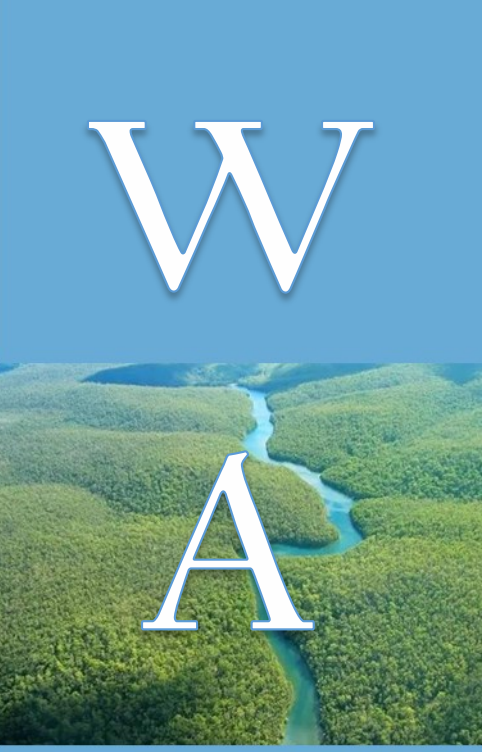

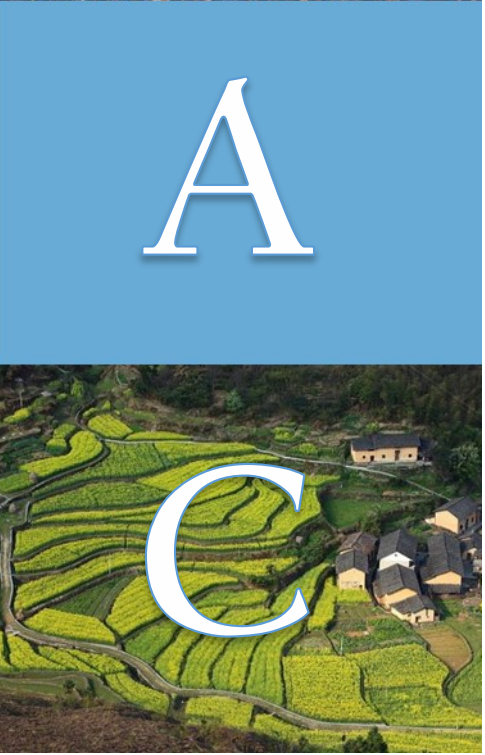

HOT NEWS

ISSUE 3, 2021

WASWAC

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The first meeting of International Network on Salt-Affected Soils

The International Network of Salt-Affected Soils' (INSAS) vision is to facilitate the sustainable and productive use of salt-affected soils for current and future generations. The first meeting of INSAS was held virtually on April 14-15, 2021.

The work of INSAS will be carried out in four main directions:
(i) SAS&Assessment: Mapping, assessing and monitoring of salt-affected soils;
(ii) SAS&SSM: Sustainable management of salt-affected soils;
(iii) SAS&Crops: Biosaline agriculture;
(iv) SAS&Water: Integrated soil and water management under saline/sodic conditions.
The expected areas of the joint work are on the Global Assessment of the Status of Salt-Affected Soils, the Manual on Sustainable Management of Salt-Affected Soils, the development of the Standard Operating Procedures for the analysis of salt-affected soils, the Sustainable Water Management in Saline Environments and others.

Why a network?

Soil salinization and sodification are major threats to global food security and to the achievement of the Sustainable Development Goals (SDGs) as identified in the Status of the World Soil Resources report (FAO and ITPS, 2015). In the last decade, there have been several global fora on salt-affected soils: SPUSH meeting, Global Forum on Salinization and Climate Change, Valencia, Spain 2010; International Conference on Soil Classification and Reclamation of Degraded Lands in Arid Environments, Abu Dhabi, UAE 2010; the Third International Salinity Forum, Riverside, USA 2014; Saline Futures, Leeuwarden, the Netherlands 2019. They highlighted the importance of working towards an integrated approach to the management

of salt-affected soils that converges soil, water and plant knowledge with practical solutions through joint actions of scientists, international organizations, research institutions, farmer associations, policy makers, and governments. To address this need, members of the Global Soil Partnership as per recommendation of its Intergovernmental Technical Panel on Soils (ITPS) have endorsed the establishment of the International Network of Salt-Affected Soils (INSAS) during its Plenary Assembly on 5-7 June 2019, in Rome. The launch of INSAS took place during the Global Forum on Innovations for Marginal Environments on 20-21 November 2019, in Dubai.

Raising awareness on salt-affected soils

The Global Soil Partnership was established in December 2012 as a mechanism to promote sustainable soil management. In 2013, the 5 th December was declared by the United Nations General Assembly as World Soil Day (WSD). WSD is held annually as a platform to raise awareness on the importance of healthy soils and to advocate for their sustainable management. World Soil Day 2021 will be devoted to salt-affected soils with the motto "Halt soil salinization, boost soil productivity." In preparation to WSD21, various activities are planned by the Global Soil Partnership. Among them are the finalization and the launch of the Global map of salt-affected soils, the preparation of the Global assessment of the status of salt-affected soils and the Global symposium on salt-affected soils. The implementation of these ambitious plans will mostly rely on the active participation and guidance of the INSAS members.

How to join the network?

Any organization can become a member of INSAS. National institutions, academia, NGOs, civil society, farmer associations, and other stakeholders interested to participate in the joint action to achieve the sustainable and productive management of salt-affected soils are welcome to join this network. To join the network, the registration form available on the website of INSAS must be filled in http://www.fao.org/global-soil-partnership/insas.

Food and Agriculture Organization of the United Nations

GLOBAL SOIL PARTNERSHIP

2nd International and 5th National Conference on Conservation of Natural Resources & Environment

The second international and fifth national conference on the Conservation of Natural Resources and Environment will be held on June 09 & 10, 2021 by the Water Management Research Center, University of Mohaghegh Ardabili.

Changes in human-environmental relations and technological advances have changed the pattern of human life, which can be expected to both control environmental threats and exacerbate natural hazards. The intensification of the water shortage crisis, the occurrence of multiple floods, reduced soil fertility and land erosion, groundwater depletion and the manifestation of dust events highlight the importance and necessity of conserving natural resources and comprehensive management of watersheds. In this regard, improving the living conditions of utilizers of water and soil resources, restoring forest and rangeland ecosystems, and preserving wetlands and lakes will be the necessities of today in preserving and protecting natural resources, water, and soil and reducing environmental damage.

Undoubtedly, the interaction of executives, researchers, activists, and stakeholders in this field is an effective step in achieving scientific and rational solutions for the protection of water, soil, and natural resources. This conference is an opportunity to present new achievements and discuss the views of managers and researchers of natural resources and environment protection. Therefore, all experts, researchers, and students are invited to participate in this conference. It is hoped that this conference, using the experiences of distinguished professors and research students, will

take a step towards improving the status of natural resources and the environment in the mega programs of the country's development.

Topics

- Modelling & Managing Water & Soil and Smart Management of Natural Resources & Environment
- Governance Approaches, Modern Technologies in Monitoring Natural Resource & Environment
- Laws and Rights of Natural Resources and the Environment, & Socio-Economic Issues
- Consequences of COVID-19 Pandemic in Natural Resources and the Environment
- Climate Change, Drought, Environmental Hazards, Resilience, & Vulnerability
- Geographical, Geological & Geomorphological Studies in the Watersheds
- Engineering & Managing Use of Unconventional Water in Agriculture
- Dynamic, Restoration & Managing Land Use and Ecosystem Services
- Application of Rainwater Harvesting Systems in Crisis Management
- River Engineering, Civil Engineering & Development Plans
- Ecotourism Approaches in the Sustainable Development
- Water economy, Natural Resources & Environment
- Eco-Friendly Agriculture & Food Security

Important Dates

Conference Date: 09 & 10 June 2021

Full Paper Submission Deadline: 02 June 2021

Registration Deadline: 05 June 2021

Registration Fee

Faculty Members and Self-Administered:

First Paper: 1,500,000 Rials (36 $)

Extra Paper(Each): 750,000 Rials (18 $)

Students:

First Paper: 1,000,000 Rials (24 $)

Extra Paper(Each): 500,000 Rials (12 $)

Without Paper:

500,000 Rials (12 $)

Papers Submission Guidance

The papers should be written in Persian or English.

The papers could be submitted in three forms:

Extended Abstract (English; 3-4 pages)

Extended Abstract (Persian; 3-4 pages)

Full papers (English)

Full papers (Persian)

It should be mentioned that the submission will be done as a full paper and there is no need to submit the abstract separately.

This is to notify you that the selection of papers for presentation will be done after referee by experts and professors with high scientific quality.

The number of pages is limited to 15 pages for the full paper.

Researchers and students can submit their papers as soon as possible for early review by the referees then send a mail containing the title of papers and its tracking code to the e-mail address of the conference secretariat and request for the early referee. The result will be announced maximum during 10 days.

More details about the conference: *http://envprouma.ir/en/?id=18&p=0*

Research on soil moisture aims to improve irrigation models

by Josh Rhoten, University of Colorado at Boulder

Irrigated agriculture is the planet's largest consumer of freshwater and ultimately produces more than 40% of food worldwide. Yet the exact amounts of water actually being used in irrigation remains largely unknown.

Answering that question would provide insight into the global water balance—the flow of water in and out of systems on Earth. It will be particularly relevant as the effects of climate change on that process become more pronounced in the future.

Credit: CC0 Public Domain

To fill this gap, CU Boulder researchers gave computer models of land surface different amounts of information on soil moisture and then evaluated how well irrigation can be predicted from them. Being able to do this on a large scale would be a useful step toward understanding how sensitive irrigation and evapotranspiration are to climate change.

The work, recently detailed in Scientific Data, was led at CU Boulder by Assistant Professor Ben Livneh, with funding and support from NASA.

Livneh is part of the Department of Civil, Environmental and Architectural Engineering and the Cooperative Institute for Research in Environmental Science (CIRES). He said the project uses satellites to offer a view of the global water balance that wasn't available before.

"When precipitation falls on land, the largest place it goes is back into is the atmosphere, but we don't have the technology to measure that change at large scales," he said. "Here we are using this satellite like a giant scale that weighs the land. Basically, when land loses mass, we can tell that a lot of water is going into the atmosphere."

Recent Ph.D. graduate Ronnie Abolafia-Rosenzweig was the lead author of the paper with Livneh. He has since started working at the National Center for Atmospheric Research to improve the physics of operational

hydrologic models.

"Understanding how much water humans use to irrigate is essential because irrigation alters Earth's water and energy budgets and is depleting water reservoirs across the globe," he said. "I am now collaborating with scientists from Michigan State University and the Sharif University of Technology in Iran to apply our methodology to predicted irrigation water use in agricultural regions surrounding Urmia Lake, which has lost 80% of its original water extent in the last two decades due to climate change (prolonged drought) and irrigation water use."

Livneh said the next phase of this research would likely center on these changes in larger basins such as the Mississippi or Colorado rivers, with a focus on the role of humans with agriculture development.

Sources: *https://phys.org/news/2021-03-soil-moisture-aims-irrigation.html*

Climatic effect of irrigation over the Yellow River basin

by Chinese Academy of Sciences

As a sensitive region of global climate change, the Yellow River basin, situated in arid and semiarid regions, also plays an important role in food production. However, using water resources in the Yellow River basin is challenging due to the drought and increasing water consumption.

″Large-scale agricultural irrigation is an important process in the utilization of water resources in Yellow River basin," said Dr. CHEN Liang, an assistant researcher in the Institute of Atmospheric Physics and also the first author of a paper recently published in *Atmospheric and Oceanic Science Letters*.

″The agricultural irrigation affects the regional climate mainly through changing the surface water process. There have been studies on climate change effects incurred by the change of soil moisture, but the role of irrigation has not been sufficiently depicted in those studies," he said.

CHEN and his team developed a new irrigation scheme based on the Noah land surface model, and then coupled it with the Weather

Research and Forecasting regional climate model. Two simulations (with and without irrigation) were conducted over the Yellow River basin for the period April to October 2000-2010.

The results indicated that when irrigation was induced, the mean surface air temperature decreased, and there was a corresponding increase (decrease) in latent (sensible) heat flux over the irrigated areas. The cooling effect was consistent with the changes in evapotranspiration and heat fluxes due to irrigation. Agriculture irrigation leads to a greater probability of cloud formation, which then impacted the spatial distribution of surface air temperature and precipitation.

Yellow River. Credit: China Green Times

Irrigation in Hetao (middle section of Yellow River). Credit: Baidu Baike

"These studies provide scientific advice for sustainable water use development in the Yellow River basin," said CHEN. "In the future, we would like to use different irrigation methods to asses the impact of irrigation on regional climate and hydrologic cycles."

Sources: *https://phys.org/news/2017-04-climatic-effect-irrigation-yellow-river.html*

Data: Global Applications of Soil Erosion Modelling Tracker

Global Applications of Soil Erosion Modelling Tracker (GASEMT)

49 relevant attributes into the database for 10 groups of information: Bibliography, Modelling exercise, Study area, Climate, Land use/cover, Fieldwork activities, Soil info, Topography, Modelling outcomes, Bibliographic Review

To gain a better understanding of the global application of soil erosion prediction models, we comprehensively reviewed relevant peer-reviewed research literature on soil-erosion modelling published between 1994 and 2017.We aimed to identify (i) the processes and models most frequently addressed in the literature, (ii) the regions within which models are primarily applied, (iii) the regions which remain unaddressed and why, and (iv) how frequently studies are conducted to validate/evaluate model outcomes relative to measured data. In the second study, we performed a bibiometric analysis to investigate collaboration networks and citation patterns.

This GASEMT database provides comprehensive insights into the state-of-the-art of soil- erosion models and model applications worldwide. This database intends to support the upcoming country-based United Nations global soil-erosion assessment in addition to helping to inform soil erosion research priorities by building a foundation for future targeted, in-depth analyses. GASEMT is an open-source database available to the entire user-community to develop research, rectify errors, and make future expansions.

GASEMT in numbers:

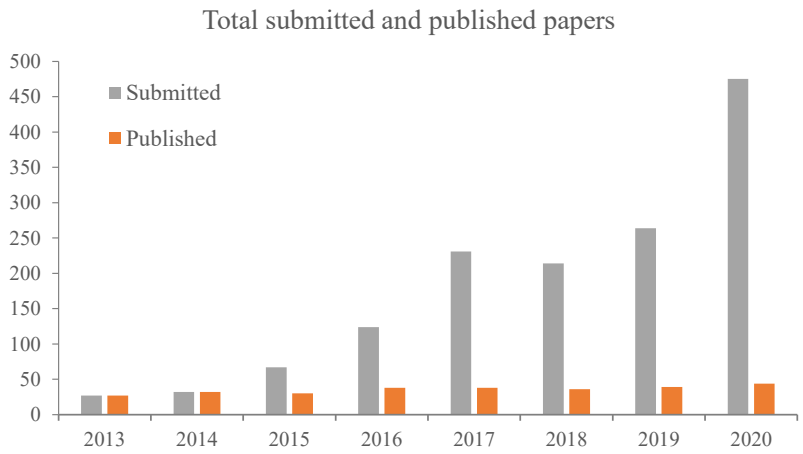
- **Period covered:** 1994-2017
- **Database source:** Elsevier Scopus
- **Potentially relevant:** 8471 articles
- 1697 appropriate articles have been reviewed, systematically evaluated and transferred in the database
- 3030 individual modelling records from 126 countries, encompassing all continents
- Collective knowledge of 67 soil-erosion scientists from 25 countries
- 49 fields extracted.

More information: *https://esdac.jrc.ec.europa.eu/content/global-applications-soil-erosion-modelling-tracker*

Updated Submission Data of ISWCR in March 2021

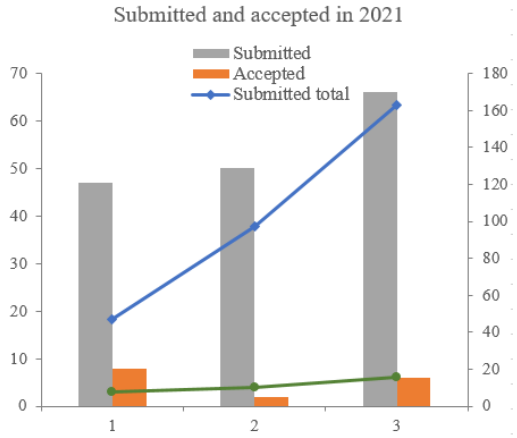
Annual Volume of Submissions and Publishing since 2013

Year	Published	Submitted
2013	27	27
2014	32	32
2015	30	67
2016	38	124
2017	38	231
2018	36	214
2019	39	264
2020	44	475



Monthly Submissions & Acceptance in the current year (2021)

Month	Submitted	Accepted
1	47	8
2	50	2
3	66	6



The International Soil and Water Conservation Research (ISWCR), initiated in June 2013, is a quarterly academic journal in English and publishes in Science Direct of Elsevier with open access globally. Since initiation, ISWCR has developed rapidly and established a good reputation in both international academia and publishing industry. It was indexed by Chinese Science Citation Database (CSCD) in April 2015, covered by SCOPUS in January 2017, and was indexed by Emerging Sources Citation Index (ESCI) of Clarivate Analytics in October 2017. In July 2019, ISWCR was officially indexed by SCIE and the first impact factor, obtained in June 2020, is 3.770.

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Segun O. Oladele, Adewole T. Adetunji
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Comparative effects of composted organic waste and inorganic fertilizer on nitrate leachate from the farm soils of northern Guam
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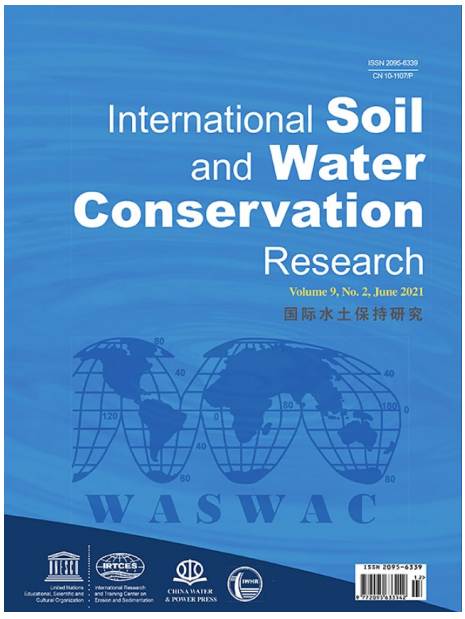
The scope of International Soil and Water Conservation Research includes research, strategies, and technologies for the prediction, prevention, and protection of soil and water resources. It focuses on identification, characterization, and modeling; dynamic monitoring and evaluation; assessment and management of conservation practices; and the creation and implementation of quality standards.



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