WASWAC

HOT NEWS

11, 2024

HOT NEWS

ISSUE 11 2024

CONTENTS

Editor: Pengfei DU

Assistant Editor: Songdi YANG

The First Announcement of The 6th WASWAC World Conference

IMPORTANT DATES

* Abstract submission begin: **January 1, 2025**
* Last date of abstract submission: **May 30, 2025**
* Intimation of acceptance of abstracts: **June 30, 2025**
* Registration fee payment begin: **January 1, 2025**

Training Program: September 18-19, 2025

VENUE

Institut National de la Recherch Agronomique (INRA), Avenue de la Victoire BP 415, 10090 Rabat, Morocco

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UPDATES

www.waswac.org.cn

www.inra.org.ma

16th International Symposium on River Sedimentation

DATE

August 4-7, 2025

VENUE

Omaha, Nebraska, United States

THEME AND TOPICS

The theme of the symposium is Centnnial of Modern Sediment Transport Machanics

SPONSORS

- ◇ World Aocciation of Sedimentation and Erosion Research (WASER)
- ◇ International Research and Training Center on Erosion and Sedimentation (IRTCES)

THE SYMPOSIUM TOPICS

1. Fundamentals for sediment transport (Boundary layer flow, fluvial Hydraulics, and Hydrology)
2. Fundamentals of sediment transport (Bed forms, bed load, and suspended load)
3. Experimental and computational sediment transport and fluvial processes
4. Watershed hydrology and sedimentation
5. River Erosion and sedimentation (case studies)
6. Scours abound hydraulic structures (case studies)
7. Reservoir sedimentation
8. Estuarine and coastal sediment transport

9. Seabed sediment transport
10. Environmental and ecological sediment with climate changes

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WASER

16th ISRS

EUROSOIL 2025 | The Official Meeting of the European Confederation of Soil Science Societies

I am reaching out to you as the Chairman of EUROSOIL2025 regarding the upcoming official meeting of the European Confederation of Soil Science Societies (ECSSS). This event will be held in Seville, one of Spain's most beautiful cities, September 8-12 , 2025.

We expect over 2,000 scientists and industry professionals to attend, making this the largest Soil Sciences event in Europe and one of the most prestigious conferences in the field. Additionally, a EUROSOIL EXPO will be organized, offering an excellent opportunity for networking, business interactions, and meeting potential customers in your areas of interest.

I am pleased to announce that abstract submission and registration are now open and available online.

José A. González-Pérez

EUROSOIL 2025 Organizing Committee

REGISTRATION

https://www.eurosoil2025.eu/eurosoil2025/call-abstracts/guidelines

ABSTRACTS

https://www.eurosoil2025.eu/eurosoil2025/registration/registration-fees

MORE INFORMATION

An exposition for products and services related with soil sciences is being organized.

Commercial exposition and sponsoring

https://www.eurosoil2025.eu/eurosoil2025/sponsors-expo

For booking a space for European Project Meetings, Assemblies, Workshops, or any other activities related to Soil Sciences to contact our Technical Secretariat at:

VIAJES EL CORTE INGLÉS

Congress Division, Seville

Telf: (+34) 954506625

e-mail: **eurosoil@viajeseci.es**

info@eurosoil2025.eu

Sponsoring opportunities and commercial exposition. Please request the "Sponsor & Expo Prospectus"

KEY DATES

◇ **November 2024**

Abstract submission & registration opening

◇ **31 March 2025**

Early registration deadline

◇ **15 May 2025**

Regular abstract submission deadline

◇ **31 May 2025**

Abstract notification to authors

◇ **1 August 2025**

Regular registration deadline

◇ **15 July 2025**

Last minute submission (only posters)

◇ **8 September 2025**

EUROSOIL 2025 starts

The 7th National Conference on Soil Conservation and Watershed Management was Held

Prof. Seyed Hamidreza Sadeghi, the deputy president of WASWAC attended the conference

Prof. Dr. Seyed Hamidreza Sadeghi, Professor at Tarbiat Modares University (Iran) and Vice President of WASWAC, Email: **sadeghi@modares.ac.ir**

Drs. Mahin Kalehhouei, Ph.D. in Watershed Management Engineering and Sciences, Tarbiat Modares University and Chair of International Committee of Watershed Management Society of Iran, Email: **mahin6936@gmail.com**

The 7th National Conference on Soil Conservation and Watershed Management, focusing on "the consequences of climate change on agriculture and natural resources," was hosted by the Soil Conservation and Watershed Management Research Institute (SCWMRI) of Agricultural Research, Education and Extension Organization (AREEO)

in Tehran, Iran, on June 11 & 12, 2024. The conference aimed to achieve several specific objectives, including the dissemination of key findings and recommendations, fostering collaboration among stakeholders, and promoting innovative solutions in the field. Some 250 attendees from the soil conservation and watershed management field, including policymakers, professors, researchers, experts, students, and other specialized activists, were present at the conference. In total, 51 oral papers and 147 posters were presented at the meeting from 198 accepted papers. Watershed Management Society of Iran, World Association of Soil and Water Conservation, Natural Resources and Watershed Management Organization of Iran, Drought Adaptation Scientific Society, Scientific Association of Rain Catchment Systems, and Imam Khomeini Higher Education Center sponsored the conference.

The participants in the conference, while initially emphasizing the need for full and active participation of various educational, research, executive, and policy centers in the field of agriculture and natural resources, after listening to the lectures and visiting the poster papers, examining the evidence, possibilities and specialized future research in the field of soil conservation and water management and by confirming the clear and significant trend of climate change and anomalies leading to increased evaporation and transpiration, the frequency of extreme events, numerous irregularities and the change of the climate regime based on statistics and long-term information of the relevant component, unanimously approved and emphasized the following key recommendations.

1. Clarifying and specific involvement of realistic climate scenarios in policy-making, planning, and implementation of all production, service, industrial, and welfare sectors about various agricultural and natural resources sectors through the preparation of compatible programs, risk management, and finally, reducing the consequences of climate change on food security,
2. Development of action plans (in the core of agriculture and natural resources) with emphasis on the participation of all specialists and managers (all fields) related to the field of agricultural activities and natural resources,
3. Raising awareness of the processes and

trends of various climatic changes in the form of system dynamics models and analysis of vague and unknown communications to identify the determining variables and explain the operational policies based on goal-oriented and variable-based policies through modeling and field studies of practical paths and transferring the results to the society local to national and international goals. This comprehensive approach ensures that no aspect of climate change is overlooked, providing a solid foundation for effective strategies.

4. Monitoring and evaluation of different types of drought with emphasis on agricultural drought based on localized models and early warning and crisis management systems and preparation of comprehensive and integrated specialized packages,
5. Public education to reduce carbon emissions, increase green space per capita, change the pattern and reduce traffic, reduce fossil fuel consumption, modify the nutritional pattern and reduce the carbon footprint and food and reduce wastage, in line with the United Nations policies and accordance with Iranian-Islamic culture to minimize climate change and related consequences,
6. The conference emphasized the development and deepening of several key areas in the field of soil conservation and watershed management. These include conservation agriculture, climate-smart agriculture, sustainable agriculture, timely risk warning systems, climate modeling at different management scales, the use of clean and green energy, redefining the agricultural calendar, changing the nutritional pattern, serious obstacles Legal change of land use in the third and fourth categories of agriculture, green economy, production direction of productive species resistant to climate change, new technologies of artificial intelligence, Internet of Things and big data in adapting to or facing climate change. Each of these areas was discussed in detail, and specific recommendations were made for their further development and implementation.
7. Sustainable management of the country's land resources through consistent, nature-based, biological, and comprehensive management of watersheds to compensate for part of the consequences of cli-

mate change,

8. Health-oriented assessment of the country's watersheds based on agricultural drought indicators and optimization of the management model based on the water, energy, and food nexus,
9. Creation and development of appropriate meteorological and hydrometric stations in land and sea areas and preparation of a suitable and comprehensive database of floods and droughts to create the possibility of separating quantitative and qualitative climatic and non-climatic factors influential in the occurrence of different hydrological processes in watersheds,
10. Special attention is paid to the natural subsystem, for the efficient management of water, soil, and natural resources in different types of sensitive ecosystems in the current changing state, relying on good governance, civil society, government, and the private sector at the watershed scale.

Call for Paper | Urban Soil and Green Quality for Human Health

In 2024, the world population has reached 8.2 billion people, 57% of whom living in urban areas (Worldometer 2024; Trading Economics, 2024). By 2030, with a population of about 8.5 billion, the urban population is expected to be 70% (World Bank Group, 2024). Given these numbers, planning our cities has become essential, as people seek not only services but also well-being and recreational spaces.

A better urban organization implies integrating nature into cities. There are several solutions to introduce nature into urban environment: parks, tree-lined avenues, gardens, flowerbeds, single trees, and other green spaces all help to (re)create patches able to purify air and water, and provide habitats for animals (small mammals, birds, insects). In many cases it is even necessary to requalify degraded and abandoned urban areas, eliminating sources of contamination and reconstructing soil able to support vegetation suitable for urban spaces. Today, the network of naturalized patches within the city is recognized to have beneficial effects on physical and psychophysical human health. However, healthy greenery relies on soils or reconstructed substrates able to support the life of the plants. This aspect has been often neglected, with the assumption that plants can either find or create soil conditions adequate for their survival and growth. Although this can sometimes occur, combining soil with appropriate plants provides more effective and sustainable solutions and can reduce maintenance costs and plant failures. Further, well-matched soil-plant systems deliver more ecosystem services, including the mitigation of temperature extremes. Proper plant care and soil management are also key strategies for maintaining a vibrant and healthy urban greenery. With this special issue, EQA seeks to publish scientific papers that expand knowledge on urban soils and plants, from planting to ongoing management. Additionally, we are interested in studies on ecosystem services provided by the soil-plant system in urban areas, including air purification, water circle, nature-based approaches to alleviate human physical and mental

health conditions, wildlife colonization of urban spaces, the creation of new parks, the renaturalization of brownfields.

The deadline for submitting manuscripts is February 28, 2025.

EQA - International Journal of Environmental Quality
ISSN 2281-4485 – Special issue announcement
Journal homepage: *https://eqa.unibo.it/*

Published by

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Assoverde and Kèpos

Italian Society of Soil Science

Saudi Official Commends Beijing's Green Efforts

China has done "exceptionally well" in tackling land degradation, drought and desertification, and its sharing of knowledge and experience will promote global efforts in fighting land degradation, says a senior Saudi Arabian official. ***"China's contribution to global land restoration has been significant, particularly through initiatives like the Great Green Wall Project, which has seen more than 66 billion trees planted and the reclamation of millions of hectares of desertified land,"*** Faqeeha said, adding the scale of the project's greening is "so massive that, according to NASA it is observable from space".

Scenery of Dayekou, Zhangye City, China,
Gansu Provience Gansu Forestry and Grassland Bureau of Picture

Osama Ibrahim Faqeeha, deputy minister of environment of Saudi Arabia, said his country will host the 16th session of the Conference of the Parties to the United Nations Convention to Combat Desertification in Riyadh next month, which is a "vital and timely opportunity" to increase drought resilience, improve monitoring and enhance global commitments to land restoration.

The project, also known as the Three-North Shelterbelt Forest Program, has reduced soil erosion and restored land while showcasing the effect land restoration can have on surrounding communities, he said. Chinese companies and experts are expected to share their expertise and good practices at COP16 for the good of the world, he added.

"As a global leader in green technology and land restoration, China's participation at COP16 is valued as part of the wider international community's efforts to address land degradation," Faqeeha said. "COP16 will provide an opportunity to share learnings from these major projects as we seek to mobilize international action on land degradation, drought and desertification."

Faqeeha cited recent research by nonprofit Global Energy Monitor in San Francisco, which showed that the amount of wind and solar power under construction in China is nearly twice as much as in the rest of the world combined.

China's green technologies will help achieve long-term environmental sustainability, and its efforts to restore degraded land are in line with Saudi Arabia's visions and the two countries should work together, he said.

"Saudi Arabia and China share common challenges and opportunities in addressing climate change and land restoration. Both understand the importance of technological innovation and large-scale environmental initiatives in combating the challenges.

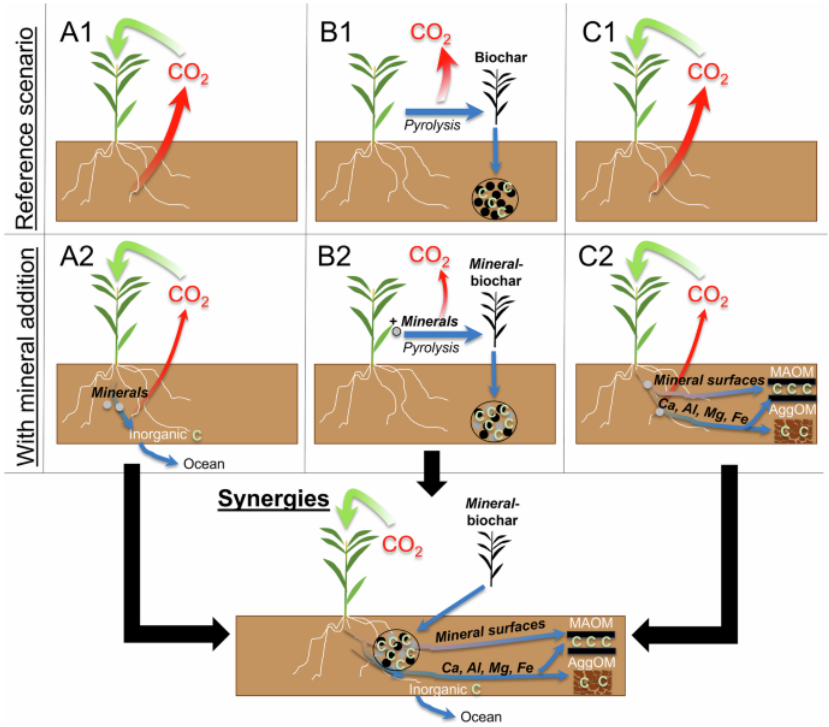
"Clearly, the strategic priorities of landmark projects such as Saudi's Green Initiative and China's Great Green Wall Project are closely aligned."

Story Source: *https://www.chinadaily.com.cn/a/202411/21/WS673e9961a310f1265a1cecf7.html*

Applying Minerals to Soil to Draw Down Atmospheric Carbon Dioxide Through Synergistic Organic and Inorganic Pathways

ABSTRACT

Minerals in soil can sequester atmospheric carbon dioxide through natural organic and inorganic processes. Here we consider three soil- and mineral-based methods for carbon dioxide removal: (1) grinding and spreading of calcium- and magnesium-rich silicate rocks for enhanced rock weathering and subsequent inorganic carbon formation, (2) mineral doping of biomass prior to conversion into biochar for enhanced biochar carbon yield and stability, and (3) strategic application of minerals to soil to increase soil organic carbon accrual and stability. We argue that there are powerful synergies between these approaches for carbon dioxide removal through organic and inorganic pathways. We find that primary silicates, as contained in basalt, can benefit both enhanced weathering and soil organic carbon formation, while phyllosilicates and other reactive secondary minerals may have positive synergies for biochar and soil organic carbon. Optimising such synergies may substantially enhance economic and environmental benefits, yet these synergies require accurate quantification.

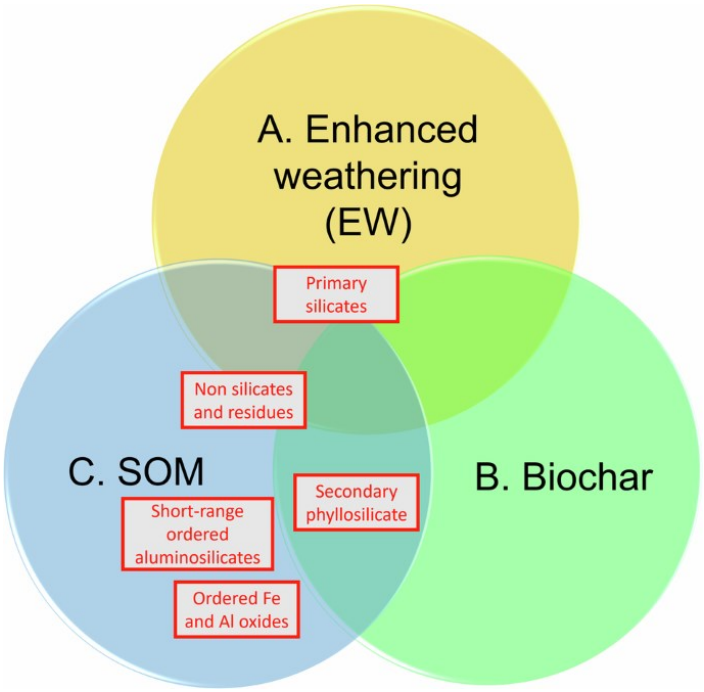


Role of minerals in three soil-based carbon dioxide removal methods.

A Enhancing carbon retention as inorganic carbon through enhanced rock weathering, **B** enhancing stable biochar formation via pyrolysis facilitated by addition of minerals, and **C** limiting respiratory CO_2 emission by enhanced conversion of plant carbon into persistent soil organic carbon (matter). In panels under 1 (top) the reference scenario is outlined and in panels under 2 (middle) the effect of minerals on these reference scenarios are shown. In the bottom panel, we highlight synergies between the three methods. MAOM stands for mineral-associated organic matter, and AggOM for aggregated organic matter.

Potential of mineral classes to result in carbon dioxide removal synergies.

A Enhancing carbon retention as inorganic carbon through enhanced rock weathering, B enhancing stable biochar formation via pyrolysis facilitated by addition of minerals, and C limiting respiratory CO_2 emission by enhanced conversion of plant carbon into persistent soil organic carbon (matter). In panels under 1 (top) the reference scenario is outlined and in panels under 2 (middle) the effect of minerals on these reference scenarios are shown. In the bottom panel, we highlight synergies between the three methods. MAOM stands for mineral-associated organic matter, and AggOM for aggregated organic matter.



INTRODUCTION

To mitigate the severe environmental and economic impacts of climate change, it is critical to reduce global warming to below 2 °C, as recommended by the Paris Agreement. Climate change and associated temperature extremes, droughts and flooding threaten global food production, the long-term sustainability of human civilization, and the entire biosphere[2]. In addition to decarbonizing the global economy, it is now necessary to also achieve carbon dioxide removal (CDR) of around 10 Gt CO_2 per year by 2050 to keep planetary warming below 2 °C. CDR is required both to remove excess atmospheric CO_2, and to offset emissions that cannot be easily abated. However, the CDR industry has struggled to grow, as individual CDR methods are hindered by economic barriers, as well as social and political limitations. Acceleration of CDR implementation is essential to limit global warming to

a mean increase of 2 °C relative to the pre-industrial era. Therefore, there is a need to enhance the efficacy and potential of CDR methods and their co-benefits, which can partly be achieved by integrating different methods to improve economic and environmental outcomes.

Several CDR methods function by enhancing natural biogeochemical cycles that remove and sequester CO_2 from the atmosphere. Minerals play a key role in several of such methods, through interactions with carbon in soil (including inorganic carbon, soil organic matter and plant biomass) that result in CDR. Here, we describe three soil-based CDR approaches that use minerals, namely: (A) inorganic carbon storage through the application of crushed silicate minerals to soil (enhanced rock weathering), (B) mineral 'doping' of biochar, to store persistent pyrolyzed, organic carbon, and (C) accrual of soil organic carbon through additions of reactive minerals.

To date, these different mineral-based CDR methods that are applied to soil have mostly been researched separately, even though there are strong potential synergies between them. In this perspective article, we describe such potential synergies between these three CDR methods. First, we give an overview of the three individual CDR methods – describing both how they work as well as some of their limitations (Section 2). Next, we discuss general mineral properties and environmental conditions that enable and optimise synergies between these methods (Section 3). Finally, we discuss the suitability of a variety of minerals for each CDR method, and identify potential minerals that may be suitable for sequestering carbon through multiple CDR methods (Section 4).

Read More: *https://www.nature.com/articles/s43247-024-01771-3*

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