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## Global Soil Partnership Plenary Assembly



### **Eighth session**

**Virtual, 03-05 June 2020**

**Status of Global Assessments (GSPPA: VIII/2020/9)**

#### **Executive Summary**

- The Global Assessment of Soil Pollution (GASP) report is being prepared under GSP auspices in response to the request of the United Nations Environment Assembly at its third session in 2017 and as part of the implementation of the Outcome Document of the Global Symposium on Soil Pollution.
- The report “State of Knowledge of Soil Biodiversity – Status, challenges and potentialities” has been prepared in response to the Decision XIV/30 of the 14<sup>th</sup> meeting of the Conference of the Parties (COP) to the Convention on Biological Diversity held in Sharm El-Sheikh, Egypt, in November 2018. In effect, in paragraph 23 of this decision, the COP 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 and to make it available for consideration by the Subsidiary Body on Scientific, Technical and Technological Advice at a meeting held prior to the fifteenth meeting of the COP.
- Both major assessments constitute an essential stage of understanding of where we are in terms of soil pollution and soil biodiversity. It should be noted however that there are substantial gaps in terms of data and information, thus the assessments need to rely on the best available knowledge and do not intend to constitute a baseline, but the zero stage, hoping that actions will be taken by all to close the wide identified gaps.

#### **Suggested action by the GSP Plenary Assembly**

The Plenary Assembly may wish to:

- Express appreciation for the efforts made in performing these global assessments, prepared by scientists around the world, despite the challenges related to the limited financial resources available.

- Support the completion and wide dissemination of the Global Assessment of Soil Pollution, while the ITPS and Secretariat are encouraged to use this opportunity to seek resources and foster actions to close the identified gaps in this important field.
- Likewise, welcome the process for producing the assessment on soil biodiversity and urge countries to make sure that soil biodiversity is used as a solution and not only as an academic/scientific field.
- Urge countries that after the release of these reports, they implement vigorous actions at national level to address critical issues that require attention.

### **Brief status of Global Assessments**

#### **Global Assessment of Soil Pollution**

1. Under the leadership of the ITPS, the preparation of the GASP report was initiated at the beginning of 2019 with the formulation of a questionnaire to be sent to countries. This tool included 93 questions, organized in 12 sections aimed at collecting information about inter alia: administrative level of competence for soil pollution issues; reference values for contaminants; major sources of soil pollution and associated contaminants; soil pollution monitoring systems; inventories and data; monitoring of health and environmental risk; socioeconomic cost of soil pollution; management and remediation practices; case studies; major constraints to tackle soil pollution; and future planned actions.
2. The [questionnaire](#) was distributed through the GSP focal points and made available to other stakeholders through the GSP website and newsletter in March 2019. 107 responses were received from 77 countries. The majority of respondents were from research institutes or universities (38 responses), followed by representatives of ministries of agriculture (32) and environment (15).
3. The analysis of the responses and the preparation of the report was led by the GSP Secretariat which coordinated a team of 9 international consultants. The general chapters and especially the regional chapters have been prepared with the support of an extensive network of national experts who have reviewed the information provided in response to the questionnaire, and completed missing information on the basis of scientific publications, official national reports and other sources.
4. To ensure that countries had the opportunity to review the information presented in the GASP report before publication, the Regional Soil Partnerships were invited to participate in a peer review process, as part of the Editorial Board, including members of the ITPS, selected outstanding scientist and representatives of FAO, UNEP and WHO. The Editorial Board is composed by 30 experts. Representatives, of remediation companies, international networks of soil pollution, such as NICOLE and COMMON FORUM, and NGOs specialized on soil pollution issues have also participated in the peer-review process.
5. The main conclusions of the report are:
  - Soil pollution is a global problem, there are virtually no pristine areas left on the planet. Soil pollution is not exclusively a local problem, as it knows no borders, and can be exported from one country or region to another. Therefore, joint and coordinated action is needed.
  - Despite this recognition, there is a lack of information at the global level, although there are some differences among regions. For example, Europe and Eurasia have established

a reporting mechanism which provides some insights on the status of the environment, including the status of soil pollution. Such reporting mechanism is absent in the other regions.

- There is a significant lack of research and official information about diffuse soil pollution, affecting mainly agricultural lands, and hence threatening the production of safe food.
  - The majority of researches activities focus on the fate of single contaminants in the environment, however, practically there is no situation in nature in which a single contaminant is found, but a mixture of them. The knowledge of the interactions among contaminants is very limited, which reduce the efficiency of risk assessment approaches and make difficult decision-making processes on tackling soil pollution.
  - There is an urgent need, as indicated by countries in the questionnaire, to establish a mechanism for inventorying and monitoring soil pollution at the global level to ensure that it does not continue to endanger human health and the environment.
6. The GASP report and the summary for policy makers will be formally released at the fifth session of the United Nations Environment Assembly, in February 2021. A pre-launch will be organized in FAO at a date to be defined.

### **State of Knowledge of Soil Biodiversity – Status, challenges and potentialities**

7. Under the leadership of the ITPS, the preparation of the Report was initiated in the beginning of 2019, with the nomination of an Editorial Board formed by representatives from: FAO-GSP, Intergovernmental Technical Panel on Soils (ITPS), Global Soil Biodiversity Initiative (GSBI), the Convention on Biological Diversity (CBD) and the Joint Research Centre of the European Commission. In June 2019, FAO launched a call for experts to establish a Working Group for drafting the Report. The call was addressed to everyone interested to contribute, including experts from governments as well as policy makers at all levels, scientists and researchers, NGOs, existing initiatives. More than 400 experts worldwide communicated their interest in participating and about a hundred experts were selected as contributing authors.
8. From August to October 2019, FAO invited countries to participate in National Survey on the Status of Soil Biodiversity: Knowledge, Challenges and Opportunities”. To enhance collaboration, the Parties to the CBD were also invited to submit information through the same platform and encouraged to coordinate with the appropriate line Ministries and with relevant institutions at the national level. The survey was considered a first important step in the whole process. The aim was to collect information at country level on the status of soil biodiversity, better understand concerns and threats to soil biodiversity, compile relevant policies, regulations or frameworks that have been implemented, and catalogue current soil biodiversity management and use efforts. The survey consisted of 16 questions divided into five sections: (I) General information; (II) Assessment; (III) Research, capacity building and awareness raising; (IV) Mainstreaming (policies, regulations and governmental frameworks); and (V) Gap analysis and opportunities. The full questionnaire is available [here](#).
9. Fifty-seven countries submitted responses and all of the following regions or sub-regions had at least one respondent: North America, Latin America and the Caribbean, Europe and Eurasia, Near East and North Africa, Sub-Saharan Africa, Asia and the Southwest Pacific.
10. To ensure that countries had the opportunity to review the information presented in the Report, all countries that responded to the survey were invited to a peer review process in April 2019. Also, a group comprised of ITPS members, CBD counterparts, FAO-GSP experts and from the soil biodiversity scientific community provided inputs during the peer review phase. The full Report and the Summary for Policy Makers will be formally launched at the World Soil Day celebration on 5<sup>th</sup> December 2020 and the preliminary findings will be presented at the 24th

Meeting of the Subsidiary Body on Scientific, Technical and Technological Advice of the CBD to be held in Montreal, Canada in August 2020.

11. The Report presented some set of key set messages, including:

- Soil biodiversity plays a pivotal role in the functioning of the Earth's ecosystems and sustaining life in this planet.
- Globally there is an increasing recognition of the soil biodiversity relevance improving soil conditions to grow healthy and nutritious food; providing a stock of genetic resources to maintain human wellbeing and health; controlling/preventing/suppressing outbreak of plant, animal and human diseases; and the stabilization of greenhouse gases, air and water purification, floods, drought and soil erosion mitigation.
- Soil biodiversity supports human health through a range of pathways including discovery of many drugs and vaccines, disease regulation, bioremediation, nutrients, and immune regulation.
- Biodiversity declines have negative consequences for soil functioning and the provisioning of ecosystems services.
- Protecting aboveground biodiversity also requires protection of the soil and its biodiversity. However, while aboveground biodiversity is familiar to most people and its protection is managed under national and global laws and regulations, there are very few comparable activities that directly focus on the protection of soil biodiversity.
- Despite the increasing wealth of knowledge of soil biodiversity and the rapid development of new technologies, there are still important knowledge gaps in researches areas such as taxonomy, soil organisms distribution, pest control, AMR, environmental risk assessment and bioinoculants.
- Novel technologies such as metagenomic, metabolomic and volatilomic approaches can help measuring the diversity status and functionality of the soil community, but still there is a significant lack of resources and technological barriers in the field.
- The role of soil biodiversity in ecosystem restoration activities is gaining recognition and continued work is required for achievement of desired restoration outcomes.
- Despite the mounting scientific evidence about major threats to soil biodiversity and function in response to climate change and land use intensification, soil biodiversity has been omitted from many global biodiversity assessments and conservation actions.
- There is an urgent need, as indicated by countries in the survey, to establish mechanisms to assess and monitor soil biodiversity worldwide.

12. The key messages of the Report formed the basis for the preparation of the updated draft plan of action for the International Initiative for the Conservation and Sustainable Use of Soil Biodiversity. The latter was formally established by decision VI/5, and since then, FAO has been leading the implementation of the Initiative. In March 2006, the framework for action was adopted, under section B of the Decision VIII/223 during the 8th meeting of the Conference of the Parties (COP). During the last meeting of the COP, under Decision 14/30, a review of the implementation of the Initiative, in consultation with the FAO under the framework of the Global Soil Partnership as well as other interested partners, was requested.

13. FAO supported the CBD Secretariat in the review of the Initiative and also on the preparation of a new plan of action and strategies to enhance the implementation of the International Initiative. The updated draft plan of action was submitted for consideration by the Subsidiary Body on Scientific, Technical and Technological Advice, at a meeting held prior to the fifteenth meeting of the Conference of the Parties.