

Global Soils Conference 2024- Caring Soils beyond Food Security: Climate Change Mitigation & Ecosystem Services

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SUMMARY

The Global Soils Conference 2024 aims to address the urgent need for sustainable soil management amidst the challenges of climate change, food insecurity, and environmental degradation. With a projected 9.1 billion people by 2050, the pressure on food production and natural resources will intensify. Since 95% of food is directly or indirectly reliant on soil, its health is critical to meeting global food demands. However, the world faces a significant gap between the potential and actual agricultural yields, contributing to issues like poverty and malnutrition.

INTRODUCTION

Despite considerable efforts to improve soil quality, problems like nutrient depletion and soil degradation continue to undermine agricultural sustainability. These challenges threaten not only food security but also biodiversity, water quality, and ecosystem services. In light of these issues, soil science must play a central role in addressing global concerns such as climate change adaptation, ecosystem conservation, and sustainable development. To meet future demands for food, fuel, and fiber, soil health must be prioritized, with strategies that enhance productivity while safeguarding the environment.



The conference, held from November 19-22, 2024 in New Delhi, India, will bring together experts from various fields, including scientists, policymakers, farmers, and industry leaders, to explore solutions for sustainable soil and resource management. With the theme “*Caring Soils Beyond Food Security: Climate Change Mitigation and Ecosystem Services*,” the event will cover critical topics such as improving soil health, enhancing agricultural productivity, increasing input efficiency, combating land degradation and addressing climate change impacts. The conference will also emphasize the role of soil in preserving biodiversity and supporting ecosystem services. Expected outcomes of the conference include a set of global recommendations for sustainable soil management, enhanced international collaboration in soil research and policy and the formation of a global network of soil scientists and practitioners. It will also increase awareness among the public and policymakers about the vital importance of soils, not only for food production but for the broader environmental and socio-economic health of the planet. Through this platform, the conference aims to inspire a paradigm shift in how soils are managed and valued across the world. The Global Soils Conference 2024 will cover a broad range of themes central to sustainable soil management and its critical role in addressing global challenges. These include soil health and fertility management to ensure sustainable food security, the role of soils in climate change mitigation and adaptation, land degradation and desertification and the protection of biodiversity and ecosystem

services. The conference will also explore soil and water quality, sustainable agricultural practices and innovations in rapid soil assessment and monitoring technologies. Policy and governance issues, including the integration of soil health into national and international frameworks, will be discussed, alongside the socio-economic impacts of soil management, especially in relation to poverty alleviation. Additionally, the conference will highlight the importance of soil science education and capacity building, aiming to equip stakeholders with the knowledge and tools needed to manage soils sustainably in the face of climate change and environmental challenges.

Future Directions in Soil Science: Key Areas of Focus for Sustainable Soil Management and Global Collaboration

The Global Soils Conference 2024 will serve as a key platform to address the future of soil science by highlighting critical areas such as advancing soil health technologies, including the development of innovative monitoring tools, rapid soil testing techniques, and real-time data platforms for efficient soil management. The conference will explore research on optimizing nutrient management, reducing nutrient loss, and mitigating soil degradation, while promoting sustainable agricultural practices. Discussions will emphasize the role of soil science in climate change adaptation and mitigation, exploring solutions for carbon sequestration, soil moisture retention, and enhancing resilience to extreme weather events. The event will also focus on land restoration techniques like reforestation, agroforestry, and sustainable land management to combat soil degradation, desertification, and erosion. Biodiversity and ecosystem services will be key themes, with a focus on the role of soil organisms in nutrient cycling, pest control, and overall ecosystem health. Policy frameworks for sustainable soil management will be a major focus, aiming to strengthen global and national efforts in soil protection and integration into broader environmental and climate policies. The conference will also promote public awareness and education about the importance of soil for food security and environmental well-being, alongside the need for capacity-building programs for farmers, scientists, and policymakers. Finally, the conference will foster global collaboration and the exchange of research and best practices, facilitating the creation of international networks to tackle soil-related challenges and implement solutions across regions.

CONCLUSION

Global Soils Conference 2024 will serve as a pivotal platform for addressing the urgent need for sustainable soil management in the face of pressing global challenges. By bringing together a diverse range of stakeholders, the conference will foster collaboration and innovation in soil science, focusing on enhancing soil health, improving agricultural productivity, and safeguarding vital ecosystem services. The discussions will emphasize the multifunctional role of soils in ensuring food security, mitigating climate change, and preserving biodiversity. Through shared knowledge, policy frameworks, and the formation of global networks, the conference will contribute to a paradigm shift in how soils are perceived and managed, encouraging integrated approaches to soil stewardship that will be crucial for achieving long-term environmental, socio-economic, and developmental goals. Ultimately, the event will drive actionable solutions, inspire greater global cooperation and raise awareness of the critical importance of soils for the well-being of current and future generations.

REFERENCES

Global Soils Conference 2024. Conference Announcement and Themes - Information about the Global Soils Conference 2024 hosted by the Indian Society of Soil Science.