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HOT NEWS

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WASWAC

WORLD ASSOCIATION OF SOIL AND WATER CONSERVATION

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Contents

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Voice of WASWAC for the World Soil Day 2019

President's Notes

I am very happy to read the article prepared for the World Soil Day. This article is written by Professor Jose Luis Rubio, the vice president of the World Association of Soil and Water Conservation, hence it could be seen a voice from the association.

In this article, with the deep affection for the soil, the author addresses the severe challenges and threats to soil from climate change and human activity.

It is now well-known that soils are fundamental to life on earth. But pressures on soil resources are reaching critical limits due to unsustainable human activities driven by a rapidly growing global population and increased demand for food, feed and natural resources.

Among the different threats soils are facing, erosion is the number one threat. It is estimated half of the topsoil on the planet has been lost in the last 150 years due to soil erosion.

We are celebrating the World Soil Day, with the motto: Stop Soil Erosion, Save Our Future which is proposed by GSP, FAO. Let it lead our continued commitment to prevent soil erosion, mitigate its negative effects on human health and the environment, and remediate eroded soils.

L. R.

Prof. Li Rui

President of WASWAC

Soil, Desertification and Climate Change

5th December World Soil Day

José Luis Rubio

Vice President of the World Association of Soil and Water Conservation-WASWAC

Immediate Past President of European Society for Soil Conservation -ESSC

Centro de Investigaciones sobre Desertificación-CIDE (CSIC)

Valencia, Spain

Our planet has a very special configuration. The singularity of life develops and is concentrated in a humble and thin layer of soil of only a few centimeters that surrounds it. The rest is a huge mass of inert and lifeless geological material. This living skin of the earth has been and is the basis of the development of civilizations and responsible for the production of food throughout the history of mankind. The fertile soil also stabilizes and reinforces the quality and ecological regulation functions of the territory. The soil helps retain and keep fresh water clean for agriculture, flora, fauna, landscape quality, biodiversity and human consumption. Soil is the elixir and the biological engine of the Earth that recycles organic materials by the activity of millions of microorganisms that improve its structure and thus increase its capacity to mitigate erosive processes, overflow and flood effects, drought periods, impact of forest fires and the misuse and management of the territory.

The soil and the atmosphere interact permanently by exchanging humidity, gases, compounds and energy flows. The soil evolves adapting and oscillating in response to changes of the climatic parameters and, in turn, the atmosphere receives the influence of the functioning and processes of the soil. They share the same reality and they will share the same future. Therefore, the soil is also a powerful climate regulator. It constitutes the second largest deposit of organic carbon on the planet, only behind the oceans and far ahead of the carbon stored by the atmosphere and vegetation. It also regulates other greenhouse gases such as fearsome methane or nitrogen oxide and affects surface albedo, radiation balance, emission of aerosols and dust particles, moisture balances and evapotranspiration, which are part of the complex system of climate regulation of the planet.

However, all this enormous potential, essential for the proper development of the productive, social and environmental aspects of the planet, is threatened. About twelve thousand years ago, in the Holocene, the stabilization and improvement of the climate made possible the development of agriculture, and as a consequence, the construction of the first cities, civilizations, science, technology and progress that we now enjoy. And precisely now all this is endangered by another climate change. But this time not natural but triggered by man. Current anthropic climate change threatens the destabilization and collapse of basic productive systems and crucial socio-economic structures. And all this due to the chemical alteration of the atmosphere that implies the alteration of the climatic parameters and their feedback with terrestrial ecosystems. The current level of well-being and progress, at least in some parts of the planet, has its Achilles tendon in the consequences of the immense tonnage of greenhouse gases that we continue to emit into the atmosphere for more than two centuries.

It is a global threat unprecedented in the history of mankind. We can say that climate change is the greatest social, economic and environmental challenge of the 21st century. In many aspects we face problems of consequences that are still unknown and unpredictable, whose control will require scientific knowledge and new answers and smarter ways of relating to the natural environment.

It is a global problem, but with varying degrees of local impacts and consequences. In the drier areas of the planet, the warming trend will increase the levels of aridification and thus its vulnerability to desertification problems. Desertification, the result of sensitive natural conditions (edaphic, geomorphological and climatic) and inadequate human actions, is a set of numerous processes that go unnoticed initially but can progressively reach levels of very serious consequences for the stability and productivity of the territory. Overlapping, in the affected areas, a whole series of interrelated processes act, such as loss of organic matter from the soil, degradation of its structure, surface crusting and compaction, aridity, variability and torrentiality of rainfall, decrease in plant cover, salinization ,etc. that weaken the biological quality of the soil, its resilience, its fertility and its ability to withstand erosive rains that inexorably wash and drag the soil of burned forest slopes and from abandoned or poorly managed agricultural areas, on their irreversible path to valley bottoms , coastal areas or the sea. In its final consequences, when high degradation is reached, all the biospheric potential of the affected areas is endangered and at these extreme levels there is a double

rupture: the one that affects the provision of ecosystem services of the territory and the one that affects to the agricultural and forestry productivity of the terrestrial ecosystem. When we reach these extremes, when we lose the soil, we lose everything. Then, the territory becomes a wasteland and unproductive for all purposes.

Most international climate change assessment reports, such as those produced by the IPCC (Intergovernmental Panel on Climate Change Assessment), predict a series of trends for the drylands: temperature rise, rainfall decrease, climatic variability, extreme climatic phenomena, increased incidence of droughts, increased forest fires, reduced soil moisture, and salinization, that can increase the aridity of the territory and consequently the risks of desertification. In turn, desertified areas have an impact on climate change through different feedback mechanisms already mentioned. The concurrence of both trends will have very negative consequences due to the increase of their effects.

These predictions and evaluations, are direct, are scientifically supported and very worrying. They force the urgent development of effective and innovative mitigation and adaptation measures and strategies. The mitigation aspects are logically important but the global / local interaction of the warming trend causes perverse effects in the affected areas. In the drylands we can and must legislate to address the change to removable sources of energy and to reduce harmful emissions in a carbon-free economy and many other necessary measures, but this will not free us from droughts, floods, increased forest fires, instability of the territory and decreased water resources and agricultural production and an increasingly arid and inhospitable environment. Therefore, proactive and preventive adaptation measures must be a priority and it is now when they must be designed and implemented. A chemically altered atmosphere does not understand administrative problems, laws or geographical competencies or deadlines. He is indifferent and implacable and will act in the direction that the current human experiment is marking it.

A new vision and a change of course is imposed in our energy model, in the really sustainable management of our resources and in the interaction with the natural environment, the soil and the territory. In many aspects we cannot continue doing things in the same way as until now because this would lead us to a disaster announced in socio-economic and environmental terms. In this forced change of course, innovation, new approaches and creative solutions have to play a crucial

role, and in it institutions, companies, the academic and scientific world and society in general, should be the most important agents impellers The future is open. And this future must bring the opportunity for change and improvement in our social, economic and environmental relationship with our unique and abused natural environment. We play too much in it.

Journal quality metrics: CiteScore and Impact factor

CiteScore is a metric for measuring journal impact in Scopus. The calculation of CiteScore for the current year is based on the number of citations received by a journal in that year for the documents published in the journal in the past three years, divided by the documents indexed in Scopus published in those three years.

This is how CiteScore of 2017 is calculated:

$$CiteScore\ in\ 2017 = \frac{\#\ \text{of citations to all items published in } 2014 - 2016}{\#\ \text{of all items published in } 2014 - 2016}$$

Note: CiteScore metrics are a family of 8 indicators, include: CiteScore, CiteScore Tracker, CiteScore Percentile, CiteScore Quartiles, CiteScore Rank, Citation Count, Document Count and Percentage Cited. CiteScore Tracker provides a current review of how a journal is performing during the course of the year. It is updated every month. CiteScore Percentile indicates how a journal ranks relative to other journals in the same subject field. (The fields are defined according to the Scopus field definitions). CiteScore is calculated on an annual basis, showing the average citations for a full calendar year. CiteScore Tracker calculation is updated every month, giving a current indication of a journal's performance. CiteScore is a metric without field-normalization, thus should not be compared between subject fields (different citation practices across disciplines affect the values of the metric).

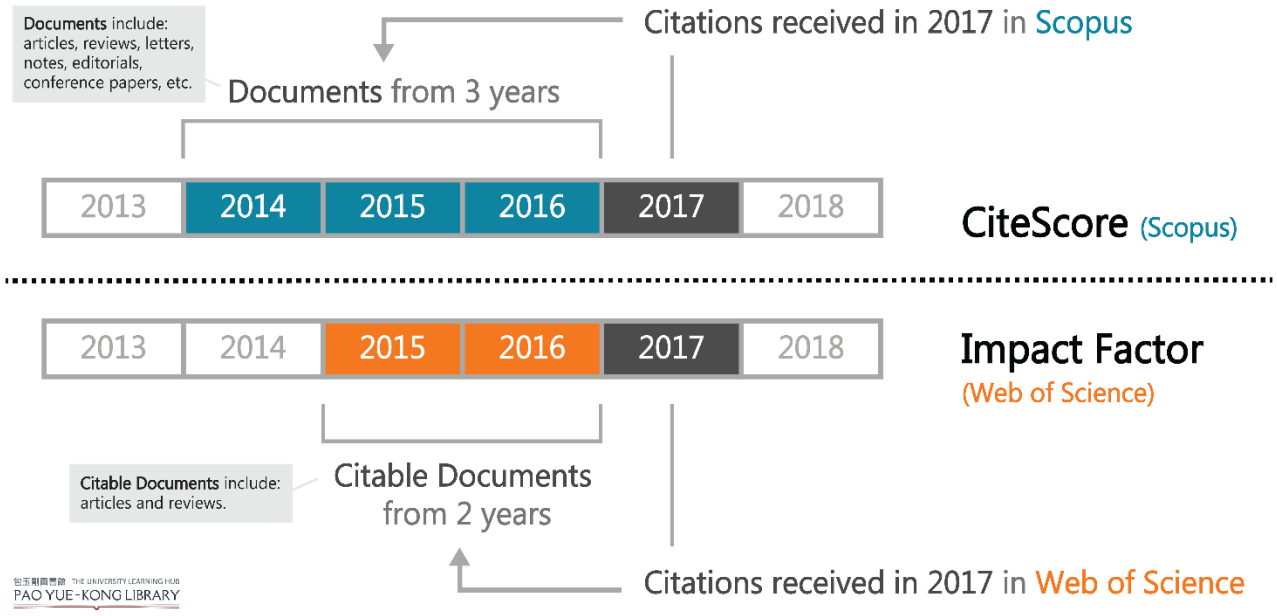
The Impact Factor has had a long reign in academe. Beginning in 1975 as a byproduct of the Science Citation Index, it provided a unique, objective means of rating journals based on their citations and quickly became a standard measure of journal quality. When someone says they want a journal's impact factor they really mean the Impact Factor from Journal Citation Reports (JCR) and nothing else.

This is how Impact Factor of 2017 is calculated:

$$CiteScore\ in\ 2017 = \frac{\#\ \text{of citations to all items published in } 2015-2016}{\#\ \text{of all items published in } 2015-2016}$$

Major difference between CiteScore and Journal Impact Factor:

- CiteScore calculation is based on Scopus data, while Impact Factor is based on Web of Science data.
- CiteScore uses a 3-year window while Impact Factor adopts a 2-year window.
- CiteScore includes all document types indexed by Scopus, include articles, reviews, letters, notes, editorials, conference papers, etc. while Impact Factor only includes "citable documents" which are articles and reviews.



Difference between CiteScore and Impact Factor

Subscription of *ISWCR* 2020 begins

International Soil and Water Conservation Research (ISWCR), the official journal of WASWAC, is a quarterly academic journal in English and publishes in Science Direct of Elsevier with open access globally. The subscription of ISWCR 2020 begins from this month.

The aims of *ISWCR* is to track the development trend, advanced theory, innovative technology and practice results in soil and water research, build the academic exchange platform, and promote the development and prosperity of soil and water conservation discipline. It publishes both research and review papers in soil erosion, soil and water conservation, conservation agriculture, soil evaluation and management, soil degradation, watershed management and sustainable development. *ISWCR* is currently indexed by several well-known databases: SCIE, SCOPUS, CSCD(C), DOAJ. The journal will acquire its first impact factor in the second year in 2020. Currently, the cite score is 4.08 based on SCOPUS analysis. According to the simulation of impact factor (IF) based on data from Web of Science, the mocked IF is 2.96 in 2018, which is equivalent to the Q2 journals in SCI/SCIE journal list in the field of environmental science.

There are several benefits when you subscribe the *ISWCR* 2020:

- Get a free membership of WASWAC in 2020
- Get a free 2018 China river sediment bulletin (the latest version)
- Get a free weekly planner by China Water Power Press

If you are interested in making a subscription for the 2020 journal, please contact the editorial office:

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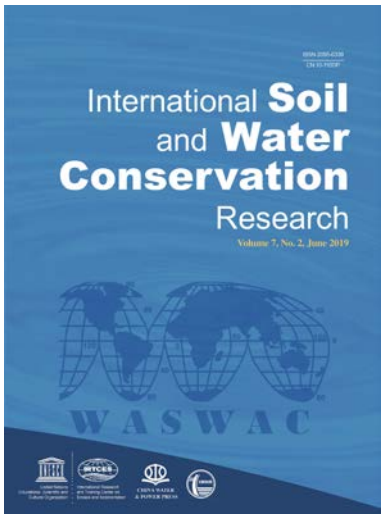

Water management grows farm profits

By Rachel Leege

A healthy lifestyle consists of a mixture of habits. Diet, exercise, sleep and other factors all must be in balance. Similarly, a sustainable farm operates on a balanced plan of soil, crop, and water management techniques.

The western United States is a region with scarce water resources. In this case, water management techniques make up a larger piece of a sustainability plan. There is mounting concern around the globe about water scarcity. This is due to urban sprawl, depleting water supplies in some areas, and predicted water shortages in the future with less snowpack.

Water management techniques that lead to the optimal use of limited resources are not well-identified. Yet. Matt Yost, a researcher at Utah State University, is working to find the best combination of practices to maximize yield, profit, and water efficiency.

Soil moisture sensors aid in advanced irrigation scheduling and help measure water consumption on farm fields.

Photo credit: Matt Yost

Most cropland in Utah and the western United States is irrigated," explains Yost. "There are areas where groundwater from aquifers is being used faster than it can be replaced. Some of these areas are under intense pressure to conserve water."

Water for irrigation comes from aquifers far below the farm's surface. Aquifers are naturally refilled by water from the surface by precipitation. Increased water use can lower the water table. Eventually wells can go dry. These factors make water optimization crucial for food security.

Yost researches many water management techniques. These include using irrigation scheduling and advanced pivot irrigation technology. In addition, his team researches crop and soil management practices. They look at rotating in drought-tolerant crops, cover crops, and reduced tillage.

From left to right: low elevation spray application (LESA), mid-elevation spray application (MESA), and mobile drip irrigation (MDI). Photo credit: Matt Yost

Yost's team works together with many farmers across Utah to do farm-scale trials.

"Irrigation research is tough and costly on farmer's fields," says Yost. "It's especially true when it comes to irrigation scheduling. Though difficult, this on-farm research and collaboration is crucial for the understanding and adoption of new water optimization techniques."

So, what is the best combination of management techniques to maximize yield, profit, and water efficiency? The answer isn't clear, yet. Results and analyses are still pending, but Yost offers some initial recommendations:

- Advanced pivot irrigation technologies, such as mobile drip and low-energy precision application or spray application, are beneficial. They can usually maintain crop yields with about 20% less applied water.
- Most farmers may be able to reduce irrigation rates by 10% without affecting crop yields.
- Biochar applications are showing few short-term crop yield or water saving benefits.

" We are beginning to answer questions about new irrigation techniques and scheduling approaches," says Yost. "But many still exist for discovery."

Advanced pivot irrigation systems such as mobile drip irrigation, low-energy precision application and low-energy spray application reduce wind drift and evaporation - allowing for reduced irrigation rates. Photo credit: Jonathan Holt

Next, Yost and his team hope to secure funding for long-term irrigation research sites. Water is a limited and vital resource. Strategies to optimize water use will be crucial to the sustainability of irrigated agriculture.

"In irrigated agriculture, agronomy and irrigation go hand-in-hand," explains Yost. "Nearly everything about one influences the other. Most irrigation programs focus more on engineering than on irrigation science. With my original training in agronomy, I've noticed knowledge gaps and have identified opportunities to unite irrigation science and agronomy." Yost's unique perspective offers a holistic approach to integrated water, soil, and crop management.

Yost presented his work at the November International Annual Meeting of the American Society of Agronomy, Crop Science Society of America, and Soil Science Society of America in San Antonio. Funding for this research came from an Innovator Award from the Foundation for Food and Agriculture, Western Sustainable Agriculture Research and Education, and the Utah State University Water Initiative and Extension Service.

Source: https://www.soils.org/discover-soils/story/water-management-grows-farm-profits

How multiple factors of climate change affect soil

by Freie Universitaet Berlin

A team of ecologists at Freie Universität Berlin studied soil and how it was affected by multiple factors of climate change. The team, led by Prof. Dr. Matthias Rillig, experimentally examined effects of up to 10 factors of climate change by randomly adding an increasing number of such factors. Results on soil functions and biodiversity showed consistent trends with increasing number of factors added, irrespective of what the factors were. The results give a rare glimpse into what might happen under climate change when considering a wide range of factors simultaneously: there were ecological "surprises," and it was quite difficult to accurately predict effects when many factors were involved. The study highlights the urgent need to focus on multifactor studies and appears in the current issue of Science.

Credit: CC0 Public Domain

Imagine soil in the city or on an agricultural field: what will it have to deal with? Specifically, how many anthropogenic factors will act on it? There might be increasing temperature, drought, the presence of microplastic, various pesticides, heavy metals, salinity, atmospheric nitrogen deposition—a wide range of factors with different modes of action and different effects. Such a situation is very difficult to capture in experiments, because such a study would have a high corresponding number of factors, and all combinations of such factors. For example, an experiment

examining the effect of 10 interacting factors would have over 1000 treatment combinations. Such experiments are not possible in ecology.

Likely for this reason, soil ecologists have so far studied mostly the effects of one or two factors at a time. "About 99 percent of the over 1000 papers we screened for this study only examined effects of one or two factors on soils, with very few experiments looking at more factors," explains Dr. Anika Lehmann, a member of Professor Rillig's team at Freie Universität Berlin.

Rillig and co-workers then examined the effects of 10 factors of climate change in a microcosm experiment. First, each factor was examined on its own. Then the team looked at the effects of having more and more factors included by randomly adding factors from the set of 10 factors. This way, they could ask: What is the effect of just the number of factors, rather than what they actually are? The results were quite surprising, given the wide range of factors that were used: For all the responses measured, parameters related to soil carbon storage and biodiversity of fungi, there was a clear trend with the number of factors included; this trend was a decline in soil functions and in biodiversity.

This means that the direction of effects could be known simply by knowing how many factors were acting on the soil and its organisms, irrespective of what they actually were. For predicting the actual effect, it was still helpful to know which factors were involved, and it was very difficult to impossible to predict what the exact responses were as an increasing number came into play, but the direction of effects was clear.

"The consequences of these results are a bit sobering, but there is also some good news here," explains Rillig. First, this means that scientists are currently still quite ignorant of what might actually happen with climate change in reality, with more and more factors acting on ecosystems. In addition, there may be some surprises in store: For example, in the experiment, soils became water-repellent with many factors applied, something that was not apparent at all from looking at the single-factor results.

On the other hand, this might also mean that everything helps—every factor that we eliminate or reduce will potentially help soils and ecosystems. Moreover, some factors are interrelated, such as factors of climate change or pesticide applications, which means that by reducing some (via changes in behavior or suitable policy measures), others could be reduced, as well. "What has become very

clear from our study is that we need to rethink climate change biology with a focus on the multitude of factors and their interactions," says Rillig.

Related research paper:

THE ROLD OF MULTIPLE GLOBAL CHANGE FACTORS IN DRIVING

SOIL FUNCTIONS AND MICROBIAL BIODIVERSITY

By Matthias C. Rilling, Masahiro Ryo, Anika Lehmann,

Carlos A. Aguilar-Trigueros, Sabine Buchert, Anja Wulf

Many factors influence global change

Global environmental change is driven by multiple natural and anthropogenic factors. With a focus on global change as it affects soils, Rillig et al. point out that nearly all published studies consider just one or two factors at a time (see the Perspective by Manning). In a laboratory experiment, they tested 10 drivers of global change both individually and in combination, at levels ranging from 2 to 10 factors. They found that soil properties, processes, and microbial communities could not be predicted from single-effect responses and that multiple factors in combination produced unsuspected responses. They concluded that single-factor studies remain important for uncovering mechanisms but that global change biology needs to embrace more fully the multitude of drivers impinging on ecosystems.

Abstract

Soils underpin terrestrial ecosystem functions, but they face numerous anthropogenic pressures. Despite their crucial ecological role, we know little about how soils react to more than two environmental factors at a time. Here, we show experimentally that increasing the number of simultaneous global change factors (up to 10) caused increasing directional changes in soil properties, soil processes, and microbial communities, though there was greater uncertainty in predicting the magnitude of change. Our study provides a blueprint for addressing multifactor change with an efficient, broadly applicable experimental design for studying the impacts of global environmental change.

Source: https://phys.org/news/2019-11-multiple-factors-climate-affect-soil.html

Soil Association Food for Life award winners revealed

By Rosie Lintott

UK charity the Soil Association celebrated the best in sustainability and healthy food served across the UK at the Food for Life Served Here and Green Kitchen Standard Award winners at London City Hall.

The night celebrated people and foodservice providers in the industry who are making a difference and inspiring others through Soil Association Food for Life's sustainable catering frameworks: Food for Life Served Here and Green Kitchen Standard.

The Food For Life Served Here Celebration (in conjunction with the Soil Assocaition) awards at City Hall with Prue Leith, 15th November 2019. Credit: Photography by Fergus Burnett

Soil Association chief executive Helen Browning said: "There has been a doubling in the number of food providers engaging with our celebration of excellence, despite the turmoil and uncertainty facing the food service industry, and this is something we're delighted to shout about. Cooks and food providers achieving our standards can therefore be rightly proud, confident and bold about providing the best in sustainable and healthy catering in the UK."

The night also celebrated the 10th anniversary of Food for Life Served Here and the organizations that adopted this commitment in its early years.

An independent judging panel including City University of London professor of food policy Professor Tim Lang, food writer, historian and school food campaigner Bee Wilson, Bremner Consulting CEO Myles Bremner, National LACA chair Stephen Forster and Scotland Excel category manager Lynsey

Gordon.

Winners were chosen for their commitment to embedding the Food for Life Served Here standards, sourcing and serving healthy food that's better for the environment in an outstanding way and keeping sustainability in mind in the kitchen.

Prue Leith presented the awards, on Friday 15 November, saying, "The commitment of caterers to safe, healthy, sustainable and delicious food is absolutely vital if we are to tackle our current environment and health crisis. Today we are honoring great caterers who feed the public in all manner of places: nursery schools, care homes, hospitals, visitor attractions and workplaces alike. Congratulations to everyone getting a Food for Life Served Here award."

The winners included the Excellence at Silver and Gold Award Oldham Council. Susan Carr, Area Co-ordinator, said: "It feels amazing to have received the award. We've worked really hard over the last ten years to get here and so it's nice to be recognized for doing that. Providing quality to our customers on a daily basis is so important to us at Oldham Council."

Shakespeare Birthplace Trust won the Restaurants, Events and Leisure Champion Award. Beverly Edwards head of hospitality said: "I feel proud and honored to have won the award. The biggest challenges are having the team on board, and without them, I wouldn't be here."

The winner of the Food for Life Supplier Scheme Champion was Yeo Valley. Founder Gary Durbin said: "I'm delighted. To get this award for an industry that we love, Food for Life is so important to us. I've been involved in it personally for ten years, so to get that award is superb."

The Green Kitchen Standard Champion was awarded to Aramark University of Westminster group chief executive chef Nick Thwaites. He said: "As caterers we feel like we have a responsibility to make sure what we're doing is sustainable and ethical, so to get recognition for that is fantastic."

Full list of winners:

Further and Higher Education Champion Award

Ivan Hopkins at Nottingham Trent University

Healthcare Champion Award

Carl Stevenson at Bondcare Summerfield House Care Home

Independent School Champion Award, sponsored by Yearsley Food

Simon Blackwood at King's House School

Restaurants, Events and Leisure Champion Award, sponsored by Vintage Roots

Beverley Edwards at Shakespeare Birthplace Trust

Workplace Champion Award

Daniel Blackburn at John Lewis Partnership Victoria Head Office Campus

Schools Champion Award, sponsored by Yeo Valley

Marie Bridge at Christ Church Primary

GS Plus

Early Years Champion Award

Tracy Miller & Olivia Cherry at Woodlands Day Nursery

Childbase Partnership

Excellence at Silver and Gold Award, sponsored by Pip Organic

Oldham Council

Innovation in Customer Engagement Award, sponsored by ParentPay

Leicestershire Traded Services Catering

Food for Life Supplier Scheme Champion

Yeo Valley

Green Kitchen Standard Champion, sponsored by Wallaroo Foods

Aramark University of Westminster

Source: https://www.verdictfoodservice.com/news/soil-association-food-life-award-winners/

FAO Glinka World Soil Prize|4th edition winners revealed

Xu Minggang, Director and Professor, South Subtropical Crops Research Institute, Chinese Academy of Tropical Agricultural Sciences (CATAS) and Professor (Soil Science) and Research Leader, Chinese Academy of Agricultural Sciences (CAAS), China has been awarded with the Glinka World Soil Prize for his outstanding contribution and work on sustainable soil management.

Photo of Professor Xu Minggang

Doctor Minggang, with over 30 years of research, has made a significant contribution towards the application of sustainable soil management practices under intensified agricultural systems, not only in his home country China, but globally. His continuous efforts and research results, particularly in carbon sequestration, preventing soil acidification, improving soil organic matter content and soil fertility, have been used extensively throughout all China and translated into national policies. The results of his research on soil fertility have been extended to a total of 39.8 million hectares soils, with increased crop yields generating an annual income of 4.7 billion US$ for rural communities over the last 15 years. In China, his achievements are illustrated by 260 scientific articles and had a positive impact on food security for over 1.4 billion people. The award of the Glinka World Soil Prize 2019 confirms Doctor Xu as one of the leading soil scientists in China and worldwide.

75th SWCS International Annual Conference

Expanding Horizons: Where Conservation Meets Innovation

75th SWCS International Annual Conference

July 26 - 29, 2020

Des Moines, Iowa

This year's conference theme, "Expanding Horizons: Where Conservation Meets Innovation," evokes images of the expansive views of the region and the deep and varied soil horizons that make Iowa's farmland some of the most productive in the world. This year's theme also speaks to the broadening of individual perceptions and experiences as attendees discover new concepts, partners, and advancements in soil and water research.

The conference will feature the latest ideas, technologies, and practices and foster a dialogue around their adoption. Through workshops, sessions, symposia, tours, exhibits, and demonstrations, cutting-edge research and practice developments in soil health, water quality, and resource management will be shared. Scientists and practitioners will present their work at the field, farm, and watershed scale across an array of private and public arenas. Researchers and conservationists will team up with farmers to share lessons learned and the environmental outcomes of on-farm trials, monitoring, and state-of-the-art precision agricultural tools. Applications of social theories and examples of successful outreach and education will enable attendees to identify ways to scale up grassroots efforts. Participants will also hear about policy and economic developments that build a framework to increase conservation adoption and support future generations.

Central Iowa is where the Soil and Water Conservation Society's story began and where the Society is still headquartered today. Attendees will have an opportunity to view artifacts, never before displayed, from the founder of the Society, Hugh Hammond Bennett. Attendees will also have the opportunity to reflect on the ideas of the founding members of the conservation movement as we usher in a new era of research, practice, and people.

The Soil and Water Conservation Society's 75th International Annual Conference will assemble a diverse, multigenerational conservation community of researchers, practitioners, industry leaders, farmers, and students from around the world. Join us in Iowa as we recognize lessons from the past, expand our professional and personal horizons, and shape the future of conservation.

Call for presentations

There are several options to present information and research at the 75th SWCS International Annual Conference. All oral presentation and symposium submissions must be received through the online submission system found at www.swcs.org/20AC on or before **January 17, 2020**. Poster submissions must be received on or before March 6, 2020. Please note that due to increased participation there will be no extension this year.

Oral presentations

Oral presentations are opportunities to share the results of conservation research projects and/or lessons learned. Each presenter will be given 20 minutes: 15 minutes to make their presentation and 5 minutes for questions. Submissions under this category are limited to no more than two per author.

Poster presentations

Poster presentations report the results of research or lessons learned from professional experience. They entail affixing printed materials (typed information, photos, graphs, etc.) to a 4' x 8' poster board. Poster presenters are expected to be at their posters during all conference refreshment breaks and during the exhibitor and poster reception to answer questions and explain experiences and results. NEW THIS YEAR! The SWCS Iowa Chapter will be sponsoring a student poster contest by offering four awards (most creative, peoples' choice—student, peoples' choice—non-student, and most effective) in the amount of $100 each.

Symposia

Symposia are 90-minute sessions that provide more comprehensive, in-depth coverage of a specific topic and that also allow for audience interaction. The sessions are organized by an individual and incorporate multiple presenters, panel discussions, or other formats as determined by the organizer. Submissions under this category are limited to one per author.

Workshop

Workshops are designed to enhance professional skills through engagement, hands-on interactive education, and training in selected topics. Workshops may be proposed for a time frame of two to four hours on Sunday afternoon, July 26. To propose a workshop, please utilize the submission form found at www.swcs.org/20AC. Please do NOT use the CMT submission system.

General Topic Descriptions

Adaptive Management of Conservation Efforts

Conservation Economics and Policy

Conservation Models, Tools, and Technologies

Conservation in Organic, Specialty, Small-Scale, or Urban Agriculture

Outreach, Education, and Community Engagement

Social Sciences Informing Conservation

Soil Health Resources, Indicators, Assessment, and Management

Water Resource Assessment and Management

Fresh water, the global concern and steps essential to combat

(excerpt)

By Prafulla Kumar Mandal

Introduction : The very basic and primary resources Land, Water and Air constitute the Globe or Earth. On Globe or Earth , two kingdoms originated, advanced, spread and thrive are the Plant and Animal . Water is essential constituent of the plant and animal lives, since maximum constituent of living cell is water and no plant and animal cell division and multiplication can take place without water, be the water visible or invisible forms. As such, it is commonly told the “Other name of water is life”. There is enough water in the Earth or Globe on Bay, Sea and ocean which is hard saline. But for every purpose and existence of non-marine members of the Plant and Animal Kingdoms, only fresh water is essential. Its availability has become a great concern World wide. The UNs, FAO, WMO,WHO, UNEP etcs. International organisations repeatedly alerted the countries to take

appropriate steps to conserve/store fresh water received from rainfall and use it without wasting. A discussion may be done on this issue and how to resolve and avoid the apprehended crisis/ scarcity for the present and for future.

1.What United Nations tells about the FRESH WATER

Fresh Water is at the core of sustainable development and is critical for socio-economic development, energy and food production, healthy ecosystems and for survival of the non-marine members of the plant and animal kingdoms ,one of which is the human itself. Water is also at the heart of adaptation to climate change, serving as the crucial link between the society and the environment.

As the global population grows, there is an increasing need to balance all of the competing commercial, non-commercial, industrial and agricultural demands on fresh water, so that communities get enough of it, for their needs. In particular, women and girls must have access to clean, private sanitation facilities to manage menstruation and maternity in dignity and safety.

At the human level, water cannot be seen in isolation from drinking water and sanitation. Together, they are vital for reducing the global burden of disease and improving the health, education and economic productivity of populations. (United Nations) . Without food no living beings can exist. For deriving food, water is the pivotal input of Agriculture. The main source of this fresh water is the Rainfall.

2. Water Conservation - vs - Irrigation and its other use

Often these independent two groups are miss-mixed and confused . Irrigation and its other uses are solely dependent on Water Conservation i.e. store both in Ground Water Aquifer and Surface Water Bodies . If there is stored water out of precipitation , then Irrigation and its other uses are possible from that source. If not, no scope.

3.Water conservation - vs - Water savings

Often, meaning and implication of water conservation and water savings are miss mixed and applied wrongly . Water conservation is the retention and storing of water, which is received through precipitation in in-land in the soil horizons, surface water bodies and underground aquifer . Water savings is the balance of that conserved / stored water after its various uses. It is the prudent use , which is retained as balance after its optimum use avoiding wastage . Whatever use may be , all are

solely dependent on the water conservation.

4. Scarcity of water for Irrigation and its other uses

Irrigation is the artificial application of water in to the crop field. During no-rainfall period it is necessary. When inadequate availability of water from the stock to meet up the demand in the event of necessity happens , that is the Scarcity , surely due to inadequate conservation / storage of natural fresh water in both ground aquifer and surface water bodies. Similar is in other uses.

5.Run-off , inadequate storage of water in Surface Water Bodies, because of its rapid departure

Rain Water touching the ground i.e. received through precipitation, if not halted in each elevation i.e. topographical situation for prolonged time, but moves downwards rapidly , then accumulated downward rush happens in lower reach ,that causes devastating flood and departs rapidly, decrease recharge to aquifer. Thus , maximum of such water flows over land uninterrupted in the form of run-off through the river system, that ultimately ends to Bay , Sea and Ocean leaving decreased storage/ conservation in the in-land. That is to some extent happening now where either no or inadequate soil conservation measures taken up.

6.Inadequate storage/conservation of the water received through precipitation in the surface water bodies

Due to accelerated soil erosion , dereliction of surface water bodies and uninterrupted increased runoff , the storage capacity of water bodies is decreased , percolation of field water for recharge of aquifer also decrease ,ultimately decreased storage of natural water . So, it is obvious that , added with over draft ,there will crops up scarcity to met the demand of various uses during no-rainfall period; now that is the consequence.

7.The Integrated Soil and Water Conservation

Soil Conservation is the pre-cursor of the Water Conservation. If soil is conserved by various measures, then automatically natural water will be conserved or stored in situ and enhance recharge of the aquifer. For real water conservation, 3 group of soil conservation measures are adopted to disintegrate raindrop biting energy on land surface, to decrease sediment yield ,to halt rain water in each elevation for prolonged time, to interrupt the direct flow of run-off water, to arrest the eroded soil in situ, to enforce recharge of surface water in to ground aquifer through the soil horizons/ layers , to store surface water in surface water bodies, to surplus transparent water,

to increase the time of concentration of run-off water in the drainage net work, to non-erosive safe disposal of surplus water , for prolongation of stream flow in the natural drainage system , to resist degradation and restoration of degraded land and development of micro climate suitable for habitation. This is also the preventive measure to flood and drought.

8. Waste not want not

While emphasis be given to increase of conservation / storage of natural fresh water in in-land, also similar awareness campaign should be launched for minimum / optimum use of water and to avoid wastage. Mentality should be created for no more urbanisation, no more urban area expansion. The urban dwellers may like to understand and realise that, the rural people may not sacrifice, do charity providing water out of their stock , that they maintain.

9. National Water Policy

Each country should frame National Water policy under the superintendence of the constituted National Water Resources Council. The policy should envisage the formulation of a State water policy and preparation of an operational action plan in a time bound manner to achieve the desired objectives. The developmental strategy includes many effective water conservation and management plans as a component of the long term perspective planning of water resources.

10. Our Clarion Call

Let the forthcoming year be the year of Integrated Soil Conservation. May it be voiced clarion call “Agriculture is the super culture of all the cultures in the World. Conserve Land, Soil, fresh water for nourishing People, Plants and Animals and for survival of the Civilization”. Unless enough fresh water is conserved / stored, the water scarcity can hardly be overcome. Therefore, to launch a development programme exclusively for “Natural Resources Conservation (Soil Conservation) Mission”. This emphasis and augmentation on integrated soil conservation, thereby water conservation, will comply with the advice of the Food And Agricultural Organisation of the United Nations, too. It is very much relevant that, the entire Soil Conservation operation is protective production, environment friendly, rather environment refreshing, many-fold benefits and for all the positive gains for the present and future.