Contents

IUSS Reports
IUSS Events ........................................... 4
Report from the IUSS Secretariat ...................... 5
News from national and regional Soil Science Societies ........................................... 16
Awards ....................................................... 17
IUSS Presidential Elections 2022 ......................... 22
Other IUSS News .......................................... 26

International Decade of Soils (2015-2024)
World Soil Day 2022 .................................... 32
IUSS Centenar 2024 ....................................... 33
IUSS Book Series ........................................ 36
Stop Soil Degradation and the IUSS educative project to achieve it ............. 37
SueloFono Podcast ....................................... 38
Soil Voices Project ....................................... 39

Conference and Meeting Reports
International WRB Excursion to Iceland 2022 ........................................... 45
Ecology of Soil Microorganisms 2022 ........................................... 46
15th International Conference of the East and Southeast Asia Federation of Soil Science Societies (ESAFS 2022) ......................... 47
The International Conference on Salt-Affected Soils (2022) ......................... 56
NCSS Workshop 2022 and COP27 ........................................... 58

IUSS Alerts June – November 2022
Upcoming Conferences & Meetings ......................... 60

New Publications ........................................... 68

Miscellaneous ............................................ 78
2021-2022 OIV Awards Ceremony ........................................... 79
Management of rural and urban soils and hydrogeological disasters ................... 80

In Memoriam ............................................. 82
Tahar Gallali .............................................. 83

IUSS Honorary Members and Award Winners
IUSS Honorary Members ........................................... 86
IUSS Award Winners ........................................... 89
With the World Congress of Soil Science 2022, held in Glasgow 31 July to the 5 August, now behind us we, the British Society of Soil Science, as hosts would like to take this opportunity to thank everyone that supported and contributed to this special event. Alongside the scientific programme there was also a ground-breaking policy session, the first of its kind for a WCSS, exhibition, soil judging competition, tours offerings, fringe event programme, and arts, cultural and outreach offerings. Whether you were part of the organising committee(s), chair or vice-chair, convenor, speaker or presenter, exhibitor, volunteer, or simply an attendee, everyone coming together, especially after the last couple of years, truly made the Congress one for the record books. We would also like to take this moment to thank IUSS Council for selecting us as hosts of the 22nd WCSS and for the Executive Committee’s support throughout our journey to delivering the Congress, Speakeasy our event co-ordinators for their professional operational support, and all other sponsor and partner organisations that made everything possible.

In the coming weeks and months as we seek to collate information and crystallise outcomes from the Congress, we will continue to seek to secure a legacy from WCSS22 to support and promote continued developments in soil science and further afield. We will communicate how you can access these archives in the coming months, but in the meantime you can view some information here. We will also wholeheartedly be supporting the organisers of the 23rd (Nanjing, China) and 24th (Toronto, Canada) WCSSs in delivering long-lasting impacts from the series.

Who attended WCSS22?

The congress was open to anyone who had an interest in the sustainable use of soils, particularly research scientists, regulators and NGOs. Over 1600 people attended the Congress in person, representing a diverse range of soil science practitioners. The specific policymakers’ programme, held on Tuesday 2 August 2022, was particularly well attended, with standing room only, and explored how scientific research can inform environmental policy.

The percentage of delegates attending the WCSS22 both in person and online:

- In Person 1377
- Online 298

The following diagrammes give details about the delegates attending WCSS22. All graphs have been made available by the British Society of Soil Science.

### WHO ATTENDED WCSS22?

- **In Person:** 1377 delegates
- **Online:** 298 delegates

The following diagrammes give details about the delegates attending WCSS22. All graphs have been made available by the British Society of Soil Science.
Soil Judging Competition

From the 26 to the 31 July the British Society of Soil Science hosted the 4th quadrennial Soil Judging Competition at the University of Stirling (UK). Soil judging competitions have been held at previous Congresses in the WCSS series and form an important part of the offering for early career soil scientists entering the sector. Following these precedents, the 2022 event hosted teams from nine different countries, representing four different continents, and delivered rigorous classroom and field training centred around soil classification. Support, both operational and financial, from IUSS was critical in aiding delivery of a successful programme. The 37 competing delegates, 12 coaches, 5 supporting staff (IUSS and BSSS), and 10 volunteers were accommodated in university halls of residence with meals and lectures taking place at the Stirling Court Hotel. Field sites were chosen for their diverse range of soil profiles and gave the opportunity for delegates to experience some of the cornerstone landscapes of Scotland with over eighteen differing soil profiles made available for observation. Lectures were designed to complement the field excursions and a range of lectures was delivered by renowned academics such as Allan Lilly, Richard Hewison, Matt Aitkenhead (all representing the James Hutton Institute), Erika Micheli (Szent Istvan Uni.), John Galbraith (Virginia Polytechnic), Patricia Bruneau (NatureScot), Maxine Levin (Uni. Of Maryland), and Peter Schad (Technical Uni. of Munich) among others. The lectures given combined with the field studies to make the Soil Judging Competition a world-class training, and networking, event for young soil scientists.

The final day, the 31 July, was the big competition. Delegates, volunteers, support staff, and judges all contributed to what was an enjoyable event. We would like to congratulate team America (1st), team Australia (2nd) and team Spain (3rd) for placing in the overall competition and Clare Tallamy for coming in first in the individual competition, with Eduardo Vasquez-Garcia taking second, and Ben Atkins taking third. Well done to everyone who competed!
The voyage of the IUSS soil globe

One highlight at the IUSS Booth was the soil globe, an inflatable water ball showing the global distribution of soil types, which was distributed to participants of the exhibition. Participants were asked to inflate the balls and send a photo from their country. Below you will find a number of pictures of the soil globes as they were photographed in situ by their owners. As you can see, the soil globe has travelled quite a bit and a lot of fun was had by all.

Recognition and Finances

As recognition for the support of the IUSS Stimulus Fund materials produced for the Competition were branded with the IUSS Logo and credit given during the Opening Ceremony of the WCSS22.

Outcomes

A post-Competition survey was carried out and revealed the majority of delegates were happy with their experience attending in Stirling. Highlights include:

- 100% of survey respondents rated their overall experience attending the Soil Judging Competition Very Satisfactory or Satisfactory
- 100% of survey respondents rates the classroom training as Very Good or Good
- 60% of survey respondents rated the field training as Very Good or Good, rising to 93% rating it as Very Good, Good, or Fair.

IUSS Booth at WCSS22

The IUSS shared a booth with the Italian Soil Science Society at the exhibition during the WCSS 2022 in Glasgow. The IUSS presented the work of its four Divisions in four posters, the new book on soil biodiversity and activities regarding soil awareness raising. Furthermore, the IUSS showed all its books produced in the book series under the International Decade of Soils 2015-2024. In addition, flyers about the IUSS, copies of global soil maps as well as permanent calendars called ‘soilutions’ were distributed.

IUSS Secretary Sigbert Huber at the IUSS booth (all: © Sigbert Huber)
Working meeting during WCSS22

During the WCSS-22 in Glasgow, the President of the IUSS and Dr. Winfried Blum, who is an Honorary Member of the IUSS, held a working meeting with the Vice Minister of Agriculture and Rural Affairs of China on behalf of the IUSS to strengthen relationships to achieve the sustainability of the soil resource.

Activities of the IUSS President

Opening speech at the congress by Laura Berta Reyes Sanchez

Excellencies, Distinguished Guests, Ladies and Gentlemen, on behalf of the International Union of Soil Sciences, I would like to extend a very warm welcome to the World Congress of Soil Science 2022. Whether you are here with us in person in Glasgow or for the first time in the Congress’ history attending virtually from home, we are delighted to have you with us.

The IUSS promotes knowledge of the soil resource in its relationship with the ecosystems that sustain it, and since its foundation in 1924, based on their fundamental knowledge of soils and their properties worldwide, the IUSS soil scientists have made major contributions to combat different forms of soil degradation focusing on sustainable development and collaborating with sister organizations to put soil resource on the world Agenda. After two and a half years of fighting the pandemic, and despite it, here we are again participating in the leading meeting of the IUSS: the 22nd World Congress on Soil Science in China in 2026.

Closing Ceremony speech of IUSS President Laura Bertha Reyes Sánchez

(© The World Congress of Soil Science 2022)
scientists is also a high priority for the IUSS because they are the generational replacement of the IUSS to fulfill their mission. We need young scientists’ commitment and active inclusion in the IUSS, and the IUSS needs strongly support the young scientists to engage them. Therefore, I welcome young scientists and students participating in the 4th International Soil Judging Contest. You are the future of the IUSS, and soil sustainability will be in your hands in the coming years. To face the current environmental challenges that come from complex causes and require interdisciplinary equally complex solutions, the IUSS requires minds with different perspectives, skills, and life histories. Minds that contribute diverse knowledge and visions to the soil’s preservation so that it maintains its properties and ecosystem benefits over time: minds capable of making soil’s sustainable use. That means we need to include everyone. The IUSS needs to include everyone to move towards diversity and inclusion as the basis of equity because failing to include half of the human population puts the sustainability of the soil and its biodiversity at risk, affecting food security, agricultural production as a fundamental economic engine, and the real possibility of climate change mitigation. That is why, diversity, equity, and inclusion are issues of the greatest importance to the IUSS, and we are strongly working on it because they are at the core of everything we do and at the core of all we need to do to achieve the soil sustainability and contribute to reach the UN sustainable development goals. With international in-person attendance from 86 countries, we would ask you to be respectful to your colleagues and staff both in person and online. We hope this Congress is enjoyable for all attending or working on its delivery and please be mindful of this when engaging with others throughout the Congress. Echoing Bruce, I would like to thank the whole team for getting us to the first night of the World Congress, something that two years ago, we weren’t sure would happen. Thank you once again for attending and I would like to invite Lord Provost as the Mayor of Glasgow to join me on stage.

Dear Lord Provost,

We are delighted to be in Glasgow with you and on behalf of the International Union of Soil Sciences I am honoured to present you as a joint publication of the FAO of the United Nations and IUSS for the children of the world, the first of 500 copies of the children’s book, the Magical World of Soil Biodiversity, to Glasgow city. As a long-lasting legacy from the Congress, we hope that the city’s schools and libraries are able to share the book with local children.

ESAFS 2022

The IUSS President opened the 15th International Conference of the East and Southeast Asia Federation of Soil Science Societies (ESAFS 2022) held in Kuala Lumpur, Malaysia, on August 22–26, 2022. The theme of the conference was ‘Our Soils Our Future’. With the aim of strengthening the relations of the IUSS with the 14 Soil Science Societies that make up the ES- AFs (East and Southeast federation of Soil Science Societies) as well as promoting the realisation of this important regional congress, the President of the IUSS gave the opening speech at the 15th International Conference of the ESAFS. During the event, it was announced that the 16th International Conference of the ESAFS will be held in Vietnam, organized by the Soil Science Society of Vietnam. IUSS President Laura Bertha Reyes Sánchez was honoured with the ESAFS AWARD 2022 by the Minister of Agriculture, Nik Zawawi.
2nd International Forum on Black Soil Conservation and Utilization and the 8th Lishu Black Soil Forum

On July 22, 2022, IUSS President Laura Bertha Reyes Sánchez spoke online about the IUSS perspective and gave remarks during the 2nd International Forum on Black Soil Conservation and Utilization and the 8th Lishu Black Soil Forum, which was held in Changchun, Jilin Province, China.

The event brought together agricultural departments of the world’s major black soil countries, relevant international organizations, scientific research institutions and the private sector to participate.

Mr. Tank Renjian, Minister for Agriculture and Rural Affairs of China, invited the IUSS President Laura Bertha Reyes Sánchez to speak during the opening ceremony of the International Conference on Salt-Affected Soils via video link about the theme of the conference: “Salt-Affected Soils and Food Security.” The event was held in Weifang, Shandong on 6-8 September 2022.
Report from the IUSS Secretariat

IUSS on Twitter
By the end of November 2022, the number of followers on twitter had risen to more than 3,300. Follow us at @IUSS_ORG, where we promote all our official activities and remain in touch with the Soil Science Scientists community worldwide.

IUSS YouTube channel
The International Union of Soils Sciences has a YouTube channel: IUSS Channel – YouTube. It contains the video messages of the candidates for the presidential elections, and a selection of Linked videos, which are shared by the Secretariat. The channel currently has some more than 200 followers. It offers information on the WCSS22 in Glasgow, and a video celebrating IUSS’ 97th anniversary, counting down the days until the centennial celebrations on May 19th 2024.
As part of a series of projects established to help commemorate the Centenary of the IUSS in May 2024, the IUSS Executive Committee with the support of the National Soil Science Societies is creating a Collection of Personal Histories of leading senior soil scientists, who contributed to the development of the former International Soil Science Societies and the transition to the International Union of Soil Sciences (IUSS).
All the videos regarding the personal histories received so far have been compiled in an own playlist on the IUSS YouTube channel: Personal Histories – YouTube.

IUSS on Facebook
The IUSS Facebook page has nearly 14,600 followers (November 2022) and invites all its members to contribute.

IUSS on LinkedIn
IUSS is also represented on LinkedIn in the Group ‘IUSS – International Union of Soil Sciences’, which is managed mainly by Niels Batjes, ISRIC – World Soil Information. Currently the group has already more than 5,080 members. You are kindly invited to join the group and post information for the IUSS members here.

IUSS Stimulus Fund
The IUSS Stimulus Fund was created to support suitable activities within the Commissions and Working Groups. Where appropriate, the Fund will also support other activities to assist the development of Soil Science in general, but particularly in regions of the world where lack of resources limit opportunities.
Some funds have been and will continue to be allocated to undertake specific projects identified by the Executive Committee, particularly projects which contribute to fulfilling the objectives of the International Decade of Soils. IUSS has set aside a sum of $15,000 annually to help fund a number of activities, but this funding may be increased, if the quality of applications is particularly high. The normal maximum award will be $2,500, but larger awards may be considered. For more information about the stimulus fund, please go to https://www.iuss.org/about-the-iuss/iuss-stimulus-fund/
Please note that research projects, travel costs of individual people, and applications from countries with outstanding membership fees as well as applications lacking detailed budgets cannot be taken into consideration for funding.
As in the preceding years, in 2022 again USD 15,000 were available, with two submission dates for applications: 15 March and 15 September.
Calls for submissions were published in the IUSS Alert. From the second round of submissions (deadline 15 September 2022), the IUSS decided to contribute to support the following four activities:

1. Third Conference on Global Soil Biodiversity to be held in Dublin, Ireland, March 13-15, 2023: support 6 young scientists by waiving their registration fees.
2. 3-Day Workshop on Know Your Soil Program for Youth and Soil Judging Contest, December 3-5, 2022, Cuttack, Odisha, India: support 30 participants and five resource people.
4. 15th International Conference of the East and Southeast Asia Federation of Soil Science Societies (ESAFS 2022), August 22-26, 2022 Kuala Lumpur, Malaysia: support 17 young scientists who were sponsored and given funds to come to the Conference in 2022; a total of 13,944 USD was approved from the IUSS Stimulus fund.
A short (500-1000 words) report of the activity for which the funds were received, must be presented for inclusion in the IUSS Bulletin within two months of completion.
The next submission date for applications will be 15 March 2023, where again 15,000 USD will be made available.

News from national and regional Soil Science Societies

British Society of Soil Science

Categorising Soil: Training Course
With classroom-based lectures and in-the-field training at local soil pits, this two-day Soil Training course is one not to miss! Taking place at the University of Stirling on 28 and 29 July, the course will cover Scottish soil types including brown earths, peat bogs, and podsol and the tools used in understanding and categorising soils in practice. The price for non-members is £425, which includes supplementary Associate membership of the Society until the end of 2022.
Book your place: https://britishsocietyofsoilsscience.wildapricot.org/event-4732970.

Share Your Soil Voice
Soil Voices, part of Our Living Soil, builds connections between writers, soil practitioners, food producers and consumers. Contact Jude Allen if you would like to record your soil story or memory during WCSS22, which will then be added to the online world map of soil stories. Read more: https://soilvoices.org/.

Soil and the UN Sustainable Development Goals
96% of the food we eat comes from soil and it needs to feed 7 billion people. Our new videos, released in advance of the World Congress of Soil Science, highlight the importance of soil in achieving the UN Sustainable Development Goals.
Launches during June, we are delighted to share the first two videos with you: Life on Land and Zero Hunger. Two more videos were launched in the run-up to the World Congress of Soil Science 2022 (WCSS22) and all videos are available on our YouTube channel. Please share them with your networks, on social media using the hashtags #WCSS22 and #SustainableSoil.

Introduction to Agricultural Land Classification
We are running the Introduction to Agricultural Land Classification (ALC) course virtually over three half-day sessions from 22-24 November. This training course, designed and presented by ALC experts from Natural England, the Welsh Government and commercial consultancy, offers a unique opportunity to learn about the background and technical basis of the current ALC guidelines. Read more: https://britishsocietyofsoilsscience.wildapricot.org/event-4836014.

Award Nomination: Life on Land
Life on Land has been nominated for an award at the Earth Futures Festival 2022. Released ahead of WCSS22, the short video highlights the importance of soil in delivering the UN Sustainable Development Goal of Life on Land (SDG 15).
The Tours Triumph!

Following some fantastic post-congress tours, the NNR team at NatureScot give an overview of the Stirling Tour in their blog, Celebrating Soil. SRUC’s Davy McCracken also highlights the North Scotland tour in his article in The Press and Journal.


Soil Science Society of China

Newsletter Vol.5 and Vol.6 recently launched

The two most recent newsletters of the Soil Science Society of China are now available online. Policy highlights include the passing of a new law to strengthen black soil protection.


Dokuchaev Soil Science Society

The VIII Congress of the Dokuchaev Soil Science Society was held on the 10-14th of August 2022 in Syktyvkar, Komi Republic, Russian Federation. Initially, it was planned to be held in 2020 but the date was shifted because of the COVID-19 pandemic.

The work of the Congress took place in a hybrid format: participants and delegates of the congress who could not come to Syktyvkar to take part in person were given the opportunity to make reports and listen to their colleagues online. The congress programme included young scientists’ soil judging competition, a plenary session, work of seven symposiums, two round tables, mid-congress and post-congress scientific field excursions. The subjects of the reports touched upon all topical issues of soil and environmental research, climate change and the state of the biosphere, agro-economic assessment of soils, degradation and restoration of soil cover.

The new Central Council of the society was elected. The Congress expressed many thanks to Prof. Sergey Shoba for his many years of activity as the President of the Dokuchaev SSS. The new President was elected – Prof. Pavel Krasilnikov.

The next IX Congress of the Dokuchaev Soil Science Society will be held in 2024 in Kazan, Tatarstan Republic, Russian Federation.

Malaysian Society of Soil Science

The two most recent newsletters of the Malaysian Society of Soil Science are now available on the IUSS website. Issue 1, 2022, contains a report about the 51st MSSS Annual General Meeting, the Soil Familiarisation Tour 2022: Calcareous and In-land Soil, and a number of outreach programmes and how organic farming can contribute to the Sustainable Development Goals, and many other interesting articles. Issue 2, 2022, gives an account of nutrient management by local farmers, the Youth and Agriculture Forum 2021 and a National Webinar on 2021 World Soil Day, among others.

Spanish Society of Soil Science

On the occasion of World Environment Day, which was celebrated on June 5 with the slogan “Only one Earth”, primary school students (4th, 5th and 6th grade) of the Centro Rural Agrupado (CRA) La Sabina, Robres (Huesca), participated in some fun experiments with soil samples. With these experiments they reviewed the functions of soils and valued the importance of soils for human life and the health of the planet; they also highlighted the contrasting properties of the different types of soil. David Badía Villas, soil scientist, president of the territorial delegation of the Spanish Society of Soil Science (SECS) in Aragón, professor at the Escuela Politécnica Superior de Huesca (EPS-Unizar) and researcher at the University Institute for Research in Environmental Sciences of Aragón (IUCA) was in charge of the didactic session.

David Badía Villas experimenting with soil samples

Ukrainian Society of Soil Scientists and Agrochemists (USSSA)


David Badía Villas experimenting with soil samples with different types of soil (both: © SECS)

Latin American Soil Science Society (SLCS)

Chilean Soil Science Society

The Chilean Soil Science Society invite you to participate in its XIV Congress “Soils for the Support of the Social Welfare and Environmental Protection”, which will be held on November 22-25, 2022, in Valdivia, Chile. Abstract submission: September 2, 2022.

Read more: www.congresoschcs.cl.

Mexican Soil Science Society

The Mexican Soil Science Society invite you to participate in its 46th Mexican Congress on Soil Science to be held on October 3-7, 2022, in Saltillo, Coahuila de Zaragoza, Mexico. Read more: https://46ncs.cinvestav.mx/

Colombian Society of Soil Science

The Colombian Society of Soil Science invites you to participate in the VII National Workshop Seminar “GIS, Agronomic and Precision Agriculture” to be held on July 14-15.

WSD in the Latin American Soil Science Society: SLCS

On December 5, 2022, celebrating the World Soil Day, the Latin-American Soil Science Society’s strong educational commitment to soil science was rewarded by being winners of the King Bhumibol Award as well as second and third place winners in the FAO-IUSS Children’s booklet contest on Soils: where food begins.

The winners of the King Bhumibol World Soil Day Award: Dr. Elizabeth Solleiro and Mr. C. Axel Cerón (© Dr. Elizabeth Solleiro)

The amazing journey where food is born

Special picnic on World Soil Day

Winner of second (left) and third (right) place of the FAO-IUSS Children’s booklet contest on Soils: Where food begins (both: © FAO)
Awards

IUSS Distinguished service medal 2021 to Dr. Taolin Zhang, Vice Minister of the Ministry of Agriculture and Rural Affairs of China

Following its mission, since 2012 the IUSS has recognized outstanding world soil leaders who have translated soil science into action, by awarding the IUSS Distinguished Service Medal. The IUSS Distinguished Service Medal is a recognition for people who have served the IUSS as a worldwide organization in a way that has been more than committed to its goals, having behaved worthy of this distinction. Consequently, this award recognizes people who throughout their lives have distinguished themselves for actions that contributed significantly to the growth and consolidation of the IUSS, of the soil science as well as the promotion and reinforcement of public policies for soil resource preservation.

Left: Dr. Taolin Zhang and Dr. Laura Bertha Reyes Sánchez. Right: Dr Bruce Lascelles, Dr. Laura Bertha Reyes Sánchez and Dr. Taolin Zhang (from left to right) (both: © The World Congress of Soil Science 2022)

IUSS Distinguished service medal 2022 to FAO Global Soil Partnership

Following its mission, since 2012, the International Union of Soil Sciences (IUSS) has recognized outstanding world soil leaders, who have translated soil science into action, by awarding the IUSS Distinguished Service Medal.

On December 5, 2022, World Soil Day, Laura Bertha Reyes Sanchez, IUSS President, bestowed this prestigious prize to the Global Soil Partnership. In the words of Ms Reyes Sanchez, “this medal is given in recognition of the outstanding actions of the GSP in favour of Soil Sciences and for promoting the knowledge and appreciation of the soil resource.”

IUSS President Laura Bertha Reyes Sanchez bestowing IUSS Distinguished service medal to FAO director QU Dongyu (© FAO)

Guy Smith Medal Recipient: Dr. Peter Schad

Laudation by the Guy Smith Medal Award Selection Committee.

Distinguished delegates, Ms. President of the IUSS, Ms. Chairman of the IUSS Division 1, Soil in Space and Time, honored guests, soil scientists and students. It is an honor for us to provide this laudation for Dr. Peter Schad at the occasion of the presentation of the sixth Guy Smith Medal Award for soil classification. (Photo beside courtesy of Martin Wiesmeier).

Upon launching the call for the sixth Guy Smith Prize, the selection committee received numerous outstanding nominations. After a thorough scrutiny of the submissions by the Guy Smith Committee, Peter Schad came out as the strongest candidate. Incidentally, Peter follows Rudi Dudal, Hari Eswaran, Otto Spaargaren, Juan Comerma and Dick Arnold, who were awarded the previous Guy Smith Prizes.

Dr. Peter Schad is Professor and Chair of Soil Science at the Technical University of Munich.

• He was vice chair of the IUSS working group The World Reference Base for Soil Resources (WRB), from 2002 to 2010.
• He has been Chairman of the WRB working group since 2010 until now.
• His main achievement is the development and promotion of the international soil classification system WRB.

Peter has participated in and guided numerous field excursions in many (at least 26 outside Europe) countries. These efforts have greatly contributed to the acceptance, understanding and use of WRB.


Guy Smith Medal Award 2022 (© Martin Wiesmeier)

Peter Schad with Guy Smith Award 2022 (© Martin Wiesmeier)

On a field trip to Australia (© Deckers, S.)

IUSS Reports

IUSS Bulletin 141, December 2022
Peter Schad has taught soils of the world and their use, management and conservation to generations of students not only in Germany but also at universities around the world, such as Singapore, Mexico, Spain, Ecuador, and Brazil.

Peter has co-authored many (50+) scientific publications on the classification, geography and management of soils. Among them are scientific articles on soil genesis, WRB manuals (in various languages), and scientific books on soils of the world with his German colleagues (German and English), such as the “Essentials of Soil Science” (English) and, recently, “Soils of the World” (German and English).

Peter Schad is dedicated to the belief that it should be possible to satisfactorily characterize and classify all soils that can be encountered in the world through one common classification system. His long-term efforts as (vice) chair of the WRB working group have been instrumental to that goal. He interacted with many soil scientists at all levels. These discussions have led to further developing WRB and getting acceptance for WRB as a world soil classification system. In addition, he carefully re-worded the WRB into a precise but understandable language for laypersons. He aligned under one umbrella soil description, classification and soil mapping.

Other Awards
Fellowship Award 2022 of the China Soil Science Society bestowed to high-ranking IUSS members
The IUSS President Laura Bertha Reyes Sánchez and our former President Dr. Rainer Horn were honoured with the Fellowship Award 2022 of the China Soil Science Society.
Outcome of 2022 IUSS Presidential Election

Victor Okechukwu Chude from Nigeria, former President of the Soil Society of Nigeria, received 47 votes in his favour, no votes against and no abstaining votes. All votes cast equal 61% of the Council members. He will take up the position of President-Elect on 1st January 2023. He will be the first African IUSS President (2025/26) in the history of IUSS and will celebrate with us the next WCSS in China in 2026.

Let us congratulate him on this success!

If you want to know more about Prof. Chude, please click here: https://www.iuss.org/about-the-iuss/iuss-presidential-election/

Other IUSS News

How IUSS works

The IUSS is based on two pillars:

1. It is a union of national societies or academies (the Full members).
2. It is an organization of soil scientists (individual members).

The main contribution of Full Members to the society’s activities is through the Council, while the individual members participate in the events and activities organized by the IUSS and through the activities of the IUSS Divisions, Commissions and Working groups that they join, and the organizational bodies where they serve.

The administrative hierarchy of the IUSS is broadly as follows:

3. An individual soil scientist is a member of Full Member (normally a National Soil Science Society, but in some cases the Full Member is a National Academy). Where individuals are members of more than one National Society they must indicate the Full Member within which they wish to vote on matters relating to IUSS.
4. Full Members are the National Soil Science Societies (or equivalents) or National Academy Members. It is the responsibility of Full Members to undertake elections amongst their membership for the positions of President Elect and Division and Commission Chairs and the nomination of potential candidates to be President Elect and Honorary Members of IUSS.
5. The Council is the supreme body of the IUSS, and carries general responsibility for the efficient functioning and the success of the IUSS. The Council consists of the Executive Committee, one accredited representative from each Full Member, and three elected representatives of the Honorary Members.
6. Full Members are the national representatives on the Council of IUSS and must nominate an individual to be their representative on Council and notify the Secretariat of their name. Council meets at the World Congress of Soil Science and at the Inter-Congress Meeting and electronically in intervening years. Council Members will vote on changes to Statutes and Bye-Laws and for the selection of Honorary Members consider actions by the Executive Committee and where appropriate approve those actions and suggest candidates for the membership of Standing Committees.
7. In addition to the representatives of Full Members, Council Membership consists of three Honorary Members (elected by the Honorary Members) and the members of the Executive Committee.
8. Votes of Council are (from 2022) undertaken electronically via a secure system.
9. The Executive Committee membership is: The President, The President-Elect, the Past President, Vice-President (Congress), the Four Divisional Chairs, Standing Committee Chairs (Budget and Finance, Structure and Statutes, Prizes and Awards; Presidential Elections), the Treasurer and Secretary (non-voting).
10. The Executive Committee operates in a manner similar to the Board of Directors of a Public Company dealing with day-to-day decisions. Major decisions (e.g. changes to Statutes and Bye-Laws) are passed to Council for voting, either at the Congress or Inter-Congress meetings or by electronic voting in intervening periods.
11. The legal representative of the IUSS is Brian L. Anderson and the registered office is deWitt LLP in Madison, Wisconsin (USA). The legal representative is mainly responsible for tax issues of the IUSS in the USA. The responsibility for the accounts of the society and the provision of the annual audit lies with the board of finances and the treasurer.
12. The operational headquarter of the IUSS is placed to the Secretariat the name of the individual receiving the members of the Executive Committee.

Science in IUSS:

1. The Strategic Plan provides the broad framework for the ongoing and future developments of IUSS. The IUSS President and the President’s Committee are responsible for drafting the IUSS Strategic Plan. The Strategic Plan shall be refreshed at least every four years; the President will determine if a more frequent review is required based on the progress made against objectives and the changing landscape in which IUSS and its members are working. The Strategic Plan will be presented to the Executive Committee for discussion, enrichment and final drafting by consensus. The Strategic Plan must be approved by the Executive Committee by a simple majority; it will then be presented to the Council for its approval at their meeting. The Strategic Plan forms a major part of the IUSS Council Policy.
2. The IUSS President and the President’s Committee are responsible for drafting the Implementation Plan. The Implementation Plan must be presented to the E. C. for discussion and contributions for its improvement to get the final document which must be approved by the Executive Committee by a simple majority. This Implementation Plan will then be presented to the Council for its approval at their meeting.
3. The implementation of the Strategic Plan and the scientific activity of IUSS are undertaken through the Divisions, Commissions and Working Groups. There are Four Divisions, each with a number of 5-6 Commissions and each a variable number of Working Groups.
4. Working Groups are part of one or more Division(s)/ Commissions. Members with common interests in topics not specifically addressed by Divisions or Commissions may propose the establishment of a Working Group. The Working Group will normally exist for a short period of time as long as it maintains an active program of scientific work, but normally will not exist beyond 8 years.
5. Divisional Officers – Each Division has a Chair elected in a ballot and two Vice-Chairs nominated by the next host of the World Congress.
6. Commission Officers – Each Commission has a Chair and Vice-Chair elected in a ballot.
7. Each Division is responsible, through the Divisional Nominating Committee, with drawing up a list of candidates for Division and Commission Officers and submit this list to the Electoral Committee.
8. Voting for Division and Commission Officers – The Division Chairs and Commission Chairs and Vice-Chairs are elected in a vote by individuals organised and managed by Full Members. The Full Member returns to the Secretariat the name of the individual receiving most votes for each position in their nationally organised ballot.
9. The recently established Research Fund aims to identify emerging scientific themes; providing a cross-cutting commentary of the Strategic Plan, identification of cross-cutting issues of the Divisions, communication of key (research) findings done by the Commissions and Working Groups to the scientific community.
IUSS Stimulus Fund

IUSS has established an annual Stimulus Fund to support suitable activities within the Commissions and Working Groups. Activities may address emerging scientific themes, delineated in the Research Forum. Where appropriate, the Fund will support other activities to assist the development of Soil Science generally but particularly in regions of the world where lack of resources limit opportunities. The principal aims of the Fund are the promotion and development of Soil Science. Activities might include support of meetings, website development, travel and matching funds for activities that will be of benefit to IUSS and its members.

Awards and prizes

The IUSS confers several awards and prizes. Many of them are offered by Divisions, Commissions and Working Groups, whilst others are given by the Prizes and Awards Committee: the Diokhachev and Von Liebig Awards, for basic and applied research, as well as the Jeyes Award for young and mid-career soil scientists and the IUSS Distinguished Service Medal, for outstanding world soil leaders who have translated soil science into action.

The elections

The IUSS is a democratic organization having several positions to be elected and a collective responsibility for them. Here is a Table summarizing the procedures for the main kinds of elections:

<table>
<thead>
<tr>
<th>Position</th>
<th>Nomination</th>
<th>Selection</th>
<th>Recommendation</th>
<th>Voting</th>
<th>Max. time in change</th>
</tr>
</thead>
<tbody>
<tr>
<td>President-elect</td>
<td>Executive Committee, Full Members, Divisions and Commissions</td>
<td>Committee for Presidential elections</td>
<td>Executive Committee</td>
<td>Council</td>
<td>2 years, followed by 2 years as President and 2 years as Past president</td>
</tr>
<tr>
<td>Vice President</td>
<td>Chair hosting the WCSS</td>
<td>Not applicable</td>
<td>Not applicable</td>
<td>Council</td>
<td>4 years</td>
</tr>
<tr>
<td>Division and Commissions Chairs</td>
<td>Divisions, Commissions, Council and Full Members</td>
<td>Divisional Nomination Committees</td>
<td>Electoral Committee</td>
<td>Individual members through Full Members</td>
<td>8 years</td>
</tr>
<tr>
<td>WG (Chair selected within the WG)</td>
<td>Individual members</td>
<td>Not applicable</td>
<td>Division(s)</td>
<td>Executive Committee</td>
<td>8 years</td>
</tr>
<tr>
<td>Honorary members</td>
<td>Individual members through Full Members, and Ad hoc members</td>
<td>Committee for Presidential elections</td>
<td>Executive Committee</td>
<td>Council</td>
<td>ever</td>
</tr>
<tr>
<td>Chairs and Members of the Standing committees</td>
<td>Executive Committee</td>
<td>Executive Committee</td>
<td>Not applicable</td>
<td>Council</td>
<td>8 years</td>
</tr>
<tr>
<td>Treasurer</td>
<td>Full Members</td>
<td>Ad hoc task force appointed by the President</td>
<td>Executive Committee</td>
<td>Council</td>
<td>8 years</td>
</tr>
<tr>
<td>Secretariat</td>
<td>Full Members</td>
<td>Ad hoc task force appointed by the President</td>
<td>Executive Committee</td>
<td>Council</td>
<td>Subjected to periodic evaluation</td>
</tr>
<tr>
<td>Task forces</td>
<td>President or Executive Committee</td>
<td>Not applicable</td>
<td>Not applicable</td>
<td>Ad hoc</td>
<td></td>
</tr>
</tbody>
</table>

As a general rule, travel funds will not be provided directly from the Stimulus Fund to an individual to attend a meeting. Instead, such travel/support funds will normally be provided to the meeting organizers to be used specifically to assist and promote the attendance of younger scientists.

Victor Hugo Alvarez Venegas (1938-2022)

The Brazilian Soil Science Society (SBCS) communicates, with great regret, the death of Victor Hugo Alvarez Venegas, a professor of Soils Department at the Federal University of Viçosa (UFV), which took place on 19 June 2022. Professor Victor Hugo was 83 years old, and an honorary member of SBCS.

Born in Ecuador he dedicated most of his career to the UFV and Brazilian soil science. He became General Secretary of SBCS in 1997 and was vice president from 2001 to 2009. During his term the SBCS had its structure entirely revised to adjust to IUSS Divisions and Commissions. His position held by Prof. Hugo Echeverria the proposals of SBCS to host the World Congress of Soil Science in Brazil, which culminated in 2018 with the 18th WCSS Rio.

His death is a great loss not only for SBCS, but for SCLS and IUSS.

From the International Soil Modeling Consortium (ISMC)

New Working Group: Machine Learning for Soil Modeling

The ISMC will start up a working group focusing on Machine Learning Approaches and their applicability for soil modeling. If you are interested to participate, please send an email to ismc.coord@gmail.com.

The 4th edition of the WRB, 2022

By Peter Schad

The World Reference Base for Soil Resources (WRB) was first published in 1998. In 2006 and 2014 new editions were released. On 1 August 2022, during the 22nd World Congress of Soil Science (WCSS) in Glasgow, the 4th edition was presented. It can be downloaded here: https://www3.isast.vn/boku/wrb-working-group/documents/wrb-2022/. It is an open access document under the terms of the Creative Commons Attribution License, which permits use, distribution and reproduction in any medium, provided the original work is properly cited.

The WRB is an international soil classification system for naming soils and creating legends for soil maps. The editor is the IUSS Working Group WRB. The publisher is the IUSS. The responsible people for the 4th edition are mentioned in the Acknowledgements. The lead author is Peter Schad (Technical University of Munich, Germany). The fundamental decisions have been made by the members of the WRB Board: Lúcia Anjos (Brazil), Jaume Boixadera Liblet (Spain), Seppe Decker (Belgium), Stefaan Dondeyne (Belgium), Einar Eberhardt (Germany), Maria Gerasimova (Russia), Ben Harms (Australia), Cecary Kabala (Poland), Stephen Mantle (The Netherlands), Erika Michel (Hungary), Curtis Monger (USA), Rosa Pach Claret (Spain), Peter Schad (Germany), Karl Stahr (Germany), Connie van Huystee (South Africa), Vincent Buness (Germany) and Margaretha Rau (Germany) served as secretaries of the WRB Board. The draft of the Field Guide (Annex 1) and of the Soil Description Sheet (Annex 4) were written by Vincent Buness, Margaretha Rau and Peter Schad and the draft of the Guidance on data set-up (Annex 5) by Einar Eberhardt. The figures, if not assigned otherwise, were made by Vincent Buness. And numerous other soil scientists made worthwhile contributions.

The fourth edition comprises 13 Chapters:

1. Background and basics
2. The rules for naming soils and creating legends for soil maps
3. Diagnostic horizons, properties and materials
4. Key to the Reference Soil Groups with lists of principal and supplementary qualifiers
5. Definitions of qualifiers
6. Codes for the Reference Soil Groups, qualifiers and specifiers
7. References
10. Annex 3: Horizon and layer designations
11. Annex 4: Soil description sheet
12. Annex 5: Guidance on data set-up
13. Annex 6: Colour symbols for RSG maps

As one can easily see, there is a new set of Annexes. Only Annex 2 was (with some changes) taken from the previous editions:

- The new Annex 1 is a Field Guide. It replaces the FAO Guidelines for Soil Description (2006) for the use with WRB. Compared to the FAO Guidelines, the Annex 1 is more comprehensive for WRB, more precise and more didactical. It gives many definitions of field terms that up till now were nowhere defined in WRB, neither in the WRB itself, nor in the FAO Guidelines. These terms were taken decades ago from Soil Taxonomy and the Soil Survey Manual of the United States. Many of the
The following diagnostics were introduced:

- **albic horizon**: In the first and the second edition of WRB, the albic horizon was defined. However, it was only defined by colour, and results of soil-forming processes were not required. Therefore, it could not be generally considered as a soil horizon and was changed to albic material in 2014. But this made the definition of the Albic qualifier difficult. Now, the albic horizon was reintroduced, explicitly requiring results of soil-forming processes. The albic material was maintained (just defined by colour) and renamed claric material (see below).

- **cohesive horizon**: Dense subsurface horizon dominated by kaolinite. It is found in tropical regions with seasonal climate and was not considered so far in WRB.

- **limonic horizon**: Accumulation of Fe by capillary rise in groundwater soils. The accumulation is so strong that Fe oxides cause a cementation. It is traditionally referred to as bog iron.

- **pannicic horizon**: Buried A horizon.

- **turbic horizon**: Accumulation of Fe by subsurface flow, usually from Planosols and Stagnosols further up the landscape.

- **protogypsic properties**: Accumulation of secondary gypsum, not sufficient for a gypsic or petrogypsic horizon.

- **aeretic material**: Deposited by wind.

- **mulmic material**: Mineral material with a high content of soil organic carbon, derived from organic material. Drainage of soils with organic material causes accelerated decomposition, and eventually the content of soil organic carbon sinks below the limit value of 20%, which transforms the organic material into mineral material.

- **organotechnic material**: Contains large amounts of organic artefacts and relatively small contents of soil organic carbon in the fine earth.

The following diagnostic materials received new names:

- **fulvic horizon**, **melanic horizon**: Belonged to an outdated concept of soil organic matter.

- **andic properties**: Had a non-systematic combination of various characteristics (the only relevant characteristic, the wind deposition, is now characterized by the aeretic material, see below).

- **genic properties**: Its two criteria can be better expressed by two independent separate qualifiers.

- **sulfidic material**: Not needed after introducing the hypersulfidic and the hypsulfidic material in 2014.
King Bhumibol Award 2022
The Geology Institute of the National Autonomous University of Mexico won the King Bhumibol Award 2022 offered by Thailand and the FAO celebrating World Soil Day. Dr. Elizabeth Solleiro, Vice Chair of Commission 1.6 Paleopedology of Division 1 of the IUSS, and Mr. C. Axel Cerón, Vice President of the new Young and Early Career Scientists Working Group of IUSS Division 4, travelled to Thailand to receive this important award. Part of the innovative work presented to obtain this award was supported by the IUSS Stimulus Fund, a project that was carried out in collaboration with the group of young scientists from the Mexican Soil Science Society (SMCS) who work with Dr. Solleiro. The IUSS attaches great importance to supporting members and especially young scientists with the Stimulus Fund to carry out educational projects, of which this award is a direct result. Congratulations to UNAM’s Institute of Geology of the National Autonomous University of Mexico and to the IUSS Young and Early Career Scientists Working Group.

Glinka World Soil Prize
This year’s Glinka World Soil Prize Laureate is Dr. Ashok Kumar Patra from the ICAR-Indian Institute of Soil Science in Bhopal, India. This prize recognizes his 33-year dedicated career in soil science research and education. Read more: https://www.fao.org/global-soil-partnership/resources/highlights/detail/en/c/1621992/.

Poster contest
Laura Bertha Reyes Sanchez, President of the IUSS announced the winners following an online public ballot that reached 25,695 votes in less than 48 hours! The winners of category A (5-10 years old) is Edanur M. and Roşna B., Asya Ç. from Türkiye and the winner of category B (10-14 years old) is Yun-Yi from China. Read more: https://www.fao.org/world-soil-day/contests/poster-drawing-contest-2022/en/.

Booklet contest
Ms Reyes Sanchez also unveiled the names of the three prize-winners of the children’s booklet contest on soils for nutrition: 1st prize to Anja Weber from Kenya, 2nd prize to Juan Camilo Fontalvo Buelvas from Mexico and 3rd prize to Jully Gabriela Retzlaf de Oliveira from Brazil. Read more: https://www.fao.org/world-soil-day/contests/children-booklet-contest-2022/en/.

Discover the winners of the WSD children contests!
Another aim of the World Soil Day campaign is to reach out to children and young people and explain why soils are fundamental to life. With this in mind, the WSD team has prepared a number of contests to involve young people as well as inviting designers and educators to work out how to present the messages across. Check out the over 200 posters and 30 booklets that we received. Big congratulations to all contestants.

World Soil Day 2022
International Decade of Soils (2015-2024)
World Soil Day at Purdue University

During their celebration of World Soil Day students in the Soils and Landscapes class held the whole soil world in their hands! The IUSS inflatable Soils-of-the-world globe had been picked up by Prof. Schulze during WCSS22 in Glasgow.

Students holding the IUSS soil globe (© Darrell G. Schulze, Purdue University, USA)

World Soil Day at the Technological College of Huesca (University of Zaragoza, Spain)

The Technological College of Huesca (University of Zaragoza), a College of Agricultural Engineering and Environmental Sciences, with the collaboration of the Territorial Delegation in Aragon of the Spanish Soil Science Society (SASSS) and the Official College of Agricultural Engineers of Aragon, Navarre and the Basque Country, have organized different activities related to the soil, following the international initiative promoted by the Food and Agriculture Organization of the United Nations (FAO), to celebrate World Soil Day 2022.

On 16th November, a practical workshop with didactic experiments with the soil for pre-university education intended for High School biology and geology teachers was given by Clara Martí, Andoni Alfaro and David Badía, members of the Technological College of Huesca.

Given that the World Soil Day 2022 slogan is ‘Soils: where the food begins’, a conference on ‘Sustainable nutrition in agricultural soils’ was organised (30 November) by Agronomist Engineer J. Betrán Aso, Head of the Agricultural Quality and Analysis Unit of the Agro-Environmental Laboratory of the Government of Aragon. In addition, an exhibition of old books on soil science, was shown by the staff of the Library of Technological College of Huesca. During the following days (from 30 November to 12 December), an open contest was held for the students of that University with questions on soils and plant nutrition. Link to the test: https://docs.google.com/forms/d/e/1FAIpQLsebPZ2H-FbRdE6L2_zx7vDIDT-x-1FhacNDrUI7x4rQbQxRA/viewform

Workshop with simple didactic experiments with the soil for pre-university education in a lab of the Technological College of Huesca (© Technological College of Huesca)

Jesus Betrán giving his lecture on ‘Sustainable nutrition in agricultural soils’ in the Technological College of Huesca (© Technological College of Huesca)
IUSS Centennial 2024

IUSS Centennial – Call for session proposals
The IUSS Centennial website has opened the registrations and the call for session proposals at https://centennialiuss2024.org/
Session proposals can be submitted from 5 December 2022 to 30 June 2023.
The programme group chairs and officers will build the session programme from the session proposals. The programme group chairs may also suggest to merge proposed sessions that are similar.

Personal histories videos of leading senior soil scientists uploaded
As part of a suite of projects established to help commemorate the Centenary of the IUSS in May 2024, the IUSS Executive Committee with the support of the National Soil Science Societies is creating a Collection of Personal Histories of leading senior soil scientists, who contributed to the development of the former International Soil Science Society (ISSS) and the transition to the International Union of Soil Sciences (IUSS).
All the videos regarding the personal histories received so far have been uploaded in an own playlist on the IUSS YouTube channel: Personal Histories – YouTube.
If further National Soil Science Societies would like to provide such videos of interviews with leading senior soil scientists, please contact the IUSS Secretariat for further details at iuss@umweltbundesamt.at.
More videos related to the IUSS can be found here: IUSS Channel – YouTube.

IUSS Genealogy
With the goal of establishing an IUSS Genealogy, the following letter was sent to all IUSS full members:

Dear Presidents of the IUSS National Soil Sciences Societies,
In preparation of the Centennial of the IUSS in May 2024, the Executive Committee discussed some time ago, how far we can prepare a book or a brochure, which sums up the “IUSS Genealogy.” This document should not only describe the foundation of the national societies, but possibly also document outstanding members, who contributed to the development of the former International Soil Science Society (ISSS) and the transition to the International Union of Soil Sciences (IUSS).
Originally, it was assumed, that interviews with members of national societies about ISSS or IUSSS can be prepared as videos, which turned out to be too difficult. Therefore, we hope that the idea to prepare and to publish an IUSS genealogy documentation for the Centennial Celebrations not only finds your agreement, but also your active support.
We would be very happy, if you can prepare a 2-3 pages documentation of your society:
1. year of foundation, development of membership until today,
2. members of the Executive Committee and time period,
3. outstanding activities of your members, e.g. in specific research areas, awards for excellency etc.;
4. perhaps short interviews in written form with some members about their opinion regarding ISSS or IUSS, and further suggestions for future generations;
5. further topics.

Dear colleagues, we hope, that you are willing to contribute to this document, and that we can count on your report on the history of your national society. We will finally publish this document as an open access IUSS contribution.
Moreover, it would be very supportive, if you could also contribute a few photos which underline the direct link of your society to ISSS or IUSS as an additional document. Even under the aspect that we still have nearly 2 years time until the Centennial Celebration, we hope to receive as a first step your reply concerning the contribution (yes or no) until the end of October 2022, and the final text thereafter until the end of February 2023. This would allow to prepare the final text until the end of next year for printing.
Please send your replies to the following email address: rhorn@soils.uni-kiel.de.
With our best regards and thanks for your agreement and contributions.
Yours sincerely,
Prof. Dr. Winfried Blum, Prof. Dr. Rainer Horn.

IUSS Soil Book Series

“Sustainable soil management as a key to preserve soil biodiversity and stop its degradation’ published”
Within the framework of the International Decade of Soils (IDS) 2021-2024 and continuing with the objective of publishing and distributing material relevant to the interests of the IUSS and its members an IUSS Open Access Book Series was launched under a Creative Commons license. This is the first book of the Open Access IUSS Book Series celebrating the 98th anniversary of IUSS, as it was published on May 19, 2022.
Soil Biodiversity was proposed as a current topic of great scientific, social, economic, and political importance for the present IUSS book. The book was written from an interdisciplinary perspective covering the current state of the art in this area. Perspectives of various points of view and interactions are reflected according to the different areas of knowledge of soil sciences offered by the authors. That is why the book contains both experimental data and conceptual information, didactic experiences, and reviews organized in four different sections.

Stop Soil Degradation and the IUSS educative project to achieve it

Children’s booklet contest on “Soils: where food begins”:
In the framework of World Soil Day 2022, FAO, the International Union of Soil Science (IUSS) and the Global Soil Partnership (GSP) launched a scientific children’s booklet contest on soils for nutrition with the motto “Soils: Where food begins”. Submissions were to be sent by 18 November 2022. The winners were announced on World Soil Day, 5 December 2022.

Suelófono Podcast

The first season of ‘Suelófono: The very first podcast of soils in Spanish’ was listened to in 19 countries. Now the second season has been launched, with a special episode in English with Prof. John Galbraith from Virginia Tech! Don’t miss the Suelófono.

Suelófono is an idea supported by the National Autonomous University of Mexico (UNAM) and the International Union of Soil Sciences (IUSS). Developed by Axel Cerón González, Elizabeth Solleiro Rebolledo and Jesús Aceves Romero from UNAM.

Spotify: https://spoti.fi/3r4Sery
YouTube: https://bit.ly/3r4pxer
Facebook: www.facebook.com/psuelox
Instagram: www.instagram.com/psuelox.

Impact of the podcast – areas of the world it was listened to

Creative team of the podcast Suelófono

Episode on calcareous soils and climate change

Episode with John Galbraith on Soil Evaluation

Creative responses: soil workshop.

Handwritten responses were created during and after several face-to-face sessions with the children. We went out into the school grounds and prepared some soil for planting and also planted seeds in trays that the children grew on the class windowsill. Because of COVID, two of the sessions were online. The children learnt about the importance of soil and children were encouraged to take notes on how they were connected to soil through everyday items such as clothing, leather shoes, pottery and clothing. They were taught about how much soil had been lost over the last 150 years and about what has happened in order for this loss to occur. We also had a session on soil creatures and the children found larger soil creatures and looked through a USB microscope at smaller creatures.

The children were then invited to explore a pot of soil, using different senses and to then write down a description of how the soil smelt, looked, sounded and felt, and also how they imagined it might taste. The follow up to this session was that the children should use the notes they had made on their sensory experiences of soil to create a creative response in the form of a letter, poem or short story. I collected data from their creative responses, considering what sort of language they used to describe soil – see below.

By Jude Allen and Isla Robertson

The final workshops have now been delivered as per original email notification from BSSS, dated 07/07/2021 – details below.

1. Workshop spread over 6 weeks with Class 9 at Ilchester Primary School Somerset – some online and some face-to-face - Jan-March 2022

The children are in Year 5 and are aged between nine and ten years.

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Above: Letter to the soil
Below: Notes on soil

Few pictures from the soil workshops at Ilchester Primary School Somerset:
Some of them were held online, some face-to-face. The children discovered how to prepare the soil for planting, planted seeds and got to know some of the creatures living in the soil (all © Jude Allen)
In the future, the weighted negative perceptions of soil could be addressed in a number of ways, and opportunities for positive experiences with soil would be better during warmer weather. With more time, children could also undertake some art projects that use soil and that create a more positive perception of the smell of soil. A good opportunity could be to locate some anaerobic soil and bring this in for the children to smell and to compare this with some healthy soil.

2. A full day face-to-face workshop for the children at Landmatters Community and invited external children

This workshop was delivered to a group of approximately 15 home-educated children in an off-grid community. There were ten children, aged from 9-12. A lot of the workshop was conducted outside.

The children learnt about soil and its importance and how healthy soil is a living entity. We played games outside, delivering messages to each other as if the children were part of the mycorrhizal network, looking at how the network is used for plants and trees to communicate threats and other information. We laid down on the ground, listening to and smelling the soil, and then we went inside and discussed how we can use our senses to fully explore and then to represent our environment and also to create empathy for non-human beings. The children wrote about the soil using their senses, synaesthesia, personification, similes, and metaphors, and then wrote from the perspective of the soil. These were then read out and recorded.

We also recorded a soil play with the children acting the parts of different elements of the soil, but the recording is not great as the acoustics were not good and the children laughed a lot! Some individual recordings are below:

- I love my children: https://www.youtube.com/watch?v=9D9VRKAmSk0.
- I’m worried I am being washed away: https://www.youtube.com/shorts/ATqOWJUvcsQ.

The language used was standardised (corrected for spelling) and then arranged in a table according to whether it was positive, negative or neutral. The words were then colour-coded according to the perception. There was a small majority of neutral terms (36), followed by negative (30), and then only 22 positive responses. It was significant that most of the positive responses came from one child and if these were to be removed, there would be an overwhelming dominance of neutral and negative word associated with soil. This would suggest that there is possibly an overall negative perception of soil among the children. It is noteworthy that touch and taste perception are absent from the positive answers. The data from this analysis shows a slight dominance of neutral and negative words associated with soil and this is enhanced to a great dominance if the one child with many positive associations is removed.

<table>
<thead>
<tr>
<th>Analysis of descriptive pieces</th>
<th>positive</th>
<th>negative</th>
<th>neutral</th>
<th>perception of taste</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 super</td>
<td>damp</td>
<td>out of crushed rocks</td>
<td>sight</td>
<td></td>
</tr>
<tr>
<td>2 amazing</td>
<td>cold</td>
<td>crumbly</td>
<td>smell</td>
<td></td>
</tr>
<tr>
<td>3 magical</td>
<td>damp</td>
<td>gritty</td>
<td>touch</td>
<td></td>
</tr>
<tr>
<td>4 awesome</td>
<td>cold</td>
<td>squishy</td>
<td>hearing</td>
<td></td>
</tr>
<tr>
<td>5 life</td>
<td>rough</td>
<td>squasy</td>
<td>perception of taste</td>
<td></td>
</tr>
<tr>
<td>6 inventive</td>
<td>rough</td>
<td>dough</td>
<td>perception response</td>
<td></td>
</tr>
<tr>
<td>7 strength</td>
<td>bitter</td>
<td>play-doh</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8 zero mistakes</td>
<td>rough</td>
<td>dry</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9 live</td>
<td>rocky</td>
<td>crushed-up-biscuit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10 life</td>
<td>damp</td>
<td>lump-of-dough</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11 great</td>
<td>rough</td>
<td>wet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12 bright</td>
<td>cold</td>
<td>mushy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13 chocolate-cake</td>
<td>soggy</td>
<td>rocky</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14 bright</td>
<td>slimy</td>
<td>bumpy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15 friendly</td>
<td>damp</td>
<td>brown</td>
<td></td>
<td></td>
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<td>crumbly</td>
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<td>disgusting</td>
<td>hammer-crushing-up-bricks</td>
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<tr>
<td>22 alive</td>
<td>horrible</td>
<td>rocks-hitting-eachother</td>
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<td>23 vomit-fruit</td>
<td>squishy-noises</td>
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<td>dough</td>
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<td>31 crunchy</td>
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<tr>
<td>32 need</td>
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</table>
3. A 3 hour online and extra-curricular workshop for the students on the Master’s course in Regenerative Food and Farming at Schumacher College

This workshop was delivered to people who already knew a lot about and loved soil! This meant we could really focus on looking at other people’s writing about soil – in particular poems, and then spend time developing creative responses.

Hugo: https://twitter.com/SoilVoices/status/1537752454888038401
Amber: https://twitter.com/SoilVoices/status/153707056323256833
Anna:

They tear me open with their ploughs
Again and again
My tears in stormy gullies
Washed away
They pile them high with their machines
Heavy and loud
What use is a mountain of sadness?
They never learn

Feedback: Hallo Jude,
That was such a great session, thanks! It’s so important for us to reconnect back with the natural world and your exercise did exactly that for me! MORE PLEASE!
I think this workshop would be amazing for facilitating anyone looking to reconnect. I loved Anna’s point too, people working the land need this as it brings them back out of the busy ‘jobs to do’ world and makes them present with the ground they are working with.
I wrote a poem whilst we were smelling the soil, thought I would share as I feel you helped create it… although it’s not great haha.
I feel you soil, I feel your soul, when the trees are towering, when the leaves are leaving, when the roots are rustling, when the badgers are burrowing, you are nothing, you are everything.’

4. Two 3-hour workshops for Bristol-based Black2Nature group for children and young adults

This is the second time I have been invited to work with the Bristol based Black2Nature. This is an organisation that aims to engage city-based and ethnically diverse groups of young people with the countryside. The cohorts were mixed gender aged between about 15-17. Based at Langaford Farm Charitable Trust on Dartmoor in Devon, UK.

We started each workshop with an exercise where we split into groups and thought of as many possible uses of a paperclip! We then talked about the power of our imaginations, and why imagination might be important when thinking of climate solutions and the future. We went out into the meadow, and discussed the importance of soil and its uses, whilst looking at and getting into two pre-dug soil pits. We talked about the creatures in the soil and why soil was important. We then sat in a field and used our senses to respond to the soil and talked about what the soil might say. It was interesting, because many of them were reluctant to even sit on the ground, seeing soil as dirty or something that might contaminate them. It took a long time for some of them to hold the soil in their hands, and to smell it properly. Written responses were thin, partly because of the setting and that the young people involved felt they were on a ‘holiday’ participation weekend, rather than a formal workshop where they needed to produce something. It was an interesting learning process, and I think next time, I will just run discussion groups without expecting a ‘product’ at the end. The discussion element was very fruitful, and I felt the young people took a lot away from the activity.

This picture inspired Anna to write the following poem (© Jude Allen)

They tear me open with their ploughs
Again and again
My tears in stormy gullies
Washed away
They pile them high with their machines
Heavy and loud
What use is a mountain of sadness?
They never learn
The IUSS Working Group World Reference Base for Soil Resources (WRB) undertakes every year a field workshop. The participants are very thankful to Ólafur Arnalds and his colleagues for the organization of this marvellous trip. We were 28 participants from 11 countries. During these excursions, we test the WRB and discuss proposals for changes. The Iceland excursion was the very last trip before finalizing the 4th edition of the WRB, which was released some weeks later at the World Congress of Soil Science in Glasgow. The 4th edition can be downloaded here: https://www3.ls.tum.de/boku/wrb-working-group/documents/wrb-2022/.

The tour started in Reykjavík and went contractwise around the island. We saw 20 soil profiles, 12 of them Andosols. 2 of the Andosols had only vitric properties, the other 10 had andic properties and some of them vitric properties as well. All Andosols with andic properties were Silandic, i.e., with allophanes and imogolites. Applying the 4th edition of WRB, the remaining soils were: 3 Histosols, 2 Gleysols, 2 Fluvisols, and 1 Regosol.

An interesting topic was the separation between Andosols and Histosols. In WRB, organic soils with andic or vitric properties are Histosols. In Soil Taxonomy (ST), they are only Histosols if the content of organic carbon is above 25%. We also discussed, in which fraction the organic carbon has to be measured for deciding, whether a layer consists of organic or of mineral material. Our decision was: in the fine earth (i.e. the soil constituents ≤ 2 mm) plus the dead plant residues of any length and a diameter ≤ 5 mm. The next question was, how to differentiate Andosols and Gleysols. WRB gives preference to Gleysols. ST does not key out hydromorphic soils at a higher level, and the soils showing both characteristics are Andosols.

A third discussion point was the allocation of soils that are permanently water-saturated but did not undergo redox processes. According to the 3rd edition of WRB, they cannot be Gleysols. We decided to change the criteria and add soils with permanent water saturation starting ≤ 40 cm from the mineral soil surface to the Gleysols (to be characterized by the Oxyaquic qualifier). The fourth important topic were sandy soils with fluvic material. They were Arenosols according to the 3rd edition. We decided to swap Arenosols and Fluvisols in the key, giving now preference to Fluvisols.

These examples show, how important common field workshops are, and how lucky we were to have this Iceland excursion. Not to talk about the breath-taking landscape! The next WRB excursion is from 17 to 24 September 2023 to Catalonia. More detailed information will be available early in 2023. The participants are always a mixture of experienced colleagues and young scientists, and we especially encourage young scientists to join.
Ecology of Soil Microorganisms 2022

By Petr Baldrian, Head of the Organising Committee

The meeting “Ecology of Soil Microorganisms” with the subtitle “Microbes as Important Drivers of Soil Processes” was held in Top Hotel Praha, Czech Republic on June 19-23, 2022. In total, 216 persons registered for the meeting. The scientific programme was composed of 2 keynote lectures, 11 invited lectures, 55 contributed talks, 36 brief talks and 119 posters. This was the fourth meeting originally with the idea that a specialized soil microbiology conference is missing. The conference provided an interdisciplinary platform where experts from different disciplines related to microbial ecology can meet and new strategies for further research topics can emerge from such interaction. The conference demonstrated the power of the novel tools used in microbial ecology and demonstrated the critical importance of the microbiome for the future health of ecosystems endangered by global change. A major goal of the conference – to bring into contact researchers in mycology and the large community of microbial ecologists that focus on bacteria and archaea was achieved and mycology topics were very well represented. This is crucial for the further development of soil microbial ecologists that focus on bacteria and archaea was achieved and mycology topics were very well represented. Especially the sessions on global change effects, agricultural soils and microbial processes in the environment attracted much attention. The participants were generally positive about the meeting that was one of the first in this research field after the COVID pandemic and the tradition of conferences will be continued by the 5th meeting to be held in 2025 in Helsinki, Finland.

With the help of the financial contribution from the International Union of Soil Sciences, the organisers were able to waive the conference fee of 490 EUR each (in total 1960 EUR) of four early stage researchers who presented their work at the conference:

- Benjamin Poodiack (Israel)
- Theo Trabac (Ireland)
- Gennuo Wang (Germany)
- Diana Nebeska (Czech Republic)

The visibility of IUSS was ensured by the presence of Prof. Ellen Kandeler, who was able to introduce the society to those who were interested in its activity. Furthermore, IUSS logo was placed on the conference webpage (www.soilmicrobes.org) and all relevant conference materials. IUSS was also advertised in a ‘Sponsors loop’ presentation running during all session breaks.

Handing over of the Student Poster Award to the winners Lydie Jakubova and Haotian Wang by the Chair of the Organizing Committee Petr Baldrian (to Tomas Vetovsky from the local organizing team, Institute of Microbiology, Prague)

15th International Conference of the East and Southeast Asia Federation of Soil Science Societies (ESAFS 2022)

Report prepared by Dr. Rosazlin Abdlullah, President of the Malaysian Society of Soil Science

1 Introduction

The 15th International Conference of the East and Southeast Asia Federation of Soil Science Societies also known as ESAFS 2022 was successfully organised at Royale Chulan Hotel in Kuala Lumpur, Malaysia on August 22-26 2022, with 2 days (August 23-24) for scientific sessions and 2 days (August 25-26) for excursion program. The conference was officiated on 23rd August by Deputy Minister of Agriculture and Food Industries II, YB Datuk Dr. Nik Muhammad Zawawi bin Haji Saleh. The conference was jointly organized by The Malaysian Society of Soil Science (MSSS) in collaboration with the Institute of Biological Sciences (ISB), Faculty of Science, Universiti Malaya (UM) with the support of International Union of Soil Sciences (IUSS), Malaysian Agricultural Research and Development Institute (MARDI) and Department of Agriculture (DOA). The earlier date for the conference, June 2021, was postponed and rescheduled one year later due to Covid-19 pandemic. The objectives of ESAFS 2022, are to share invaluable experience and knowledge among soil scientists in East and Southeast Asia countries, to promote active participation of member societies and networking and to contribute towards sustainable development in the region through harmonization of agriculture and environment. The theme of ESAFS 2022 is ‘Our Soils Our Future’. Soil degradation due to soil erosion, soil pollution, soil organic matter and carbon depletion, soil sealing/capping, soil compaction, and soil acidity, salinity and alkalinity, is negatively affecting food production and associated food security, national economies, provision of ecosystem services, adaptation to climate change, and increasing poverty. The situation is being aggravated by climate change and unsustainable soil management practices partially resulting from the rapid economic development and urbanization characterizing some countries in the region. Thus, maintaining and improving soil health are crucial to have sufficient food source for the population in the future.

2 Delegates

The event was attended by 242 participants and invited speakers comprising experts, researchers and entrepreneurs from Malaysia as well as from international delegates. Breakdown of participants different countries attending the conference are as below:

2.1 Malaysia (physical) — TOTAL 141 participants

<table>
<thead>
<tr>
<th>No</th>
<th>Country</th>
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<tbody>
<tr>
<td>1</td>
<td>Malaysia</td>
<td>141</td>
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2.2 International Delegates (physical) — TOTAL 94 participants

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<tr>
<td>1</td>
<td>Bangladesh</td>
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<td>3</td>
<td>Indonesia</td>
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<td>4</td>
<td>Japan</td>
<td>13</td>
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<td>5</td>
<td>Philippines</td>
<td>2</td>
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<tr>
<td>6</td>
<td>Korea</td>
<td>41</td>
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<td>7</td>
<td>Sri Lanka</td>
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<tr>
<td>8</td>
<td>Taiwan</td>
<td>3</td>
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<td>9</td>
<td>Thailand</td>
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conducted the oral and poster sessions on the 23rd and 24th. There were about 10 oral sessions and about 12 poster sessions, which had covered a huge range of interesting science research and support to ESAFS 2022. Hardcopies of Abstract Book of ESAFS 2022 were printed and which were oral, video and live conferencing. Oral presentations were carried in three different modes: (see table on the next page).

3 Scientific and technical programme
The Scientific and Technical Committee has successfully conducted the oral and poster sessions on the 23rd and 24th. There were about 10 oral sessions and about 12 poster sessions, which had covered a huge range of interesting topics. The theme of the conference is ‘Our Soils Our Future’. The scientific and technical programme was divided into eleven sub themes as follows:
1. Soil Education and Public Awareness
2. Emerging Soil Contaminants
3. Soil Information and Digital Mapping
4. Soil Fertility and Plant Nutrition
5. Soil Ecology and Soil Quality
6. Soil and Water Management
7. Land Use and Climate Change
8. Soil Degradation and Remediation
9. Forest Soils
10. Paddy soils
11. Recent Advances in Soil Research

During oral session, country report has been presented by the President and/or representative of ESAFS member societies.

Attendees of member societies:
1. Dr. Rosazlin Abdullah (President of ESAFS), Malaysia
2. Prof. Dr. Shamim Al Mamun (Representative, Soil Science Society of Bangladesh)
3. Prof. Dr. Jirng Che (Representative, Soil Science Society of China)
4. Prof. Dr. Budi Mulyanto (President, Indonesian Soil Science Society)
5. Prof. Dr. Junta Yanai (Representative, Japanese Society of Soil Science and Plant Nutrition)
6. Prof. Dr. Pil Jo Kim (President, Korean Society of Soil Science and Fertilizer)
7. Prof. Dr. Dipak Ranjan Biswas (President, Indian Society of Soil Science)
8. Prof. Dr. Keshav R Adhikari (President, Nepalese Society of Soil Science)
9. Prof. Dr. Artemio A. Martin Jr. (President, Philippine Society of Soil Science and Technology)
10. Dr. Udaya W.A. Vitharana (President, Soil Science Society of Sri Lanka)
11. Prof. Dr. Audhasith Wongmaneroj (Representative, Soil and Fertilizer Society of Thailand)
12. Prof. Dr. Nguyen The Hung (Representative, Vietnam Society of Soil Science)
13. Prof. Dr. Davandorj Davasuren (Representative, Soil Science Society of Mongolia)

4 Pre and Post conference tour
Pre-conference tour was held on 22nd August 2022. A total of 21 participants including international delegates joined the tour. The half day educational trip was designed to expose the uniqueness of Malaysian aboriginal culture from Carey Island, Selangor and experience the wedding and welcoming tradition ceremony and the sculpture specialty at Mah Meri Cultural Village. The delegates were welcomed with traditional dance and ceremony where every participant get their headdress made by leaf origami. The tour includes making leaf origami, visiting Mah Meri and UNESCO gallery, and all participant was given the opportunity to try and experience the traditional costume dance together with the wedding ceremony. The tour ended with a wonderful lunch where traditional foods were served to the participant.

A post-conference tour for participants was held on 25-26 August 2022. A total of 49 participants including the international delegates joined the tour. All participants were given a tour bulletin during the visit as a basic introduction of the trip. The 2 days 1 night post conference tour to Cameron Highlands, Pahang was arranged stimulate and encourage a lively exchange of knowledge and experience among soil scientists on the uniqueness of environment of this country. The tour started with a visit to Geological Museum in Ipoh, Kinta District, Perak, Malaysia. The museum brings together a diverse and unique collection of fossils, rocks, minerals, precious and semi-precious gemstones from within the country. This tour concluded with a pedon visit in Teningkap, Cameron Highland, Pahang, Malaysia where the morphological, properties and soil classification were determined based on the soil profile description and laboratory data of the soil pedons. On the second day of tour, all participant visited the Bih Tea Plantation where the soil management and practices as well as crop suitability were also discussed. Finally, the tour ended with visit to Agro Technology Park, MARDI Cameron Highlands which have research demonstration plots and gardens that includes English, Edible, Wild Orchid, Nepenthes, Roses, 50 types of Flower, Herbs and Pets garden. Before heading back to Kuala Lumpur, the participant also gets an opportunity to buy the strawberry and visited the local market for souvenir.

5 IUSS Stimulus Fund
A total of 17 young soil scientists were selected for the IUSS stimulus fund. Successful applicants were awarded a subsidized registration fee of RM 600 (USD133) (see table on the next page).

The IUSS and IDS 2015-2024 logos were included in publicity materials during promotion activities and events of ESAFS 2022 as follows:

- Brochure
- Backdrop
- Bunting
- ESAFS 2022 programme book
- ESAFS 2022 Book of Abstracts
- ESAFS 2022 Soil tour bulletin

6 Impact
ESAFS 2022 received media coverage from RTM during opening ceremony and local newsletter. The event received more than 16,000 views and was shared 87 times on social media.
Overview of the successful IUSS Stimulus Fund applicants

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<th>Country</th>
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<tr>
<td>1.</td>
<td>Effyanti Mohd Shuib</td>
<td>Department of Land Management, Faculty of Agriculture, Universiti Putra Malaysia</td>
<td>Malaysia</td>
</tr>
<tr>
<td>2.</td>
<td>Nur Saadah Abdul Halim</td>
<td>Institute of Biological Sciences, Faculty of Science, Universiti Malaya</td>
<td>Malaysia</td>
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<td>3.</td>
<td>Pravin Vejan</td>
<td>Institute of Biological Sciences, Faculty of Science, Universiti Malaya</td>
<td>Malaysia</td>
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<tr>
<td>4.</td>
<td>Irfan Ahmad Afip</td>
<td>Department of Geology, Faculty of Science, Universiti Malaya</td>
<td>Malaysia</td>
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<tr>
<td>5.</td>
<td>Noor Sharina Mohd Rosli</td>
<td>Institute of Biological Sciences, Faculty of Science, Universiti Malaya</td>
<td>Malaysia</td>
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<tr>
<td>6.</td>
<td>Izzah Abd Hamid</td>
<td>Department of Crop Science, Faculty of Agricultural Science and Forestry, UPM Bintulu Sarawak Campus</td>
<td>Malaysia</td>
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<td>7.</td>
<td>Aaron Avit Ajeng</td>
<td>Institute of Biological Sciences, Faculty of Science, Universiti Malaya</td>
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<tr>
<td>8.</td>
<td>Sanjeev Ramarao</td>
<td>Department of Crop Management Faculty of Agriculture, Universiti Putra Malaysia</td>
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<td>9.</td>
<td>Kevin Dinggun Kanang</td>
<td>Faculty of Plantation and Agrotechnology, Universiti Teknologi MARA</td>
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<tr>
<td>10.</td>
<td>Lijan John Ahmu</td>
<td>Faculty of Forestry and Environment, Universiti Putra Malaysia</td>
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<td>11.</td>
<td>Muhammad Zarif Hanifah</td>
<td>Monash University Malaysia</td>
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<td>Bin Md Zogriat</td>
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<td>12.</td>
<td>Zahidah Ab Razak</td>
<td>Institute of Biological Sciences, Faculty of Science, Universiti Malaya</td>
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<td>13.</td>
<td>Muhammed Falah Hamada</td>
<td>Institute of Biological Sciences, Faculty of Science, Universiti Malaya</td>
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<td>Dehua Zhao</td>
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<td>15.</td>
<td>Ahmmed Md Motasim</td>
<td>Department of Land Management, Faculty of Agriculture, Universiti Putra Malaysia</td>
<td>Bangladesh</td>
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<td>16.</td>
<td>Nabayi Abba</td>
<td>Department of Land Management, Faculty of Agriculture, Universiti Putra Malaysia</td>
<td>Nigeria</td>
</tr>
<tr>
<td>17.</td>
<td>Dr. Shamim Al Mamun</td>
<td>Environmental Science and Resource Management, Mawlana Bhashani Science and Technology University Santosh</td>
<td>Bangladesh</td>
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</table>

7 Photos during ESAFS 2022

Link: https://drive.google.com/drive/folders/1_TA9vqODk9DylwP91wKADx71Cq7FQmc (all Photos: © ESAFS2022)
Keynote Speech by Dr Shamshuddin Jusop

Keynote Speech by Prof. Dr. Kazuyuki Inubushi

Mr Ronald Vargas, the Secretary of Global Soil Partnership, FAO delivering his talk entitled Soil Science Towards 2030 during the closing ceremony of ESAFS 2022

E-Poster presenter, Mr Jutom from Sabah, Malaysia

Photos during Pre-Conference Tour

Impressions from the Mah Meri Culture Village, Selangor

Photos during Post Conference Tour and more

Geological Museum

Soil profile description at Cameron Highlands
TehBoh Plantation (above) and AgroTechnologyPark MARDI CameronHighlands (below)

President and/or representative of ESAFS member societies from East and South East Asia Countries

Cultural Show

President and/or representative of ESAFS member societies from East and South East Asia Countries

Media Coverage

(Berita RTM)
The International Conference on Salt-Affected Soils (ICSAS) was hosted by the Ministry of Agriculture and Rural Affairs and the People’s Government of Shandong Province, organized by the Cultivated Land Quality Monitoring and Protection Center of the Ministry of Agriculture and Rural Affairs, the Department of Agriculture and Rural Affairs of Shandong Province, the People’s Government of Weifang, Shandong Province and co-organized by the Global Soil Partnership of FAO. The Conference was opened by the welcome speeches of Ma Youxiang, Deputy Minister of Agriculture and Rural Affairs of PRC as well as by the Vice Governor of Shandong Province, the Minister of Agriculture of Australia, Russia, Bulgaria, the United Arab Emirates and other countries, the President of the International Union of Soil Sciences, and the International Center for Biosaline Agriculture. More than 180 people including diplomatic envoys from the United States, Australia, the Netherlands, and Bangladesh in China, the Food and Agriculture Organization of the United Nations and representatives of international organizations, well-known experts in the field of soil science, and representatives of agricultural departments of relevant provinces attended the meeting. The conference released the “Weifang Initiative of the International Conference on Salt-Affected Soils”, and organized a series of thematic forums, which were a complete success and were affirmed and recognized by leaders of ministries, provinces and cities, and guests at home and abroad. Among in-person participants, 52 leaders of the departments and bureaus of the Ministry of Agriculture and Rural Affairs; 62 people from the Shandong Provincial Government, provincial organs, and the Provincial Department of Agriculture and Rural Affairs participated in the meeting, including 14 experts from universities and research institutes.

The online participation of the conference was impressive and reached over 3 million views. The conference has been broadcasted by nearly 30 authoritative media platforms worldwide for simultaneous bilingual live broadcast (Chinese/English), which has been watched by more than 30 countries and regions including the United States, Russia, and the Netherlands. More than 100 central, provincial and municipal media, including CCTV, Xinhua News Agency, People’s Daily Online, Dazhong Daily, and Shandong Satellite TV reported on the conference. CCTV Channel 13 news live broadcast room, Shandong Satellite TV news broadcast and other important central media publicity channels have carried out in-depth reports on the conference.

The conference released the “Weifang Initiative of the International Conference on Salt-Affected Soils”, which received positive support and response from all participants, including the FAO Representative Office in China, the World Food Program China Office, and Algeria, Bangladesh, Bulgaria, Dominica, Ecuador, Hungary, Kazakhstan, Kuwait, the Netherlands, Russia, Syria, the United Arab Emirates, the United States, Venezuela and other embassies in China. The initiative calls on all countries to jointly carry out assessment of salt-affected soils resources, dynamic monitoring and evaluation, technology R&D and promotion, improve relevant laws, regulations and policy measures, and strengthen international exchanges on soil health. Recordings of the conference are available:

In light of the 27th Conference of Parties "COP27" to be held in Egypt in November 2022, the National Committee of Soil Science (NCSS), an initiative of the Egyptian Academy of Scientific Research and Technology (ASRT), has organized on 27 September 2022 a workshop on “the Impact of Climate Change on Soil Resources and Food production: Challenges and Adaptation Strategies.”

Different keynote speakers were invited from different sectors in Egypt, with officials and experts from ICARDA, the Ministry of Agriculture, Cairo University, South Valley University, NARSS, Desert Research Center, Agriculture Research Center, National Research Council and Central Laboratory for Agricultural Climate. The members of the NCSS, also, delivered important speeches on different topics related to measuring and predicting climate change impact, climate-smart solutions, and adaption and mitigation measures.

Significant participation of scientists and stakeholders enriched the discussions and contributed to recommendations on adaptation and mitigation solutions.

The workshop has addressed different climate-related issues, including:
- Impact of climate change on sustainable development
- Impact of climate change on soil health
- Adaptation and mitigation mechanism

The NCSS workshop was concluded by a discussion and recommendation to the policy/decision makers. Recommendations included:
- Development of clean energy sources, e.g., green hydrogen, to reduce GHGs emissions
- Expansion of the cultivated area in Egypt, planting trees in cities and afforestation of areas surrounding populated areas
- Reducing greenhouse gas emissions (mitigation) by using clean energy such as green hydrogen and increasing the area of cultivated land
- Agriculture planning in light of anticipated climate changes and with mitigations and adaptation strategies.
- Adopting circular economy and bio-based solution, regenerative agriculture and climate smart solutions as measures to cope with changes.

Announcement of a Workshop organized by the NCSS addressing climate changes and possible solutions
(© National Committee of Soil Science – Egypt)

Participants during the workshop (© National Committee of Soil Science – Egypt)

The NCSS
The NCSS mission is to open a channel of communication with the public to shape perceptions about soil problems in Egypt and globally and to develop solutions together with specialists in the field. Also, the NCSS provides scientific and technical advice to ASRT on national issues at the request of the ASRT president.

Members of the NCSS during 2020-2022 and some of the workshop participants
(© National Committee of Soil Science – Egypt)
IUSS contributes to ISC GeoUnions Standing Committee on Disaster and Risk Reduction
The International Science Council (ISC) GeoUnions Standing Committee on Disaster Risk Reduction was established in July 2020 to strengthen the long-standing ISC leadership in advancing Disaster Risk Reduction (DRR). The Committee identifies and encourages activities of global scientific communities for the implementation of global scientific communities for the implementation of the Sendai Framework, as further defined by the ISC. Prof. Takashi Kosaki, IUSS Past President, and Dr. Edoardo Costantini, IUSS President Elect, are the IUSS representatives to this committee. The presence of the IUSS in the Committee is aimed at highlighting the role played by soil as an anthropogenic factor that regulates natural disasters and to advise multiple stakeholders through the ISC. One of the activities of the Committee is the publication and broad distribution of policy briefs related to events of global relevance connected to DRR. The current policy brief no. 6 talks about the lessons to be learned from the Tonga Volcanic Eruption: http://www.iscgdrr.com/plus/view.php?aid=57.

Read more about the Standing Committee on Disaster and Risk Reduction: https://www.iuss.org/media/sc-dr_leaflet_v4_2022-06-22_digital.pdf.

News from the International Science Council (ISC)
Stockholm+50 Letter to fellow citizens
In 1972, 2200 environmental scientists presented an urgent call on the state of the environment at the UN Summit on the Human Environment. In 2022, fifty years on from the UN Summit, the ISC, Future Earth and the Stockholm Environment Institute convened an Expert Writing Group of natural scientists, social scientists and humanities scholars to modernize and extend the historical call on the eve of Stockholm+50. This week the campaign featured in Nature, encouraging support for the new letter.
Read the Nature Editorial
Visit the dedicated website to read and support the 2022 version.
[From ISC Update on June 3, 2022]

Who’s right is it anyway? Copyright and scholarly publishing
Copyright for scientific publications, such as journal articles, is complex and contested. This blog considers some of the recent initiatives designed to support authors to retain rights to their published work. Read more: https://council.science/current/blog/copyright-and-scholarly-publishing/.
[From ISC Update on June 8, 2022]

How do we develop indicators of healthy soil? Science-based policy development from a policymaker’s perspective
In this article Elena Havlicek, Federal Office for the Environment FOEN, Soil and Biotechnology Division, Switzerland discusses policy efforts to work towards healthy soils. Recently, Global Soil Biodiversity Initiative (GSBI) has launched an important call to the Executive Secretary of the UN Convention of Biological Diversity on the need to protect soil biodiversity, urging governments to develop policies and legal mechanisms, and stated that education and awareness are decisive to take necessary actions for protect and restore soil resources.
[From GSBI Newsletter – June 2022]

Confused by the abbreviations & acronyms of the many soil biodiversity projects and organizations?
The recent increase in research initiatives and projects related to the science of soil biodiversity led to the creation of many new acronyms. We at the GSBI Secretariat developed a living online document of soil biodiversity-related organizations, societies, and projects with the goal of assisting the global community of soil biodiversity researchers, educators, and policy-makers in understanding what the goals of these organizations are and how they may relate to one another.
Read more: https://www.globalsoilbiodiversity.org/soilrelated-organizations.
[From GSBI Newsletter – June 2022]
More Plant-Available Water from Soil Carbon
Healthy soil soaks up rainfall and stores it for crops. While farmers have known this for a long time, it has been hard for scientists to predict how much extra water farmers can expect soil to provide to their crops when they use practices that improve carbon in the soil.

New equations published in the Soil Science Society of America Journal show that enhancing soil carbon results in an increase of plant-available water as much as three times higher than earlier estimates. Read more: https://access.onlibRARY.wiley.com/doi/epdf/10.1002/saan.20751

[From ASA-CSSA-SSSA Science Policy Report, 8 June 2022]

A Glance at the Global Soil Partnership
10th Plenary Assembly

The Global Soil Partnership 10th Plenary Assembly took place online on 23-25 May 2022. Over 450 people from 143 countries including FAO Members, delegates and members of the Global Soil Partnership (GSP) participated actively and with great enthusiasm. The Plenary was very special as it marked the tenth anniversary of the formal establishment of the Partnership, a decade dedicated to raising the profile of soil and putting sustainable soil management in action. Read more: https://www.fao.org/global-soil-partnership/about/plenary-assembly/tenth-session-2022/en/.

[From Global Soil Partnership Special announcement No. 40, June 2022]

Launch of the Global Black Soil Distribution Map

The Global Black Soil Distribution Map, is the outcome of a multi-year effort, produced using a country-driven approach led by the Partnership. Black soils not only sustain the people settled on them, but are also a food basket for the rest of the world.

Press release: https://www.fao.org/newsroom/detail/en/iu207/G2sjKjWc8q8ByY1xxv-nib69NI-jezqtG0xh51HDM.

Conserving healthy soils

The health of soils is dependent on the variety of organisms they contain, known as soil biodiversity. The amount of soil biodiversity determines the productivity of land, and thus the provision of food, water, and the regulation of climate. Current land degradation, chiefly due to chemical-fuelled, intensive agricultural production, is causing the loss of soil biodiversity, undermining the services provided by healthy soils. Governments should put in place policies and legislation, and promote land management practices which restore or preserve soil biodiversity.

Read more: https://www.iucn.org/resources/issues-briefs/conserving-healthy-soils?fbclid=IwAR1I1uATa5y6QO8B-G2xIWCpq8ByY1xxvn63W-njezqtG0xh51HDM.

How does soil moisture impact our lives?

Soil moisture is key to understanding the land’s surface and all the activities that occur there, both seen and unseen. These include agriculture, hydrology, weather, and human health, to name just a few. But first it is important to understand what soil moisture is. Soil moisture is the available water contained within the matrix of soil and organic matter at the surface of the earth, above the water table.


News from the International Science Council (ISC)
ISC Annual Report 2021 published

2021 was a pivotal year for the Council, with the launch of major new activities, a well-attended General Assembly, and the election of the Council’s second Governing Board. Science advice to policy was under the spotlight in 2021, with important negotiations on climate and biodiversity policy, as well as the need to respond to the unfolding COVID-19 pandemic and to ‘build back better’.

This report summarises all of the ISC’s major activities through 2021, as well as those of its affiliated bodies, and includes the Council’s financial reporting for the year. We hope you will enjoy exploring the report online and would welcome any feedback.

Read more: https://council.science/annual-report-2021/.

International Year of Basic Science for Sustainable Development was launched

The International Year of Basic Science for Sustainable Development was launched on 8 July at UNESCO in Paris. It focuses on the links between basic sciences and the Sustainable Development Goals. This is a unique opportunity to convince all stakeholders that through a basic understanding of nature, actions taken will be more effective, for the common good.

Find out more about the year and how to get involved
(Source: ISC Newsletter July 28, 2022)

GSBI Blog “Beneath Our Feet” – Challenges of and opportunities for protecting European soil biodiversity

The author explores the efficacy of current and past soil-related policies in the protection of European soils in the May issue of Conservation Biology.


[From GSBI Newsletter – July 2022]

Check out the GSBI table of soil biodiversity-related organizations

Recently, the GSBI Secretariat developed a living online document of soil biodiversity-related organizations, societies, and projects with the goal of assisting the global community of soil biodiversity researchers, education, and policy-makers in understanding what the goals of these organizations are and how they may relate to one another.

Read more: https://www.globalsoilbiodiversity.org/soilrelated-organizations.

[From GSBI Newsletter – July 2022]

The secret world beneath our feet is mind-blowing – and the key to our planet’s future

Beneath our feet is an ecosystem so astonishing that it tests the limits of our imagination. It’s as diverse as a rainforest or a coral reef. We depend on it for 99% of our food, yet we scarcely know it. Soil. Under one square kilometre of undisturbed ground in the Earth’s mid-latitudes (which include the UK) there might live several hundred thousand small animals. Roughly 90% of the species to which they belong have yet to be named. One gram of this soil – less than a teaspoonful – contains around a kilometre of fungal filaments.

Read more: The secret world beneath our feet is mind-blowing – and the key to our planet’s future | Soil | The Guardian

World Soil Day 2022 – Soils, where food begins

5 December 2022 is the United Nations World Soil Day (WSD). This year’s campaign, “Soils, where food begins” highlights the value of soil for food production, better nutrition, and healthy diets.

The soil beneath our feet is a world made up of organisms, minerals, and organic matter that supply humans and animals with food through plant growth. Just like us, soils need balanced and varied input of nutrient in appropriate quantities to be healthy. When crops are harvested, nutrients are removed from the soil. Nutrient-deficient soils produce nutrient deficient plants, causing hidden hunger for more than 2 billion people worldwide. Soils have no borders and are at risk. This year’s WSD will focus on the importance of soils for nutrition while serving as a call to action and empathy for those who bear the brunt of these threats.

DISCOVER OUR CAMPAIGN MATERIAL
Are you planning an event or an outreach activity?
Mark your agenda, alert your audience, contact your local, regional and global advocates and make use of the free campaign toolkit (all files are print-ready).

PIN YOUR EVENT ON THE MAP!
If you haven’t done so yet, register your event on the World Soil Day map! Don’t forget to share photos of your event on social media using the hashtags #WorldSoilDay and #Soils4Nutrition.

[Global Soil Partnership (GSP) Special announcement No. 42, September 2022]
Teaching about the essence of soil biodiversity
Professor Loren B. Byrne of Rodger Williams University in Rhode Island, USA discusses the importance of soil biodiversity in ecological education and “Pedagogy for the Pedosphere” in this timely back-to-school piece.

Read more: https://esdac.jrc.ec.europa.eu/content/global-soil-biodiversity.

[From GSBI Newsletter – September 2022]

“Frontiers for Young Minds” Translations
Did you know that Frontiers for Young Minds soil biodiversity articles are translated into many languages? Brought to you by (Dx) – The German Centre for Integrative Biodiversity Research. Can you contribute to translating articles? What do you need to know to contribute:

1. Check the list of articles,
2. Find an article according to your scientific expertise, and
3. Fill out the form,
4. Wait for our response and translate the article.

Read more: https://dxs.frontiersin.org/collections/11796/soil-biodiversity.

[From GSBI Newsletter – September 2022]

How does young soil support plant life?
In order to grow well, plants need a place to grow, access to nutrients, and in most cases sunlight. A rich soil provides that home and a good supply of nutrients. But young soils have less to offer – yes, soils can have different ages that home and a good supply of nutrients. But young soils have less to offer – yes, soils can have different ages ranging from hundreds to thousands of millions of years old. This is because soil is being made and lost all the time, with various dynamic processes.


[From ASA, CSSA, SSSA Science Policy Report, 31 August, 2022]

Global assessment of storm disaster-prone area
Rainfall Erosivity Density (RED) is a measure of rainfall aggressiveness and a proxy indicator of damaging hydrological events. By using measured Rainfall Erosivity Density (RED) for 3,625 raingauges worldwide and applying kriging methodologies, we could identify the damaging hydrological hazard-prone areas that exceed warning and alert thresholds (1.5 and 3.0 h m-2 h-1 yr-1, respectively). In this study, we analysed the spatial pattern of hydrological hazard associated with rainfall erosivity with a global-scale visualisation. The results indicated that about 31% and 19% of the world’s land area have a greater than 50% probability of exceeding the warning and alert thresholds.


[From ESDAC Newsletter 146, October 2022]

Land and Soil Management Award
The European Land Owners Organisation (ELO) is going to hold a land use and soil management practices mitigating soil threats. You can apply for this award until 15 January 2023. The award is bestowed to the winner every year during the Forum for the Future of Agriculture.

Read more: https://www.europeanlandowners.org/awards/soil-land-award.

[From ESDAC Newsletter 146, October 2022]

Phosphorus budget and P stocks
We estimate the Phosphorus (P) budget from agricultural lands of EU and UK (ca. 173 million ha). This takes into account the P inputs (fertilizers, manure, chemical weathering, atmospheric deposition) and the P outputs (crop production, plant residue removal, losses by erosion) for the period 2011–2019. The P budget and the P inputs/outputs are available at NUTS2 (Regional scale) and country scale. In addition, we estimate the P displacement and losses due to water erosion at catchment scale and aggregate them at sea outlet. We make also the datasets for both Total P and Available P ( Olsen) concentration and stocks available. More details of the empirical model is given in the published study.


[From ESDAC Newsletter 145, September 2022]

Call for costs of sediments removal
The EUSO Working group on soil erosion addresses the question on the costs of sediments removal. This WG will develop a study on estimating the off-site costs of soil erosion. Therefore, there is a call for data on the costs of removing sediments from dams, ports, rivers, etc. In case you are aware of studies or reports quantifying the costs of removing sediments (or energy revenue costs due to sedimentation), please contact the WG chair: paros.paragos@ec.europa.eu. The overall objective is to have a pan European estimation of sediments removal. The topic will be also addressed during the WG soil erosion session on 26th October 2022.

[From ESDAC Newsletter 145, September 2022]

Soil macroinvertebrate communities:
A world-wide assessment
Read the article by Patrick Lavel and colleagues in Global Ecology and Biogeography.

Macroinvertebrates comprise a highly diverse set of taxa with great potential as indicators of soil quality. Communities were sampled at 3,694 sites distributed worldwide. We aimed to analyse the patterns of abundance, composition and network characteristics and their relationships to latitude, mean annual temperature and rainfall, land cover, soil texture and agricultural practices.


[From GSBI Newsletter – October 2022]

2023 GFFA Science Slam
Dear students, doctoral researchers, young scientists and postdocs,
We would like to invite you to apply to perform at the GFFA Science Slam in Berlin on 20 January 2023. You will present your research project live in front of a great audience. As slammer, you will also get a booth at the Innovation Forum on 19 and 20 January to present your research subject to visitors. Upon your successful application, accommodation and travel expenses will be covered. The GFFA Science Slam is a competition during which presenters ("slammers") introduce their scientific research topics, which should match the GFFA topic, in an entertaining way. The focus is on giving a diverse, primarily non-expert audience the opportunity to learn scientific concepts. The audience then votes on the slams, judging them not only on scientific content but also on comprehension and on their entertainment value.

Read more: https://esdac.jrc.ec.europa.eu/content/glosem.

[From ESDAC Newsletter 144 (August 2022)]
entation with the highest audience rating receives a prize at the end of the event. You can watch the 2022 GFFA Science Slam (virtual event) on the GFFA Review website and get impressions of the GFFA Science Slam 2020 (in presence) here.

For more information on the topic look at the background paper or visit the GFFA homepage.

2022 Earth Week Webinars
The American Geosciences Institute (AGI) hosted a webinar titled “Updating Soil Survey to Meet Dynamic New Challenges and Sustainable Soils for a Sustainable Planet.” This was the final webinar in the 2022 Earth Week series. It highlighted the importance of maintaining soil quality and how to do so sustainably, such as by incorporating rating organisms into the soil food web to enhance soil quality. The speakers also showcased the use of GIS in mapping soils, with a case study on a project in Kansas that focuses on the Keith soil series. (From ASA, CSSA, SSSA Science Policy Report, October 26, 2022)

What is blue carbon, and why is it important?
“Blue carbon” is a term for carbon captured by the world’s oceans and coastal ecosystems. Mangrove forests, tidal marshes, and seagrass beds are the main vegetated coastal areas that store vast amounts of blue carbon. It’s not really blue – it’s named after the color of the ocean. Blue carbon is an important tool in reducing the impact of agriculture on the environment.

Read more: What is blue carbon, and why is it important? (From ASA, CSSA, SSSA Science Policy Report, October 26, 2022)

Call for Papers “Optimizing the Use of Organic Amendments to Meet Climate-Smart Agriculture and Soil Fertility Goals.”
As the editors of the recently launched research collection, “Optimizing the Use of Organic Amendments to Meet Climate-Smart Agriculture and Soil Fertility Goals,” we kindly invite you to contribute to this important, up-to-date, and impactful collection of research on this topic. Alongside a top group of authors, you will have the choice to publish your work in Frontiers in Agronomy or Frontiers in Soil Science, both young multidisciplinary journals led by top researchers in the field.

Abstract Submission Deadline: 20 January 2023
Manuscript Submission Deadline: 19 April 2023


EGU 2023 – Call for abstracts is now open
The EGU General Assembly 2023 will bring back many of the features the EGU community enjoyed before the pandemic, including oral, posters, and PICO sessions. In a new hybrid format, as well as a wide variety of networking opportunities.

Apply for financial support by submitting your abstract by 1 December 2022, 13:00 CET (https://egu23.eu/guidelines/supports-and waivers.html).
Submit your abstract to a SSS session by 10 January 2023, 13:00 CET. Instructions on how to submit an abstract can be found at https://egu23.eu/programme/how-to-submit.html.

If you need a registration fee waiver to attend EGU23, apply for financial support with your abstract submission by 1 December 2022, 13:00 CET (https://egu23.eu/guidelines/supports_and waivers.html).
More info about the EGU23 format can be found at https://egu23.eu/about/meeting_format.html.
If you have any questions, please contact egu23@copernicus.org.

News from the International Science Council (ISC)
Join the IUPAC Global Women’s Breakfast 2023.
ISC Member, the International Union of Pure and Applied Chemistry (IUPAC), is inviting all ISC Members and their networks to join the IUPAC Global Women’s Breakfast (GWB) on 14 February 2023. Under the theme “Breaking Barriers in Science” GWB2023 is held in conjunction with the United Nations Day of Women and Girls in Science.
It is also a flagship event of the International Year of Basic Sciences for Sustainable Development, reaching out beyond chemistry to all stakeholders across science.
Browse the online map to find a global breakfast event near you or become an event organizer and register your event on the GWB page: https://council-science-events/iupac-gwb-2023/.

Call for nominations for the World Data System Scientific Committee
The World Data System Scientific Committee (WDS SC) is seeking nominations for candidates to replace one vacancy on the Scientific Committee. The term of this position will be from 1 February 2023 to 30 June 2024.

To maintain diversity on the Scientific Committee, we encourage nominations particularly focusing on females, and underrepresented geographic regions including the Global South. All scientific disciplines are welcome.
Deadline: 20 January 2023
Read more: https://wds.icsu.org/2023/01/09/call-for-nominations-for-the-world-data-system-scientific-committee/.

What is a soil carbon credit?
Agriculture is essential to ensuring global food security. However, the agricultural industry is also one of the largest sources of greenhouse gas emissions. Some agricultural practices can release carbon dioxide, nitrous oxide and methane into the atmosphere. Incentivizing climate-smart farming practices by creating “soil carbon credits” is one way to reduce the impact of agriculture on the environment.

Read more: What is a soil carbon credit? – Soils Matter, Get the Scoop! (wordpress.com).
(From ASA, CSSA, SSSA Science Policy Report, November 23, 2022)

What is blue carbon?
Blue carbon is an important tool in reducing the effects of agriculture on the environment.

Read more: What is blue carbon, and why is it important? (From ASA, CSSA, SSSA Science Policy Report, October 26, 2022)

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Read more: What is a soil carbon credit? – Soils Matter, Get the Scoop! (wordpress.com).
(From ASA, CSSA, SSSA Science Policy Report, November 23, 2022)
Workshop Soil Mapping for a Sustainable Future

7-9 February 2023
Orléans, France
The 2nd joint Workshop of the IUSS Working Groups Digital Soil Mapping & Global Soil Map entitled 'Soil Mapping for a Sustainable Future' is now open for registration.


The 3rd Global Soil Biodiversity Conference
13-15 March 2023
Dublin, Ireland
Extended deadline: October 7, 2022

BONARES Conference 2023 – Soil as a Sustainable Resource
15-17 May 2023
Berlin, Germany
A sustainable bioeconomy requires integration of soil productivity with a wide range of other soil functions including nutrient cycling, carbon storage, water retention and filtering as well as being the habitat of a myriad of organisms and enabling their activities. The conference will bring together researchers from various disciplines related to soil and plant sciences and agronomy to discuss strategies towards a multi-functionality of soil ecosystems taking into account the constraints of climate and global change into account. The conference aims at providing solutions for a sustainable soil management including climate change adaptation, which requires an understanding of soils at a systemic level and to assess their value in a socioeconomic framework.

We are looking forward to welcome interested scientists as well as stakeholders in the field of soil management for inspiring discussions.

We welcome contributions (oral presentations and posters) to the following topics:
1. Impact of agriculture and cropping systems on soil functions
2. Carbon and nutrient cycling in soils: Processes and interactions in a changing world
3. Soil biomes and multifunctionality of soils
4. Soil degradation and sustainable soil management in agricultural landscapes
5. Model-based prediction of the dynamics of soil functions
6. Using soil sensing technologies for soil mapping, modelling and decision making in agriculture
7. Soils as a key to climate change mitigation: private and public governance instruments to unlock the potential
8. Data challenges and solutions.


InterPore2023
22-25 May 2023
Edinburgh, Scotland
Deadline for submitting abstracts: Monday, 12 December 2022
Event page: www.interpore.org/2023

Global Conference on Sandy Soils
4-8 June 2023
Madison, Wisconsin, USA
Deadline for Abstract submission: March 15, 2023
Deadline for registration: April 15, 2023
Sandy soils cover approximately 900 million ha worldwide particularly in arid or semi-arid regions. There are extensive areas of sandy soils under cultivation, but the soil fertility is often low. Sandy soils – as a group of soils – have received limited research attention. With increasing global pressure on land resources, marginal soils such as sandy soils are taken into production or cultivated more intensively. There is a need to quantify and understand the properties of sandy soils. This conference will bring together experts on sandy soils from across the world.


5th WASWAC World Conference – Adaptation strategies for soil and water conservation in a changing world
19-23 June 2023
Palacky University, Olomouc, Czech Republic

The conference aims are:
• To analyse the present and future situation of soil and water conservation on a worldwide scale while taking local specifics into consideration.
• To analyse the effects of population growth, human activity and climate change on soil and water in the context of the demands of sustainable farming, water and food supply.
• To promote and increase collaboration between scientific organisations, policymakers, the general public and practitioners.
• To design goals, strategies and directions for conservation of soil and water as basic irreplaceable natural resources for current exploitation and the needs of future generations.
The second announcement will be made in early January 2023.

4th Global Soil Security Conference (GSS2023) – Global Soil Security: Beyond the Soil
26-29 June 2023
Seoul, Korea
Deadline for Abstract submission: March 31, 2023
Deadline for registration: June 16, 2023
Soil security has become the central dogma of the sustainable soil management that should integrate the roles of soil functions for soil health, ecosystem services, climate change and human health. We will tailor the GSS 2023 programs specifically to connecting soil security to the theme of GSS 2023.
**28th IUGG General Assembly**

11-20 July 2023

Berlin, Germany

This General Assembly is a special opportunity for participants from around the world to come together and discuss the full range of geodetic and geophysical themes, and further enhance the important interdisciplinary collaboration for a better understanding of our Earth System. IUGG2023 will provide a platform for personal meetings, exchange of ideas and developing new concepts for international science collaboration, all of which have suffered a setback during this pandemic crisis. IUGG2023 will help to create a new spirit to address pressing large societal challenges such as global environmental change and natural hazards and to stimulate novel geoscience research.


Registration and abstract submission is now open: [https://www.iugg2023berlin.org/registration-guidelines/](https://www.iugg2023berlin.org/registration-guidelines/).

Website: [https://www.iugg2023berlin.org/](https://www.iugg2023berlin.org/).

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**Wageningen Soil Conference 2023**

August 28th – September 1st, 2023

Wageningen, the Netherlands

Website: [https://www.iugg2023berlin.org/](https://www.iugg2023berlin.org/)

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**Wageningen Soil Conference 2023**

Topics of the Day

Keynote Speakers

Call for Hands-on Masterclasses

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**Centennial Celebration and Congress of the IUSS 100 years of soil science – past achievements and future challenges**

Sunday, 19 May 2024 to Tuesday, 21 May 2024

Florence, Italy

Website: [https://centennialiuss2024.org/](https://centennialiuss2024.org/)

Download: [media/iuss_2024_brochure.pdf](https://centennialiuss2024.org/)

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**ISMOM 2024 – 9th International Symposium of Interactions of Soil Minerals with Organic Components and Microorganisms**

10-14 October 2024

Tsukuba, Japan

Following the spirit of ISMOM, we plan to put a focus on ‘aggregate’ or ‘soil structure’ as the physical constraints for the interactions among minerals, organic matter, and microbes in soil. Among regular topics of ISMOM, we also hope to cover topics associated with volcanic soil and paddy soil. You will have a chance to see these soils in the landscape at the post-conference field trip (October 15-17).

Read more: [http://web.agr.ehime-u.ac.jp/~soil/ISMOM2024.html](http://web.agr.ehime-u.ac.jp/~soil/ISMOM2024.html).

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For the complete list of upcoming events, please see the event calendar on the IUSS website: [https://www.iuss.org/meetings-events/](https://www.iuss.org/meetings-events/)
Sustainable soil management as a key to preserve soil biodiversity and stop its degradation
Edited by Laura Bertha Reyes-Sánchez, Rainer Horn and Edoardo A.C. Costantini. Published by the International Union of Soil Sciences (IUSS), ISBN: 979-8-9862451-0-2. Most organisms in terrestrial ecosystems develop at least a part of their life cycle in soil habitats or live in it, making the soil resource the most important reservoir of global biodiversity. Soil biodiversity plays a fundamental role in the proper functioning of all terrestrial ecosystems as well as economic, social, and human services that guarantee both human well-being and the existence of life on Earth. Furthermore, soil healthy, nutritious food, climate change mitigation, as well as many other issues essential to our life, all depend on the knowledge of soil biodiversity. Against this background intends the IUSS, as the leader in Soil Sciences at the worldwide level, to foreground the study of edaphic biodiversity from the broad interdisciplinary perspective, to promote the advancement of its area of knowledge.
In this regard, Soil Biodiversity was proposed as a current topic of great scientific, social, economic, and political importance for the present IUSS book as a document that had to be written from an interdisciplinary perspective and starting on the current state of the art in this area. A book written from the perspective of various points of view and interactions since the different areas of knowledge of soil sciences offered by the authors. That is why the book contains both experimental data and conceptual information, didactic experiences, and reviews organized in four different sections showing points of view and interactions from the following knowledge areas of soil sciences:
• Soil Biodiversity perspectives from biological sciences point of view
• Interdisciplinary perspectives from agronomical point of view
• Interdisciplinary perspectives from soil physical point of view
• Interdisciplinary perspectives from soil chemistry and education point of view
Within the framework of the "International Decade of Soils (IDS) 2015-2025" and continuing with the objective of publishing and distributing material relevant to the interests of the IUSS and its members; an IUSS Open Access Book Series is launched under a Creative Commons license. This is the first of the Open Access IUSS’ Book Series.

Soils of the World

Soil Management for Sustainable Agriculture
Edited By Nintu Mandal, Abir Dey, Rajiv Rakshit. First edition published June 2, 2022 by Apple Academic Press, 624 pages, 16 color & 61 B/W illustrations, ISBN 9781774630235, price eBook GBP 132.30, price hardback GBP 147.00. Taking a sustainable approach, this volume explores the various soil management techniques. It begins with an overview of the elementary concepts of soil management and then delves into new research and novel soil management tools and techniques. Topics include clays as a critical component in sustainable agriculture with respect to carbon sequestration in conjunction with its interaction with soil enzymes; the potential utilization of microbes to mitigate crop stress; resource conservation technologies and prospective carbon management strategies; the use of smart tools for monitoring soils; effective nutrient management approaches; nanotechnological interventions for soil management and techniques for the remediation of soils contaminated by metals and pesticides.
Improving soil health


This book provides a considered assessment of key management strategies to enhance the physical, chemical and biological health of soils in achieving sustainable improvements in crop yields. The book reviews the role of cultivation practices as well as organic and other soil amendments, such as biofertilizers. By assessing the dimensions of soil health, and reviewing the wealth of evidence on how well individual techniques contribute to improving soil, the book shows how farmers can achieve sustainable improvements in both productivity and profitability.

Read more: https://shop.bds-publishing.com/store/bds/detail/woorkgroup3-190-106455

Healing Soil: How soil health will save the planet and us


Using his own artworks and drawing on his soil science research, Bruce Ball reveals the importance of soil to humanity. Structured in three main parts, his book takes us on a journey from the nature of healthy soil, through the influence of soil on our health and food to its hidden contributions to our society and our planet. In Healing Soil you can discover:

- How soil works, what makes it healthy and how it affects your health
- How healthy soil helps combat climate change, environmental pollution and biodiversity loss while allowing sustainable production of nutritious food.

- How a soil-based view of the world, and parallels between soil and our lives, can help us arrive at the cultural and spiritual transformation needed for a sustainable society.
- Your own road to a healthy and sustainable life, helped by a visual soil health chart and a wealth of references that allow you to reflect and build on what you unearth in the book.


Soil health in the Western Balkans


This report attempts to benchmark a range of issues affecting soil health with considerations on the accession progress for a possible future Soil Health Law under the EU 2030 Soil Strategy. The outcomes reported here are based on a literature review of 139 sources, bilateral exchanges with national soil experts in all Western Balkans countries, and on the personal experience of the authors. Based on the results of this study it is concluded that soil degradation is prevalent and extensive throughout the Western Balkans region. Soils are under pressure, but the intensity of various soil health indicators varies between them and among the countries.


Kuwait Soil Taxonomy


This book provides guidelines to key soil taxa in the desert regions of Kuwait and guidance to associated procedures for laboratory analyses of soils, leading to land use planning and informed decisions. Soils are essential to provide food, feed, and fiber in addition to multiple ecosystem services that sustain life on earth. To achieve the above services sustainably, it is essential to use soils rationally based on their potential for specific uses. This requires establishing national soil classification systems to assess soils locally and to provide guidance to other countries where similar soils may be occurring. Once soil classification is established, it becomes easier to adopt technologies established on similar soils and environmental conditions without conducting long-term and expensive experimental trials. The taxa are established based on soil’s morphological, physical, chemical, and mineralogical properties and climatic factors. It offers opportunities to maintain future soil surveys and their correlation to the soils of Kuwait. The book is useful in other arid region countries where similar soil and environmental conditions are existing, such as Bahrain, Oman, Qatar, and Saudi Arabia. The book also has international relevance, as it was prepared by extracting definitions from USDA-NRCS keys to soil taxonomy, and sections related to soils of Kuwait are added in the book.

Read more: https://link.springer.com/book/10.1007/978-3-030-95297-6


Food starts with soils, and as the target date to accomplish the SDGs grows closer, it is more urgent than ever to reverse soil degradation and tackle its effects on agri-food systems. This booklet aims to review the role of soil fertility in producing sufficient, safe, and more nourishing food for healthier plants, animals, and people. It also offers recommendations for solutions that can provide a more nutritious agri-food system for enhancing human health and wellbeing while protecting the environment. Soil fertility and nutrition involve processes at scales ranging from molecules to the entire planet. Our interventions in these processes may exacerbate the global challenges we face but can also be modified to solve them. This booklet contributes to understanding processes related to soil fertility from the perspectives of food production and food security, and the environmental and climate change impacts associated with fertilizer misuse and overuse. The booklet also outlines the main areas of opportunity and the way forward to solve the nutrient imbalance prevailing in our current agri-food systems.

Micronutrient Fertilizer Use in Pakistan

Historical Perspective and 4R Nutrient Stewardship.


Micronutrient research has been an important component of the soil fertility and plant nutrition program in Pakistan since the identification of zinc deficiency in rice in 1969. Of the soil fertility and plant nutrition program in Pakistan, exploring the upper layer of the ground on which we tread, the ground all of us tread. His expertise has taken him quite literally, around the world, from New Mexico to New Zealand, from Stockholm to Saskatchewan. Rooted with him in the soil of his life, ride the rails, enjoy the experiences of a soil pioneer and heed his call for responsible stewardship of the planet we all occupy.


Rootin’ in the Rhizosphere: Growing up in Ecosystem Ecology


David Coleman is the David Attenborough of the Rhizosphere, exploring the upper layer of the ground on which we tread, the ground all of us tread. His expertise has taken him quite literally, around the world, from New Mexico to New Zealand, from Stockholm to Saskatchewan. Rooted with him in the soil of his life, ride the rails, enjoy the experiences of a soil pioneer and heed his call for responsible stewardship of the planet we all occupy.

Read more: https://www.amazon.com/Rootin-Rhizosphere-Growing-Ecosystem-Ecology/dp/1736459899/ref=sr_1_1?

Soil and Water Conservation for Sustainable Food Production


This book addresses the impact of soil and water quality on food production, and explores soil and water conservation measures to be applied at farm level for agricultural sustainability. Divided into 8 chapters, the book covers topics such as soil properties responsible for soil loss, the impact of climate change, water and biological factors on soil chemistry, the effect of soil on the quality of water including sustaining aquaculture productivity and environment of wetlands, soil and water qualities necessary for irrigation, management of soil organic carbon, and the importance of soil moisture conservation including agroforestry for food production. Particular attention is given to the management of soil organic carbon in sustainable crop cultivation as well as reducing soil erosion and nutrient loss from soil from cultivated lands. Read more: https://link.springer.com/book/10.1007/978-3-031-15405-8.

Problem Soils – Constraints and Management

By K C Manorama Thampatti. Published by CRC Press, November 24, 2022, 172 Pages 3 B/W Illustrations, ISBN 9781033238897; price hardback 63.00 GBP.

This is a unique book that deals with the problem soils, their constraints and management in the Indian context. The book starts with the introduction on problem soils and the classification of these soils are included there under. In the book, there is widespread occurrence of soils with different types of constraints for crop production. Such soils are popularly called as “Problem Soils”. Cultivation in these soils is not so easy as several problems have to be tackled during cultivation. It may be either soil droughtiness or acidity or salinity etc. An attempt has been made in this book to cover most of the problematic soils in India. The classification of problem soils has been done based on the limitations they possess and the most dominant limitation is taken into consideration for grouping it under a particular class. Here five broader classes have been identified viz., soils with climatic problems; soils with physical problems; soils with chemical problems; soils with biological problems and soils with problems due to anthropogenic reasons.


Emerging Pollutants in Sewage Sludge and Soils


This book provides an authoritative overview of emerging pollutants in sewage sludge and soils. It traces the latest research and new trends on the characterization, removal and treatment of such pollutants in urban and industrial sewage sludge and soils. The book covers topics such as antibiotic resistance, fate and environmental impact of contaminants of emerging concern, environmental transmission of human pathogenic viruses and their effect on soil, and the repercussion of various emerging pollutants on biodiversity. It also offers a case study of the epidemiology-based surveillance of SARS-CoV-2 in wastewater and sludge. Read more: https://link.springer.com/book/10.1007/978-3-031-07609-1#bibliographic-information.

New Publications
The OIV Awards Ceremony gathered two years’ winners (2021-2022) in La Cité du Vin, Bordeaux

After the 2020 Ceremony held online due to the Covid-19 Pandemic and the 2021 Gala cancelled because of the French government requirements, the OIV Awards ceremony took place September 30th, in La Cité du Vin in Bordeaux. The gala gathered 50 winners and 100 attendees from the 2021 and 2022 editions. The event was the first to be held in person after the covid-19 pandemic that started in 2020.

The awards were granted as usual by the President of the OIV awards, Azelina Jaboulet-Verchere and the Scientific Secretary, Richard Pfister. Due to the impossibility of attending the ceremony, some of the winners had sent a video that was shown during the ceremony explaining the book they had written.

The event was celebrated by the President of the OIV, Luigi Moio, who gave an opening speech in which he stressed the importance of culture in the vine and wine world. Between the 2021 and 2022 awards, the OIV signed a Memorandum of Understanding with the Fondation pour la culture et les civilisations du vin to strengthen their collaboration. Both entities are determined to continue working together to promote cultural aspects inherent to the sector “against the enemies that try to put wine legitimacy at risk”, stated the OIV Director General, Pau Roca. A wine tasting offered, among other international wines, some prosecco of one of the 2021 winners: The Terroirs of Conegliano Valdobbiadene Prosecco Wines by Diego Tomasi and Federica Gaiotti.

The OIV Awards were created in 1930 and value literature, photography, history and creativity of the world of vine and wine.

The 2023 Edition is open to applications: https://www.oiv.int/.

Award for “Healthy Soils for Healthy Vines. Soil Management for Productive Vineyards”

The International Jury of the OIV, the International Organisation of Vine and Wine, has awarded the book “Healthy Soils for Healthy Vines. Soil Management for Productive Vineyards” the PRIX de l’OIV 2021, OIV AWARD 2021, in the category Vitiviniculture Durable – Sustainable Vitiviniculture. The IUSS congratulates the authors Robert White and Mark Krstic on winning this award.

Read more: https://www.oiv.int.
Management of rural and urban soils and hydrogeological disasters

By Edoardo A.C. Costantini, IUSS President Elect

On the night between the 15th and 16th of September, another hydrogeological disaster occurred in Italy. Following a heavy storm, a part of the Marche region has been flooded causing the death of 13 people and several million euros of damage to houses, infrastructures, farms, and factories. The area in fact is one of the most industrialized in Italy. In not even one day we have recorded in that area what precipitates on average in 6 months.

The storm hit an area that records 700 to 1,100 millimetres of rain per year, so 400 millimetres of water in one night were devastating. It was a “self-healing storm”; a particular type of storm capable of feeding itself thanks to the contrast between warm and humid air on the ground and a colder and drier one at the upper altitudes of the troposphere. It was a real “suction” of the air, at considerable speeds, even higher than 50-70 km/h, which favoured the cooling of the rising damp air and the subsequent condensation of large quantities of water vapour, which further increased the size of the cell. This type of phenomenon is particularly dangerous because it can persist in the same areas for many hours, discharging enormous quantities of rain to the ground.

The flood and the hydrogeological and human disaster that occurred in the Marche region cause us to worry: what would it happen where I live if a similar water bomb arrived? Whenever we hear the wind blowing hard and we see bad weather approaching, we fear that the usual storm of the past will turn now into a catastrophe.

Even the least informed and most sceptical people can now directly see the consequences of climate change and observe how the territory becomes increasingly fragile and at risk of failure. Once the instability mainly affected the countryside and villages, but more and more frequently it affects the cities. Urbanization in Italy is increasing at a frenzied pace (more than 2 square meters per second, in 2021 the highest value in the last 10 years) and settlements cover ever larger and increasingly densely urbanized territories, helping to increase the risk of disaster for people and things.

Now, as always happens after a disaster, greater care of the territory and maintenance of hydraulic works is rightly required, but little attention is paid to the soils. After this recent flooding, it was said that due to the great summer drought the soils did not allow the rain to infiltrate and favourable surface flow. In reality, soil scientists know that is not so much the condition of dry soil that prevented rains from being accepted, but its compaction! A well-structured soil, even if dry, allows water to infiltrate deeply, but not if it is compacted. Compaction occurs as a consequence of the destruction of the surface structure caused by poor agricultural management. The soils of the Marche region are often very poor in organic matter and consequently poorly structured, and when they are affected by the passage of heavy machinery they become compacted by many centimetres. Thus they lose an important ecological service: the regulation of water outflows. We have seen how the water level increased in a few minutes during the disaster; if the soils had retained water even for just a few hours, they would have given people time to save themselves and limit the damage. We really need to make an ecological transition in the agricultural management of agricultural and forest land, based on sustainable and precision agriculture.

Similarly, the damage has been increased in cities and towns by overbuilding and soil sealing. Looking at the urban areas that were flooded in detail, we notice the scarcity of green areas. It is true that in the case of such heavy rain events, the areas free from settlement and allowing drainage would not have been sufficient to infiltrate all the rainwater, but they would certainly have contributed to limiting the damage. In fact, an urban aspect that is little considered is that the soils of green areas in urban centres perform important ecosystem services, including absorbing excess water. That is, they function like many little water retention reservoirs distributed among the houses, all the more necessary when there are no or insufficient retention reservoirs along the rivers and between the hills and the inhabited area. The soils of green areas and also those of draining pavements can not only absorb the precipitation of heavy storms but also infiltrate part of the excess water not disposed of by sewers and that over banking from rivers. Draining soils are therefore of fundamental importance for the mitigation of hydrogeological risk in the cities. Urban plans should be done in great detail, considering the nature of the soils before determining the type of urban destination and also orienting their management, in order to enhance their ecological services. Exactly as it should be done through the adoption of sustainable and precision agriculture in rural areas.
In Memoriam

Professor Tahar Gallali (1947-2022) passed away on Thursday, August 25, 2022, after a long and debilitating illness. Tahar Gallali was an excellent soil scientist and an outstanding professor of Tunisian higher educational system. Professor Gallali was also recognized as a great personality of science outside the soil and geological disciplines and as an activist for societal causes.

The researcher
Tahar Gallali did all his higher education in Nancy (France) with an engineering degree in Agronomic School at ENSAIA (1968-1971), a postgraduate diploma (French “diplôme d’études approfondies” or DEA) in pedology (1971), then a doctorate on “Aminopolysaccharids in soils” (1972) and finally a doctorate in Natural Sciences from the University (highest level for a doctorate in France) on the “Pedo-biological study of saldodic soils” (1980). Back in Tunisia his research focused on the management of soils as valuable natural resources and on water supply techniques, in arid areas. He published numerous papers and books on soils especially those with calcareous and saline accumulations as well as on the distribution of trace elements, the dynamics of organic matter and the recovery of solid waste. In the 2010s, he worked on soils, in relation to global warming, in partnership with the French Research Institution for Development (IRD) and the joint research unit UMR Eco&Sols (Montpellier). He developed studies theme on soil carbon sequestration in Tunisian no-till systems (French Development Agency, Project PAMPA: Multi-country Action Program in Agroecology). He contributed to the establishment of CaSA, the francophone network on soil carbon for sustainable agriculture in Africa. He also participated as principal contributor and editorial board member in the Soil Atlas of Africa. For the period 2005-2016 alone, about 25 papers and book chapters have been published internationally. During his long scientific career, he has supervised not less than 15 “thesis” and 50 postgraduate students (DEA or Master), including as a visiting professor at the University Abdou Moumi in Niamey (Niger), since 1984.
He has also acted as an expert in these fields as a consultant in many foreign countries, with UNESCO (for various commissions), ALECSEO, UNEP, UNDP, IFAD, OIS, AUPELF-AUF, etc.

The teacher
Tahar Gallali’s teaching activity has been a remarkable epic since 1980, when he established pedology as a new scientific discipline taught at the University of Tunis and included at all levels in the curricula of several masters of the Faculty of Sciences of Tunis: Natural Sciences, Sciences and Earth Techniques.

He created the first doctoral program in Environmental Sciences, including the “DEA” (master equivalent) entitled “Soil, Water and Environment” in which many French researchers and teachers (often from IRD, or the former Orstom) participated.

In 2004, he introduced a new teaching program in the University of Tunis on Soil, Environment and Natural Hazards, while developing a “virtual” program with online educational resources. This teaching activity went hand-in-hand with the publication of several educational books on “Elements de géodynamique externe (External geodynamics) (1988), Cités des sols (Keys to soils) (2004), 2 volumes entitled Pédologie I et II (Pedology I and II) (2005, 2006), Gestion des risques naturels (Natural risk management) (2007). He has also participated in Panels for 23 thesis juries and 29 teacher-researcher recruitment juries and has been an expert for the National Foundation for Scientific Research (FNRS), advisor to the Ministry of Equipment and Housing for environmental issues, member of the High Council for the Reform of the Education System.

Science for the general public
First, he founded (1992) and directed (until 2002) the “Cité des Sciences à Tunis” (Tunis Sciences City). It is one of the most important scientific projects in the Mediterranean (60,000 m², 50 million US$ in 2002). In addition to the permanent collections, the “Cité” organized many cycles of conferences or international festivals (such as “Science in the Sahara”) with Nobel Prize winners, astronauts, well-known science writers, etc., set up interactive exhibitions for the general public on modern science, and publishes books and multimedia supports for the dissemination of scientific culture.

Tahar Gallali directed the magazine Er-rif published from 1987 to 1992 by a rural development NGO. Then he created and directed (1994-2002) “Cité Editions” (City Editions) (a publisher attached to La Cité des Sciences) with its main magazine “El-Madar” for the dissemination of scientific culture with publication of works on different subject such as the following titles: Je Mesure l’Univers (I Measure the Universe); Je Vens d’Oú! (From where I Come!); Hymne à la Tolerance (Hymn To Tolerance); Le Petit Guide Bleu du Ciel (The Small Blue Guide of the Sky).

All his activity and engagements have been recognized in 2017 with the attribution of the international prize “Eureka” (“I found”, word attributed to Archimedes) which honors outstanding contributions in the promotion of teaching and popularization of science in the Mediterranean region. This Prize is awarded by the NE21 program in the framework of the celebration of the International Day of Science for Peace and Development proclaimed by the United Nations.

Other activities
In the associative field
• Founding member and first president of the ASAF, the first association of Arab-French friendship in Nancy in 1971.
• Member of the steering committee since 1987 of ASDEA (Association for the development and rural animation), a pioneer NGO in rural development.
• Member of the Board of Directors of the Institute of And Regions (1988-1994).
• Administrator at the company of oil activities ETAP (Tunisian company of oil activities).
• Associate member of the ECSITE conference of European Science Cities, since 1994.
• Member of the scientific committee of the Euro-Mediterranean University of Cargese (Corsica, France) since October 2001.

Beyond Soil Science, global issues
Beyond Earth Sciences, Tahar Gallali is also a writer on some major contemporary global issues. In 2011, he published a superb reflection on environmental and climate change issues with his book L’Homme et la Terre, une liaison dangereuse (Man and the Earth: a dangerous relationship). In October 2017, (while Tahar is very much affected by his serious illness), he edited a new essay, in the political field of North-South confrontations; entitled La seule révolution qui vaille (The only revolution that is worthwhile). According to the author, the only revolution that is worthwhile on our Earth is the scientific one. He develops this idea through a historical, economic and socio-cultural analysis of the current and past conflicts between the Occidental and the Arab world in the context of Christianity and Islam. Finally, in 2020, he published el Mektoub, ou penser le risque (el Mektoub or thinking in terms of risk) which concerns the need to review the entire Tunisian system (operational and legal) for environmental risks.

Finally, Tahar Gallali was holder of the Merit of Education and Commander of the Order of the Republic (Tunisia). Tunisia can be proud to have had, in the person of Professor Gallali, a great scientist and professor, but also an activist for great causes, an important defender of human rights and the builder of the exceptional project of the City of Sciences in Tunis. This country owes a lot to Tahar Gallali who has continuously, with young and old, students and others, defended and displayed the scientific culture as the only way to fight against the dogmatic spirit, a fight he led all his life.

There is no doubt that Tunisia has just lost an exceptional personality.

By
Christian FELLER (IRD, France), Habib BELAYOUNI (Faculty of Sciences, Univ. Tunis, Tunisia), Martial BERNOUX (IRD, France and FAO, Italy)

1 ENSAIA Ecole Nationale Supérieure d’Agronomie & des Industries alimentaires
4 ALECSEO Arab League Educational, Cultural and Scientific Organization; UNESCO United Nations Educational, Cultural and Social Organization; UNEP United Nations Environment Programme; UNDP United Nations Development Programme; IFAD International Fund for Agricultural Development; OIS Sahara and Sahel Observatory; AUPELF-AUF Association des universités entièrement ou partiellement de langue française (AUPELF) – Agence Universitaire de la Francophonie (AUF).
# IUSS Honorary Members and Award Winners

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# IUSS Honor A ry Members and Award Winners

## IUSS Honorary Members

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<td>Jai Singh Pal Yadav †</td>
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## IUSS Award Winners

### Dokuchaev Award

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<td>Victor Targulian</td>
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<tr>
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<td>Dan Yaalon †</td>
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<tr>
<td>2014</td>
<td>Alex McBratney</td>
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<tr>
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<td>Johan Bouma</td>
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<tr>
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### Von Liebig Award

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<tr>
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<tr>
<td>2022</td>
<td>Yong-Guan Zhu</td>
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### Jeju Award

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<td>2022</td>
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