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PROGRESS REPORT ON THE IMPLEMENTATION OF THE INTERNATIONAL INITIATIVE FOR THE CONSERVATION AND SUSTAINABLE USE OF SOIL BIODIVERSITY

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I. INTRODUCTION

1. The International Initiative for the Conservation and Sustainable Use of Soil Biodiversity (known as the International Initiative for Soil Biodiversity) was formally established in 2006¹, as a cross-cutting initiative within the Convention on Biological Diversity's programme of work on agricultural biodiversity, to increase the recognition of the essential services provided by soil biodiversity across all production systems and its relation to land management, including by sharing information, increasing public awareness, and promoting education and capacity-building.² FAO has been the lead partner of the initiative, and the Commission on Genetic Resources for Food and Agriculture (the Commission) received information on pertinent activities at its Fourteenth and Sixteenth Regular Sessions.

2. This document provides some background and describes progress made in the International Initiative for Soil Biodiversity since the Commission's Sixteenth Regular Session.

II. FAO ACTIVITIES

Achievements of the Global Soil Partnership with soil biodiversity dimensions

3. The Global Soil Partnership (GSP)³ was established in 2012, to develop a strong interactive partnership and enhanced collaboration and synergy of efforts between all stakeholders, from land users to policy makers, to maintain and enhance the provision of ecosystem services by soils. Hosted by FAO, one of the key objectives of the GSP is to improve soil governance and promote sustainable soil management for a food secure world, including through normative tools, capacity development, international events and field projects. The GSP relies on the scientific advice and guidance of the Intergovernmental Technical Panel on Soils (ITPS) whose work has been fundamental to advance the promotion of sustainable soil management at all levels.

4. Launched in 2015 by the ITPS, *The Status of the World's Soil Resources*⁴ was the first major global assessment on soil and related issues. The report identified loss of soil biodiversity as one of the ten major global soil threats. In June 2018, at its Sixth Meeting, the Global Soil Partnership Plenary Assembly expressed its support to move forward with the preparation of *The Second Status of the World's Soil Resources* report, noting the importance of the Global Soil Information System to inform the assessment with updated information. It further suggested that the inclusion of soil biodiversity data in this assessment be explored⁵.

5. In December 2016, at its 155th Session, the FAO Council endorsed the *Voluntary Guidelines for Sustainable Soil Management*⁶. The guidelines were developed to complement the World Soil Charter⁷. They further elaborate on principles and practices for incorporation into policies and decision-making. The global implementation plan of Pillar 1 of the GSP - promoting sustainable management of soil resources for soil protection, conservation and sustainable productivity- dedicates special attention to the implementation of the guidelines. Since the endorsement of the guidelines, significant efforts have been made to ensure their implementation. National and regional workshops, as well as global symposiums were organized. The latter mainly addressed the ten major global soil threats and the development of tools (i.e. an International Code for the use and management of fertilizers).

6. Since the Commission's Sixteenth Regular Session, main achievements of the GSP, include:

- Launch of the Global assessment on the impact of plant protection products on soil functions and soil ecosystems;

¹ CGRFA-14/13/19 and CGRFA-16/17/Inf.23.

² COP 8 Decision VIII/23.

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

⁴ <http://www.fao.org/3/a-i5199e.pdf>

⁵ GSPPA-VI/18/Report, section 2.2.

⁶ <http://www.fao.org/3/a-bl813e.pdf>

⁷ <http://www.fao.org/3/a-i4965e.pdf>

- Celebration of World Soil Day and awarding of the Glinka World Soil Prize and King Bhumipol World Soil Day Award;
- Capacity development in sustainable soil management in developing countries;
- Establishment of Global Soil Information System relying on national capacities and national soil information systems;
- Organization of the Global Symposium on Soil Organic Carbon;
- Launch of the Global Soil Organic Carbon Map;
- Establishment of the Global Soil Laboratory Network and its Regional Soil Laboratory Networks;
- Establishment of the International Network on Black Soils;
- Organization of the Global Symposiums on Soil Organic Carbon and Soil Pollution in 2017 and 2018, respectively, setting an agenda for action;
- Launch of the Global Soil Doctors Programme;
- Preparation of the International Code of Conduct for the Use and Management of Fertilizers;
- Towards a Global Soil Biodiversity Assessment.

Further details on the above-mentioned activities are provided in the following paragraphs.

*Global assessment on the impact of plant protection products on soil functions and soil ecosystems*⁸

7. At its 2016 plenary session, the GSP requested the ITPS to complete an assessment at global level of the impact of plant protection products (PPPs) on soil functions and soil ecosystems. The scope of the assessment was limited to PPPs that come into contact with soil and the impacts they have on soil biodiversity, soil functions, water quality and soil erosion. It was prepared based on scientific studies that have consistently found measurable and statistically significant effects of PPPs on soil micro-organisms. The PPPs caused significant variations in soil microbial properties, such as biomass, enzyme activity, respiration and species composition. Knowledge of the effects of PPPs on soil functions that are mediated by soil organisms is still limited.

World Soil Day celebration, Glinka World Soil Prize and King Bhumipol World Soil Day Award

8. In 2013, the General Assembly of the United Nations formally decided to designate 5 December as World Soil Day and declared 2015 the International Year of Soils⁹ to enhance awareness among policy makers and the general public on soil related matters.

9. In 2016, seizing the opportunity to link the International Year of Soils (2015) with the International Year of Pulses (2016), FAO launched the publication *Soil and Pulses – Symbiosis for Life*¹⁰. This publication aims to increase awareness on the importance of soils and pulses for the use and conservation of biodiversity, the delivery of ecosystem functions and services, sustainable food production, nutrition and food security. It highlights that the symbiosis between soil and pulses is crucial for the sustainable intensification of cropping systems.

10. The Glinka World Soil Prize (funded by the Russian Federation), pays tribute to individuals and organizations whose leadership and activities have contributed, or still contribute, to the promotion of sustainable management and protection of soil resources.

11. . At the occasion of World Soil Day 2018 *Be the solution to soil pollution*, satellite events were organized in Bangkok, New York and Rome and over 300 events took place in more than 90 countries. Over the years, the attention given to WSD has grown substantially.

12. During the WSD 2018 celebration, the first ever King Bhumipol World Soil Day Award was also awarded. This annual award, that was established with the financial support of the Kingdom of Thailand, honours individuals or institutions that have organized the best WSD celebration. As a contribution to the GSP, the Kingdom of Thailand also launched the Centre of Excellence for Soil Research in Asia (CESRA).

⁸ <http://www.fao.org/3/i8168en/I8168EN.pdf>

⁹ Resolution A/RES/68/232, adopted by the United Nations General Assembly on 20 December 2013.

¹⁰ <http://www.fao.org/3/a-i6437e.pdf>

Capacity development in sustainable soil management in developing countries

13. Capacity development in sustainable soil management was a core activity of FAO during 2017 and 2018. National and regional training sessions were organized for Member countries with a manifest interest on, *inter alia*, digital soil mapping, soil organic carbon mapping, soil salinity management, soil management and soil laboratory practices. The trainings were provided by experts in the different fields using state of the art methods and tools.

Establishment of the Global Soil Information System relying on national capacities and national soil information systems

14. The development of the Global Soil Information System (GLOSIS)¹¹ is proceeding as planned. The system's building blocks were developed and agreed upon following two sessions of the International Network of Soil Information Institutions (INSII)¹². Embracing the successful country-based approach that led to the Global Soil Organic Carbon map, a Country Soil Information System framework was developed, setting the standards for the establishment of national soil information systems. FAO is supporting the establishment of national soil information systems in Afghanistan, Cambodia, Lesotho, Sao Tome e Principe, Sudan and Turkey. GLOSIS will offer various products, including potential maps on global soil salinity, soil erosion and soil organic carbon sequestration. Each of these products will be prepared following a country-driven approach.

Organization of the Global Symposium on Soil Organic Carbon

15. Supported by FAO, the ITPS, the Science Policy Interface of the United Nations Convention to Combat Desertification, the World Meteorological Organization and the Intergovernmental Panel on Climate Change jointly organized the Global Symposium on Soil Organic Carbon from 21 to 23 March 2017 at FAO headquarters¹³. This high-level international science-policy meeting aimed to strengthen the knowledge on soil organic carbon measurement, modelling and management and to set an agenda for action to unlock the potential of soil carbon sequestration to mitigate and adapt to climate change. Over 400 participants, representing all regions of the world, attended the symposium. The outcomes of the discussions and the way forward are presented in the symposium's proceedings¹⁴.

Launch of the Global Soil Organic Carbon Map

16. Soil organic carbon (SOC), the carbon that remains in the soil after partial decomposition of any material produced by living organisms, constitutes a key element of the global carbon cycle through atmosphere, vegetation, soil, rivers and the ocean. It can be used as an indicator of soil health. In 2016, at its Fourth Session, the GSP Plenary Assembly requested the ITPS and the GSP Secretariat to develop the first-ever country-driven Global Soil Organic Carbon map (GSOCmap)¹⁵. The GSOCmap consists of national maps, developed as 1 km soil grids to assess soil carbon stock. In 2017, a group of experts developed a Soil Organic Carbon Mapping Cookbook to technically assist the 110 countries involved in this process. A second edition of this Cookbook was released in 2018¹⁶. The GSOCmap provides information on soil condition monitoring, identifying degraded areas, setting restoration targets, exploring SOC sequestration potentials, greenhouse gas emission reporting under the United Nations Framework Convention on Climate Change and making evidence-based decisions to mitigate and adapt to climate change. In defining the area of degraded land, the GSOCmap contributes to indicator 15.3.1 of the Sustainable Development Goals (SDGs).

¹¹ <http://www.fao.org/global-soil-partnership/pillars-action/4-information-data/glosis/en/>

¹² <http://www.fao.org/global-soil-partnership/pillars-action/4-information-data/insii/en/>

¹³ <http://www.fao.org/about/meetings/soil-organic-carbon-symposium/en/>

¹⁴ <http://www.fao.org/3/a-i7565e.pdf>

¹⁵ <http://www.fao.org/global-soil-partnership/pillars-action/4-information-and-data/global-soil-organic-carbon-gsoc-map/en/>

¹⁶ <http://www.fao.org/3/I8895EN/i8895en.pdf>

Establishment of the Global Soil Laboratory Network and its regional networks

17. The Global Soil Laboratory Network (GLOSOLAN)¹⁷ was established in November 2017 to facilitate the sharing of experiences among laboratory managers, strengthen the performance of laboratories and support the harmonization of information and soil data sets for the development of global standards. Harmonization of soil analysis is a critical component to make soil information comparable and interpretable across laboratories, countries and regions. Furthermore, two regional laboratory networks were established in Asia (SEALNET) and Latin America (LATSOLAN). To date, GLOSOLAN and SEALNET each held two meetings. LATSOLAN convened once. In 2019, similar regional networks are expected to be established in Africa, Europe and the Near East. A ring test was also successfully implemented and a second one is in the planning.

Organization of the Global Symposium on Soil Pollution

18. FAO, GSP and ITPS, together with the Secretariats of the Basel, Rotterdam and Stockholm Conventions, the United Nations Environment Programme and World Health Organization, organized the Global Symposium on Soil Pollution from 2 to 4 May 2018 at FAO headquarters. The Symposium provided a common platform to discuss and elaborate on the status and trends of soil pollution and on the actions that have been undertaken at both scientific and political level to reduce its consequences on human health, food safety and the environment. The symposium's proceedings "*Be the solution to soil pollution*" provides a roadmap to prevent, mitigate, and where possible, remediate soil pollution. In this framework, the GSP/ITPS initiated a global assessment of soil pollution to be submitted to the fifth session of the UN Environment Assembly in 2021.

Bringing soil biodiversity on the international agenda

19. The Fourteenth Conference of the Parties to the Convention on Biological Diversity invited FAO, in collaboration with other organizations and subject to the availability of resources, to consider the preparation of a report on the state of knowledge on soil biodiversity covering current status, challenges and potentialities by 2020¹⁸. It also invited its Executive Secretary, together with FAO and the Global Soil Partnership, to review the implementation of the International Initiative for the Conservation and Sustainable Use of Soil Biodiversity and present an updated draft plan of action by 2020¹⁹.

20. In 2020, the GSP/ITPS will organize a global symposium on soil biodiversity where the global assessment of soil biodiversity will be presented for validation.

¹⁷ <http://www.fao.org/global-soil-partnership/pillars-action/5-harmonization/glosolan/en/>

¹⁸ CBD/COP/DEC/14/30, paragraph 23.

¹⁹ CBD/COP/DEC/14/30, paragraph 24.