
Aide memoire

<i>Session</i>	Session 3 – interlinkages between biodiversity and agriculture: Part I – Imperatives and implications
<i>Title of presentation</i>	Key ecosystem services for food and agriculture – the Status of the World’s Soil Resources
<i>Name of presenter</i>	Mr. Ronald Vargas Rojas

Abstract

Soils are fundamental to life on Earth but human pressures on soil resources are reaching critical limits. The Status of the World’s Soil Resources report identified soil erosion, soil organic carbon loss, nutrient imbalance, soil acidification, soil contamination, waterlogging, soil compaction, soil sealing, salinization and ultimately the loss of soil biodiversity as the major soil threats to soil functions. Further loss of productive soils will amplify food-price volatility and potentially send millions of people into poverty. This loss is avoidable. Careful management can increase the food supply, and provides a valuable lever for climate regulation and a pathway for safeguarding ecosystem services.

Soils host a tremendous diversity of organisms that play fundamental roles in driving many ecological services on which the functioning of terrestrial ecosystems depend. In doing so, soil organisms, and their interactions with each other and with plants and animals impact on a range of ecosystem services, including soil formation and nutrient cycling, the production of food and fibre, climate regulation, disease and pest control. Soil biodiversity is vulnerable to many human disturbances, including land use and climate change, nitrogen enrichment, soil contamination, invasive species and the sealing of soil. It is the purpose of this presentation to give an overview of the state of the world’s soil resources and efforts to develop Voluntary Guidelines for Sustainable Soil Management as a means to preserve soil resources. Additionally, the presentation will present evidence on how maintaining soil biodiversity can support agricultural production.

Key considerations

- Soils host a quarter of our planet’s biodiversity;
- Soil organisms are responsible for performing vital functions in the soil ecosystem;
- Soil organic carbon and soil biodiversity are commonly linked to three dimensions of food security: increases in food availability, restoration of productivity in degraded soils, and the resilience of food production systems;
- Soil threats, and ultimately soil quality, affect the ability of soil organisms to perform a range of ecosystem services they are responsible for;
- In order to save our soils, preserve their biodiversity and maintain the provision of ecosystem services, concrete actions are needed: (1) the adoption of inclusive policies and governance, (2) the promotion of targeted soil research, (3) carrying out effective education and extension programmes on soils, (4) increasing the investment in

sustainable soil management, (5) stopping soil degradation and restoring degraded soils, and (6) the establishment of soil information systems.

- Promotion of sustainable soil management and stakeholder engagement through the Voluntary Guidelines on Sustainable Soil Management.

Key discussion points and conclusions

- The interlinks between soil degradation and soil biodiversity.
- The increased demand on provision of ecosystem services due to population growth and the Status of the World's Soil Resources.
- The role of biodiversity in the Voluntary Guidelines on Sustainable Soil Management (for implementation)

Key question/s that you would pose at the roundtable discussions

- How to promote sustainable soil management in order to halt loss of soil biodiversity and enhance the provision of ecosystem services?
- How to foster synergies between the soils and biodiversity communities?