ID ABS WEB: 137629

4. Soil health in achieving the Sustainable Development Goals
4.27 133609 - How will we monitor soils in the coming century?

THE GLOBAL SOIL BIODIVERSITY OBSERVATORY: IMPLEMENTATION PHASE

J. PARNELL [1], P. DERUITER [2], G. BROWN [3], C. GUERRA [4], Z. LINDO [5], J. BATTIGELLI [6], G. BAGNARA [7], G. MALORGIO [8], R. GONZALEZ [9], L. MONTANARELLA [10]

[1] Food and Agriculture Organization of the United Nations, Rome, ITALY
[2] Wageningen UR, Waeningen, THE NETHERLANDS
[3] Embrapa Forestry, Colombo, BRAZIL
[4] German Centre for Integrative Biodiversity Research, Leipzig, GERMANY
[5] Western University, Ontario, CANADA
[6] University of Alberta, St. Albert, CANADA
[7] Via Cervese, Forli, ITALY
[8] Universita di Bologna, Bologna, ITALY
[9] Universidad de La Salle, Bogota, COLOMBIA
[10] European Union Joint Research Centre, Ispra, ITALY

Soil biodiversity loss is one of the greatest threats in many regions of the world and is likely underestimated due to the lack of data. Although aboveground biodiversity has been promoted and protected for decades, little attention has been given to belowground biodiversity.

As part of the post-2020 Plan of Action of the International Initiative for the Conservation and Sustainable Use of Soil Biodiversity adopted at the 2022 Conference of the Parties to the United Nations Convention on Biological Diversity (CBD COP15), the Food and Agriculture Organization of the United Nations (FAO) was mandated to implement a global soil biodiversity and ecosystem function monitoring framework. The Global Soil Biodiversity Observatory (GLOSOB) aims to provide information to guide evidence-based decision-making by measuring, mapping, and monitoring soil biodiversity in a harmonized way. The outcome will be to provide soil biodiversity insight to conservation and restoration practices for sustainable agriculture.

Soil biodiversity (microflora, microfauna, macrofauna, and biological processes) will be measured, and monitored using standardized methods that complement Essential Biological Variables (EBVs) established by other initiatives (e.g., SoilBON). Here we outline EBVs for GLOSOB and their implementation.

We also lay out a framework for a country-driven adoption of GLOSOB in compliance with the COP15 decision. FAO technical networks will help establish sampling and monitoring efforts where requested and will work to complement and reinforce ongoing or planned soil biodiversity observatories or initiatives. To mainstream soil biodiversity measurements, we recommend they become a standard in the revised FAO Guidelines for soil description as part of national soil surveys and in assessments of agricultural sustainability.

Keywords: biodiversity,monitoring,assessment,global,COP15