

Lars J. Munkholm

Year 2020 started out very promising – the world economy was doing well and just the image and sound of the word “2020” indicated harmony and good vibrations. But Year 2020 did not live up to the expectations. COVID-19 turned our daily life upside down and strongly limited our face-to-face interactions with family, friends and colleagues. Almost all national and international meetings were cancelled or postponed – with the 1st ISTRO Working Group – Conservation Soil Tillage Workshop as an exception (see notice below). Virtual meetings and webinars took over. They have worked surprisingly well seen from my point of view. But, I guess that we all miss physical meetings – and in particular the informal chats and spontaneous exchanges of ideas in coffee breaks etc. Fortunately, a number of vaccines are almost ready to be rolled out. So, 2021 will hopefully allow us to travel, interact face-to-face and participate physically in e.g. the ISTRO2021 conference in September. A lasting impact of 2020 may be a significant change in the balance between virtual and face-to-face meetings. Good for the environment and the work-life balance – but unfortunately a lesson learned based on the tragic COVID-19 situation.

## ⌘ ISTRO Board election - reminder

Information on the Election for ISTRO Board positions was circulated late October in an ISTROEXTRA newsletter. We have four nominations for three open Board positions, Dr. Rachel M.L. Guimaraes, Brazil; Dr. Joséphine Peigné, France; Professor Ying Zhao, China and Dr. Ranjan Bhattacharyya, India). To vote for the 3 open board positions email [b.mckenzie@dundee.ac.uk](mailto:b.mckenzie@dundee.ac.uk) with the subject heading ISTRO ballot 2021. In the text state your name, membership number (if known) and your country. Then state the names of your three preferred candidates. All votes received will be

acknowledged. Voting will close at midnight on 31 January 2021. Only votes from ISTRO members whose membership is up-to-date will be counted – so please ensure your membership dues have been paid. To pay your dues, please contact Treasurer Steve Prior ([Steve.Prior@ars.usda.gov](mailto:Steve.Prior@ars.usda.gov)).

## ⌘ ISTRO 2021 conference: Soil and tillage and the transition to digital agriculture

22<sup>nd</sup> ISTRO International Conference Dublin, Ireland.  
20–24<sup>th</sup> September 2021.



At present, the public health and travel situation remains very uncertain. There is great optimism about vaccine development and roll out, but whether that will come to sufficient people and fast enough to return to non-essential travel in the latter half of next year remains unclear. Despite this, planning for ISTRO2021 is progressing for the conference to take place from 20-24 September 2021 in Dublin Ireland. The conference organizers and ISTRO board will confirm the registration, paper submission and practical details in January 2021, when, hopefully, the situation for the coming year will be clearer than it is now.

As a reminder, the theme of the conference is ‘Soil and tillage and the transition to digital agriculture.’ The conference, as always, will welcome contributions on basic and applied soil and tillage research, but the specific focus will extend to digital agriculture technologies (data, sensors, networking,

earth observation, recommender systems and so on). To date we have confirmed keynote speakers on digital agriculture adoption (David Rose, Reading, UK), compaction and crop establishment decision support (Per Schjønning, Aarhus, DK and Kevin McDonnell, Dublin, IE), soil conservation (Christian Thierfelder (CIMMYT, ZW), 3D soil imaging (Saoirse Tracy, Dublin, IE) and soil physical quality in clay soils (Xinhua Peng, ISS, CN). Please plan to prepare and submit your contribution to the conference, whether oral presentation or poster as the call will open in January and due to the current circumstances, the lead-time into the conference is much shorter than would normally be the case.

We look forward to seeing as many people as possible in Dublin for the conference.

## ☞ Reflection on the Soil & Tillage Research Virtual Special Issue related to the 21st ISTRO Conference Paris, 2019

Elke Noellemeier, handling editor of the 21st ISTRO VSI

The 21st International Soil and Tillage Research Organization (ISTRO) Conference held in Paris, from Monday 24th to Thursday 27th September 2018, gathered over 250 scientists from 35 different countries. More than 206 submissions were examined by the scientific committee for a final selection of 120 oral presentations and 86 posters that were exposed in 8 sessions covering the wide range of topics that are within our field and discipline. It was also a representative showcase for the great geographical diversity of research groups.

During the conference, the editors of Soil & Tillage Research invited all participants to submit their contributions to the special issue, as a way of connecting the S&T community, and specifically give an opportunity to young researchers. Three prominent members of the ISTRO community accepted to act as guest editors for the VSI, Jean

Roger-Estrade, Allen Torbert, and Blair McKenzie, who for one year guided the review process for this issue.

As result, this VSI contains 35 papers that emerged from the ISTRO conference presentations, in many cases the first author being a young scientist. [The special issue](#) reflects the diversity of contributions, bringing together a selection of the presentations covering the 8 sessions of the conference. The subjects range from fundamental research that underpins developments to applied research delivering practical outcomes. The contributions also reflect the wide geographical range of research in this field, with contributions from a great number of different countries. This also helps to understand the variety and complexity of the problems that the ISTRO community deals with. Some of the contributions are among the most frequently downloaded papers of Soil & Tillage Research ([Keller et al.](#), Historical increase in agricultural machinery weights enhanced soil stress levels and adversely affected soil functioning and [Colombi & Keller.](#) Developing strategies to recover crop productivity after soil compaction—A plant eco-physiological perspective).

This motivates the editors to think of a new VSI to reflect the contributions to the 22nd ISTRO Conference to be held in Dublin next year. I personally hope to see you all there and to help to compile another volume that reflects the work of the ISTRO community.

With kind regards,

Elke

## ☞ 1st ISTRO Working Group – Conservation Soil Tillage Workshop

1st ISTRO Working Group – Conservation Soil Tillage (WG-CST) Workshop was held 8th–9th September, 2020, Osijek, Croatia. Host institutions were CROSTRO (Croatian branch of ISTRO), Faculty of Agrobiotechnical Sciences Osijek (as host institution) and OLMIX group.



Photo: Danijel Jug

At first, I wish to thank to all WG-CST members who were able to participate in the meeting, especially due to corona issue and real possibilities for COVID-19. In spite of that reason, as a general overview and in my personal opinion, the meeting was very successful.

On the ISTRO website you may find the Book of Abstracts, plus some other, I hope, interesting and useful information. ([www.istro.org](http://www.istro.org)).

Since the WG-CST has main intention to discuss and gathering basic knowledge about the current situation in science and professional work in ISTRO main interest areas (e.g. Soil and Water Management, Climate Change, Plant Nutrition, Tillage tools and Implements, Crop Protection, etc.) but within the domain of conservation soil tillage, the 1st Workshop was organized as a two days meeting.

The first day of the 1st ISTRO WG-CST Workshop was organized as a round table with oral presentations and discussions on the topics noted in the Invitation flyer:

- CST worldwide experiences
- Different aspects and acceptance of CST
- Research results
- Recognition and perspectives views of CST
- CST and Climate Change relation

The second day was organized as a field trip visiting:

- Multi-year stationary experimental field /demonstration site with conservation soil tillage
- Different experimental sites with opened soil profile and experts support
- Family farm "PG Knežević" (Host of experiment location and field demonstration site)
- Nature Park "Papuk" and geological park with very rare Basalt columns on the soil surface

The participants were very interested in exchanging ideas and collaborating on research results and questions related to climate change. During the second day, five soil profiles under different tillage practice and different crop rotations were evaluated. When applying visual evaluation methods, experts focused on specific problems appearing for the different soil tillage practices, from conventional tillage with plowing to different conservation tillage practices including no-till. The problems identified primarily focused on soil structural problems, soil dynamics under the effect of climate and biological activity, and possibilities and strategies for soil compaction prevention.

After the two-day Workshop meeting, the main conclusions were:

- Visual evaluation is a very good and useful tool for evaluation of soil/crop conditions and for prevention of many human and/or climate induced threats,
- Conservation Soil Tillage plays one of the main roles in sustainable approach to crop production, but is on global scale still not recognized in

proportions which is deserved as technique for adaptation and mitigation of climate change and soil degradation,

- Different definitions of Conservation Soil Tillage are pretty common on global scale which sometimes leads to misunderstandings in evaluation of achieved scientific and practical results,
- Proportion of knowledge and practical experience is very heterogeneous on every level (scientists to farmers) and depends on global, regional and even on local scale
- The main barriers for expanding adoption of Conservation Soil Tillage can be divided into: 1. Economic and social development (knowledge, tradition, technics, technology, science implementation etc.) and 2. Agro-ecological conditions (climate, soil, water, crop, biology etc.)
- The main reason/motivation for the adoption of Conservation Soil Tillage in crop production are positive financial effect. Unfortunately, other positive effects (reduction of soil erosion, increase biodiversity and quality of soil, less traffic and soil compaction alleviation, nutritional status and quality traits of crops, weed infestation etc.) are still in the background,
- The participants were very interested in discussing different topics and expressed interest in different ways of cooperation
- The participants agreed on a joint writing edition – Glossary of Conservation Soil Tillage. This proposition needs to be discussed with ISTRO board in details on the next meeting or most likely on main ISTRO conference in Dublin,
- The work in WG is seen as a very good "channel" for additional promotion of ISTRO activities and has potential for attracting new members.



Photo: Danijel Jug

### Next WG-CST meeting

The participants agreed to have WG-CST Workshops once per year in years following. The next meeting is planned for end of June next year (in 2021 - prior to main ISTRO Conference in Dublin) if allowed by the COVID-19 situation (exact dates and location will be setup in due time). Three months later in September there will be a meeting at the ISTRO Conference (when most of WG-CST members will be present). So, please put these informal dates in your diaries if you are interested in participation.

From establishing up to present day, WG-CST counts 31 members from 14 different countries. Any ISTRO member, or potential member, is kindly invited and welcome to join WG-CST (there is no any cost) and can do so simply by contacting the Chair ([djug@fazos.hr](mailto:djug@fazos.hr); [danijel@hdpot.hr](mailto:danijel@hdpot.hr)) or Secretary ([daniel.plaza@pvcf.udl.cat](mailto:daniel.plaza@pvcf.udl.cat)) of WG-CST.

WG-CST Chair

Danijel Jug

## ☞ New PhD graduate awarded a 3-year ISTRO membership

Johannes L. Jensen defended his PhD thesis at Aarhus University in March 2020 – just after the Corona lockdown in Denmark. Therefore, the circumstances were somewhat different from usual – he defended his thesis in a completely empty office alone with his computer as the first at the Department of Agroecology. The defense went really well despite the different form. His thesis titled “Identification of soil organic carbon thresholds for sustaining soil functions in arable mineral soils from the humid temperate region” is about identifying lower limit values for carbon in soil and has resulted in several publications including “Short-term changes in soil pore size distribution: Impact of land use” in *Soil and Tillage Research* (2020) 199: 104597.



The moment Johannes L. Jensen received his PhD degree (Screenshot: Johannes L. Jensen).

ISTRO sponsors membership for recent PhD graduates who have had an ISTRO member on their supervision team. Don't forget to send nomination information to Lars ([lars.munkholm@agro.au.dk](mailto:lars.munkholm@agro.au.dk)) and the thesis etc. will be published on the ISTRO website.

## ☞ Upcoming Meetings and Events

-- 2020 --

### December 2020

World Soil Day, 5<sup>th</sup> December, worldwide.

-- 2021 --

### Spring 2021

EIP-AGRI seminar 'Healthy soils for Europe', spring 2021 in Setubal, Portugal. Webpage:

<https://ec.europa.eu/eip/agriculture/en/event/eip-agri-seminar-healthy-soils-europe-sustainable>

### February 2021

The Global Symposium on Soil Biodiversity, 'Keep soil alive, protect soil biodiversity', February 2–5, 2021 at FAO headquarters in Rome, Italy.

**NEW DATE** Webpage:

<http://www.fao.org/about/meetings/soil-biodiversity-symposium/en/>

### April 2021

vEGU21: EGU General assembly, April 19–30 2021, online event. Webpage: <https://www.egu21.eu/>

### May 2021

First IUSS Conference on Sodic Soil Reclamation Monday, by the International Union of Soil Sciences. May 10–12 in Changchun, China. Website:

<http://ssr.csp.escience.cn/dct/page/65578>

Intersoil 2021: Soils, opportunities for the Transition of Territories, May 18–20, 2021, Paris, France. Website: [www.intersol.fr](http://www.intersol.fr)

9th National Symposium on Control of Soil Degradation and Recovery, May 27–28, Elche, Spain. Website: <https://condegres.es/>

Global conference on sandy soils: Properties and management, May 30–June 3, 2021 in Madison, United States of America.

Webpage: <https://sandysoils.org/>

## June 2021

5th International Conference on Contaminated Land, Ecological Assessment and Remediation CLEAR2020, June 9–11 in London, United Kingdom. Website: <http://clear2020.mdx.ac.uk/>

8th World Congress on Conservation Agriculture, June 21–24, 2021 in Zollikofen/Bern, Switzerland. Webpage: <https://8wcca.org/>

Soils Conference 2021, 'Soils, investing in our future', June 27–July 2, 2021 in Cairns, Queensland, Australia. Webpage: <https://www.soilscienceaustralia.org.au/2021-joint-conference/>

## August 2021

XXIII Latin-American Congress of Soil Sciences (XXII CLACS), August 22–27 in Florianópolis, Brasil. Website: [www.slcs.org.mx](http://www.slcs.org.mx)

Eurosoil. August 23–27, 2021 in Geneva, Switzerland. Webpage: <http://eurosoil2020.com/>

## Fall 2021

20th International and 9th Americas Conference organised by the International Society for Terrain-Vehicle Systems, **fall 2021** in Montréal, Québec, Canada. Webpage: <https://conference.istvs.org/>

## September 2021

The 22nd ISTRO conference on Agriculture in the 2020s: the role of soil and tillage research and innovation in the transition to digital agriculture, September 20–24, 2021 in Dublin Ireland.

1st International Joint Congress on Sustainable Management of Cultural Landscapes in the context of the European Green Deal, September 9–13 in Santo Stefano di Camastra, Italy. **NEW DATE** Webpage: <https://www.ecocycles.net/>

## October 2021

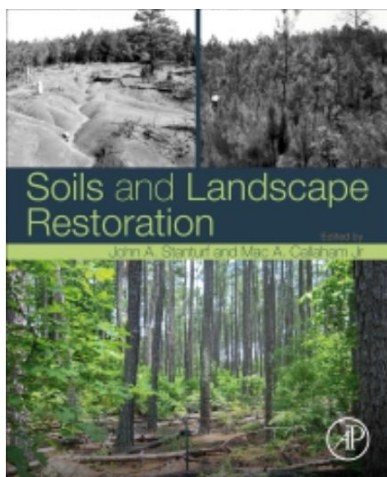
International Soil Classification Congress, October 14–22, 2021, México. **NEW DATE** Webpage: <http://iscc2020.org/>

3rd Annual Congress on Plant Science & Biosecurity, October, 7–9, 2021 in Osaka, Japan. **NEW DATE** Webpage: <https://plantbiology-biotechnology.com/>

## 🌀 New Books

### Soils and Landscape Restoration 1<sup>st</sup> Edition

**Editors:** John A. Stanturf, Mac Callahan



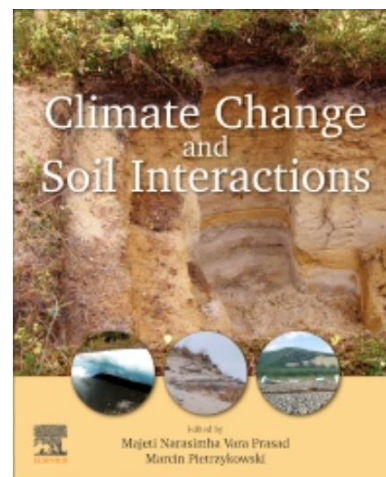
*Soils and Landscape Restoration* provides a multidisciplinary synthesis on the sustainable management and restoration of soils in various landscapes. The book presents applicable knowledge of above- and below-ground interactions and biome specific realizations along with in-depth investigations of particular soil degradation pathways. It focuses on severely degraded soils (e.g., eroded, salinized, mined) as well as the restoration of wetlands, grasslands and forests. The book addresses the need to bring together current perspectives on land degradation and restoration in soil science and restoration ecology to better incorporate soil-based information when restoration plans are formulated.

#### More information on this book:

<https://www.elsevier.com/books/soils-and-landscape-restoration/stanturf/978-0-12-813193-0>

### Climate Change and Soil Interactions 1<sup>st</sup> Edition

**Editors:** Majeti Narashima Vara Prasad, Marcin Pietrzykowski



*Climate Change and Soil Interactions* examines soil system interactions and conservation strategies regarding the effects of climate change. It presents cutting-edge research in soil carbonization, soil biodiversity, and vegetation. As a resource for strategies in maintaining various interactions for eco-sustainability, topical chapters address microbial response and soil health in relation to climate change, as well as soil improvement practices.

#### More information on this book:

<https://www.elsevier.com/books/climate-change-and-soil-interactions/prasad/978-0-12-818032-7>

ISTRO INFO is the newsletter of the **International Soil Tillage Research Organisation**. ([www.istro.org](http://www.istro.org)).

All information contained in this newsletter are © ISTRO and may not be distributed without written permission of the Secretary General, Dr. Blair McKenzie ([b.mckenzie@dundee.ac.uk](mailto:b.mckenzie@dundee.ac.uk)) or the Assistant Secretary General, Prof. Lars J. Munkholm ([lars.munkholm@agro.au.dk](mailto:lars.munkholm@agro.au.dk)).

For more information, please contact: Prof. Lars J. Munkholm, Assistant Secretary General, ISTRO, Aarhus University, Agroecology, P.O. Box 50, DK-8830 Tjele, Denmark.