



Food and Agriculture
Organization of the
United Nations

Agenda

GLOBAL SYMPOSIUM ON SOIL BIODIVERSITY

19-20-21-22
April 2021



itps
INTERGOVERNMENTAL
TECHNICAL PANEL ON SOILS



Convention on
Biological Diversity



GLOBAL
SOIL BIODIVERSITY
INITIATIVE

UNCCD **SP** Science - Policy
Interface

Co-organized by

FAO

Food and Agriculture Organization of the United Nations

GSP

Global Soil Partnership

ITPS

Intergovernmental Technical Panel on Soils

CBD

Convention on Biological Diversity

GSBI

Global Soil Biodiversity Initiative

SPI UNCCD

Science-Policy Interface of the United Nations Convention to Combat Desertification

The times indicated are local times for Rome, Italy. Rome time is in the Central European Summer Time Zone (CEST).



Summary agenda

19 APRIL / DAY 1

13.00 -14.15	High Level Opening Session
14.15-15.45	Keynote Speakers Setting the scene for the GSOBI21
15.45-16.00	Launch of the Poster Exhibition and Contest Launch of the collection of children's books on soil biodiversity

20 APRIL / DAY 2

13.00-14.00	Private sector actions on soil biodiversity/ soil health
14.00-16.00	Parallel sessions
	Theme 1 - State of knowledge on soil biodiversity
	Theme 1 - State of knowledge on soil biodiversity
	Theme 2 - Soil biodiversity in action
	Theme 2 - Soil biodiversity in action
	Theme 3 - Soil biodiversity shaping the future of food systems
	Theme 3 - Soil biodiversity shaping the future of food systems

21 APRIL / DAY 3

13.00 -14.00	Status of global soil biodiversity
14.00-16.00	Parallel sessions
	Theme 1 - State of knowledge on soil biodiversity
	Theme 1 - State of knowledge on soil biodiversity
	Theme 1 & 2 - State of knowledge on soil biodiversity & Soil biodiversity in action
	Theme 2 - Soil biodiversity in action
	Theme 3 - Soil biodiversity shaping the future of food systems
	Theme 3 - Soil biodiversity shaping the future of food systems

22 APRIL / DAY 4

13.00 -14.00	Soil biodiversity in the global agenda
14.00-15.00	Main Session Outcomes and Key Findings
15.00-15:30	Closure of the Symposium

Monday 19 April

HIGH LEVEL OPENING SESSION

The full list of panelists will be announced in future versions of the agenda.

13.00 -
14.15

Moderator
Ms Yasmina
Bouziane, FAO

KEYNOTE SPEAKERS | Setting the scene for GSOBI21

Setting the scene

Ms Rosa Poch, ITPS chair

Soil biodiversity: where are we and how it can help in addressing the global challenges?

Ms Diana Wall, Global Soil Biodiversity Initiative, USA

Soil borne diseases and ecological intensification

Mr Wim Van der Putten, Netherlands Institute of Ecology, the Netherlands

Soil biodiversity, nutrition and human health

Ms Daphne Miller, University of California, USA

Soil biodiversity and crop production: challenges and gaps

Mr Jérôme E. Tondoh, Nangui Abrogoua University, Côte d'Ivoire

Ecosystem restoration starting from the ground: is it really feasible?

Mr Felipe Pasini, Agenda Gotsch, Brazil

Quiz on Soil Biodiversity

14.15 -
15.45

Moderator
Ms Yasmina
Bouziane, FAO

15.45 -
16.00

Launch of the poster exhibition and contest
Launch of the collection of children's books on soil biodiversity
by Ms Laura Berta Reyes Sanchez, IUSS

Tuesday 20 April

13.00 - 14.00	<p>Private sector actions on soil biodiversity/ soil health</p> <p>Towards living soils</p> <p><i>Mr Philippe Schaus</i>, Moët Hennessy</p> <p>Sustainable eco-friendly fertilizers for conservation of soil diversity</p> <p><i>Mr Andrey Guryev</i>, Phosagro</p> <p>Project ACORN: Stimulating smallholder agroforestry at scale</p> <p><i>Ms Martine Jansen</i>, RABOBANK</p> <p>Synecoculture and Human Augmentation of Ecosystems: project overview</p> <p><i>Mr Masatoshi Funabashi</i>, Sony CSL</p>	<p>Moderator:</p> <p>Mr Alexander Jones, FAO</p>
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Parallel session 1

14.00 - 15.00	<p>Theme 1 - State of knowledge on soil biodiversity Moderator: Ms Lydia Mumbi Chabala, ITPS</p> <p>Soil bioanalysis: a simple and effective tool to access and interpret soil health</p> <p><i>Ms Iêda de Carvalho Mendes</i>, EMBRAPA Cerrados, Brazil</p> <p>Uncovering linkages between soil fauna and ecosystem function using factor analysis and structural equation modelling</p> <p><i>Ms Ashley B. Jernigan</i>, Cornell AgriTech, USA</p> <p>Monitoring Soil Biological Quality in the Veneto region</p> <p><i>Ms Francesca Pocaterra</i>, ARPAV, Italy</p> <p>The biodiversity of soil microfungi in Colombia</p> <p><i>Ms Nicola Lidia</i>, University of Pavia, Italy</p>
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15.00 - 16.00	<p>Theme 1 - State of knowledge on soil biodiversity Moderator: Ms Lydia Mumbi Chabala, ITPS</p> <p>Drivers of Short-to-Medium Term Litter Decomposition across Biomes</p> <p><i>Ms Ika Djukic</i>, Swiss Federal Institute for Forest, Snow and Landscape Research (WSL), Switzerland</p> <p>Litter decomposition and organic matter turnover by soil fauna in a sustainably managed olive grove</p> <p><i>Mr Adriano Sofo</i>, Università degli Studi della Basilicata, Italy</p> <p>Developing a systematic sampling method for earthworms in and around deadwood</p> <p><i>Mr Frank Ashwood</i>, Forest Research, United Kingdom</p> <p>Soil biodiversity and physico-hydraulic function: How earthworm and plant root interaction contribute to ecosystem services?</p> <p><i>Mr Jamal Hallam</i>, National Institute for Agricultural Research (INRA)-CRRA-Agadir, Morocco</p>
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Tuesday 20 April

Parallel session 2

<p>14.00 - 15.00</p>	<p>Theme 1 - State of knowledge on soil biodiversity Moderator: Mr Jun Murase, ITPS</p> <p>Soil Biodiversity from Sciences to Action – Feedback from two decades of soil bio-indicators development as agricultural soil management tool</p> <p>Ms Nolwenn Bougon, OFB, France</p> <p>Using environmental DNA to assess global soil biodiversity and build a soil quality bioindicator</p> <p>Ms Eva Bellemain, ARGALY, France</p> <p>Integrating Microbiological Quality Indicators and Soil Properties through Score Functions to Assess Land Use Changes in Colombian Andisols</p> <p>Mr Raul Aranguren, Universidad de Antioquia, Medellín, Colombia</p> <p>Bioturbations as quality indicators of Typic Argiudolls in the Southeast of Buenos Aires, Argentina. A micromorphological approach</p> <p>Ms Rosa M. Poch, Universitat de Lleida, Spain</p>
<p>15.00 - 16.00</p>	<p>Theme 1 - State of knowledge on soil biodiversity Moderator: Mr Jun Murase, ITPS</p> <p>Soil Macrofauna Biodiversity in Paraserianthes falcataria and Morus alba Plant Agroforestry in Bali Island</p> <p>Mr Nanang Sasmita, Udayana University, Indonesia</p> <p>Soil macroinvertebrates diversity and glyphosate distribution in soybean plantations and surroundings at the Yucatan Peninsula, Mexico</p> <p>Ms Esperanza Huerta Lwanga, Wageningen University, Netherlands</p> <p>Enchytraeids in two phytophysionomies of Brazilian Cerrado</p> <p>Ms Cintia Carla Niva, EMBRAPA, Brazil</p> <p>Regard and protect ground-nesting bees as part of soil biodiversity</p> <p>Ms Stefanie Christmann, ICARDA, Morocco</p>

Tuesday 20 April

Parallel session 3

14.00 -
15.00

Theme 2 - Soil biodiversity in action
Moderator: Ms Costanza Calzolari , ITPS

Soil Biodiversity: Why Should We Care?

Ms Briones M.J.I., Universidad de Vigo, Spain

Soil biodiversity in action at ecosystem level

Mr Flavio Fornasier, CREA VE, Italy

Soil biodiversity for agricultural production and environmental integrity

Mr Franz Bender, Research Division Agroecology and Environment Agroscope, Switzerland

Participatory Learning Action is Important for Community Action to improve soil-biodiversity

Mr Jayesh Joshi, VAAGDHARA, India

15.00 -
16.00

Theme 2 - Soil biodiversity in action
Moderator: Ms Costanza Calzolari , ITPS

A Coordinated Research Enterprise on Agricultural Soil Microbiomes and Soil Ecosystems across USDA Research Locations

Mr David B. Knaebel, USDA – Agricultural Research Service, USA

Understanding impact of soil biology on crops: the key to sustainability of farming systems

Mr Gerard Rass, APAD-GCAN, France, and **Ms Marie-Thérèse Gaessler**, Gässler SARL, France

Soil functioning relates to land use in a sustainably managed agro-sylvo-pastoral ecosystem

Ms Sofia R. Costa, University of Minho, Portugal

Productivity, Efficiency and Resilience of Soil Systems Emerge from Self-Organizing Processes Mediated by Management

Mr Andrew L. Neal, Rothamsted Research, United Kingdom

Tuesday 20 April

Parallel session 4

Theme 2 - Soil biodiversity in action

Moderator: Mr Peter de Ruiter, ITPS

Termites promote resource patchiness in Asia and constitute a model for achieving the sustainable development goals

Mr Pascal Jouquet, CNRS, IRD, INRA, France

14.00

Re-carbonization of soils with intensive agricultural use with the presence of pine forests and provision of fungal ecosystem services (*suilus luteus* and *suilus granulatus*). Chilean experiences

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15.00

Mr Samuel Francke Campaña, CONAF, Chile

Good agricultural practices help to restore sustainable biodiversity

Ms Beata Houšková, NPPC-VÚPOP, Slovakia

Intercrop management as a tool to increase soil fungal diversity on rainfed almond cultivations

Mr Raúl Ortega, University of Almería, Spain

Theme 2 - Soil biodiversity in action

Moderator: Mr Peter de Ruiter, ITPS

Recovery of soils biodiversity on reclaimed drilling pads of oil-gas wells in East Ukraine

Ms Oksana Naidonova, National Scientific Center "Institute for Soil Science and Agrochemistry Research named after O.N. Sokolovsky", Ukraine

15.00 -

Urban soil biodiversity: A multi-city comparison

16.00

Ms Katalin Szlavecz, Johns Hopkins University, USA

Arbuscular mycorrhizal fungal abundance in dry Afromontane forests in northern Ethiopia

Ermias Betemariam, ICRAF, Ethiopia

Diversity in soil fauna: a good tool for soil quality monitoring

Cristina Menta, Università degli Studi di Parma, Italy

Tuesday 20 April

Parallel session 5

Theme 3 - Soil biodiversity shaping the future of food systems

Moderator: Mr Edmundo Barrios, FAO

Minimal Herbicide-Based Conservation Tillage Enhances Soil Macro fauna Abundance and Distribution in Uganda

Mr Patrick Musinguzi, Makerere University, Uganda

Perceptions on soil macrofauna in the agricultural field

Ms Marie L.C. Bartz, Universidade de Coimbra, Portugal

Biodiversity in hay meadows: effects of intensive agriculture on epigeic macro-invertebrates

Ms Julia Plunger, Eurac Research, Institute for Alpine Environment, Italy

Soil Organic Carbon and enzymatic activity under Conservation Agriculture in Moroccan Dry land

Mr Rachid Moussadek, ICARDA/INRA, Morocco

14.00 -
15.00

Theme 3 - Soil biodiversity shaping the future of food systems

Moderator: Mr Edmundo Barrios, FAO

Repeated Applications of Organic Amendments Promote Beneficial Microbiota, improve Soil Fertility

Mr Mohamed Idbella, Faculty of Agriculture, Federico II university of Naples, Italy

Microbial biodiversity in the field is related to fruit and vegetable health and linked to postharvest quality

Mr Peter Kusstatscher, Institute of Environmental Biotechnology, Austria

Effect of free living nematodes and their associated microbial community on conservation biological control, utilizing soil predatory mites

Mr Eric Palevsky, Agricultural Research Organization, Ramat Yishay, Israel

Microbial resources for Mozambican agriculture: use of arbuscular mycorrhizal fungi as a sustainable alternative to chemical input in cotton production

Ms Iris Victorino, Eduardo Mondlane University, Mozambique

15.00 -
16.00

Tuesday 20 April

Parallel session 6

<p>14.00 - 15.00</p>	<p>Theme 3 - Soil biodiversity shaping the future of food systems Moderator: Mr Luca Montanarella, European Commission</p> <p>Soil biodiversity management for food security Ms Veronica Andrea El Mujtar, CONICET, Argentina</p> <p>From soil to table: Agroforestry Systems as an alternative to regenerative agriculture Ms Karina Gonçalves David, Rede Ecovida, AOPA - Associação para o Desenvolvimento da Agroecologia, Brazil</p> <p>Enabling barley production in arid soils by only exploiting the indigenous microbial biodiversity Ms Anna Rosa Sprocati, ENEA-Casaccia, Italy</p> <p><i>Additional presentations will be added in future versions of the agenda.</i></p>
<p>15.00 - 16.00</p>	<p>Theme 3 - Soil biodiversity shaping the future of food systems Moderator: Mr Luca Montanarella, European Commission</p> <p>Rhizosphere ecological interactions for improved plant health and nutrition in sustainable agricultural production Ms Cristina Lazcano, University of California Davis, USA</p> <p>Symbiotic Relationships and Effectiveness of Soybean Rhizobia in Soils of the Nigerian Savanna Mr Anthony Ozoemenam Uzoma, Federal University of Technology, Minna, Nigeria</p> <p>Exploring the potential of three Rhizobium strains from Peruvian soils as biofertilizers for the common bean (<i>Phaseolus vulgaris</i>) Ms Yohana Aguilar-Cuba, Universidad Nacional Agraria La Molina, Lima, Perú</p> <p>Influence of soil type on the biodegradation of pesticides by rhizobacteria: case of Glyphosate and paraquat Mr Mohamed Maldani, UMI, Morocco</p>

Wednesday 21 April

13.00 - 14.00	<p>Status of global soil biodiversity</p> <p>State of knowledge of soil biodiversity: challenges and potentialities <i>Ms Rosa Cuevas, FAO/GSP</i></p> <p>Reflections on the interaction between above ground and below ground biodiversity as a way to enhance sustainability and resilience of agroecosystem <i>Mr Carlo Fadda, Alliance Biodiversity International & CIAT</i></p> <p>About the importance of the soil microbiome for a healthy planet. What does agriculture have to do with it? <i>Mr Dylan Warren Raffa, FAO</i></p> <p>Towards a large scale assessment of soil biodiversity <i>Mr Alberto Orgiazzi, Joint Research Centre, European Commission</i></p> <p>Spatial distribution of soil faunal diversity: where ecology meets biogeography <i>Mr Andrey S. Zaystey, Russian Academy of Sciences, Russian Federation</i></p>	Moderator: Ms Monica Farfan, GSBI
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Parallel session 1

14.00 - 15.00	<p>Comparative microbiology evaluation of bacterial biodiversity in rhizospheres of vegetative cover of exotic species of Australia (Eucalyptus), native to Chile (Quillay) and "badland" soils of Chile <i>Mr Samuel Francke Campaña, University of Santiago, Chile</i></p> <p>Soil Protozoa diversity at coal post-mining area at different age of reclamation <i>Ms Tati Suryati Syamsudin, Institut Teknologi Bandung, Indonesia</i></p> <p>Unexpected microbial functions in agricultural soil decontamination from PCB by SMS Spent Mushroom Substrate (SMS) <i>Ms Simona Di Gregorio, University of Pisa, Italy</i></p> <p>Diversity and abundance of the entomopathogenic fungi <i>Metarhizium</i> spp. at high sampling resolution in typical Swiss permanent grassland <i>Ms María Fernández-Bravo, Agroscope, Switzerland</i></p>
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15.00 - 16.00	<p>Theme 1 - State of knowledge on soil biodiversity Moderator: Ms Lucía Helena Cunha dos Anjos, ITPS</p> <p>Assessment of agroecological conditions of terrain and its soil cover using remote sensing data <i>Ms Natalia Balova, Russian Academy of Sciences Moscow, Russia</i></p> <p>Ciliated protists as indicators of soil health: Three case studies from Italy <i>Ms Antonietta La Terza, University of Camerino, Italy</i></p> <p>Evaluation of soil health after digestate application using QBS-ar and Solvita® <i>Ms Maria Chiara Rosace, Harper Adams University, United Kingdom</i></p> <p>Biofunctool®, a multifunctional approach of soil health related to soil biota activities <i>Mr Alain Brauman, UMR Eco&Sols, France</i></p>
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Wednesday 21 April

Parallel session 2

14.00 -
15.00

Theme 1 - State of knowledge on soil biodiversity
Moderator: Mr Yi Peng, FAO/GSP

Use the Metabolic Fingerprint in Microbial Communities to Evaluate the Anthropogenic Impact on Soils

Ms Rosalina Gonzalez, La Salle University, Bogota, Colombia

Next generation biomonitoring to assess key species and soil parameters determining the biodiversity in agricultural soils

Mr Luigimaria Borruso, Free University of Bozen/Bolzano, Italy

Knowledge of biodiversity and ecosystem services of South American mycorrhiza through research networking

Mr César Marín, Universidad de O'Higgins, Chile

Diversity and Biotechnological Potential of Arbuscular Mycorrhizal Fungi on Cerrado, Amazônia and Pantanal Biomes of Mato Grosso State- Brazil

Ms Martha Viviana Torres Cely, Federal University of Mato Grosso - Campus Sinop, Brazil

15.00 -
16.00

Theme 1 - State of knowledge on soil biodiversity
Moderator: Mr Yi Peng, FAO/GSP

Patterns of Soil Biodiversity Communities in Urban Microfarm

Ms Sophie Joimel, INRA, France

Plant productivity enhancement in a simulated Amazonian Dark Earth (Terra Preta Nova)

Mr George G. Brown, Federal University of Paraná, Curitiba, Brazil

Evaluation of PGP bacteria against *Rhizoctonia solani* in *Solanum tuberosum* plants under greenhouse conditions

Ms Lizbeth Mamani-Rojas, Universidad Nacional Agraria La Molina, Peru

Underestimated biodiversity of edaphic prokaryotic metacommunity in the Western Amazon: risks may be higher

Mr Fernando Igne Rocha, Universidade Federal Rural do Rio de Janeiro, Brazil

Wednesday 21 April

Parallel session 3

Theme 1 - State of knowledge on soil biodiversity Moderator: Mr Yusuf Yigini, FAO/GSP

Mapping soil biodiversity research: a network analysis approach

Mr Giovanni Di Matteo, CREA, Italy

14.00

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A soil biodiversity survey coupled with the National Soil Quality Monitoring Network?

15.00

Ms Camille Imbert, INRAE, France

EUDaphobase – European Soil-Biology Data Warehouse for Soil Protection

Mr David J. Russell, Senckenberg Museum of Natural History Görlitz, Germany

The Italian skill network of Soil Biological Quality assessed by microarthropods' community

Mr Lorenzo D'Avino, CREA, Italy

Theme 2 - Soil biodiversity in action Moderator: Mr Yusuf Yigini, FAO/GSP

How the biological activity of Oligochaeta shape soil aggregation and influence the soil functions

Mr Eduardo Carvalho da Silva Neto, Soils Department - Federal Rural University of Rio de Janeiro, Brazil

15.00 -

16.00

Cultural ecosystem services of soil biota and possibilities of their use

Ms Jurga Motiejūnaitė, Nature Research Centre, Lithuania

Soil biodiversity teems with life but faces pollution. Are we acting correctly in agro-ecosystems

Ms Caucci Serena, United Nations University, UNU-FLORES, Germany

Use of Biochar-Lupinus- Bradyrhizobium as an alternative to improve the vegetation cover of High Andean soils contaminated by heavy metals

Ms Nataly Taco-Taype, Universidad Nacional Agraria La Molina, Perú

Wednesday 21 April

Parallel session 4

14.00 -
15.00

Theme 2 - Soil biodiversity in action
Moderator: Mr Arwyn Jones, European Commission

Restoring the soil while preserving functions: a winning approach by exploiting microbial biodiversity

Ms Giada Migliore, SSPT-PROTER-BIOGEOC, Italy

Recent Successes and Persistent Challenges in Restoration of Degraded Dryland Soils

Ms Nichole N. Barger, University of Colorado, USA

Mass multiplication of native soil mesofauna for re-introduction in the degraded agro-ecosystems

Mr N.G. Kumar, University of Agricultural Sciences, Bengaluru, India

Recovering soil ecosystem services and functions at a burned native forest in the mediterranean zone of central Chile by the use of organic amendments

Ms Claudia Rojas, Institute of Agri-Food, Animal and Environmental Sciences (ICA3), Universidad de O'Higgins. Chile

15.00 -
16.00

Theme 2 - Soil biodiversity in action
Moderator: Mr Arwyn Jones, European Commission

Soil Macrofauna and Mesofauna Diversity in rehabilitated mine tailings

Ms Sara Pelaez, University of Limerick, Ireland

Recovery of microbiological status with organic amendments on soils affected by mining activity in a decadal temporal scale

Mr Raúl Ortega, University of Almeria, Spain

How much soil diversity is restored after a cattle ranching pasture is abandoned for its natural regeneration in the Amazon region?

Mr Daniel Castro, Instituto Amazónico de Investigaciones Científicas SINCHI, Colombia

Wednesday 21 April

Parallel session 5

14.00 -
15.00

Theme 3 - Soil biodiversity shaping the future of food systems

Moderator: Ms Rosa M. Poch, ITPS

Biofertilizer applications in India: Current status and future prospects

Mr Ashok K Patra, ICAR-Indian Institute of Soil Science, India

What dead wood microbiota contributes to soil biodiversity?

Ms Mäkipää Raisa, Natural Resources Institute Finland, Finland

Earthworms and microbial diversity under conventional and organic farms. Interaction with actual and inherited pesticides

Ms Esperanza Huerta Lwanga, Wageningen University, Netherlands

Construction of a nif- mutant strain from a psychrotolerant soil bacterium to evaluate the contribution of the biological nitrogen fixation in crop plants

Mr Danilo Augusto Silvestre, Federal Rural University of Rio de Janeiro, Brazil

15.00 -
16.00

Theme 3 - Soil biodiversity shaping the future of food systems

Moderator: Ms Rosa M. Poch, ITPS

Soil physicochemical properties, seasonality, plant niche and plant genotype affect bacterial and fungal communities in olive orchard soils

Mr Manuel Anguita-Maeso, CSIC, Spain

Perennial crops for sustainable soil management – Symbiotic fungi benefit from cultivation of a perennial cereal in Europe

Ms Linda-Maria Dimitrova Mårtensson, Swedish University of Agricultural Sciences, Sweden

Volatile Organic Compounds Produced by selected Antagonistic Rhizobacteria against soil-borne Phytopathogenic Fungi

Ms Doris Zúñiga-Dávila, Universidad Nacional Agraria La Molina, Perú

Effect of different species of mycorrhizal fungi on growth and physiological characteristics of sorghum (*Sorghum bicolor* L.) in cadmium contaminated soil

Mr Majid Rostami, Malayer University, Iran

Wednesday 21 April

Parallel session 6

<p>14.00 - 15.00</p>	<p>Theme 3 - Soil biodiversity shaping the future of food systems Moderator: Ms Maria Konyushkova, FAO/GSP</p> <p>Conversion of native grasslands to food and fiber systems impact soil fauna community in Brazilian Pampa Ms Bruna R. Winck, Universidade Federal do Rio Grande do Sul, Brazil</p> <p>Transformation of the soil microbial community of the ordinary chernozem in irrigation Ms Ludmila Vorotyntseva, National Scientific Center "Institute for Soil Science and Agrochemistry Research named after O.N. Sokolovsky", Ukraine</p> <p>Aromatic plants in vineyards: Mixed intercropping as a chance for promoting soil biodiversity and increasing economic revenues? Mr Felix Dittrich & Sören Thiele-Bruhn, Trier University, Germany</p> <p>Application of bacterial biostimulants in productive landscapes of <i>Allium cepa</i> L. Ms Marika Pellegrini, AGIRE Soc., Italy</p>
<p>15.00 - 16.00</p>	<p>Theme 3 - Soil biodiversity shaping the future of food systems Moderator: Ms Maria Konyushkova, FAO/GSP</p> <p>Prospection, identification and antagonistic activity of native strains of beneficial microorganisms for the biological control of rice pathogens in Panama Mr Rito Herrera, Universidad de Panamá, Panama</p> <p>Increased soil-enzyme activity at reduced tillage and cover crops after one year of application among organic farming conditions Ms Eszter Tóth, Szent István University, Hungary</p> <p>A new integrate land degradation assessment approach considering soil biodiversity, humus forms and vegetation Mr Francesco Bigaran, Centro Studi per la Biodiversità del GMEM-AMB, Italy</p> <p>Response of Soil Biological Indicators under Long-Term Wheat Production Management Practices in a Semi-Arid Climate Ms Elmarie Kotzé, University of the Free State, Bloemfontein, South Africa</p>



Thursday 22 April

13.00 - 14.10	<p>Soil biodiversity in the global agenda</p> <p>Soil health and biodiversity in relation to UN SDGs <i>Mr Rattan Lal</i>, SPI-UNCCD</p> <p>Mainstreaming biodiversity across agricultural sectors <i>Ms Irene Hoffman</i>, FAO</p> <p>Soil biodiversity and antimicrobial resistance <i>Ms Gunilla Eklund</i>, Swedish Ministry of Enterprise and Innovation</p> <p>Soil Biodiversity: its potential for crop nutrition and disease management <i>Ms Martha Bolaños</i>, ITPS</p> <p>Bioremediation of polluted soils: status and challenges <i>Mr Andrea Ceci</i>, Sapienza University of Rome</p> <p><i>Artistic perspective by Suzette Bousema</i>: Superorganism, the hidden mycorrhizal fungal network</p>	<p>Moderator</p> <p>Ms Natalia Rodriguez-Eugenio FAO/GSP</p>
14.10 - 15.00	<p>MAIN SESSION OUTCOMES AND KEY FINDINGS</p> <p>Theme 1: State of Knowledge on Soil Biodiversity <i>Mr George Brown</i>, EMBRAPA, Brazil</p> <p>Theme 2: Soil Biodiversity in Action <i>Ms Zoe Lindo</i>, UWO, Canada</p> <p>Theme 3: Soil Biodiversity shaping the future of food systems <i>Ms Rosa Poch</i>, ITPS</p>	<p>Moderator</p> <p>Ms Caridad Canales, CBD</p>
15.00 - 15.30	<p>CLOSURE OF THE SYMPOSIUM</p> <p>Election of the best GSOBI posters</p> <p>Conclusions of the Symposium and the way forward <i>Mr Eduardo Mansur</i>, FAO</p> <p>Closing remarks <i>Ms Maria Helena Semedo</i>, FAO</p>	<p>Moderator</p> <p>Ms Natalia Rodriguez-Eugenio, FAO/GSP</p>

Poster session - Theme 1

| Earthworm diversity and soil-related processes in disturbed Caspian forest

Yahya Kooch, Tarbiat Modares University, Iran

| Soils of Georgia Highlands and their Biodiversity

Mzia Kokhia, Ilia State University, Georgia

| Modelling decomposition and microbial processes under waterlogging

Bente Foereid, Norwegian Institute of Bioeconomy Research, Norway

| Ecotoxicological evaluation of lead in distinct soil classes based on acute bioassays with earthworms

Mariana Vezzoni, Federal Fluminense University, Brazil

| Biodiversity of arbuscular mycorrhizae and chemical properties in soils of the Colombian coffee zone

Martha Marina Bolaños-Benavides, AGROSAVIA, Colombia

| A large database on functional traits for soil ecologists: BETSI

Sophie Joimel, INRA, France

| Soil survey within the Biodiversity Monitoring South Tyrol

Julia Plunger, Eurac Research, Institute for Alpine Environment, Italy

| Automatic detection of (micro)arthropods in soils

Norbert Flórián, Centre for Agricultural Research, Hungary

| Ant and termite diversity of the Colombian Amazon soils

Clara Peña-Venegas, Instituto Amazónico de Investigaciones Científicas SINCHI, Colombia

| Microbial diversity in forest soil from Vitosha mountain

Emiliya Velizarova, University of Forestry, Bulgaria

| Fungal community assembly in soils of different crops farming in the Puna (North Argentina)

Erica Lumini, MICODIF, Argentina

| Slope on soil organic carbon in domazlice district in Czech Republic

Shahin Nozari, Faculty of Agrobiological Sciences, Food, and Natural Resource, Czech Republic

| Soil biotic component indicators in Lombardy agro-ecosystems

Mauro Piazzì, TIMESIS Srl, Italy

| Microscopic “canaries in the coal mine” – environmental sequencing of microbial communities uncovers how changes in climate and land cover affect soil biodiversity and functionality

József Geml, Eszterházy Károly University, Hungary

| Earthworm biodiversity from Hyrcanian forests: natural vs. agricultural

Maria J. I. Briones, Universidad de Vigo, Spain

Poster session - Theme 1

| Biotechnological prospecting studies on microbial strains isolated from different natural biotopes in order to obtain biologically active substances and biomaterials

Caterina Tomulescu, National Institute for Chemical-Pharmaceutical Research & Development, ICCF, Roumania

| QBS-ar in soil biodiversity monitoring: the experience of Emilia-Romagna Region

Francesca Staffilani, Servizio Geologico, Sismico e dei Suoli, Direzione Generale Cura del Territorio e dell'Ambiente, Regione Emilia-Romagna, Italy

| Biodiversity in a soil sequence under different use in an area in the interior of the Valencian Community

Desamparados Soriano Soto, Universitat Politècnica de València, Spain

| Kinetic Diversity Indices for the Characterization of Topsoil Formation in Natural and Augmented Ecosystems

Masatoshi Funabashi, Sony Computer Science Laboratories, Japan

| Soil biotic component indicators in Lombardy agro-ecosystems

Mauro Piazzi, TIMESIS Srl, Italy

| Comparison between soil biodiversity at Rio da Garça (degraded watershed) and Ribeirão Arrependido (preserved watershed)

Oswaldo Julio Vischi Filho, UNICAMP, Brazil

Poster session - Theme 2

| Progress in agro-environmental policy for the protection of soil biodiversity in Cuba

José M. Febles González, University of Havana, Cuba

| Communicating the importance of soils to human health: New options and opportunities

Eric C. Brevik, Dickinson State University, USA

| Marine Soil Biodiversity as a Key Factor for Ecosystemic Health

Toso Yann

| Effect of Fairy Ring fungi on topsoil micromorphology in Pyrenean grasslands

Lourdes M. Salazar, University of Lleida, Spain

| Utilisation of grassland vegetation is favourable to the development of earthworm communities

Kevin Hoeffner, INRAE, France

| Effect of warming-induced shrub encroachment on soil fungal communities in Western Greenland

Canini Fabiana, University of Tuscia, Italy

| The change in biological activity is a good indicator of soil organic matter change

Zsolt Kotroczó, Hungary Department of Soil Science and Water Management, Hungary

Poster session - Theme 2

| The issue of soil pollution solved using organic farming #2: tried-out research of soil biodiversity

Pathawit Chongsermsirisakul & Siripen Iamurai, Chulalongkorn University, Bangkok and Panyapiwat Institute of Management, Nonthaburi, Thailand

| How much the Soil Biodiversity is known in Mexico?

Isabelle Barois, Instituto de Ecología A. C., Red de Ecología Funcional, Mexico

| In Vitro Screening for Highly Effective Strains of Azotobacter

Marisa Phiromtan De Bels, Loei Rajabhat University, Thailand

| Vermicompositng: An alternative and complimentary eco-friendly tool for sustainable waste management and soil fertility enhancement

Kadarkarai Murugan, Bharathiar University. India

| Thirty Years Of Different Amendment Practices: Effects On Microbial Soil Turnover

Gabriella Rossi, Council for Agricultural Research and Economics, Research Center for Agriculture and Environment, Italy

| Urban and peri-urban gardening promotes urban and soil biodiversity

Claudio Beni, Council for Agricultural Research and Economics, Research Center for Agriculture and Environment, Italy

| Assessment of the influence of urban soil use classes on soil biological quality and biodiversity of micro arthropods

Anita Maienza, Institute for BioEconomy, National Research Council, Italy

| Development of a multi-criteria evaluation of agroecological practices involving soil biodiversity, agronomic performance and farmer perception

Laetitia Bernard, IRD UMR Eco&sols, France

| Yatesbury House Farm is Growing Soil

Richard Gantlett, University of Reading, United Kingdom

Poster session - Theme 3

| Phosphate Solubilizing Bacteria and Arbuscular Mycorrhizal Fungi Differentially Benefit Barley and Enhance Phosphate Contents

Fatima Ezzahra Chouyia, Hassan II University, Morocco

| Metabolic activity of Pseudomonas sp isolated from agricultural soils

Antonio Rivera, Instituto de Ciencias de la Benemérita Universidad Autónoma de Puebla, Mexico

| Perennial Energy Crops and Organic Fertilization increase Soil Biological Activity and Soil Fertility on Sandy Substrate

Moritz Nabel, German Federal Agency for Nature Conservation, Germany

Poster session - Theme 3

| **Effect of different Inoculants in growth of *Solanum tuberosum* and the control of *Rhizoctonia solani***

Patricia Verástegui-Martínez, Universidad Nacional Agraria La Molina, Peru

| **Diversity and distribution of mycorrhizal arbuscular fungi associated to Bambara groundnut (*Vigna subterranea* (L.) Verdcourt) in different agro-ecological zones in Benin**

Leslie-Dolorès Raïssa BOSSOU, Laboratory of Soil Microbiology and Microbial Ecology, Benin

| **Effects of conservative practices on soil ecosystem of Mediterranean high-density olive orchard**

Elena Gagnarli, CREA, Italy

| **The Interdependence of Soil Function and Soil Biological Diversity: Lessons from an 8-year Cover Crop Study in Semi-Arid Montana, USA**

Catherine Zabinski, Montana State University, USA

| **Long term impact of soil fauna conservation practices on the introduced mesofauna and soil chemical properties in rain fed agro ecosystem**

Kumar, N.G, University of Agricultural Sciences GKVK, BENGALURU, India

| **ZEOWINE ZEOLite and WINery waste as innovative product for wine production**

Davide Manzi, CNR-IRET, Italy

| **Soil biodiversity in action: ecological intensification of soil processes for agrosystem services in the tropics**

Eric Blanchart, IRD, UMR Eco&Sols, France

| **Arbuscular mycorrhizal fungi mitigate drought impacts and improve nutrient status of *Commiphora myrrha* seedlings**

Emiru Birhane, Mekelle University, Ethiopia

| **Soil biodiversity enhancement in European agroecosystems to promote their stability and resilience by external inputs reduction and crop performance increase – SoildiverAgro**

David Fernández-Calviño, University of Vigo, Spain

| **Conservation of biodiversity through sustainable management of phytonematodes in plantain cultivated soils (*Musa AAB SIMONDS*)**

Luis Gabriel Bautista-Montealegre, AGROSAVIA, Colombia

| **Soil Biodiversity and Sustainable Vineyards: Hints From the Analysis of Microarthropod Communities**

Aldo D'Alessandro, University of Camerino, Italy

| **Bacterial community in melon/cowpea intercropping systems with reduced nitrogen application**

Margarita Ros, CEBAS-CSIC, Spain

| **Ecological intensification of Mediterranean vineyards: effects on soil conservation and economic viability**

Pilar Andrés, CREAM, Spain

| **Cultivation and Grazing Impact on Extracellular Enzyme Activity in Alberta Grasslands**

Dauren Kaliaskar, University of Alberta, Canada

GLOBAL SYMPOSIUM ON SOIL BIODIVERSITY

19-20-21-22

April 2021



The Global Soil Partnership (GSP) is a globally recognized mechanism established in 2012. Our mission is to position soils in the Global Agenda through collective action. Our key objectives are to promote Sustainable Soil Management (SSM) and improve soil governance to guarantee healthy and productive soils, and support the provision of essential ecosystem services towards food security and improved nutrition, climate change adaptation and mitigation, and sustainable development.

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