

HOT NEWS





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The WASWAC 4th International Youth Forum on Soil and Water Conservation (IYFSWC)



TIME & VENUE

September 21-24, 2024, Shenyang Agricultural University, Shenyang, China

THEME

Bringing Youth Together - Leading the Future of Soil and Water Conservation

PART SPONSORSHIP AVAILABLE

If you would like to participate this forum as well as other activities in China during this upcoming September, please see pages 7 to 11 of this issue Hot News for details, and you can also apply for the **Sponsorship Opportunity**, which will cover all expenses during your stay in **China** from Sept. 20 when arriving at Shenyang to Sept.27 when the tour in Beijing ends, including transportation, accommodation, food, conference registration, and technical/cultural tours.

WASWAC Proposed to Establish International Network on Soil and Water Conservation (INSWC) within GSP of FAO

The 12th Plenary Assembly of the Global Soil Partnership (GSP) was successfully organized by the Food and Agriculture Organization's (FAO) Land and Water Resources Division in collaboration with the GSP Secretariat. It convened representatives from all GSP member countries and organizations either in person or online. During the meeting, participants reviewed the progress and future strategies of the GSP's management entities, major initiatives, programs, regional networks, and technical networks. Invited by Mr. Li Lifeng, the Director of FAO's Land and Water Division and Secretary of the Global Soil Partnership (GSP), and as arranged by Prof. Ning Duihu, the president of WASWAC, Professor Li Rui and Dr. Jose Luis Rubio, the honorary Presidents of the WASWAC, attended the GSP Plenary Assembly.



Honorary Chairmen Professor Li Rui and Professor Jose Luis Rubio attended the meeting on behalf of WASWAC.

During the assembly, Dr. Jose Luis Rubio presented a proposal on behalf of WASWAC to establish International Network on Soil and Water Conservation (INSWC) within GSP. The report contents main include: (1) Brief Introduction of WASWAC; (2) Soil erosion is a serious threat to global ecological security and food security and urgently needs to be controlled; (3) Soil and water conservation in the world has achieved many progresses and experiences, which need to be shared and popularized globally: (4) Therefore, to establish international network on soil and water conservation under the GSP is a wise, urgent and necessary measure. The main task of the technology network is to raise society's awareness of the importance of soil and water

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conservation, unite the world's scientific and technological forces to solve major global scientific and technological problems, and provide an international platform for the dissemination and promotion of soil and water conservation technology and experience. Afterwards, some representatives expressed their support to this proposal. Mr. Li Lifeng outlined the background and necessity of the network establishing. The meeting recorded: "*Note the suggestion to establish a technical network for soil and water conservation, which is very clear and distinctive and does not duplicate existing (soil) efforts.*"



Dr. Jose Luis Rubio on behalf of WASWAC, proposed to establish International Network on Soil and Water Conservation



Professor Rui Li participates in the discussion of the conference

The establishment of this network will further deepen the connection between our association and FAO, play a greater role in protecting soil resources, maintaining ecological safety and food security, and jointly promoting the scientific progress in the field of soil and water conservation and ecological environment in the world.



About GSP

The Global Soil Partnership was established in December 2012 as a mechanism to develop a strong interactive partnership and enhanced collaboration and synergy of efforts between all stakeholders. From land users through to policy makers, one of the key objectives of the GSP is to improve the governance and promote sustainable management of soils.

Since its creation, the GSP has become an important partnership where global soil issues are discussed and addressed by multiple stakeholders. Key outputs demonstrate that the partnership was needed to fill an existing gap in the promotion of sustainable soil management.

So far, seven technical networks have been established within GSP, including: Global Soil Laboratory Network, International Network of Black Soils, International Network on Soil Fertility and Fertilizers, International Network of Salt-affected Soils, International Network of Soil Information Institutions, International Network of Soil Biodiversity, and International Network of Soil Pollution. The International Network on Soil and Water Conservation will be the 8th technical network of GSP.

ISWCR impact factor achieved 7.3

Clarivate officially released the 2023 Journal Citation Reports[™] (JCR) on June 20, 2024. JCR publishes each SCIE indexed journal a richarray of citation metrics, including the Journal Impact Factor[™] (JIF), alongside descriptive data about a journal's open access content and contributing authors.

According to the newest JCR, the 2023 Impact Factor for the International Soil and Water Conservation Research (ISWCR), the official journal of WASWAC, is 7.3, which indicates ISWCR is a Q1 journal in all three categories of Water Resources, Soil Science, and Environmental Sciences.

ISWCR was officially indexed by Science Citation Index Expanded (SCIE) in July, 2019. The Journal is classified into three subject areas of Water Resources, Soil Science, and Environmental Sciences. ISWCR received its first official Impact Factor (IF for 2019) of 3.770 in June 2020, the IF for 2020, 2021 and 2022 was 6.027, 7.481, and 6.4, respectively. The impact factor of 7.3 this year is the fifth official IF for ISWCR.

Amongst the total of 127 journals in the categories of Water Resources, ISWCR is ranked as 4 which is raised 5 places compared to that in 2023. In the categories of Soil Science, it is ranked as 3 out of 49(Q1), which is raised 3 places compared to that in 2023. In the categories of Environmental Sciences, it is ranked as 38 out of 358 (Q1), which is raised 18 places compared to that in 2023.

The specific rankings are as follows:



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2023 JOURNAL IMPACT FACTOR

7.3

2023 JOURNAL IMPACT FACTOR WITHOUT SELF CITATIONS

7.0

Journal Impact Factor Trend 2023



Trends in ISWCR Impact Factor

Total Citations

3,057

The total number of times that a journal has been cited by all journals included in the database in the JCR year. Citations to journals listed in JCR are compiled annually from the JCR years combined database, regardless of which JCR edition lists the journal.





Young Professionals' Event

Background

In today's rapidly changing environment, the need for innovative and sustainable solutions in soil and water conservation has never been more critical. Climate change, urbanization, and increasing agricultural demands are putting unprecedented pressure on our natural resources. In this context, young professionals have been endowed with a mission to drive the advancements to tackle these complex challenges.

The World Association of Soil and Water Conservation (WASWAC), China institute of Water Resources and Hydropower Research (IWHR) and Chinese National Committee on Large Dams (CHINCOLD), are excited to announce the event "Sustainable Soil and Water Conservation for Tomorrow" for young professionals, which will take place from September 21 to 27, 2024 in China.

By bringing together young professionals from diverse backgrounds, this event aims to foster collaboration, share cutting-edge research and technologies, and inspire actionable solutions for a more sustainable future. Therefore, we sincerely invite young scholars, engineers, and graduate students working in the fields of water resources and hydropower to participate in this event and share your visionary ideas.

Primary Program





More information on the 4th International Youth Forum on Soil and Water Conservation, the 17th Round Table Forum on Sustainable Development of Dams & Hydropower and the 3rd Asia International Water Week (AIWW) could be found via websites below:

https://4th-iyfswc-2024syau.scievent.com/

https://isds2024.glbmedcon.com/web/content/m986

https://3-aiww.scimeeting.cn/en/web/index/17040

Technical and Cultural Tours in the Program

Technical tours to visit the Compound Soil Erosion Laboratory of Shenyang Agricultural University, the Three Gorges Project, and ecosystem restoration projects of urban rivers etc. will be arranged. Meanwhile, the delegates will have the opportunity to visit the Shenyang Imperial Palace, the Great Wall and other historical attractions in Beijing.

♦ Compound Soil Erosion Laboratory of Shenyang Agricultural University

The compound soil erosion laboratory is the one of the most important laboratories in the field of soil erosion research in China. The laboratory covers an area of 300 m² and is a steel structure project with a 14-meterlifting frame. The interior of the laboratory mainly includes three parts, namely the freeze-thaw cycle system, rainfall system, and wind tunnel system, which can realize the simulation of main soil erosion types such as hydraulic erosion, wind erosion and freeze -thaw erosion, especially it can meet the instrumentation requirements for the simulation of soil

compound erosion mainly by hydraulic erosion and mainly by wind erosion in severe cold area affected by freeze-thaw action.



Compound Soil Erosion Laboratory

♦ Three Gorges Project

Three Gorges Project is a key project to the development and management of the Yangtze River basin. It has the largest installed capacity in the world with a total installed capacity of 22.5GW, Ecological and environmental protection has been emphasized. By optimizing reservoir dispatching, aquatic ecosystem of the Yangtze River and favorable hydrological conditions for fish

reproduction have been effectively improved. Multiple measures have been taken to protect rare terrestrial plants in the middle and upper reaches of the Yangtze River, such as Davidia involucrata, Adiantum reniforme, Taxus chinensis and Myricaria laxiflora.



Three Gorges Project

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♦ Shenyang Imperial Palace

The Shenyang Imperial Palace, one of the two most intact imperial group-buildings ever existing in China, enjoys equal popularity as the Forbidden City. It was built between 1625 and 1637 by Nurgaci. it contains an important library and testifies to the foundation of the last dynasty

that ruled China, before it expanded its power to the centre of the country and moved the capital to Beijing. This remarkable architectural edifice offers important historical testimony to the history of the Qing Dynasty and to the cultural traditions of the Manchu and other tribes in the north of China. It was inscribed on the list of the World Cultural and Natural Heritage in 2004.



Shenyang Imperial Palace

♦ The Great Wall



The Great Wall

The Great Wall is a cultural heritage. It winds its way through the northern part of China, with a total length of over 6350 km and over 16 provinces, municipalities and autonomous regions. in the process of building the Great Wall, ancient people poured glutinous rice slurry into soil and mixed it evenly to make glutinous rice mortar to bond bricks and stones. This not only has excellent adhesion but also excellent waterproof performance, allowing the Great Wall to stand for thousands of years under erosion. As the well-kept part of the Great Wall locates inside Bei jing city, it became the best choice to visit. Who know how many people's aspirations have been inspired by the sentence "He who has never been to the Great Wallis not a true man."

♦ Sponsorship Opportunity

There are **20 positions** available for the sponsorship this year. The sponsorship will **cover all expenses** in China from Sept. 20 when arriving at Shenyang City to Sept.27 when the tour in Beijing ends, including transportation, accommodation, food, conference registration, and technical/cultural tours.

- \diamond Who can apply
- Under 45 years of age
- Have bachelor degree or above
- Work in a field related to water resources and hydropower
- Fluent in English
- *♦ Registration*

Please fill out the Registration From which can be downloaded using the following weblink and send to *chincold-en@vip.126.com* **before 31 July, 2024.** If you would like to apply for the sponsorship, please send in your CV together with the Registration Form.

Evaluation will start immediately after the application deadline, and the successful appli-

cants will be informed before 15 August, 2024.

[weblink: https://files.glbmedcon.com/upload/file/20240624/20240624171041_32833.docx]

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Clay Mineral Inventory in Soils of Europe Based on LUCAS Survey Soil Samples

Introduction:

Clay minerals are a key factor in mineral soils as they are controlling physical, chemical and biological soil properties. X-ray diffraction (XRD) analysis has been widely used to identify and quantify minerals in earth science. The aim of the research documented in a recent JRC technical report describes the clay minerals in soils of Europe and the United Kingdom by using soil samples from the Land Use/Cover Area Frame Survey (LUCAS) topsoil database sampled in 2015.

Abstract :

Consistent A subset of 388 soil samples were selected from LUCAS 2015 topsoil survey. The clay fraction (<2 μ m) was separated by sedimentation in distilled water. X-ray powder diffraction (XRPD) measurements have been carried out with a Siemens D5000 diffractometer with a graphite monochromator, using CuKa radiation at 40 kV and 40 mA. Clay mineralogy has been studied by measurement of basal spacing parameters on the clay fraction oriented in glass slides: 3 to 13 °20 range 0.02 °20 step size.

The study involved the measurement of the 1. air-dried sample, 2. ethylene glycol solvated

sample, 3. heat treatment at 110, 350 and 550 °C. Identification of clay minerals were based on the d-spacing value of their 00l (mainly 001) reflections after different diagnostic treatment. The semiquantitative composition of <2 μ m fractions was estimated by using integrated areas of 00l reflections. Brief description of the clay mineralogy of all samples and semi quantitative mineral composition was performed at country level. The X-ray diffractograms after the different treatment (black = untreated, blue = ethylene glycol solvated, green = 110 °C, dark red = 350 °C, red = 550 °C) for each soil sample were analyzed. Majority clay minerals were compared to soils properties such as CEC, soil pH, soil organic carbon (SOC), and clay and sand content. Current descriptive analysis can be used to identify the most relevant clay minerals in soils of Europe.

Monitoring over time can be used as soil health indicator to establish potential correlations between clay minerals and relevant threats as soil degradation, soil erosion, and soil pollution.

Conclusions :

From the point of view of clay mineralogy and general mineralogy:

- A wide variety of soils have been analysed for clay mineralogy in UE and United Kingdom countries. As has been stated above, in general, clay content and the presence of permanent charged minerals conditioned, in this order, the CEC values of soils rather than pH or OM contents.
- On a qualitative observation basis, central Europe (i.e. Germany, Czechia, Poland) and northern countries (i.e. Finland, Sweden, Latvia) have clay mineralogies more akin to have chlorite-like or vermiculitic compositions in addition to the persistent predominance of illite. These mineralogies are consistent with highly weathered, organic rich, topsoils form more cold and humid regions, very poor, on the other hand, in clay minerals, and in nutrients such as calcium, magnesium and, potassium.
- Kaolinite and smectite are more represented in mediterranean or southern UE countries and, in addition, iron oxyhydroxides are present and differentiate orange-brown colours of these regions.
- Quartz is the main stable no clay mineral and feldspars or amphiboles appear in soil mineralogies from the well-known granitic shields of Scandinavian countries.

- Presence and quantification of sparingly soluble (carbonates) or soluble minerals (gypsum and halite) is not always stablished with certainty or either quantified, it is necessary to revisite some samples to capture signal overlapping in order to obtain further interpretations on salinity issues. Knowledge of the existence of lime additions to analyzed soils will be important to solve some of the interpretations concerning calcite presence or not in representative soils.
- Current descriptive analysis can be used to identify the most relevant clay minerals in soils of Europe. Monitoring over time can be used as soil health indicator to establish potential correlations between clay minerals and relevant threats as soil degradation, soil erosion, and soil pollution.

Details: *https://esdac.jrc.ec.europa.eu/content/clay-mineral-inventory-soils-europe-based-lucas-2015-survey-soil-samples-2*

Loess Plateau Sees Remarkable Ecological Transformation



An aerial view of the Xindiangou Water and Soil Conservation Demonstration Park in Suide, Shaanxi province

In the rugged terrain of the Loess Plateau in Shaanxi province, a remarkable transformation is unfolding in Suide county.

Gao Jianjian, chief of the ecological engineering construction department at the Suide Administration and Supervision Bureau of Soil and Water Conservation of the Yellow River, expressed delight at the progress made at the Xindiangou Water and Soil Conservation Demonstration Park in Suide.

"This region used to be one of the most severely affected areas by soil erosion on the Loess Plateau, but after years of scientific management, the area now has experienced a substantial reduction in sediment transported to the Yellow River, and transformed itself into Suide's picturesque backyard garden," she said.

Xu Naimin, former chief engineer of the Suide Soil and Water Conservation Scientific Experimental Station of the Yellow River Water Conservancy Commission, recalled the challenging conditions upon his arrival in 1952. The area was once barren, covered in yellow sand with no vegetation, making soil erosion control efforts extremely daunting. In 1953, Suide established the Xindiangou experimental site and other research sites to study soil erosion control methods in the local loess hilly and ravine areas. Xindiangou ravine, previously a significant source of sediment for the Yellow River, had been plagued by severe soil erosion.

Over the past 70 years, Suide has developed a comprehensive "three lines of defense" integrated management model tailored to the local topographical features of loess hills and ravines. This model includes constructing terraced fields on gentle slopes, cultivating shrubs on steep ravine slopes and building warp land dams at the bottom of ravines for flood control, sediment trapping and farming.



The "three lines of defense" integrated management model

The system, spanning from hilltops to ravine bottoms, acts as a multi-layered defense against soil erosion. When rainfall occurs, the vegetation on slopes acts as "security guards," preventing sediment runoff.

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The sediment trapped by warp land dams is utilized for planting various cash crops. Xindiangou also conducted research on soil and water conservation forests and economic forests, introducing a variety of fruit trees and other species for experimental plantations.

Supported by this model, Xindiangou currently boasts over 100 species of woody plants, more than 30 types of grasses, with a vegetation coverage exceeding 75 percent, achieving an impressive sediment trapping rate of 98 percent.

This system has significantly raised the soil conservation rate to 80 percent, with the lush greenery becoming invaluable assets, according to Gao.

The success of this model has led to its widespread promotion and application across provinces including Shaanxi, Shanxi, and the Inner Mongolia autonomous region, yielding substantial results.

Details: https://www.chinadaily.com.cn/a/202406/30/WS6680f1cda31095c51c50b826_1.html

Bali's Rapid Coastal Erosion Threatens Island's Ecosystems & Communities

- A recent study revealed that Bali's coastline shrank from 668.64 kilometers (415.47 miles) to 662.59 km (411.71 mi) between 2016 and 2021 due to human activities and wave circulation, at an average rate of -1.21 meters (3.97 feet) annually.
- The erosion, combined with rising sea levels, threatens the island's ecosystems, infrastructure and communities, which are economically and culturally significant.
- Despite the erosion, there was a net land increase of 1.25 km2 (0.48 mi2) due to land reclamation and infrastructure development, though these efforts also posed environmental risks.
- The study highlights the need for integrated coastal management to balance environmental protection with the needs of coastal communities.

A new study reveals that Indonesia's Bali island is experiencing faster coastal erosion than most other areas globally, primarily due to human activity and wave circulation. Between 2016 and 2021, Bali's shoreline shrank by an average of 1.21 meters per year. This erosion, combined with rising sea levels, poses a significant threat to the island's ecosystems, infrastructure, and communities. The researchers highlight the importance of Bali's coastal zone for its socioeconomic and cultural heritage and warn that Asian coasts are at risk due to inadequate planning and funding to manage erosion.



Bali's sole existing toll road, the Bali Mandara highway, was completed in 2013.

Shoreline is a crucial indicator for monitoring coastal changes, essential for spatial planning and sustainable development due to its importance to coastal ecosystems and marine environments. The paper said that many studies have been conducted in Bali's coastal zone, but none has used the latest high-resolution imagery data to monitor the coastline.

The researchers, led by Amandangi Wahyuning Hastuti from Yamaguchi University's Graduate School of Science and Technology for Innovation, analyzed advanced geospatial methods and data covering six years from 2016-22 and in March 2023 conducted a field survey along the shoreline of Bali province, collecting a total of 75 sampling points.

They found that most sandy shore erosion happened on the southern coast of Bali, including the southwest and southeast coasts, namely the districts of Jembrana, Tabanan, Badung, Denpasar, Gianyar, Klungkung and Karangasem.

Bali province is bordered by the Bali Sea (north), the Bali Strait (west), the Lombok Strait (east) and the Indian Ocean (south), with a mountain chain stretching from west to east dividing the island into north and south parts. The topography, characterized by volcanic alluvial deposits on most beaches and limestone formations in the south, has significantly influenced coastal evolution, present-day coastal morphologies and the formation of mangrove-lined beaches in areas such as Benoa Bay, Gilimanuk Bay and northern Nusa Lembongan Island.

However, rapid development to support tourism, such as airport extensions, freeway construction and seaside hotels, has led to environmental challenges such as pollution, coastal erosion and significant land use changes, threatening the natural environment. A 2022 research paper

showed that 22% of Bali's coast was categorized as very highly vulnerable to the effects of climate change, such as erosion, flooding and storms, including sea level rise. Sea levels have risen by an average of 2.5 millimeters (0.09 inches) per year in the last 25 years, according to the Intergovernmental Panel on Climate Change (IPCC).



The recently published study reveals significant coastal expansion in Bali, with a net land increase of 1.25 km², which surpasses the erosion rate observed during the study period. The growth is attributed to land reclamation and infrastructure development, while a combination of natural and human factors has led to coastal erosion. Coastal structures like seawalls offer protection against erosion but may also result in negative impacts such as downdrift erosion and water quality degradation, necessitating meticulous engineering assessments.

Ketut Sarjana Putra, a senior adviser at Conservation International, emphasizes the importance of the study for decision-makers and the people of Bali and Indonesia, highlighting the need for comprehensive modeling that accounts for coastline changes and climate-related ocean dynamics to effectively manage the coastline. He calls for further research to gain a deeper understanding of Bali's coastline changes and to predict future vulnerabilities, suggesting a pause in land reclamation efforts until more data is available.

The study suggests that the Bali government lacks a holistic and interdisciplinary master plan for coastal management. It concludes that environmental protection alone is not enough and that a balance must be struck between safeguarding coastal communities and ecosystems. The researchers recommend site-specific strategies to protect valuable coastal ecosystems and infrastructure as a means to prevent further coastal erosion in Bali Province.



Details:

https://news.mongabay.com/2024/06/balis-rapid-coastal-erosion-threatens-islands-ecosystemscommunities-study/

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