ISTRO INFO
NEWSLETTER
of the
International Soil Tillage Research Organisation

Blair McKenzie

Greetings for the festive season. I hope this issue finds you well and able to take a break from your day-to-day duties with some peace and relaxation to reflect on the things that really matter.

This issue of ISTROINFO has a number of important announcements regarding elections, nominations, and up-dates to our constitution. Further there is information about changes to the editorial board and editorial policies of Soil & Tillage Research (and other journals published by Elsevier), that may impact on a large number of members. Please can I urge you to take the time to read them and respond as appropriate?

As a forward to some of the information to come it is worth noting that the journal Soil & Tillage Research was created by ISTRO members for ISTRO members. There is a long history of the editors and editorial board being ISTRO members. Some years ago the actual publication side was passed to Elsevier, but if you look at the journal website there is a clear statement "published in collaboration with the International Soil Tillage Research Organization (ISTRO). Of real practical importance is that as a result of this long-term association Elsevier makes an annual financial contribution to ISTRO. This is a substantial part of our income and contributes to the activities ISTRO supports; including branch meetings, working group activities, scholarships for the triennial conference, etc. For the relationship to continue and to strengthen there is a need for ISTRO members to work with the journal and the editors.

Those who have read the recent issues of ITROINFO (if you haven't you can catch up with them on our website www.istro.org) will know that ISTRO is a member of the Global Soil Partnership within the FAO (http://www.fao.org/globalsoilpartnership/en/). Lobbying by the FAO at the UN has seen that 5 December will be declared the international day for soils. The GSP has 5 fundamental pillars and is in the process of developing policies to support these pillars. As a member of the GSP, ISTRO was invited to nominate members to contribute to the discussions for these pillars. The nominated members may be asked to contribute ideas and text by email and skype as the GSP develop policy and draft plans of actions to support the pillars. Our nominations have been accepted by the FAO and are:

Pillar 1: Promote sustainable management of soil resources for soil protection, conservation and sustainable productivity; ISTRO nominee Dr Peter Weisskopf (Switzerland)

Pillar 2: Encourage investment, technical cooperation, policy, education awareness and extension in soil; ISTRO Nominee Prof Oswaldo Ernest (Uruguay)

Pillar 3: Promote targeted soil research and development focusing on identified gaps and priorities and synergies with related productive, environmental and social development actions; ISTRO nominee Dr Lars Munkholm (Denmark).

Thanks to Peter, Oswaldo and Lars for taking on this responsibility for ISTRO.

It is now just over a year ago that our web master put a counter onto the ISTRO webpage. From December 2012-13 there were 3,250 connections to our website. Interestingly, the country with the highest number of hits was India. Our membership in India is not large, although we have several new members from there. So if you are an Indian researcher in agriculture, soil science or engineering and reading this on the ISTRO website you might consider clicking on the membership tab, completing the application and joining ISTRO.

⌘ ISTRO Constitution & By-Laws Updates

ISTRO members in good standing (*i.e.*, your membership dues have been paid according to the Treasurer's records) were sent an email from my Secretary Ms. Becky Roland on November 18, 2013 with a pdf attachment showing ISTRO Constitution and By-Law changes being proposed by the ISTRO Board. We know that several people did not receive this message because of changes in email addresses, full mailboxes, a blockage of messages with attachments, or other reasons. If you are among those people, please send a current email address to both the Treasurer (Allen.Torbert@ars.usda.gov) and me (Doug.Karlen@ars.usda.gov) so that a copy can be sent to you for review.

Once you have received your document, please look them over and if you do not like the way something is written or explained, please send your suggestions for changing the document to either Allen, Blair McKenzie (Blair.McKenzie@hutton.ac.uk) or me by April 15, 2014. The ISTRO Board will meet by conference call and web connection during the summer of 2014 to discuss all comments and suggestions that are received. A final modified document will then be prepared and circulated to all members in good standing. Then, during the next General Assembly meeting during the 20th Triennial Conference in Nanjing, China, a vote will be taken by those present to either accept or reject the modifications.

Your input is valuable and appreciated, so please provide any feedback you wish, positive or negative and if you have not yet received a copy of the proposed changes, please be sure your email address is correct and that your ISTRO dues are current.

Thank you. -- Doug Karlen, Secretary General

⌘ ISTRO board nominations – remain open

Nominations for two Board positions and for Assistant Secretary General are now being accepted from all ISTRO members in good standing. If a member wishes to nominate a colleague or even themselves, please send the name, a brief biographical statement outlining the candidate's qualifications for an ISTRO Board position, and an affirmation that the candidate is willing to be on the ballot and to serve if elected to Secretary General Doug Karlen on or before 30 June 2014. Please use the email address Doug.Karlen@gmail.com for this communication. Depending upon the number of nominations received, the current ISTRO Board members will identify two to four potential Board candidates and two Assistant Secretary General candidates. A ballot will be prepared and distributed to members in good standing around October 1, 2014. ISTRO members elected to these positions will assume their new positions following the 20th Triennial Conference in Nanjing, China in September 2015.

General requirements for Board members are to serve for a period of six years (2015 – 2021), to be available to attend pre- and post-conference Board meetings as well as a mid-congress Board meeting at the location of the 2018 and 2021 Triennial conference sites, to serve in various liaison positions to ISTRO Branch and/or Working Groups, and to actively participate in discussions and email exchanges associated with ISTRO business. Although funds for travel to ISTRO Board meetings are available, it really helps the Organization if the candidate has some mechanism to help cover a portion of their travel expenses so that ISTRO dues can remain at their very modest level.

For those interested in the Assistant Secretary General position, it is helpful but not necessary to have some prior experience in dealing with ISTRO activities. This can be in the form of a former Board member, Working Group or Branch officer, past-President, or any other role that would have given the candidate a working knowledge of ISTRO. These experiences should be part of the qualifications statement submitted with the nomination. Candidates for Assistant Secretary General should also realize that under current By-Laws it is expected that after a period of six years (2015 – 2021) the individual will assume the role of Secretary General for another six years (2021 – 2027). This may seem daunting, but as someone in my 10th year of service, I must admit the time really has gone by very rapidly. Finally, in addition to assisting the Secretary General with ISTRO operations, the Assistant Secretary General will be responsible for preparing and distributing ISTRO-INFO and working with the webmaster to update the ISTRO webpage. Again, these activities do take some time, but they are also a very rewarding way to serve our Organization and to help our colleagues throughout the world.
If you have any questions about any of these opportunities, please contact Doug Karlen (doug.karlen@gmail.com) or Blair McKenzie (Blair.McKenzie@hutton.ac.uk).

⌘ Soil & Tillage Research in Elsevier pilot

For 12 months from October this year, Elsevier is running an Article transfer pilot for 6 journals: Agriculture, Ecosystems and Environment; Applied Soil Ecology; Catena; European Journal of Soil Biology; Geoderma; and Soil & Tillage Research. Full details of the pilot can be found at http://www.journals.elsevier.com/soil-and-tillage-research/policies-and-guidelines/publishers-note-oct2013/

The Article Transfer pilot was established with two main goals:

to reduce the amount of resubmissions of very low quality papers, both to Soil & Tillage Research and other Elsevier Soil Journals and,

to reduce the amount of reviews for papers that fall out of scope in one journal, but can be published in another Elsevier Soil journal.

The editors' options for decisions and rationale for choosing each term now are:

Decline pre-review: manuscript not in scope, or needs serious extra work (data, statistics, references) before being considered for peer-review.
Decline post-review: manuscript not in scope, but suitable for another journal according to reviewers.
Reject pre-review: manuscript seriously flawed (e.g. experimental design), no chance of improvement, not suited to be published at all.
Reject post-review: manuscript seriously flawed, reviewers advise against publication.

An important change compared to the use of the decisions terms previously, is that if a manuscript is not in scope of Soil & Tillage Research, but better suited in another journal, editors use "Decline" instead of "Reject". "Decline" will give the authors the option to resubmit their manuscript to another Elsevier journal without reformatting or uploading their files again, saving valuable time. "Reject" should only be used if the editor is confident that the manuscript will not be acceptable for any journal.

⌘ Thank You to Miroslav Kutilek and Rattan Lal

On behalf of all members of the International Soil Tillage Research Organization (ISTRO) this letter is to thank you both for your many years of dedicated service as editors for our journal Soil & Tillage Research. Serving as a journal editor is one of the most rewarding yet frustrating ways to serve your peers and professional society. Undoubtedly, you both have experienced jubilation when you are able to inform an author that their manuscript has been accepted for publication and sorrow when their work has to be released as unacceptable for publication. Such decisions are never easy.

I also want to thank both of you for your long and dedicated service to ISTRO. You have both contributed sound scientific ideas, published papers in our journal, and guided students as they learned to pursue careers in our discipline. Thank you again for your dedicated service, and I hope to see both of you at the next ISTRO conference in Nanjing, China.

Douglas L. Karlen, Secretary General

Editors Note: With the above retirements of editors at Soil & Tillage Research this seemed to me an ideal opportunity to start to introduce the new editors to ISTRO members. I know that many of you will know some of the new editors – but I know not everyone will know all of the new editors. To start the process I posed a few questions to Ole Wendroth – and he has very kindly responded in the spirit of reinforcing the strong connection between ISTRO and S&TR. It has also been a great opportunity for me to renew my connection with Ole. Some 20 years ago my wife and I visited Ole and his young family in Germany and still recall their wonderful hospitality. We have somewhat lost contact in the intervening years – but here is a chance for ISTRO members to appreciate a colleague.

⌘ Introducing a new editor of Soil & Tillage Research

Ole Wendroth

Why did you take on being an editor of S&TR?

Since a long time, I have had a strong affiliation with Soil & Tillage Research. The first international article I ever read as a student working on my diploma degree at the University of Goettingen in 1985 was a paper published in Soil & Tillage Research. I still have a copy of it with my notes in it. Since 1996, I have been a member of the Soil & Tillage Research Editorial Board. I consider reviewing manuscripts as a very rewarding responsibility. Reviewing and editing manuscripts contributes to a high quality level of scientific writing and in particular to the excellent quality of our journal. Besides being on the Soil & Tillage Research Editorial Board, I have served over the years as Associate Editor for Journal of Environmental Quality, Vadose Zone Journal, Agronomy Journal, Soil Science Society of America Journal, and Journal of Plant Nutrition & Soil Science, and as Technical Editor for Agronomy Journal. I have always appreciated editorial responsibilities. When invited to become one of the Editors-In-Chief of Soil & Tillage Research, I was extremely delighted to take over this task.

So far what has been good and difficult about the role?

I enjoy interacting with referees and to learn about their views and insights when they evaluate a manuscript. The enormous expertise and time commitment of many reviewers has to be appreciated. Sometimes, it can become difficult to find volunteers who are willing to review manuscripts.

What current research projects are you involved with?

My projects are in the area of land use and soil management impact on soil water and solute transport, land use impact on trace gas emission and their spatial variability and temporal stability, crop sensor-based nitrogen fertilizer application, and crop irrigation while accounting for soil spatial variability. Besides that I study soil physical properties of horse race track materials. I am very interested in improving experimental approaches and analyses in agricultural and landscape ecological research. Considering measurements taken in the field or samples measured in the lab not as varying randomly but as part of a spatial or temporal process is an auspicious concept for diagnosing agricultural systems and better understanding management influences.

How did you get involved in this area of research?

The above research focus is based on my interest in soil physics, soil variability, agricultural management and its impact on crop production and environmental quality. Before I studied at the university, I had worked in different agricultural farms for several years and completed a practical apprenticeship degree. That experience inspired me a lot, and to this day stimulates a lot of my research work being conducted in commercial farms.

Did you have / Who was your mentor?

Throughout my time as a student and graduate student as well as my scientific career, I had excellent supervisors and mentors, including the farmers I worked with. Prof. Wilfried Ehlers was my advisor for my diploma thesis and Ph.D. dissertation at University of Goettingen, Germany. Prof. D.R. Nielsen was my mentor during two post-doc years at UC Davis, and since that time has always been a wonderfully inspiring friend and colleague. We wrote a book together on Spatial and Temporal Statistics – Sampling Field Soils and Their Vegetation.

Who else inspires you?

My family, that is my wife and five children in the age between 22 and 9.

What 3 words sum you up?

Happy – Thankful – Excited

What is the best piece of advice you were ever given?

Always be positive.

Where do you like to go on holiday?

To any place where we can go with as many family members as possible. We like to visit relatives and friends in Germany.

Editors Note: In the next few issues of ISTROINFO I plan to help introduce the other new editors to ISTRO members.

⌘ 2nd Soil and Crop Management: Adaptation and Mitigation of Climate Change.

Osijek, Croatia 26-28th September 2013

A report on the conference has been prepared by Danijel Jug, President of the Croatian branch of ISTRO. The full report with lots of pictures of the conference, dinner and tour as well as a full conference programme with details of presentations and all the posters is available at http://www.pfos.hr/~hdpot/simpozij_2013.htm .

Below is a summary of Danijel's report.

2nd International Scientific Conference "Soil and Crop Management: Adaptation and Mitigation of Climate Change", was held under CROSTRO organization (Croatian Soil Tillage Research Organization) under the auspice of ISTRO (International Soil Tillage Research), from 26-28 September, 2013, Osijek, Croatia.

The conference was attended by about 90 scientists-participants from 16 countries (Armenia, Bulgaria, Croatia, Czech Republic, France, Hungary, Iran, Iraq, Israel, Macedonia, Nigeria, Serbia, Slovakia, Slovenia, Spain, Uruguay), with 44 papers divided on 5 main topics / session, as follows:
1 Soil tillage and crop management in function of environmental protection
2 Adaptation and mitigation of climate changes in crop production
3 Soil degradation (biotic and abiotic) in agriculture production
4 Good agronomy practice
5 Sustainable production systems for food and bioenergy

Helpers at the registration desk check in delegates.

Plenary presentations

Impact of climate change on soil temperature in Croatia by Višnja Vučetić, Petra Jakovčić, Suzana Filić and Danijela Derežić.

Soil management to adaptation and mitigation of climate threats by Márta Birkás, Ivica Kisić, Da nijel Jug, and Vladimír Smutný.

A climate gradient approach toward understanding terrestrial ecosystem function by Yosef Steinberger.

Agricultural compaction of some soil types in eastern Croatia by Vesna Vukadinović, Danijel Jug, Boris Đurđević, Irena Jug, Vladimir Vukadinović, Bojan Stipešević, Iva Lović and Željko Kraljičak.

Review of research and practice of production and tillage systems in Podravje region (Slovenia) by Franc Bavec, Martina Bavec, Bojan Stipešević and Danijel Jug.

Oil-seed rape harvesting by special adapter by Jan Turan, Vladimir Višacki, Aleksandar Sedlar and Pavol Findura.

Soil tillage systems in maize as a key factor in soil protection against erosion in the Czech Republic by Vladimír Smutný, Vojtěch Lukas, Lubomír Neudert, Tamara Dryšlová, Martin Houšť and Blanka Procházková.

Tillage systems in winter wheat production as a challenge to mitigate global climate changes by Dusan Kovacevic, Nebojsa Momirovic and Zeljko Dolijanovic.

Marta Birkas and Danijel Jug share a joke.

Round table topic

Problems with the acceptance of reduced / conservation tillage systems – different aspects – different approaches. Moderators: Profs. Danijel Jug and Márta Birkás.

Conclusions and actions from the Conference.

Background for soil tillage improvement in Central – South-East Europe (related to Round table)

Conference tour – judging by the smiles this was after lunch and wine tasting.

Strengths

University education, foresight in soil tillage education, applicable data from long-term experiments – including climate mitigation techniques, data from soil condition monitoring, knowledge of the soil state/tillage problems, cooperation with farms, and regional/international cooperation.

Weaknesses

Downward tendency in state assistance (education, research). Some students/farmers are disinterested in profession development.

Opportunities

National/EU support.

Weaknesses

Economic aspects of farming, fluctuating prices of product in crop production, costs of input materials, wide range of farmer skills (from poor to excellent), level of the soil tillage machinery (from poor to high), extreme/incalculable climate, poor knowledge in mitigation techniques, claims of energy sector: stubble residues for energy, poor links in animal husbandry (lack of FYM, decreasing demand of fodder crops), other shortcomings in farming: fertilising defects, deficiencies in crop protection (stronger weed infestation, more pests and diseases).

⌘ Uruguay Branch conference

November 28-29, 2013 the 5th meeting of the Soil Science Society of Uruguay (SUCS) in association with the ISTRO Uruguay: "Soil & Water Conservation: Actions and challenges of today", was held in Palmar, Soriano, Uruguay. This meeting attracted more than 100 participants including an international guest from Chile. The participants were agronomists working in the private activity, researchers, and agronomy students.

Presentation sessions were well attended.

The main economic activity of Uruguay is to produce and export agro products, and soils are the principal natural resource Uruguay has. This is one of the reasons why the political initiatives to preservation of soils were recently implemented. Although the first stage of this implementation was held successfully, some aspects need to be adjusted.

Water quality and soil erosion were other topics presented in the meeting, as well as the update of the soil mapping for Uruguay. Another important topic was the functions of the government laboratory as support of the cartography, and as control of the performance of analytical service laboratories. Another aspect discussed was the impact of the intensive animal production on the soil, and measures to reduce the risk of water contamination. Soil erosion from forestry, soil compaction and watering in agricultural soils, and the prospects of biofuels were also items presented and discussed.

Please Note: Dr Mónica Barbazán: SUCS President announces that in October 2014 the SUCS in association with the ISTRO Uruguay soil will have the 1st congress in Uruguay.

⌘ Uruguay & Argentina Soil structure evaluation 14-22 October 2013

Carolina Sasal (Argentina), Oswaldo Ernst and Mario Pérez Bidegain (Uruguay) report that in October 14-22, 2013, Hubert Boizard visited Uruguay and Argentina. The purposes of this mission were to provide training in the cultural profile method, to analyze problem situations under no-till and to discuss potential collaborations.

Hubert in full flow with the cultural profile method.

From 14 to 16 October, the Uruguayan society of Soil Science (SUCS) and the UDELAR organized a meeting that was held in Paysandu, Uruguay. More than 20 participants, researchers and post graduate students discussed the implementation of the cultural profile method and compared visual description of soil structure under no-till and tillage situations on the experimental station of the University.

Soil profile under native pasture

In Argentina, the Argentinean Association of Soil Science (AACS) and the National Institute of Agricultural Technology (INTA) organized a two-day workshop called “Methodology of the cultural profile for the assessment of problem situations under no-till” that was held in the INTA Experimental Station of Paraná, Entre Ríos, and attracted over 80 participants. The issue of soil structure under no tillage and the problems to

conserve the soil resulted very attractive. In addition, Oswaldo Ernst presented the ISTRO and the advances in the Argentinean ISTRO branch. During the second day, five soil profiles under no-till with different soil rotations and soybean monoculture were evaluated by the crowded audience.

Soil profile after cropping

The mission of Hubert Boizard was focused on soil structural problems in no-till, the dynamics of soil structure under the effect of climate and biological activity, and the contribution of the cultural profile method for assessing soil structure. In Argentina and Uruguay, the researchers are concerned about compaction of soil under no-till and its consequences. The generalization of no–till farming and simplification of crop rotations raise questions about the sustainability of some farming systems. In this sense, the platy structure observed in large-scale no-till systems, its origin and consequences on the risk of runoff were analyzed. An adaptation of the cultural profile methodology to no tillage was visualized to better take into account the effects of climate and biological activity. This topic may be developed further during the meeting of Visual evaluation methods and soil compaction prevention strategies that will be held between the 26-30 May of 2014 in Maringá, Paraná, Brazil. See more information in following pages.

⌘ Polish Branch update

Following new elections for the Polish Branch the new office bearers are:
Branch President/Chair: J. Jurga, PhD DSc
Branch Vice-President: E. Wrzesinska, PhD DSc
Branch Treasurer: D. Blazejczak, PhD DSc
Host Institution: West Pomeranian University of Technology, Szczecin
Address: Faculty of Environmental Management and Agriculture, Department Construction and Use of Technical Equipment, Papieza Pawla VI nr 3/201, 71-459 Szczecin, Poland
e-mails: istro@zut.edu.pl
www.istro.zut.edu.pl
Number of Branch Members: 27

Polish ISTRO Branch, members from different universities and research institutes in Poland are actively working on soil physics, tillage, precision farming and related subjects. The main topics of the research activities are mostly problem-oriented. Some of the research fields are listed below:

The role of long-term fertilization and crop rotation in formation on soil physical and chemical properties with emphasis on consideration water-air conditions;

Growth, yield and weed infestation of some plants depending on fertilization and crop rotation;

Studies on soil seedbank in relation to tillage systems and crop rotation;

Properties of soil environment due to tillage systems;

Growth, development and yielding of cereals, pulses and root crops in different habitats;

Effect of chaff length of maize and sorghum on biogas yield and digestate properties;

The method of forecasting soil bulk density changes based on rut geometric parameters;

Determination of the pre-compression stress in the subsoil layer compacted by wheels of agricultural vehicles;

The method of determination the pre-compaction stress of soil to prevent its excessive wheel compaction by agricultural machines;

Pressure exerted by the soil in selected points of ploughshare working surface during cultivation of silty soil;

Influence of hole length of pellet durability;

Assessment of exhaust emissions from tractors operating in livestock buildings;

Comparison of selected errors in agricultural machine crossings driven manually and automatically;

The impact of the production costs of winter rape seeds on the value of the biodiesel produced; and

Physical properties of overlays used in reclamation of coal ash in the "Dolna Odra" power station.

Editors Note: Further Branch updates will be in the next issue with news about a rejuvenated Kenyan Branch.

⌘ Update of ISTRO Working Groups F and B, Visual Soil Examination and Evaluation and Subsoil Compaction joint meeting

Soil structural quality of tropical soils: Visual evaluation methods and soil compaction prevention strategies

To be held between the 26-30 May 2014 at Golden Ingá Hotel in Maringá, Paraná, Brazil

Draft Outline Programme:

Two days of talks, with two follow-up knowledge transfer field days

Background:

Following on from productive meetings during the Montevideo conference, the ISTRO working groups F and B are announcing the first joint meeting of these two complimentary groups. The workshop will be held in Maringá, Brazil, where we can access clayey and sandy tropical soil under no tillage, producing annual crops (soya bean and corn) and mechanically harvested sugarcane. This will allow the work groups to explore the use of both topsoil and subsoil methods for visual assessment and investigate subsoil compaction prevention strategies in tropical soils.

Work group members, ISTRO members and colleagues who wish to contribute are invited to offer presentations in the form of one page abstracts, which should be sent to the organisers by January 31st 2014. If you would like to demonstrate a method during the field days, please send details of the method and how you intend to demonstrate it by January 31st 2014. We aim to publish presentations and descriptions of demonstrated techniques in a special issue.

The programme is still under development but the date and place have been set, with subscription costs to be US$300 (Includes coffee breaks, four lunches, and transportation to the knowledge transfer days). The deadline for registration is the 28th February 2014. However, the number of participants is limited, so we advice early subscription. The hotel will have special deals for workshop participants. Details and updates will be released in further editions of ISTROinfo and on the event website: www.pb.utfpr.edu.br/vsee-sc

Objectives:

To discuss top and subsoil visual methods, with special focus on soil compaction.

To exchange experiences in using different visual methods.

To refine and to relate the visual methods to tropical soils.

To discuss compaction prevention strategies with special focus on tropical soils.

To identify ways of combining visual methods with soil compaction research and compaction prevention tools.

Contact

VSEE

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Subsoil Compaction

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⌘ 20th Triennial ISTRO Conference.

Nanjing, China 14-18th September 2015

Please make careful note of the dates

Website now in operation!

http://istro2015.csp.escience.cn/dct/page/1

Scientific Program – Topics Announced

Soil erosion and degradation of soil quality in upland agriculture

Subsoil compaction: cause, effect and control

SOC sequestration and management

Soil biology and biodiversity:

Biophysics: the interaction between biology and architecture of soil

Earth critical zone: coupled hydrological and nutrients transport across scales

Biogeochemical processes in paddy soils

Agricultural sustainability and Climate change

Tillage and seeding equipment design and modeling

Farmer and consultant's research experiences and needs

⌘ Soil & Water Conservation: Actions and challenges of today

Attention Fertile Crescent Scholars

Ms. Erin Pocock, a Ph.D. student at Western University in London, Canada recently contacted me for assistance with her research question which is described below. I suggested she contact Dr. Daniel Hillel and perhaps prepare a request for assistance from ISTRO members that could be distributed with this issue of ISTRO-INFO. I encourage anyone who can provide her leads to please do so. – Doug Karlen, Secretary General

The Fertile Crescent was, in ancient times, one of the most productive agricultural regions in the world, and as such has been studied in great depth by scholars across disciplines. The modern Middle East, on the other hand, is expected to be most negatively impacted by the impending water crisis, and agricultural practices are again under careful analysis. However, the period in between, some 1400 years of medieval agricultural history, encompassing this transition from boom to bust, has been sorely under-studied. My PhD is addressing this lacuna.

I am attempting to describe all aspects of agriculture in the western Fertile Crescent, an area called the Levant (modern-day Syria, Lebanon, Jordan and Israel), to improve our understanding of how farming and farming techniques were modified during this period of change. One of the most important elements of this project is documenting soil tillage methods. Unfortunately, historical resources on this period are scarce, as are archaeological studies. Educated guesses can be made based upon agricultural practices from earlier and later periods, or from areas that have been better documented in the medieval era (ie. Egypt, Yemen, Iraq and Muslim Spain), but whether or not we can assume that medieval Levantine farmers used the same practices is unclear. Specific questions regarding soil tillage that require answering include: what plow did Levantine farmers use? Did they rely upon animal labour? What other tillage and seedbed preparation tools were used during this period? What methods of fertilization were utilized? And of course: did these methods change throughout the years?

To help answer these critical questions I am appealing to ISTRO members and their colleagues for assistance and guidance. Traditional historical research methods are insufficient for this project, and I'm finding a need to broaden my search parameters: to think 'outside the box'. I am hoping that some of you might be aware of current or recent studies into the agricultural practices of the medieval Levant which might help to answer these questions. Or perhaps some of you might know of theories about tillage techniques that could be universally applied, and might assist in supporting what little evidence there is. It is an exciting project that could fill in huge gaps in the historical narrative, but some creative research is required in order to compensate for the lack of data. Please send any suggestions or recommendations to me, at eroulsto@uwo.ca.

Thank You

Erin Pocock

⌘ New books

Krümmelbein, J., Horn, R. , Pagliai, M. 2013: Soil degradation. Advances in Geoecology 42. Catena Verlag ISBN: 978-3-923381-59-3

Introduction to Soil degradation processes under various landuse and regional conditions.

Soils are regularly exposed to different kinds of external loads, which can be described as static or dynamic but which vary constantly in loading time and magnitude. How these external forces and soil management strategies coincide to deliver sustainable management and function of soils in a world with changing climate and increasing population is discussed in a range of challenging ways. The most recent flooding events in Germany, Poland, Austria, Czech Republic, etc. and the catastrophic landslides in Italy, etc., all capture the enormous effects and threats linked to manmade soil degradation which has not changed or adjusted management approaches to allow for changed climate with more intense rainfall events and major storms. This idea is the more relevant the more intense is the effect of soil cultivation dependent changes in the mechanical, hydraulic and physicochemical soil processes and functions. The result of such processes must be defined as a degraded system, which certainly under the aspect of requested crop yield increase, better filtering and buffering for clean drinking water production, as well as concerning a less intense climate gas emission to the atmosphere (global change effect), requires a better and more process-based understanding of the dominant processes.

In the following, various aspects of mechanical soil degradation will be described in the book elucidating the various scale effects as well as the consequences also for soil erosion and its quantification.

Eight contributions deal with the scale dependent processes of soil degradation and describe the interactions between soil particles and chemistry on soil strength.

The rheological approach including the differentiation between various chemical properties gives a fascinating insight into the soil processes and properties. On this basis the follow up processes at the aggregate level can be better understood and it certainly also helps to link results with a more complete concept. The basis for the mechanical processes is still the effective stress equation which can itself be subdivided in the various scale effects. Finally both a more complete picture of the strengthening but also of the degradation processes can be derived and countermeasures developed. These countermeasures also include natural soil regeneration or amelioration approaches based on the quantified internal soil strength and the information about the actual sensitivity of soil being under threat of soil compaction and deformation.

The first paper of Baumgarten and Horn deals with the assessment of soil degradation by using a scale-spanning soil mechanical approach followed by Khaydapova et al. who deal with the impact of Anthropogenic Load on Rheological Properties of Typical Chernozems.

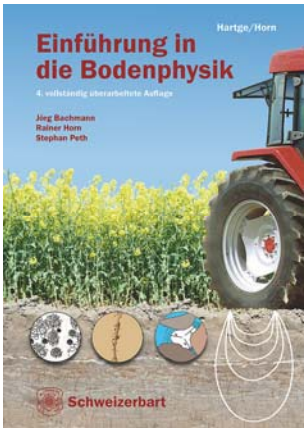
The effect of aggregation on soil strength as well as the risk of soil degradation even for soils derived from volcanic ash is described by Fuentes et al., while Stumpf et al. define aggregate properties of a constructed soil in Southern Brazil. How far organic carbon also the mechanical strength and affects also the biological properties within single aggregates will be defined by Mordhorst et al.

Zink et al. define an approach to quantify subsoil compaction on cable construction sites while Levy and Mamedov deal with the bulk soil susceptibility to deformation under different agricultural managements and discuss the applicability of the water retention curve patterns. Finally the contribution of Weisskopf et al. describes interesting results on the evolution of structural properties of an arable soil after compaction and the different regeneration pathways.

The consequences of non-side adjusted soil management on soil erosion are the topics of 2 contributions by Pellegrini et al. about assessment of topsoil structure degradation in a compost-amended silty clay loam soil under simulated rainfall, and by Šarapatka et al. dealing with arable land degradation with special focus to water erosion.

The latter paper leads into the last chapter, where regional soil degradation studies under various climatic and landuse systems are presented. Gimeno-García et al. describe soil and water salinity in a coastal wetland in Spain, while Drahorad et al. have analyzed soil characteristics and nutrient distribution after 27 years of grazing exclusion in Widou Thiengoly, Senegal. The following 2 papers again deal with soil properties in southern America. Dörner et al. investigate changes in the physical quality of an Andosol under different management intensities in southern Chile while Kaiser et al. prepared a review about physical properties in Subtropics and Tropics.

We hope that the combination of various soil degradation aspects and approaches and how to counteract them can deliver a valuable contribution to improve our understanding and to adjust the countermeasures more effectively.



Hartge, Karl Heinrich; Horn, Rainer:

Einführung in die Bodenphysik

von: Jörg Bachmann; Rainer Horn; Stephan Peth

[Introduction to soil physics]

ISBN 978-3-510-65280-8, brosch., price: 49.80 €

will be released 1/1/2014

Synopsis

Soils are composed of solid, liquid and gaseous phases. These phases are closely coupled to precipitation, groundwater and the atmosphere, making up the substrate for plant growth and yield. Complex physical and chemical - mostly quasi-dynamic - equilibria form the basis of assessing the *quality of a soil* for agricultural use, which, in the face of a growing world population must be intensified.

The present, fourth, completely revised (German) edition of this text presents an introduction to the basic physical and chemical relationships in soils and how the *productivity* of a soil is affected by physical parameters (such as grain size distribution, density, hydraulic conductivity, loading). The basic processes of water-, gas-, and heat transport are discussed at different scales; so are the deviations from the idealized laws of physics in *real* soils.

Methods of soil amelioration and soil protection are discussed in this context.

The volume addresses students of and researchers in soil science, agronomy, agriculture, forestry and all practitioners interested in how soil parameters and plant yield are related.

English (2014) and Spanish (2014/2015) language editions of this text are in preparation.

⌘ Other upcoming meetings

The 20th World Congress of Soil Science (20WCSS)

While ISTRO is not directly part of the IUSS many members are. For that reason and to stress the importance of understading and managing soils I think it is worth alerting ISTRO members to the upcoming world congress.

It is great honor and pleasure to inform that the 20th World Congress of Soil Science (20WCSS) will be held at the ICC JEJU, Korea, from June 8-13, 2014.

WCSS has been held quadrennially since 1927 as a scientific meeting in the field of soil science. As the most highly acclaimed meeting of its field, the 20WCSS will gather a large number of scientists and industries together with over 2,500 expected participants from more than 100 countries from around the world.

Under the theme of "Soils Embrace Life and Universe", all the participants from around the world will discuss up-to-date knowledge, recent research results and technological advances in the broad areas of soils sciences. During the congress, various scientific programs will be organized, and participants will have a great networking opportunity with internationally prominent scholars, specialists and researchers through diverse social activities.

We look forward to your interest and active participation.

Homepage	www.20wcss.org
Secretariat	20WCSS Secretariat 1F Haeoreum Bldg., 748-5 Yeoksam-dong, Gangnam-gu Tel +82-2-566-5058, +82-2-557-8422~3 Fax +82-2-566-6087 E-mail wcss@20wcss.org

***Sign up for 20WCSS to get the latest updates in www.20wcss.org.**

We are pleased to announce the first edition of the International Conference on *Engineering and Applied Sciences Optimization (OPTI 2014)* to be held in Kos Island, Greece on 4-6 June 2014.

The purpose of **OPTI 2014** is to bring together the scientific community working in the broader field of Engineering and Applied Sciences Optimization including problems formulation, computational methods and software development. OPTI 2014 will facilitate the exchange of ideas in topics of mutual interest and will serve as a platform for establishing links between research groups with complementary activities.

OPTI 2014 is organized under the auspices of the International Society for Structural and Multidisciplinary Optimization (ISSMO), Transportation Research Board (TRB), European Community on Computational Methods in Applied Sciences (ECCOMAS), Hellenic Institute of Transportation Engineers (HITE), Greek Association for Computational Mechanics (GRACM) and John

Key Date: Deadline for presenting a one page abstract is October 31, 2013
Further information is available at URL:
www.opti2014.org
The Proceedings of the conference will be indexed by ScienceDirect and SCOPUS of Elsevier.

25-28 February 2014
42nd Actual Tasks on Agricultural Engineering
Opatija, Croatia
http://atae.agr.hr/

18-20 March 2014
4th International Conference on Machine Control and Guidance
Braunschweig, Germany
www.mcg2014@tu-braunschweig.de

27 April-02 May 2014 The General Assembly 2014 of the **European Geosciences Union** will be held in Vienna, Austria. There are several sessions that are relevant to ISTRO members including those detailed below. The deadline for abstract submission for all sessions is 16 January, 2014.

Invasive and non-invasive methods to characterize physical soil properties on various scales.
http://meetingorganizer.copernicus.org/EGU2014/sessionprogramme

It is a co-organized session which can be found within the disciplinary sessions SSS (Soil system sciences) 7.8, HS (Hydrological sciences) 8.3.16 and SM (Seismology) 4.8.
For abstract submission, please visit:

Conveners: Julia Krümmelbein and Anna Schneider

Fluorescent organic matter in soil environments: new knowledge and/or non-resolved questions?
http://meetingorganizer.copernicus.org/EGU2014/session/14882
Link for the Abstract submission:
https://administrator.copernicus.org/authentication.php

Conveners: Mikhail Borisover , Co-Conveners: Stéphane Mounier , Débora Milori , Frédéric Coppin , Nicola Senesi

Modification of soils by plants: sustainability by design

http://meetingorganizer.copernicus.org/EGU2014/session/14925

Convenors: Paul Hallett, Rosario Garcia Moreno, Doris Vetterlein, Philip White.

Link for Abstract submission
www.egu2014.eu/abstract_management/how_to_submit_an_abstract.html

21-23 May 2014
2nd International Conference on Robotics and associated high-technologies and equipment for agriculture and forestry. Madrid, Spain
http://www.rhea-conference.eu/2014/

22-27 June 2014
6th World Congress on Conservation Agriculture in Winnipeg, Canada
http://www.citc.oeg/WCCA

ELS 2014 - the Earth Living Skin: Soil, Life and Climate Changes - the first Conference of a Series organized under the auspices of the Soil System Sciences Division of the European Geosciences Union. ELS 2014 will be held next 21 – 25 September 2014 in Nova Yardinia, Castellaneta Marina (TA), Italy.

The scientific program will be structured according to the proposed sessions, open to contribution. In November the call for abstracts will be launched till February 2014. Please visit our web site at http://www.els2014.eu

http://www.plantstress.net/plantstressdocument.php?doc=117&ln=eng

Latin America Soil Science Congress, Cuzco Peru 9-15 November 2014 www.slsc.org.mx

⌘ Final comments

I remind readers tht at the start of this issue was the following "ISTRO members in good standing (*i.e.*, your membership dues have been paid according to the Treasurer's records) were sent an email from my Secretary Ms. Becky Roland on November 18, 2013 with a pdf attachment showing ISTRO Constitution and By-Law changes being proposed by the ISTRO Board. We know that several people did not receive this message because of changes in email addresses, full mailboxes, a blockage of messages with attachments, or other reasons. If you are among those people, please send a current email address to both the Treasurer (Allen.Torbert@ars.usda.gov) and me (Doug.Karlen@ars.usda.gov) so that a copy can be sent to you for review." If you did not receive this information please contact Allen or Doug.

It remains only for me to wish all ISTRO members a happy holiday season and best wishes for a peaceful and productive 2014.

ISTRO INFO is the newsletter of the **International Soil Tillage Research Organisation**. (www.istro.org).

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