in April 2026, is shaping up to be a major event aligned with the objectives of the Convention and the goals and targets of the Framework. As preparations for the Conference move forward, the Global Soil Biodiversity Initiative will invite the Secretariat of the Convention, and any other organization in the position to do so, to provide support in raising the visibility of the event and in exploring potential avenues for

⁵ See Cintia Csorba and others, "Sustainable use and conservation of soil microorganisms and invertebrates contributing to bioremediation and nutrient cycling", Background Study Paper, No. 74 (Rome, FAO, Commission on Genetic Resources for Food and Agriculture, 2024).

financial or in-kind support, for example, for facilitating the participation of delegates (in particular participants from underrepresented regions), in alignment with the Plan of Action.

V. Suggested recommendations

91. The Subsidiary Body may wish to adopt a recommendation along the following lines:

The Subsidiary Body on Scientific, Technical and Technological Advice,

Having considered the note by the Secretariat on biodiversity and agriculture,¹

Recommends that, at its seventeenth meeting, the Conference of the Parties adopt a decision along the following lines:

The Conference of the Parties,

Recalling its decisions [VI/5](#) of 19 April 2002, [VIII/23](#) of 31 March 2006, [X/34](#) of 29 October 2010, [XIII/3](#) of 17 October 2016 and [15/28](#) of 19 December 2022,

Noting the importance of soil biodiversity to achieve multiple global commitments, including the Rio conventions, by contributing to solutions to tackle climate change, biodiversity loss and land degradation,

Recognizing that the conservation and sustainable use of soil biodiversity is key to achieving food security and nutrition, while contributing to the achievement of multiple goals and targets of the Kunming-Montreal Global Biodiversity Framework,²

1. *Welcomes* the progress made in the implementation of the Plan of Action (2020–2030) for the International Initiative for the Conservation and Sustainable Use of Soil Biodiversity,³ and recognizes the barriers and opportunities in national implementation summarized in document CBD/SBSTTA/27/8;

2. *Encourages* Parties, other Governments and relevant organizations to continue to support the implementation of the Plan of Action in alignment with the Kunming-Montreal Global Biodiversity Framework;

3. *Encourages* Parties to integrate the conservation, restoration and sustainable use of soil biodiversity in their national biodiversity strategies and action plans, including through biodiversity-inclusive spatial planning conducted in a participatory manner;

4. *Invites* Parties to strengthen cooperation among national focal points for the Minamata Convention on Mercury,⁴ the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal,⁵ the Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade⁶ and the Stockholm Convention on Persistent Organic Pollutants⁷ and to implement coherent and integrated actions to address the conservation and restoration of soil biodiversity and its interlinkages with pollution control;

5. *Encourages* Parties, other Governments, subnational governments, local authorities and relevant organizations to provide support and resources for monitoring soil biodiversity, including for community-based monitoring that engages indigenous peoples and

¹ CBD/SBSTTA/27/8.

² Decision [15/4](#), annex.

³ Decision [15/28](#), annex.

⁴ United Nations, *Treaty Series*, vol. 3201, No. 54669.

⁵ *Ibid.*, vol. 1673, No. 28911.

⁶ *Ibid.*, vol. 2244, No. 39973.

⁷ *Ibid.*, vol. 2256, No. 40214.

local communities, farmers, pastoralists, women and youth in the development and management of monitoring systems;

6. *Invites* relevant global and regional organizations, as well as academic institutions, to address the knowledge gaps in soil biodiversity;

7. *Notes* the ongoing work on microorganism and invertebrate genetic resources conducted under the Commission on Genetic Resources for Food and Agriculture, and welcomes the request made by the members of the Commission at its twentieth session that the Secretariat of the Commission engage with potential partners, including the Secretariat of the Convention on Biological Diversity,⁸ in the establishment of a global pollinator platform;

8. *Requests* the Executive Secretary of the Convention to further engage with the Food and Agriculture Organization of the United Nations and the Commission on Genetic Resources for Food and Agriculture on the ongoing work on microorganism and invertebrate genetic resources, including in relation to soil biodiversity and pollinators;

9. *Also requests* the Executive Secretary, subject to the availability of resources, to cooperate with relevant organizations on the development of relevant tools and guidance on reducing the impacts of pollution on soil biodiversity and to report on progress to the Subsidiary Body on Scientific, Technical and Technological Advice at a meeting held before the eighteenth meeting of the Conference of the Parties;

10. *Further requests* the Executive Secretary, subject to the availability of resources, and invites the Food and Agriculture Organization of the United Nations, the Global Soil Partnership, the Global Soil Biodiversity Initiative and other relevant organizations, to continue efforts to develop harmonized methodologies for the conservation and sustainable use of soil biodiversity and indicators to support Parties in the monitoring of and reporting on soil biodiversity, providing relevant capacity-building, as necessary;

11. *Requests* the Executive Secretary to bring the present decision to the attention of the Food and Agriculture Organization of the United Nations, the United Nations Development Programme, the Basel, Rotterdam and Stockholm Conventions, the Convention on Wetlands of International Importance especially as Waterfowl Habitat,⁹ the Minamata Convention on Mercury, the United Nations Convention to Combat Desertification in Those Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa,¹⁰ the United Nations Framework Convention on Climate Change¹¹ and other biodiversity-related conventions and entities of the United Nations system, in particular those involved in the implementation of the United Nations Decade on Ecosystem Restoration.¹²

⁸ Ibid., vol. 1760, No. 30619.

⁹ Ibid., vol. 996, No. 14583.

¹⁰ Ibid., vol. 1954, No. 33480.

¹¹ Ibid., vol. 1771, No. 30822.

¹² See General Assembly resolution 73/284.