



WORLD ASSOCIATION OF SOIL AND WATER CONSERVATION

HOT NEWS

Issue 04, 2019



WASWAC HOT NEWS No. 04, April, 2019

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Editor: Dr. DU Pengfei. Contributors include Dr. Amir Kassam and Dr. QU Liqin.



IRTCES Building

(Where the Secretariat of WASWAC is located)

The Secretariat of WASWAC

No. 20 Chegongzhuang Road West, Beijing 100048, P. R. China

Tel: +86-10-68786579

Fax: +86-10-68411174

Email: waswac@vip.163.com

For ISWCR paper submission:

<http://www.keaipublishing.com/en/journals/international-soil-and-water-conservation-research/>

WASWAC Website: www.waswac.org

Pay your attention to the acceptance of your abstract submitted to WASWAC World Conference IV

**Soil and Water Resources Management for Climate Smart Agriculture
and Global Food and Livelihood Security**

At New Delhi, India, November 5th-9th, 2019



**Acceptance or confirmation
of your abstract/paper**

by June 15, 2019

We are pleased to receive your abstract submitted to our fourth World Conference.

A committee will review the abstracts and decide about the nature of presentation (oral/poster). Author(s) will be intimated regarding the acceptance of the papers by **June 15, 2019**. If anyone who did the submission but failed to receive the acceptance or confirmation by **June 15, 2019**, please both contact the secretariat of conference and the secretariat of WASWAC through e-mail aticscsi2019@gmail.com and waswac@foxmail.com

Information contained in the circular and all updates are available at the website of SCSi <http://scsi.org.in> , Conference Website: <http://soilconservation.org>, and WASWAC official website: www.waswac.org

WASWAC awards (2019) nomination are open

According to the BASIC RULES FOR WASWAC AWARDS, the Award Committee (WASWAC AC) issued the Announcement of WASWAC Award (2019) as following:

1. Types and number of awards

No.	Award Type	Number
1	Norman Hudson Memorial Award (NHMA)	no more than 3 awardees for this time. (No more than one for very year, between 2017 to 2019.)
2	Distinguished Research Award (DRA)	no more than 3 awardees for 2019.
3	Distinguished Extension Award (DEA)	no more than 3 awardees for 2019.
4	Special Contribution Award (SCA)	no more than 2 awardees for 2019.

2. Criteria of Awards

WASWAC Norman Hudson Memorial Award (NHMA)

The candidates should be a member of WASWAC.

The candidates have made outstanding achievements in soil and water conservation research.

The candidates have a great reputation over the world.

WASWAC Distinguished Research Award (DRA)

The candidates should be a member of WASWAC.

The candidates have gained distinguished research achievements in soil and water conservation research.

WASWAC Distinguished Extension Award (DEA)

The candidates should be a member of WASWAC.

The candidates have rich extension experiences and great impacts of promoting new technology application.

WASWAC Special Contribution Award (SCA)

The candidates have made a great contribution to soil and water conservation in management, study or technique service at global or regional scale.

The candidates have made a great contribution to WASWAC or ISWCR (International Soil and Water Conservation Research) in association's development, member's attracting, paper's review, academic activities promotion, financial supports, etc.

3. Procedures of appraisal and choose

(1) Nomination (the deadline is June 30, 2019)

The WASWAC councilor, advisor and regional representatives (vice president) could make the nomination for all four awards. Each councilor/advisor/vice president can recommend at most one candidate for each award including NHMA, DRA, DEA, SCA.

The WASWAC members could make the nomination for NHMA, DRA and DEA. Each member could recommend at most one candidate for each award including NHMA, DRA and DEA. To produce a valid nomination, it is necessary to have at least five recommendations from members.

SCA candidate only be recommended by WASWAC councilor/advisor/vice president.

A formal recommendation form with handwritten signature and brief introduction about the achievements of the recommended candidate are necessary to submit to waswac@foxmail.com or ndh@mwr.gov.cn Please mark the subject of your email with "WASWAC award nomination".

(2) Primary Selection

Primary selection will be made by WASWAC AC based on the results of nomination. The number of official candidates cannot exceed 3 times of the number of final awardees.

(3) Final Evaluation

The official candidates will be submitted to WASWAC Council for voting to reveal the final awardees.

(4) Publicity

The award results will be publicized at the WASWAC fourth World Conference in Nov. 5-9, 2019, in the Hot News, and in the official website of the Association as well.

Please get back the recommendation form to us before June 30, 2019.

The form is attached in this file, and available in our official website:

<http://www.waswac.org/waswac/LatestNews/webinfo/2019/04/1552621427329287.htm>



April 19, 2019

Recommendation Form of WASWAC Awards (2019)

Referrer name:
(with signature)

Date of submitting:

Award type	Recommended Candidate				
	Name	Country	Affiliation	Email	Recommendation reasons
Norman Hudson Memorial Award (NHMA)					
Distinguished Research Award (DRA)					
Distinguished Extension Award (DEA)					
Special Contribution Award (SCA)					

Notes:

- (1) Only WASWAC members could be nominated for NHMA, DRA and DEA.
- (2) The WASWAC councilor, advisor and region representatives (vice president) could make the nomination for all four awards. Each councilor/advisor/vice president can recommend at most one candidate for each award including NHMA, DRA, DEA, SCA.
- (3) The WASWAC members could make the nomination for NHMA, DRA and DEA. Each member could recommend at most one candidate for each award including NHMA, DRA, DEA. **To produce a valid nomination, it is necessary to have at least five recommendations from members.**
- (4) SCA candidate only be recommended by WASWAC councilor/advisor/vice president.
- (5) Brief introduction about the achievements of the nominator are necessary to provide.
- (6) Please submit this form and relative documents to wasmac@foxmail.com or ndh@mw.gov.cn by June 30, 2019. And please mark the subject of your email with "WASWAC award nomination".

COMING MEETINGS

The 8th World Congress on Conservation Agriculture



The 8th World Congress on Conservation Agriculture (8WCCA) is jointly organized by the European Conservation Agriculture Federation (ECAAF), and its member in Switzerland, Swiss No-till (SNT), with the support of the Food and Agriculture Organization of the United Nations (FAO) and the African Conservation Tillage Network (ACT). **It will be held in Bern, Switzerland, from 29 June to 2 July 2020.**

The theme: The Future of Farming: Profitable and Sustainable Farming with Conservation Agriculture

Why the 8WCCA?

The first World Congress on Conservation Agriculture was organized jointly by ECAF and FAO in 2001 in Madrid, Spain. Since then the event has been organized in different regions around the world (Iguassu-Brazil, 2003; Nairobi-Kenya, 2005; New Delhi-India, 2009; Brisbane-Australia, 2011; Winnipeg-Canada, 2014; Rosario-Argentina, 2017) and in its 8th edition the Congress will be held in Europe from where it first originated.

Conservation Agriculture (CA) is recognized as an agricultural system capable of overcoming the very serious sustainability weaknesses shown by the conventional tillage-based agriculture. Whereas in 2015/16 CA was practiced on around 180 million hectares of cropland worldwide, its regional

distribution is uneven. Europe (where around 5% of the cropland area -3.6 million ha- is under CA) has shown a considerable adoption only in some countries, despite many promising empirical and scientific results conferring its relevance and suitability in Europe as well as in Africa and Asia.

Thus, this World Congress is an opportunity to take a leap forward in terms of reviewing the recent progress made in the practice of CA and in knowledge generation regarding CA worldwide and putting this experience and know-how at the service of the European agriculture that will be facing the first steps in the implementation of the new Common Agriculture Policy (CAP). There is also a need to accelerate the adoption by smallholders in Africa, Asia and Central America and 8WCCA will provide an opportunity to share and discuss successful examples of uptake of CA by smallholders from around the world so that it can be mainstreamed more rapidly.

The sub-themes:

Sub-theme 1: Successful experiences and learnings from Conservation Agriculture worldwide

Sub-theme 2: Farm and ecosystem level benefits of CA systems to society and environment

Sub-theme 3: Mainstreaming of CA with national policy and institutional support and for global governance to support national and international needs and commitments

Sub-theme 4: Promoting CA-based knowledge and innovation systems and information sharing and communication

The Congress also seeks to alert EU policy stakeholders and technical officers of the urgent need to adopt sustainable soil and production system management practices of CA to achieve the objectives of the CAP 2020.

Who should attend ?

Farmers keen on sharing their experience and know how as well as knowing more about CA and how it works in practice for greater productivity, profitability and environmental sustainability.

Scientists, educationists and extensionists of any discipline dealing with CA systems development and with sustainable soil, water, agriculture and landscape management.

Government representatives, officials and other policy stakeholders interested in or working on issues related to the sustainability of agriculture and the environment.

Private sector and non-governmental organizations interested in CA for sustainable farming systems and landscape management.

Congress venue and language

The event will be celebrated in Bern (Switzerland) between 29th June and 2nd July 2020. The first three days will deal with indoor sessions and the last day will be a field day when practical aspects of the concept and principles of CA and its role as a climate smart agriculture in sustainable intensification will be demonstrated.

All presentations and discussions during the event will be held in English and there will be no translation.

Paper and poster contributions

All participants are invited to present papers on any of the Congress sub-themes. Abstracts must be submitted **not later than 01-11-2019** through the Online submission platform (soon to be available at 8wcca.org). They should not exceed 400 words and should clearly describe the objectives, methods, results and conclusions of the work. An International Scientific Committee will review all contributions.

Papers accepted for oral presentations will be included in the oral sessions of the Congress and authors will be informed, in advance about the length of time available for their presentations.

Papers accepted for poster presentations will be included in the poster sessions of the Congress.

Final decisions for paper acceptance for oral or poster presentation will be announced by 31-01-2020. Abstracts of registered participants will be distributed in the Congress Abstract Proceedings to be published before the Congress. In addition, authors can also choose to submit a full paper by 15-03-2020, which will be made available online.

Abstracts or full papers will only be considered for publication if at least one of the authors is registered at the Congress, with a maximum of two contributions per registration.

Conference registration

On-line registration will be possible. An online registration platform will be available soon at the 8WCCA web site (8wcca.org). Registration fees and application dates will be made available at the web site.

Sponsors and contacts:

The organizers welcome individuals, companies and institutions interested in supporting the 8WCCA.

For further information please contact the organizers at info@8wcca.org

Registration Opens for SWCS International Annual Conference

Conservation professionals from around the world will convene in Albuquerque, New Mexico, July 29 – August 1 for the Soil and Water Conservation Society (SWCS) 73rd International Annual Conference. (For the conference agenda, online registration and other information, visit www.swcs.org/18AC).

The theme for the 2018 conference is ‘Culture, Climate and Conservation.’ “The Society’s Annual Conference is an event where conservationists from every sector gather to share the most recent discoveries on sustainable resource management,” notes SWCS CEO, Clare Lindahl. “While the natural resources we value and protect may vary from state to state and region to region, the lessons we learn from one another and the partnerships we form at this conference span geographies and disciplines.”

SWCS New Mexico Chapter President Wayne Robbie adds that because of New Mexico’s climate, water resource management will be an area of emphasis for the conference. “Water is perhaps the most precious natural resource in the Southwest, so by necessity, water conservation practices used in agricultural systems, urban environments and natural ecosystems continue to evolve with ongoing research. The conference in Albuquerque will give scientists from other parts of the world new perspective on maintaining functional watersheds to support agriculture and the needs of municipal water users.”

The SWCS International Annual Conference is designed to provide a forum for conservation professionals to come together to discuss successes and challenges, combat shared obstacles, and accelerate conservation efforts. In addition to presentations from leading speakers in the conservation field, the conference agenda this year includes seminars on rangeland and forest restoration, as well as the use of technology to advance conservation. Attendees will also receive the latest information on conservation in organic crop production systems, community engagement in resource management, conservation economics and policy, and other current topics. Continuing education units will be available for certified crop advisors, professional agronomists, professional soil scientists/classifiers, professionals in erosion and sediment control, and others.

The presenting sponsor of the 2018 conference is Syngenta.

What are soil contaminants – and how did soil get contaminated?

By Lauren Svejcar, Murdoch University



Soils in the city have a risk of contamination due to runoff from pavement, overuse, and other factors. Credit: Barrett Kays

In its original state, soil was an uncontaminated substance covering the earth. But, humans have intentionally and accidentally poured harmful products onto it in some areas. The waste can hurt the soil and possibly human, plant, and animal health.

The biggest risks for soil contamination are in urban areas, and former industrial sites. However, if you are unsure about the condition of the soil near your home or property, it's best to have a soil test done to be sure about its safety. Of course, most soil is perfectly safe for play, gardening and recreation, but it's best to be safe!

Common contaminants in urban soils include pesticides, petroleum products, radon, asbestos, lead, chromated copper arsenate and creosote. In urban areas, soil contamination is largely caused by human activities. Some examples might be manufacturing/industrial dumping, land development, local waste disposal, and excessive pesticide or fertilizer use. Even heavy car and truck traffic can contaminate soil; have you ever noticed a shiny puddle under your car in the driveway? That's oil –

a petroleum product – and when it rains, that oil could end up in the soil!

Where and how much contamination is added to soils will largely determine how that contamination is spread throughout an area. Type of soil will also play a role in its distribution. For example, certain contaminants may reach ground water sources more easily in sand than clay. This is because of faster infiltration rates of coarse grained sandy soil types. Fine-grained clay soils or organic material in surface soils can hold contaminants tightly, which means the contaminants will accumulate if left undisturbed (e.g. no excavation or tillage).

There are several ways humans can be exposed to soil contaminants. The most common are: Ingesting soil, Breathing volatiles and dust, Absorbing through skin, and Eating food grown in contaminated soil.

Urban gardens are usually a good idea, but it's best to know your soil. Many vegetables and herbs can absorb contaminants as they grow. That puts you at risk if you eat them. Also, vegetables and herbs can have dust on them coming from contaminated soil. If not properly washed, you could ingest the contaminants. Some garden beds may also be lined with chemically treated wood. If you did not build your garden beds yourself, it's best to test your soil because the chemicals can leach into the garden soil.

Home yard areas may not be obvious sites for soil contamination. But, during housing construction, soils can get contaminated. Petroleum products from the construction vehicles leak onto them. Paint may spill. Even fibers from roofing products can blow onto soil and disrupt life in soil. These are just a few examples of construction contamination of soils on home sites.

Homeowners may also inadvertently contaminate their soil. Overuse of pesticides or herbicides is the primary culprit. But, sometimes chemically treated wood is used in landscaping. If not used properly, this can contaminate the soil, and the plant and microbial life that it sustains.

My colleagues and I have created additional information on the Soil Science Society of America public information pages, Discover Soils. Visit <https://www.soils.org/discover-soils/soils-in-the-city/soil-contaminants> to start learning more today!

Details:

<https://soilsmatter.wordpress.com/2019/02/15/what-are-soil-contaminants-and-how-did-soil-get-contaminated/>

VACANCIES

1. Postdoctoral Position - Remote Sensing of Vegetation



A postdoctoral position in the field of Remote Sensing of Vegetation is available in the Global Change Molecular Plant Physiology group at the Department of Biology, University of Toronto Mississauga and will be supervised by Prof. Ingo Ensminger. The group is using physiological, molecular, genomic and remote sensing tools to better understand how climate change affects forest trees.

DUTIES

The successful candidate will work in a Genome Canada funded project and use multispectral and hyperspectral sensors on unmanned aerial vehicles (UAV) for physiological phenotyping. Duties include assessing leaf optical properties of vegetation, and to coordinate this work with leaf level determination of functional traits performed by other team members. Candidates are expected to work in an interdisciplinary research project with partners from the Canadian Forest Service and private industry, contribute to ongoing experiments, assess tree responses to abiotic stress and analyze physiological and remote sensing data.

PROFILE

Candidates must hold a PhD in biology, forestry, remote sensing or a related discipline and should have strong quantitative and writing skills. Candidates should have experience with one or more script languages (e.g. Python, Rcran tools, Matlab) and have experience with analysis of large data sets; previous experience with the analysis of multi- or hyperspectral data and some background in plant biology is mandatory.

HOW TO APPLY

Please send your application electronically as a single PDF to Ingo Ensminger

(ingo.ensminger@utoronto.ca). Use the words "Postdoc Remote Sensing of Vegetation" in the subject line of your email. Please include a cover letter with a brief statement of your research interest (max. 1 page), your CV, and contacts of two references. Review of applications will begin immediately and continue until the position is filled. **Start of contract expected by August or September 2019.**

For more information on the project please contact Ingo Ensminger (ingo.ensminger@utoronto.ca, +1 905 569 4599).

Further information can also be found at <http://www.utm.utoronto.ca/ensminger/> For general information for postdoctoral fellows at the University of Toronto please visit <http://www.sgs.utoronto.ca/postdoctoralfellows>

The University of Toronto is strongly committed to diversity within its community and especially welcomes applications from racialized persons / persons of colour, women, Indigenous / Aboriginal People of North America, persons with disabilities, LGBTQ persons, and others who may contribute to the further diversification of ideas.

Apply here: <http://www.earthworks-jobs.com/rsgis/toronto19052.html>

2. PhD Thesis Subject 2019-2022 - Effect of the presence of bacteria on the isotopic fractionation of calcium in soils



This doctoral thesis topic proposes, using an experimental and theoretical study to lift different locks:
Identify the elementary isotopic fractionations of Ca in batch at the water-matrix-bacteria interface (fractionation intensity, influence of pH, initial Ca concentration, adsorption kinetics, matrix / solution ratio)

Identify the isotopic fractionation of Ca in a mesocosm (role of bacteria, roots, soil type)

Characterize the underlying fractionation mechanisms (Rayleigh / equilibrium, exchange / adsorption / desorption / complexation ...)

The project will test the potential of stable Ca isotopes, a methodology currently controlled by few

laboratories, to specify the mechanisms for storage and release of nutrients in soils. The impact of the study will be both fundamental and applied research, including the development of a new indicator of nutrient bioavailability in soils.

It will be a question of setting up experiments (1) in batch to test the role of the micro-organisms on the isotopic fractionation of Ca, then (2) in mesocosms in order to identify the respective role of bacteria, minerals / humic compounds on isotopic fractionations.

This multi-disciplinary approach (geosciences, microbiology, chemistry) integrating the joint analysis of several isotopic systems will characterize the nutrient reservoirs and their interactions in the critical zone. Applying only one isotopic system to the understanding of natural mechanisms often only provides information on the processes and / or sources that affect it. The objective is thus to combine the "non-traditional" stable isotopes of Ca and Sr with two "stable conventional" isotopes such as C and N and a radiogenic isotope, the Sr. Indeed Ca, and Sr are natural competitors for the adsorption sites of organomineral particles, nitrogen can provide information on the state of bacterial nitrification (NH_4^+ , NO_2^- , NO_3^-), while C is a tracer conventionally used to trace organic processes in soils.

Required Skills

Earth sciences, Isotopy, Soil sciences, chemistry, some notions of microbiology would be a plus

Host laboratory

The experimental work as well as the elementary and isotopic measurements will be carried out within the Laboratory of HYdrology and Geochemistry of Strasbourg (<https://www.lhyges.unistra.fr>), and more particularly within the Isotope Biogeochemistry team and experimental (BISE; <https://www.lhyges.unistra.fr/description-de-l-equipe-BISE>).

Please send me your resume, cover letter, copies of the transcripts of license, master 1 and first semester of master 2 and the name and contact information of two referees for Monday, May 13th to Anne-Desiree Schmitt strasbourg19041@earthworks-jobs.com. A first selection will be made and a candidate will be proposed to apply to the doctoral school.

Do not hesitate to contact me if you want more information on the subject or the terms of the contest.

Details: <http://www.earthworks-jobs.com/geoscience/strasbourg19041.html>

Oceans Play Vital Role in Climate Change in Drylands



Ocean activities will have a greater impact on climate change in drylands, which might lead to intensifying drought and deterioration of ecosystem, according to Chinese researchers.

Researchers from Lanzhou University in northwestern Gansu Province analyzed how ocean activities influence climate change and the ecological environment in drylands of the world over the past 100 years.

According to Guan Xiaodan, the leading researcher, drylands account for approximately 41 percent of the global total land area. Significant warming and human activities increase the danger of land degradation and ecological deterioration, making drylands more sensitive to global climate change. As an important regulator of the Earth's climate system, the ocean's impact on climate change in drylands cannot be neglected.

Research showed that the mechanism of how the ocean activities including the Pacific Decadal Oscillation, El Nino and La Nina affect the dryland climate change.

Guan said the research contributes to a comprehensive understanding of climate change in drylands and also provides scientific reference for preventing desertification and mitigation strategies for global climate change.

"In the future, we will conduct more systematic studies on these mechanisms by combining various observational data and numerical simulations," Guan said.

The research was published in the journal *Science China Earth Sciences*.

[Source: Xinhua](#)

Bacteria that oxidizes methane found in common soil

by Bob Yirka , Phys.org

A team of researchers with members from Norway, Austria, Russia and Germany has found a kind of bacteria that oxidizes methane. In their paper published in Proceedings of the National Academy of Sciences, the group describes their findings and suggest their work could lead to progress in combating global warming.

Scientists have reached consensus that global warming is happening, and that it is because humans continue to pump greenhouse gases into the atmosphere. The main culprit is carbon dioxide, but there are other greenhouse gases making their way into the atmosphere, as well—one of them is methane. Humans produce methane naturally, via flatulence, as do animals. It also results from production of rice and other crops, and released it during oil extraction. To combat global warming, we stop emitting methane, or find a way to remove it. In this new effort, the researchers report a natural way to remove methane from the air by supporting a type of bacteria that oxidizes it.

Scientists have suspected for many years that one or more types of bacteria oxidize methane because testing has shown that methane levels drop in places where there is soil present.

The researchers report that they have isolated a type of bacteria that lives in soil and oxidizes methane: *Methylocapsa gorgona*. It is very common and is found all around the globe. It can also live on very low concentrations of the gas. On the downside, the researchers found that it is also quite fragile, and activities like farming can kill it.

The researchers suggest that *M. gorgona* could possibly be an effective methane sink if used properly. They also acknowledge that creative ideas are required before such applications could come to fruition. They go so far as to suggest the bacteria might be genetically altered to force it to consume more methane. But in the meantime, the discovery could lead to changes in farming practices that prevent the destruction of the bacteria, allowing vast stretches of land to once again remove methane from the air.

Details here: <https://phys.org/news/2019-04-bacteria-oxidizes-methane-common-soil.html>

Climate extremes: Impact on global crop yield variations

Overall, year-to-year changes in climate factors during the growing season of maize, rice, soy and spring wheat accounted for 20%-49% of yield fluctuations, according to research published in Environmental Research Letters.

Climate extremes, such as hot and cold temperature extremes, drought and heavy precipitation, by themselves accounted for 18%-43% of these interannual variations in crop yield.

To get to the bottom of the impacts of climate extremes on agricultural yields, the researchers used a global agricultural database at high spatial resolution, and near-global coverage climate and climate extremes datasets. They applied a machine-learning algorithm, Random Forests, to tease out which climate factors played the greatest role in influencing crop yields.

"Interestingly, we found that the most important climate factors for yield anomalies were related to temperature, not precipitation, as one could expect, with the average growing season temperature and temperature extremes playing a dominant role in predicting crop yields," said lead author Dr. Elisabeth Vogel from the Centre of Excellence for Climate Extremes and Climate & Energy College at the University of Melbourne.

The research also revealed global hotspots -- areas that produce a large proportion of the world's crop production, yet are most susceptible to climate variability and extremes.

"We found that most of these hotspots -- regions that are critical for overall production and at the same time strongly influenced by climate variability and climate extremes -- appear to be in industrialised crop production regions, such as North America and Europe."

For climate extremes specifically, the researchers identified North America for soy and spring wheat production, Europe for spring wheat and Asia for rice and maize production as hotspots.

But, as the researchers point out, global markets are not the only concern. Outside of these major regions, in regions where communities are highly dependent on agriculture for their livelihoods, the failure of these staple crops can be devastating.

"In our study, we found that maize yields in Africa showed one of the strongest relationships with growing season climate variability. In fact, it was the second highest explained variance for crop yields of any crop/continent combination, suggesting that it is highly dependent on climate conditions," Dr Vogel said.

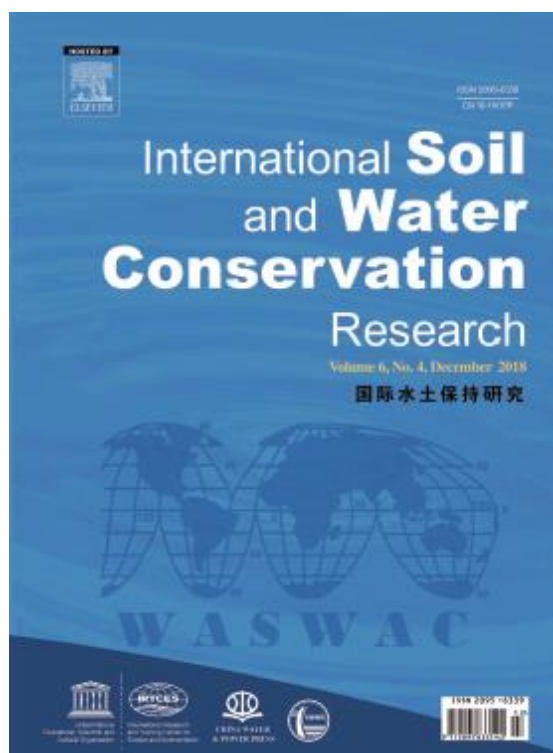
"While Africa's share of global maize production may be small, the largest part of that production goes to human consumption -- compared to just 3% in North America -- making it critical for food security in the region."

"With climate change predicted to change the variability of climate and increasing the likelihood and severity of climate extremes in most regions, our research highlights the importance of adapting food production to these changes," Dr Vogel said.

"Increasing the resilience to climate extremes requires a concerted effort at local, regional and international levels to reduce negative impacts for farmers and communities depending on agriculture for their living."

Source: University of New South Wales

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