



Food and Agriculture
Organization of the
United Nations

20th Working Session of the Intergovernmental Technical Panel on Soils (ITPS)

**GSOWA23: Review and redefine the conclusions and
recommendations of the Global Symposium on Soil
and Water (GSOWA23) – outcome document**

19-21 March 2024

Janet Nabwami. GSP

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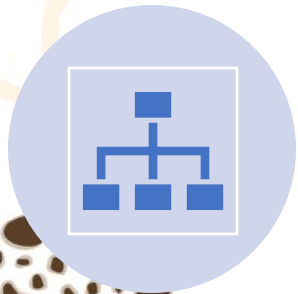
GSOWA23: Objectives



Identify knowledge gaps and management challenges, and research priorities of soil and water resources in a changing environment;



Share and promote sustainable soil and water management practices in addressing water scarcity and soil degradation challenges;



Discuss tools and frameworks to guide integrated management and governance of soil and water resources; and



Examine communication and partnership strategies for promoting sustainable soil management, solutions to water scarcity and low quality, reuse of water, and reducing soil pollution.

GSOWA23: Main themes



Theme 1 | **Soil and water management in rainfed agriculture**

This theme focuses on innovations for increasing the water-holding capacity of soils and improve green water use efficiency. It will also analyze the suitability of using soil organic carbon (SOC) as an indicator for land degradation neutrality and water scarcity, and interactions/trade-offs in soil management practices for water availability and soil recarbonization in rainfed agriculture.



Theme 2 | **Soil and water management in irrigated agriculture**

This theme highlights the importance of efficient irrigation systems for preventing soil degradation, circular economy approaches for sustainable water management in fertilization, the value of water quality control to minimize soil salinity in irrigated systems, and the development of innovative irrigation systems for improved nutrient use efficiency.



Theme 3 | **Soil and water management under the One Health framework**

This theme explores the link between soil health and water quality within the One Health approach. It examines thresholds associated with the use of contaminated water and soil in agriculture, their impact on soil biodiversity, food quality, and safety and presents technical innovations for real-time monitoring of green water and water quality.



Theme 4 | **Integrated soil and water management and effective governance**

This theme focuses on policies and governance actions aimed at improving soil and water resources management, leveraging innovative technologies such as precision agriculture, remote sensing, and big data analytics, and considering gender aspects for effective Integrated soil and water management.

Participation

GSOWA23: Structure

High level speakers



FAO Director-General,
Dr QU Dongyu



H.E Josefa Leonel
Correia Sacko, African
Union Commissioner
for Agriculture



Prof Laura Bertha Reyes
Sánchez, Past President of
the International Union of
Soil Sciences (IUSS), Mexico

Keynote speakers



Rosa Poch, Chair of the
Intergovernmental Technical
Panel on Soils (ITPS), Spain



Rabi Mohtar, Texas Agriculture
and Life Sciences University,
United States of America



Livia Peiser, Land and
Water Division, FAO



Shuwen Hu, China
Agricultural University,
China

Panel discussion



Rafla Sahli E. Attia, Ministry of
Agriculture, Water Resources
and Fisheries,
Tunisia



Marco Arcieri, Vice-
President Honoraire,
International Commission
on Irrigation
and Drainage, Italy



Fairouz Larfaoui, One
Health and Disease
Control group, FAO



Vera Boerger, Land and
Water Division, FAO

GSOWA23: Identified actions



Theme 1 | **Soil and water management in rainfed agriculture**

Utilization of soil suitability maps and early warning systems

Selection of crops adapted to water scarcity.

Integrated management systems

Consumer awareness and advocacy on importance of sustainable soil and water management in ensuring food security and environmental sustainability.

Capacity strengthening among extension services and farmers.

Collaboration and partnerships among stakeholders,
- Inclusive and participatory research, alongside partnerships

Monitoring soil moisture
- establish standardized procedures for monitoring soil moisture,
- incorporating both remote sensing technologies and on-site methods

Emphasizing soil moisture management:
- promote practices that enhance soil moisture retention and limit evapotranspiration,
- Educational programmes, to empower farmers and extension services

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GSOWA23: Identified actions



Theme 2 | Soil and water
management in
irrigated agriculture

Develop soil moisture monitoring systems using remote sensing and on-site techniques

Integrate specific soil management practices in saline/sodic areas into irrigation financing schemes.

Encourage the adoption of harmonized standard operating procedures for physical soil parameters linked to soil moisture.

Explore alternative water sources such as sea desalination and greywater
- use of good quality water for irrigation

Use drought-resistant crop varieties to maximize productivity while minimizing water consumption.

Implement water-saving techniques - shallow water layer combined with wetting and drying,
- alternate wetting and drying,
- precision agriculture technologies

Integrate best practices for improving soil and water management, along with enhancing water use efficiency in irrigated agriculture

Ensure equitable access to water for irrigation

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GSOWA23: Identified actions



Theme 3 | Soil and water management under the One Health framework

Create agricultural strategies integrating technical cooperation, policy development, education, and incentives grounded in the One Health approach.

Adopt management practices to improve soil health and reduce the risk of soil and water pollution.

Focus on One Health-oriented research and development to reduce greenhouse gas emissions, decrease pollutant releases, and transform agrifood systems

Promote circular local economies within agrifood systems to reduce waste, environmental degradation, and increase resilience within communities.

Strengthen the environmental component of the One Health framework, particularly focusing on soil and water management

Prioritize the preservation and restoration of healthy soils and water sources to address multiple Sustainable Development Goals (SDGs)

GSOWA23: Identified actions



Theme 4 | **Integrated soil and water management and effective governance**

Establish focal institutions dedicated to soil and water management and create partnerships and platforms for sharing best practices and lessons

Promote sustainable practices tailored to different soil types, through economic incentives prioritizing integrated soil and water management

Invest in capacity development programmes to empower stakeholders in implementing sustainable practices.

Develop clear regulations promoting inclusivity and equity in resource management, with a focus on gender sensitivity in land tenure and soil/water management relationships.

Use innovative technologies to improve the efficiency and effectiveness of integrated soil and water management practices.

Support development and enforcement of regulatory-level soil protection measures in countries lacking comprehensive frameworks, promoting cohesive and structured approaches to soil protection to fill existing governance gaps.

GSOWA23: General recommendations I



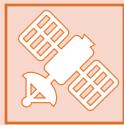
Advocacy and awareness: campaigns to raise public awareness about the importance of sustainable soil and water management for life on Earth, food security, and environmental sustainability.



Capacity strengthening: invest in technical training and capacity-building initiatives for extension services and farmers



Collaboration and partnerships: among stakeholders, to create inclusive and participatory research and partnerships to develop and disseminate effective management strategies.



Monitoring and assessment: establish standardized procedures for monitoring soil moisture using remote sensing technologies and on-site methods.

GSOWA23: General recommendations II



Soil moisture management: practices that enhance soil moisture retention and limit evapotranspiration, Integrated Management Systems



Policy and legal frameworks: assist countries in developing and strengthening legal frameworks and institutions



Innovative technologies: utilize innovative technologies such as precision agriculture, remote sensing, and big data analytics to enhance the efficiency and effectiveness of integrated soil and water management practices.

GSOWA23: GSP action agenda I



Develop a comprehensive training programme focused on soil moisture assessment and monitoring, aligned with the Global Soil Information System (GloSIS).



Enhance the Global Soil Doctors Programme by integrating training materials on soil moisture management and integrated soil and water management.



Facilitate collaboration and coordination among technical networks within the Global Soil Partnership to address soil degradation and water quality loss in both rainfed and irrigated agriculture systems.

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GSOWA23: GSP action agenda II



Provide support to countries in developing and strengthening legal frameworks and institutional capacities for integrated and sustainable soil and water management.



Foster synergies with other FAO tools, initiatives, and projects to bolster integrated and sustainable soil and water management efforts.



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Thank you



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