



SOIL CONNECTS is the biannual newsletter of Division 4 in the International Union of Soil Sciences

Issue 6 - July 2017



this edition

Welcome to SOIL CONNECTS - 6

It is a pleasure to release the sixth edition of the newsletter covering the stories, issues, events from the members of Division 4. This newsletter will contribute to a suite of newsletters already produced within the IUSS and will give its members the opportunity to share their knowledge of soil with other members and the broader community.

Planning has now commenced for the 21st World Congress to be held in Rio de Janeiro. We are continuing and it is expected that the plenary and session information will be released in the coming year. In the meantime there are many other soil focused conferences and symposia, including an every increasing presence at the annual EGU meetings.

It continues to be my pleasure to edit this newsletter and I call on all of you who are reading it to contribute to future issues.

Damien Field
Editor, Soil Connects

Cover Photo - The fourth world soil carpet was made in Persian Gulf Island of Hormoz by 30 artists who worked on it for one week.

Photo sourced: IRNA

Soil Connects logo designed by;
David van der Linden



Newsletter design inspired by Profile, a newsletter produced for Soil Science Australia

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IUSS Division 4 & Newsletter Information

DIVISION 4

The Role of Soils in Sustaining Society and the Environment

This Division focuses on transfer and outreach of good soil knowledge to society, as well as, taking responsibility for lifting the profile of soil among the general community. It takes the scientific knowledge and information developed in the other three divisions of the IUSS and shares this through education, international conventions and informing public policy and debate. Sharing of this knowledge between scientists, economists, policy makers and the broader community means this division interacts well beyond the traditional bounds of the soil science disciplines.

Commission 4.1 - Soils and the Environment

This Commission looks at soil as part of the ecosystem and how human activities impact on the soil and environmental interactions.

Commission 4.2 - Soils, Food Security and Human Security

This Commission looks at the challenge of maintaining agricultural lands, providing enough safe and nutritious food, and the role of soils in a changing world affecting human health.

Commission 4.3 - Soils and Land Use Change

In the context of global sustainability, this Commission investigates how soil functions can be managed and controlled to mitigate the impact of climate change. It also considers the impact of land use change with increased urbanisation, and loss of productive and forested lands.

Commission 4.4 - Soil Education & Public Awareness

A well informed public is needed so that the importance of soil is understood. This Commission shares the developments in learning and teaching of soil science that support this aspiration, as well as, developing strategies that increase the connectedness of the public with soil.

Commission 4.5 - History, Philosophy, and Sociology of Soil Science

This Commission deals with the past; it links the study of what has happened in history and how soil can be used to help explain the past changes. This Commission investigates the relationship between human development and soil.

Newsletter Contributions

Soil Connects is published in December and July each year. Contributions are to be received the first day of the month preceding the publication and can be emailed to the current editor Damien Field - email: damien.field@sydney.edu.au



Division Chair's Report

In this edition the Chairs report will be given as a summary of the meeting of IUSS division 4 members held at EGU in Vienna.

Meeting of IUSS Division 4 members

14 members of Div4, all of them also engaged in the working group on "cultural patterns of soil understanding", met at the occasion of the European Geosciences Union meeting in Vienna.

Prepared by Christian Feller, Nikola Patzel and Eric Brevik

Rationale for change of Division 4 structure

The Division 4 Chair, Christian Feller, proposed some possible new names for Div. 4, including: "The Role of Society in Sustaining (or not) Soils and the Environment." He said that (1) biophysical sciences, (2) economy and policies, and (3) culture were the three main dimensions of perceptions of soil by society. Currently, we have missed the acknowledgement of different cultural perceptions of soils within different societies, social classes or individuals': psychology, religion, art etc. If we don't know of culture in soil science and don't take this into consideration, very important aspects are missing. He also proposed the need to evaluate soil more as natural capital with its ecosystem services, and its economic and political regulations.

For future consideration, Christian Feller proposed to establish these commissions in Div4:

- A Education on Soil and Public Awareness
- B History of Soil Knowledge
- C Soil and Medicine
- D Soil as an Economic and Legal Body/System
- E Cultural Patterns of Soil Understanding.

The discussion that ensued highlighted broad support for adapting a new structure of division 4 in response to upcoming societal needs which go beyond classic soil science. An alternate title of the division, "Soil, environment and society" was also proposed. Several participants prefer "soil and health" to "soil and medicine" as a commission title. It was also suggested to create a commission on "soil and art" and to transform the working group on "cultural patterns of soil understanding" to a commission later, but with a bit more broad and simple title.

In general, the discussion showed the polarity of taking rather abstract names (broad vessels) for organisational units – vs. taking more precise names which may be more telling, but also to be changed more often. The general issue of division 4 should be inter- and trans-disciplinary activities. The time-line of this

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restructuring process presented by Christian was agreed by everybody. A new structure will be able to be voted in August 2018 in Rio.

Discussion on the role and activities of the working group on “cultural patterns of soil understanding

The first action of the meeting was to vote unanimously Eric Brevik (USA, Dickinson State University) to be vice chair of this working group. Then we discussed the role of the new working group in relation to the commissions in Div4. Currently it plays a kind of interface role between the Div4 commissions. We discussed why we say cultural “patterns” (and not e.g. “heritage” or just “culture”).

It is because of the aim of drawing common patterns out of different observations of behaviour and of ideas towards soil. This focus and name can be changed when maybe turning the WG later into a commission. The seven topics identified from the questionnaire to the cultural patterns working group members were reported again as a possible structure for 21WCSS symposium contributions and as sections for the book intended for 2019 (ranking in alphabetical order):

- 1) EMBEDDED SOIL – how is soil part of broader concepts of nature?
- 2) REFLECTION OF SCIENCE – investigating soil science as a cultural phenomenon, such as how we frame the value we attach to soil.
- 3) RELIGIONS AND SOIL – religious and spiritual traditions and experiences and their implications for soil understanding.
- 4) SOIL ART – including historical and contemporary portrayal of soils in art as well as the use of soil and/or soil materials to create art.
- 5) SOIL CULTURE ARCHAEOLOGY – the importance of soil to indigenous people.
- 6) SOIL EDUCATION – the function of soil education to foster or change cultural understanding of soil.
- 7) SOIL PSYCHOLOGY – analytic investigations into what drives our understanding of soil, on both the individual and cultural level.

This structure was approved in general, but not discussed in detail. It was proposed to well integrate ETHNOPEDODOLOGY issues and results into this structure.

Christian Feller, e-mail: christian.feller@ird.fr
Nikola Patzel, e-mail: nikola.patzel@soilcom.com
Eric Brvik, email: eric.brevik@dickinsonstate.edu



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Presentations at 21 WCSS symposia (12-17th of August, 2018 in Rio de Janeiro) – and possible book chapters for 2019.

At the founding session of the soil cultural patterns working group in Rio in November 2016, we made an oral agreement, with secretary general Sigbert Huber, to publish a book within the new IUSS series in 2019, which shall reflect the outcomes of the working group's progress.

A presentation in Rio 2018 could be a good stepping stone for a book chapter, but not an absolutely necessary one. The decision for which book chapters will be invited to be part of the book will follow the WCSS, and will be probably be done by Nikola Patzel, Eric Brevik and Christian Feller with input from the Working Group members at the WCSS.

We will discuss more about the book's structure and concept in the working group during the next few months, and for some sections sub-groups will already begin to meet which will then collaborate for their contributions for single book sections.

Please don't hesitate to contact patzel@bodenkommunikation.info, eric.brevik@dickinsonstate.edu and christian.feller@ird.fr with any ideas and suggestions on these topics, be it for the conference, the book, or both.

Please be aware that these things need early preliminaries, therefore we beg you to contact us before 31st of August, 2017, with first and not yet committal proposals for the topics above.



Image taken from <https://remineralize.org/2015/08/natural-vitality-soil-and-your-health-ebook-features-rte/>

Soil Art, Culture, and History session at EGU

by Eric Brevik
Dickinson State University
USA

The new IUSS Soil Cultural Patterns Working Group got off to a good start at the 2017 European Geosciences Union meeting in Vienna by co-sponsoring a session on “Soil Art, Culture, and History”. The session drew 22 presentations (7 orals and 15 posters) that covered a wide range of art, culture, and history topics. Art and culture topics included the making of a film documenting climate change impacts on cold region soils and people/cultures, soil as a subject of and medium used in art, the use of art projects to teach students or do public outreach about soil, poetry with soil as a subject and inspiration, cultural patterns of soil understanding, and viticultural terroir. On the history side, presentations covered topics including digital soil mapping in the USA, understanding of soil humus, American soil science history, the history of soil mapping and modeling for sustainable land use management, the history of soil science education in the USA, and a review of Perrault’s experiments. Feedback on the session was very good, and many great discussions resulted from the presentations. In addition, connections were established between people working in these areas and more people were made aware of the existence of the new Soil Cultural Patterns Working Group, both of which should help the Working Group organize for the 2018 WCSS and beyond.

The Soil Art, Culture, and History session was organized by Eric C. Brevik, Jorge Mataix-Solera, Rosa M. Poch, Christian Feller, Cristine Carole Muggler, and Paulo Pereira. More information on the session can be found at <http://meetingorganizer.copernicus.org/EGU2017/session/23248> and the links to the oral and poster session abstracts are accessible from the link above. Anyone who is interested in the activities of the Soil Cultural Patterns Working Group can contact Nikola Patzel (patzel@bodenkommunikation.info), Working Group chair, or Eric Brevik (Eric.Brevik@dickinsonstate.edu), Working Group vice-chair, for more information about the Working Group and possible contributions to its topics.



Bruegel. La chute d'Icare (The Fall of Icarus). Circa 1568. Musées Royaux des Beaux-Arts de Belgique, Brussels, Belgium (Inv. 4030). Photo: RoScan, J. Geleyns (© Musées Royaux des Beaux-Arts de Belgique, Brussels, Belgium).



Re-discovering soils: an interdisciplinary conversation

Greta Marchesi & Maria Puig de la Bellacasa

This June, an international group of social and physical scientists came together for a 'Re-discovering Soils' workshop at the University of Sheffield. The objective of the workshop was to support an interdisciplinary conversation on soil care. 'Re-discovering soils' was organized by Anna Krzywoszynska (University of Sheffield), Greta Marchesi (Dartmouth College), and Maria Puig de la Bellacasa (University of Leicester) and funded by the University of Sheffield's Geography Department and the Grantham Centre for Sustainable Futures. The workshop was the inaugural event of the Soil Care Network, a virtual community connecting scholars and scientists "animated by the love of, fascination with, and dedication to soils." Scholars from across the physical and social sciences participated in group discussions about caring for soil in a moment of globally-scaled environmental change.

The workshop also featured individual presentations on the ways that different human understandings shape soil care. Sociologist of science Bruno Latour argued that the Anthropocene demands an entirely new conceptual model of globalized nature to support efforts for constructive change. Other topics ranged from Sebastian Ureta's exploration of care for toxic soils in Chile to Daniel Münster and Jenny Goldstein's analyses of post-colonial soil science in India and Malaysia to Anne O'Brien's discussion of popular culture and soil care in Australia and Kristina Lyons' presentation on democracy and Colombian state soil science. Elisabeth Stockdale reclaimed the term 'soil husbandry' for her work supporting farmers, and Tom Sizmur espoused the benefits of caring for earthworms. Nikola Patzel and Stephen Nortcliff each discussed the growing relevance of social and cultural factors to the scientific study of soils.

For more information or to join the Soil Care Network, visit the website at <https://www.soilcarenetwork.com/> or contact Anna Krzywoszynska at a.krzywoszynska@sheffield.ac.uk.



Johan Bouma preparing to present after receiving the Alexander von Humboldt Award at EGU, 2017.

Be inspired by Alexander von Humboldt

by Johan Bouma

Em. Prof Soil Science, Wageningen University

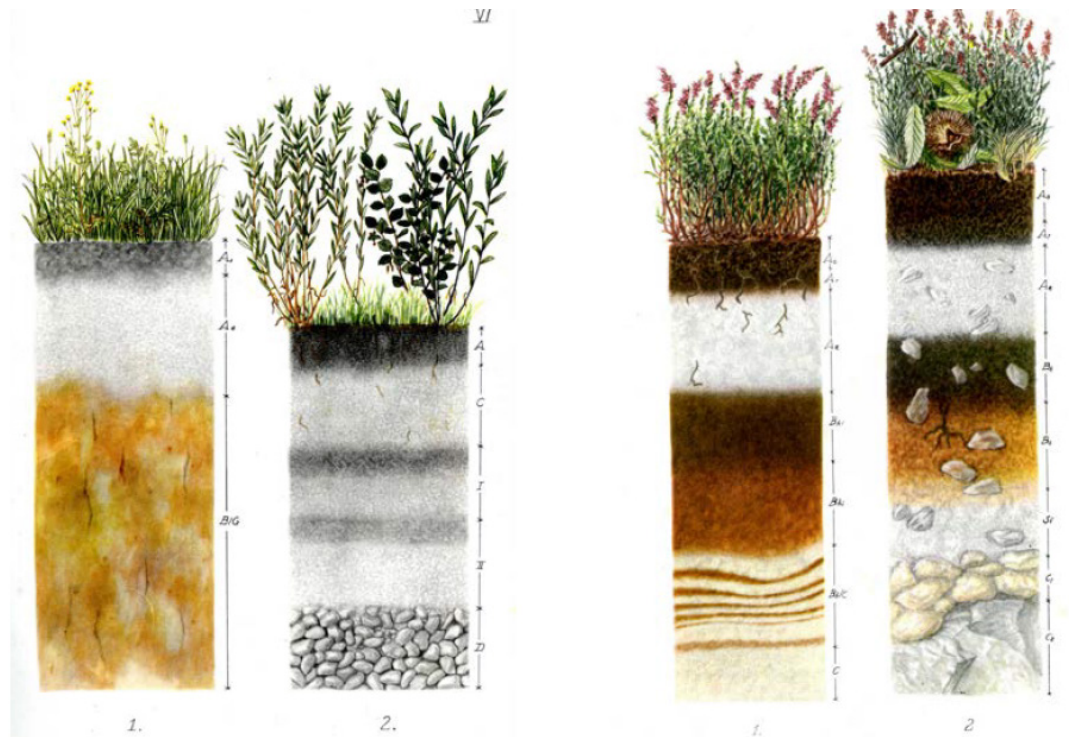
The Alexander von Humboldt Medal is reserved for scientists who have performed research in developing regions for the benefit of people and society through which they have achieved exceptional international standing in geosciences and planetary and space sciences, defined in their widest senses

Prof. Johan Bouma is the first soil scientist to be awarded the Alexander von Humboldt at the European Geophysical Union meeting in 2017. Prof. Bouma was asked to write a short article in response to this award. Here is what he has provided.

The scientific career of Alexander von Humboldt, a name linked with the medal for research in developing countries by the European Geosciences Union, is highly inspiring for scientists operating in the current scientific arena as one realizes after reading the impressive biography by Andrea Wulff (2015). He was the first in the early 1800's to emphasize the importance of the: "interconnected web of life" rather than isolated disciplinary and Taxonomic issues as was the custom at the time and still is in some quarters. He saw man as part of nature rather than as its justified and exclusive consumer, the dominant view at the time and still present today. It is now generally accepted that the geosciences are not only closely linked with other environmental sciences but with society itself. Modern measuring, sensing and modeling facilities offer now the possibility to express ecosystem dynamics in quantitative terms rather than in terms of the flowery illustrated books, reports, letters and drawings by von Humboldt, but the basic message is the same. But perhaps his greatest contribution has been his enthusiastic and uncompromising dedication to be receptive to new ideas ("keep learning") and to maintain an open, inquisitive mind when observing phenomena in nature or when interacting with land users in Latin America and The United States. He always encouraged young colleagues and shared his data freely. As a scientist he carried his instruments everywhere, meticulously documenting his many observations to be systematically analysed later, often deep into the night. At the same time he was, in dialogue with poets like Goethe, quite aware that "facts" are experienced differently by different people, as it involves personal emotions and values. Two centuries before terms like inter- and transdisciplinarity were coined they were acted out in real life by von Humboldt. As, for example, he observed the misery of farmers in the Aragua valley in the Andes following erosion and soil degradation as a side effect of cutting upland forests. In general he warned against developments where science may feed the brain with abstract data while ignoring imagination in the process: a message with high relevance to the current scientific arena.



See his Bio at <http://www.egu.eu/awards-medals/alexander-von-humboldt/2017/>



Soil profiles and associated vegetation represented as paintings in Walter Kubiena's textbook (1953) *Bestimmungsbuch und Systematik der Böden Europas* (The Soils of Europe). Taken from Feller et al 2015: <http://www.soil-journal.net/1/543/2015/soil-1-543-2015.pdf>



G. Wessolek. Soil Aesthetics Criteria. 2007. (Courtesy of the artist.). Taken from Feller et al 2015: <http://www.soil-journal.net/1/543/2015/soil-1-543-2015.pdf>

Use of art to illustrate soil: a way to get to know soil.

FELLER, C., LANDA, E. R., TOLAND, A., WESSOLEK G.
SOIL, 1, 543–559, 2015

Abridged by Damien Field.

Christian Feller and his co-authors published an article in the Journal SOIL in 2015 musing on the role of art in Soil. Part of the article focused on a place for painting in the soil science curricula. Viewing soil as a natural body the work of Dokuchaev in 1883 redefined soil as a collection of horizons rather than a series of layers. For the student this is made obvious when they see a profile for the first time as a collection of organised multi-coloured horizons, as it is these horizons that reveal us its story.

In the early 20th century the depiction of profiles was through coloured sketching's and paintings. Well known to all soil scientist is the example to the left of the plates that appear in Walter Kubiena's textbook (1953) *Bestimmungsbuch und Systematik der Böden Europas*. It is interesting to note the very clear straight boundaries that appear between the horizons, almost as if the profile is pieced together as discrete layers. Of course, with the increasing use of photography this representation may be too perfect or exemplary. Albeit, this representation remains a means to introduce those new to soil the concept of the horizon. One of the concepts that clearly defines the uniqueness of Soil Science.

Other soil scientists – for example Gerd Wessolek, Alexandra Toland (Technische Universität Berlin), Ken van Rees (University of Saskatchewan), Jay Stratton Noller (Oregon State University), Folkert Van Oort, Bénédicte and Louis-Marie Bresson (INRA, France). Here the opportunity to include artistic activities for students of soil science and engage artists in teaching endeavours is realised. To the left the representation by Wessolek to explore aesthetics of colour and texture is an example. The ability to capture such aesthetics is an exercise in the student to capture details that would not be possible in tabular or written form effectively, i.e. a complementary activity.

The raising of soil awareness has also relied on the use of painting techniques. It is claimed that the international “art and soil” 2004 calendar focused the attention on this medium signalling a move beyond its long established utilitarian relationship with agriculture too now be viewed from an aesthetic perspective by a broader audience.

These brief examples are all contributors to education of soil and by encouraging a personal experience with a material often lot underfoot. You can read the full article at <http://www.soil-journal.net/1/543/2015/soil-1-543-2015.pdf>



Soil in Persian culture

Alavipanah¹, S. K., Taghavi Bayat¹, A., Behifar¹, M., Alavipanah², S., Ghazanfari¹, K.

¹University of Tehran, Tehran, Iran, salavipa@ut.ac.ir

²Humboldt University of Berlin, Berlin, Germany

Introduction: Increasing public awareness about soil-related outreach involves the dissemination and acceptance of information about soil to stakeholders who have not been aware of its importance. These days almost everybody knows that soils are the foundation of food production and food security but, what about past? When awareness of soil importance and its conservation started? At what time we can find the first evidence of public announcement about soil in history and literatures? To find these questions we search in one of the oldest and biggest ancient culture Iran that have great ancient history and rich literature such as the poetic writings of the old poets Mowlana, Hafez, Saadi and Khayyam who presented the philosophical ideas of their time which are comparable to ideas presented in the scientific journals of today. The issues related to soil like the importance of soil, soil management, farming etc., are discussed in the Old Iranian traditions and literary works. Soil is a Complex, Dynamic, Open System and life also is the same! There are many ways, where the human contributes to usage and conservation of soils. Some more pertinent psychological research such as concept formations, graphic perception, expert, novice difference, and perceptual learning are needed.



Background: On the basis of evidences and texts remained from ancient Iran, Persians were believed that world created from four fundamental elements, which soil is one of them. In old literary texts soil is called mādar (mother) and godly element. As one of the four elements, soil is considered to be “maintainer of the nature” (dārāgxēm) of the heavenly glory (xawarrah). Moreover in creation of the material world in seven chronological stages, the earth/soil (zamīg), is the third one. As a holy creation, it is belongs to the “Bounteous Devotion.” The holiness of soil in ancient Iran was as much so that people were not allowed to bury corpse, which regarded to be greatly polluted.

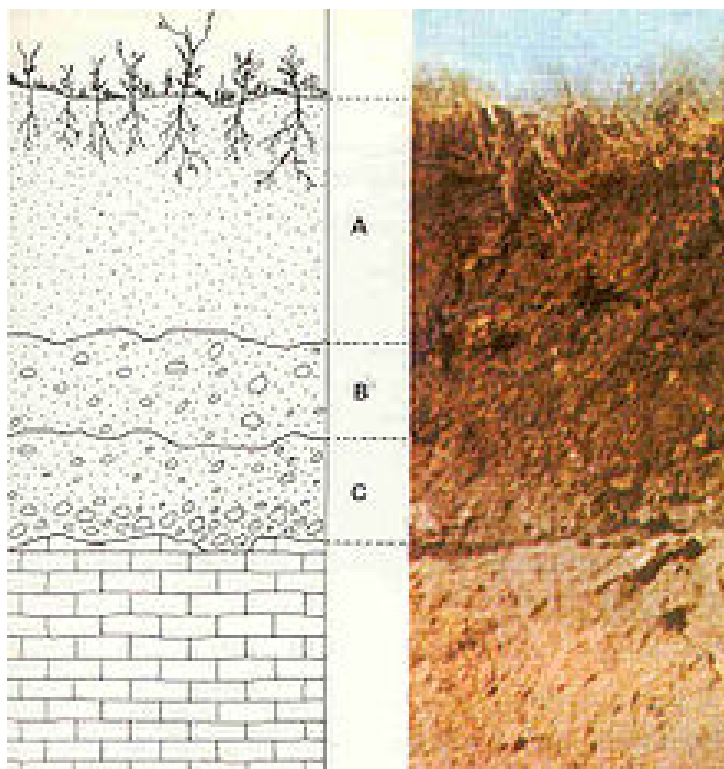
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Ancient Iranians regard the burial of “corpse matter” would defile the soil, so they constructed daxma “tower of silence”, in which the corpses are exposed to be eaten by birds. Furthermore soil is one of the purifiers of the material world.

Apart from ancient Iranian thought on soil, as mentioned before, the poetic writings of the old poets present also the philosophical ideas of their time on soil. Omar Khayyam Neyshabouri (pen-name Khayyam) was an insightful and erudite scientist who wrote profusely about philosophy, culture and mathematics.

continued on page - 14

A daxma “tower of silence” in Yazd Province, Iran



Soil representation through the pencil sketch and the photograph. Source ; <https://en.wikipedia.org/wiki/Soil>



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He wrote about the importance of soil and about the nature of soil. Jalal-e-Din Mohammad Molavi Rumi (pen-name Molavi) is one of the great spiritual masters and poetical geniuses of mankind in the 13th century. He believed that soil is one of main elements of nature need to preserve, protect and honor due to its major role for growing plants and any other living organisms. Abū-Muhammad Muslih al-Dīn bin Abdallāh Shirazi (pen-name Saadi), was one of the major Persian poets and literary men of the medieval period. He believed that soil as alive organism which needs to protect from pollutions. Sohrab Sepehri was a 19th-century notable Iranian poet and a painter. He wrote in his poems about soil in many aspects to show its important role in human life. Parvin E'tesami was one of Iran's greatest female poets in 20th-century. She wrote in her poems about soil as source of growth.

Here we have listed few Persian poems which incorporated soil and its vital role in our daily lives:

“Look how the morning breeze has helped the rosebud bloom
And how at the sight of the rose the nightingale swoons
Come sit in the shade of the rosebush for such a rose
Has often grown out of the soil to fall dawn again.”

(Omar Khayyam)

بی خیانت جنس آن برداشتی

خاک امین و هر چه در وی کاشتی

The soil is faithful to its trust, and whatever you have sown in it, you carry away the (equivalent in) kind thereof without fraud (on the part of the soil).

(Mohammad Molavi)

Spring with all its fragrance and freshness had arrived in the orchard of our house.

As if a chunk of spring had just fallen into our yard. There was a warm and pleasant sunshine.

I could just see the warm breath of the earth coming out of the soil of the orchard.

(Parvin E'tesami)

There is no cloud, There is no wind, I sit beside the pond,
The swimming fishes, light, I, flower, water,
The pureness of the cluster of life;
My mother reaps the sweet basil,
Bread, sweet basil, cheese, a cloudless sky, wet garden petunia,
Salvation is at hand: within the garden flowers.

Conclusion: Investigation and study of old Iranian people's history and literature confirm their awareness and knowledge on several issues relating to the concept of soil. The holiness of soil to old Iranians caused them to reverence and protect it from pollution. It is a noticeable issue since it is regarded by modern humans just from some decades ago. Moreover, Ancient Iranian rightly called soil "mother" and as we know nowadays it is the foundation of food production and food security, supplying plants with nutrients, water and supports for their roots, etc. Furthermore here, we have deliberated some of the most famous poets of Iran, like Khayam, Sapehry, and Rumi, which their thoughts provide some clues regarding concepts of soil worthiness. The most important considered aspects are fertility, biodiversity, providing ecological services. As long as we continued our research, more and more facts were appeared that the poetical literature of the mentioned scientific facts have been discussed by these poets. Of course the language of poetry is different from the language of science and needs more sophisticated skills to find the real relationship between these two languages. Therefore, this work is an open discussion and any kinds of contribution are welcomed.

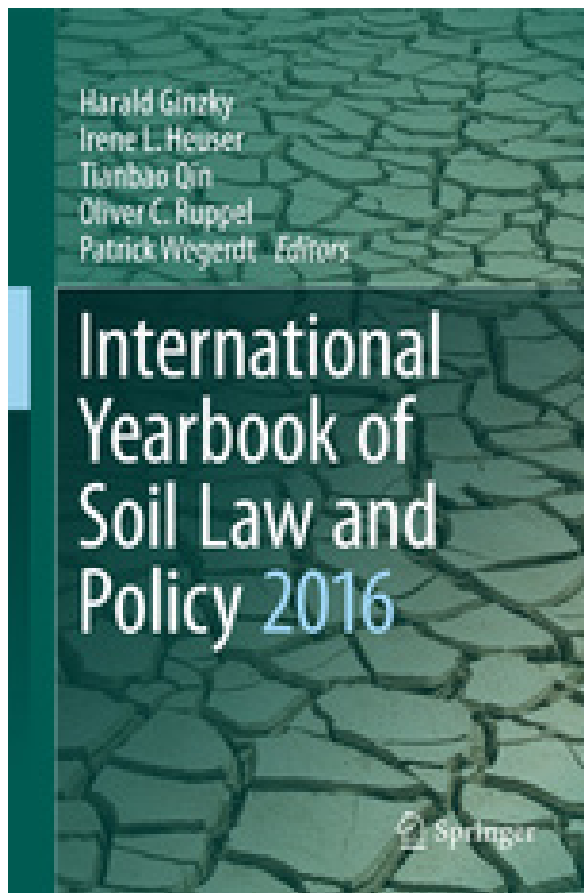
Sources

- Alavipanah, S.K., 2006, Thermal Remote Sensing and Its Application in the Earth Sciences, Iran, Tehran, Tehran University Press.
- Dadeji, Farnbagh, 1956, Zand-Akasih, Iranian or Greater Bundahishn, tr. Behramgore Tehmuras Anklesaria, Bombay.
- FAO and ITPS, 2015, Status of the World's Soil Resources (SWSR) – Main Report. Food and Agriculture Organization of the United Nations and Intergovernmental Technical Panel on Soils, Rome, Italy.
- Kreyenbroek, Ph., Cosmogony and Cosmology in Zoroastrianism/Mazdaism, Encyclopedia Iranica, online edition, available at: <http://www.iranicaonline.org/articles/cosmogony-i>.
- Narten, J., 1982, Die Am aSp taim Avesta, Wiesbaden.
- SASTIW (Secretariat for the Advancement of Science and Technology in the Islamic World), 2016, Summary Report, International Scientific Summit of Health and Lifestyle: Global Soil Threats, Faculty of Geography, University of Tehran, Tehran, Iran.
- Shahbazi, A. Sh., 1987, Astodan, Encyclopedia Iranica, online edition, available at: <http://www.iranicaonline.org/articles/astodan-ossuary>.
- Vichitakiha-iZatsparam. With Text and Introduction, 1964, tr. B. T. Anklesaria, pt. I, Bombay.



The fourth world soil carpet was made in Persian Gulf Island of Hormoz by 30 artists who worked on it for one week. Four tons of colorful soil of the island (Ref: IRNA)

International Yearbook of Soil Law and Policy 2016



The first volume of the International Yearbook of Soil Law and Policy includes an important discussion on the implementation of the Sustainable Development Goals that are the basis for the post-2015 development agenda up to the year 2030; the Yearbook focuses in particular on Goal 15, which includes achieving a “land degradation-neutral world.” It also provides a comprehensive and highly informative overview of the latest developments at the international level, important cross-disciplinary issues and different approaches in national legislation.

The book is divided into four sections. Forewords by internationally renowned academics and politicians are followed by an analysis of the content and structure of the Sustainable Development Goals with regard to soil and land as well as the scientific methods for their implementation.

In addition, all relevant international regimes are discussed, including the latest developments, such as the decisions made at the 12th Conference of the Parties to the United Nations Convention to Combat Desertification (UNCCD) and the Paris Agreement on Climate Change. The next section deals with cross-disciplinary issues relevant to the implementation of the Sustainable Development Goals like the right to food, land tenure, migration and the “Economics of Land Degradation” initiative. The last section gathers reports on the development of national legislation from various nations and supra-national entities, including Brazil, China, the European Union, Mongolia, Namibia and the United States. Addressing this broad range of key topics, the book offers an indispensable tool for all academics, legislators and policymakers working in this field.

The “International Yearbook of Soil Law and Policy” is a book series that discusses the central questions of law and politics with regard to the protection and sustainable management of soil and land – at the international, national and regional level, .

See details at <http://www.springer.com/gp/book/9783319425078>

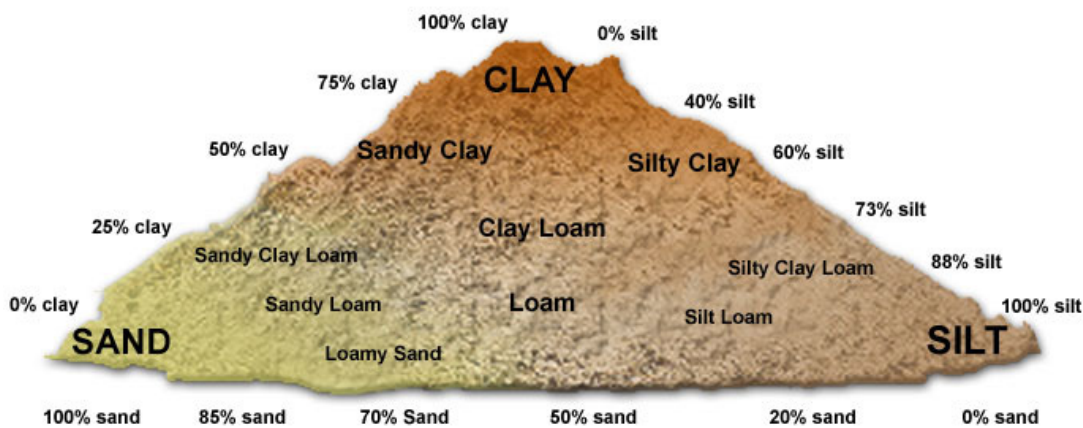
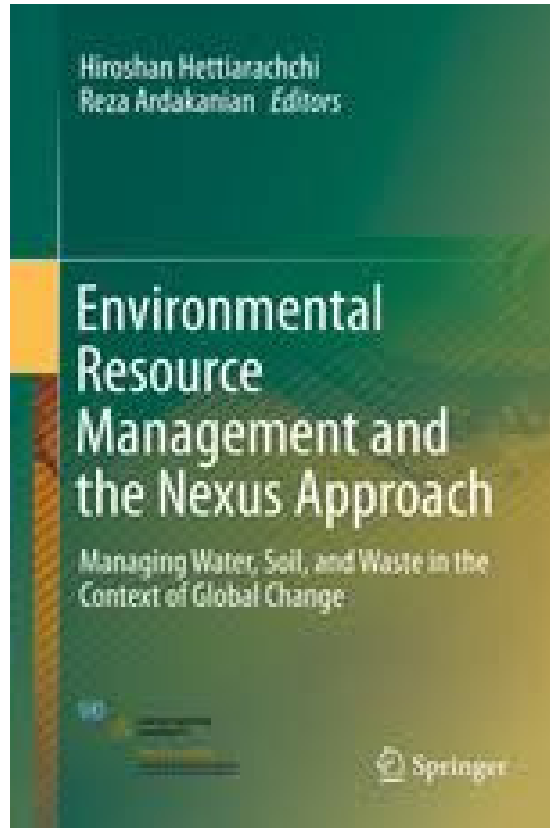
Environmental Resource Management and the Nexus Approach

This book elaborates how water, soil, and waste may be managed in a nexus and how this approach may help combat global change. In addition to providing a brief account on nexus thinking and how it may help us tackle issues important to the world community such as food security, the book presents the environmental resource perspective of three main aspects of global change: climate change, urbanization, and population growth.

Taking as its point of departure the thematic discussions of the Dresden Nexus Conference (DNC 2015) held in March 2015, the book presents the perspectives of a number of thought leaders on how the nexus approach could contribute to sustainable environmental resource management.

The first chapter provides an introduction to the issues and content of the book. Chapters 2 and 3 focus on climate change adaptation. Chapters 4 and 5 discuss the role of urbanization as a main driver of global change. The last two chapters of the book present ideas on how the nexus approach may be used to cope with population growth and increased demand for resources

See details at <http://www.springer.com/gp/book/9783319285924>



A contemporary representation of the texture triangle appealing to the general public. Source ; <https://www.sprinklerware-house.com/DIY-Determine-your-soil-type-s/6561.htm>



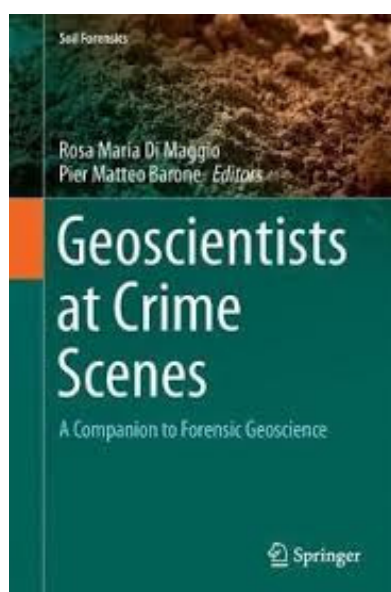
Books

Soils, Ecosystem Processes, and Agricultural Development

The main objective of this book is to integrate environmental knowledge observed in local agriculture, based on the understanding of soils science and ecology, and to propose possible technical solutions and a more integrated approach to tropical agriculture. The chapters describe and analyze the ecological and technical countermeasures available for mitigating environmental degradation due to the increasing agricultural activities by humans, based on our scientific understanding of traditional agriculture in the tropics. This is an effective approach, as such ecological and technical tools previously involved in traditional activities are expected to be easily incorporated into present agricultural systems. The book starts with a rather classical pedological issue and analyzed traditional agricultural practices with different resource management strategies in terms of their modification of natural biological processes. It focuses on the present situation of tropical agriculture; that is, resource utilization in modern agriculture after application of technical innovation (increased application of chemical fertilizers as well as agricultural chemicals). Here, possible technical approaches to resource management that reasonably support agricultural production whilst mitigating environmental degradation are discussed. The negative impacts of agricultural development on our environment are rapidly growing, yet we are increasingly dependent on the agricultural sector for food and energy. The situation is similar in the tropics, where subsistence agriculture with low input management has long comprised most agricultural systems. Comparison of ecological and/or agronomical studies between different continents are still rare; therefore, this analysis may help clarify what is an essential problem when considering technical transportation beyond continents and/or between temperate and tropical regions

Details found at:

<http://www.springer.com/gp/book/9784431564829>



Publ. 2017 Springer
Di Maggio, Rosa Maria, Barone,
Pier Matteo (Ed)

Summary

This book presents the forensic geoscience in general and, in particular, in Italy and their application to peculiar crimes. Italy is internationally relevant due to the presence of different kinds of “geo-crimes” (in the first place, environmental mafia), and is emblematic to understanding the best way to fight these crimes. This book will not only offer a new view point to comprehending these “geo-crimes”, but also fresh and updated results of the different methods applied to fight against these crimes. This book is unique in that it is not a collection of articles but an individual work with the same theme beginning with a state-of-the-art of these disciplines to their international value passing through several case studies.

Details found at:

<http://www.springer.com/gp/book/9783319580470>

Remote Sensing of Soils.

Pre-order Now, Expected August 2017.

This book is about applications of remote sensing techniques in the studies on soils. In pursuance of the objective, the book initially provides an introduction to various elements and concepts of remote sensing, and associated technologies, namely Geographic Information System (GIS), Global Positioning System (GPS) in chapter-1. An overview of the sensors used to collect remote sensing data and important Earth observation missions is provided in chapter-2. The processing of satellite digital data (geometric and radiometric corrections, feature reduction, digital data fusion, image enhancements and analysis) is dealt with in Chapter-3. In the chapter to follow the interpretation of remote sensing data, very important and crucial step in deriving information on natural resources including soils resources, is discussed. An introduction to soils as a natural body with respect to their formation, physical and chemical properties used during inventory of soils, and soil classification is given in Chapter-5. The spectral response patterns of soils including hyperspectral characteristics -fundamental to deriving information on soils from spectral measurements, and the techniques of soil resources mapping are discussed in chapter-6 and -7, respectively. Furthermore, the creation of digital soil resources database and the development of soil information systems, a very important aspect of storage and dissemination of digital soil data to the end users are discussed in chapter-8. Lastly, the applications of remote sensing techniques in soil moisture estimation and soil fertility evaluation are covered in chapter-9 and -10, respectively.

Publ: 2017 Springer
Shankar R.



Summary

This book deals with a rapidly growing field aiming at producing food and energy in a sustainable way for humans and their children. It is a discipline that addresses current issues: climate change, increasing food and fuel prices, poor-nation starvation, rich-nation obesity, water pollution, soil erosion, fertility loss, pest control and biodiversity depletion. This series gathers review articles that analyze current agricultural issues and knowledge, then proposes alternative solutions.

Details found at: <http://www.springer.com/gp/book/9783319586786>

Publ. 2017 Springer
Lichtfouse, Eric (Ed)



Journal - Feature Article

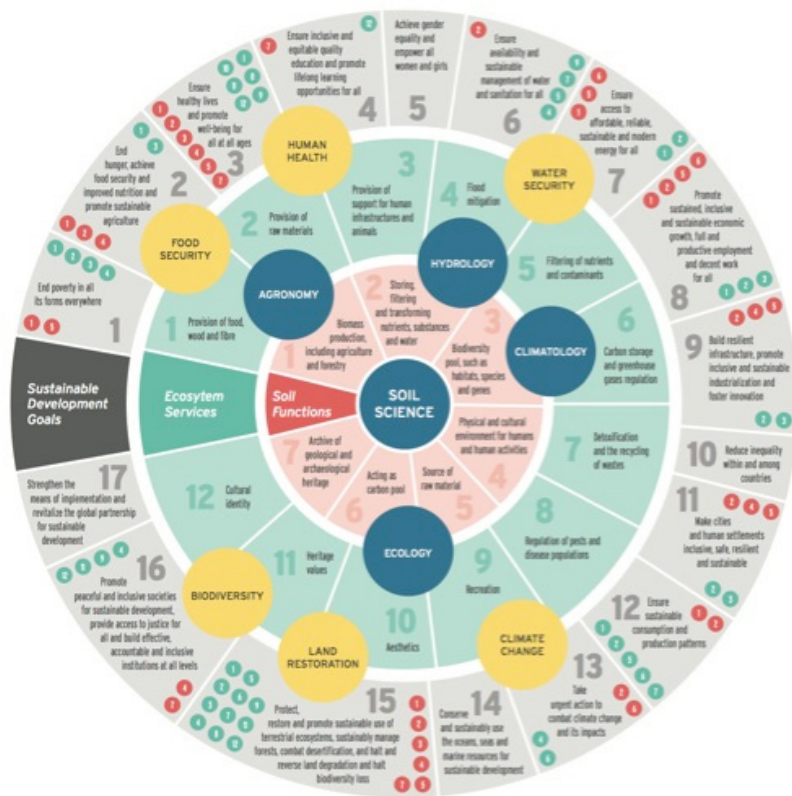
The significance of soils and soil science towards realization of the United Nations Sustainable Development Goals

Keesstra S D., Bouma J., Wallinga J., Tittonell P., Smith P., Cerdà A., Montanarella L., Quinton J N., PachEpsky Y., van der Putten W. H., Bardgett R. D., Moolenaar S., Mol G., Jansen B., Fresco L. O. 2016. The elusive role of soil quality in nutrient cycling: a review. *Soil Use and Management*. doi:10.1111/sum.12288

In this forum paper we discuss how soil scientists can help to reach the recently adopted UN Sustainable Development Goals (SDGs) in the most effective manner. Soil science, as a land-related discipline, has important links to several of the SDGs, which are demonstrated through the functions of soils and the ecosystem services that are linked to those functions (see graphical abstract in the Supplement). We explore and discuss how soil scientists can rise to the challenge both internally, in terms of our procedures and practices, and externally, in terms of our relations with colleague scientists in other disciplines, diverse groups of stakeholders and the policy arena. To meet these goals we recommend the following steps to be taken by the soil science community as a whole: (i) embrace the UN SDGs, as they provide a platform that allows soil science to demonstrate its relevance for realizing a sustainable society by 2030; (ii) show the specific value of soil science: research should explicitly show how using modern soil information can improve the results of inter- and transdisciplinary studies on SDGs related to food security, water scarcity, climate change, biodiversity loss and health threats; (iii) take leadership in overarching system analysis of ecosystems, as soils and soil scientists have an integrated nature and this places soil scientists in a unique position; (iii) raise awareness of soil organic matter as a key attribute of soils to illustrate its importance for soil functions and ecosystem services; (iv) improve the transfer of knowledge through knowledge brokers with a soil background; (v) start at the basis: educational programmes are needed at all levels, starting in primary schools, and emphasizing practical, down-to-earth examples; (vi) facilitate communication with the policy arena by framing research in terms that resonate with politicians in terms of the policy cycle or by considering drivers, pressures and responses affecting impacts of land use change; and finally (vii) all this is only possible if researchers, with soil scientists in the front lines, look over the hedge towards other disciplines, to the world at large and to the policy arena, reaching over to listen first, as a basis for genuine collaboration



Fotolia © lightpoet



Graphical Abstract Keestra et al., 2016, see details at <http://www.pablotittonell.net/wp-content/uploads/2016/03/Graphical-abstract-for-print-20151223.pdf>



The Soil Under Foot, taken from http://www.huffingtonpost.com/maria-rodale/the-secret-is-in-the-soil_b_1705025.html



SEE THIS BLANK SPACE

**Don't forget to send in your news, stories,
pictures to be included in the next issue of
Soil Connects**

There is a spot waiting here



Soil Science: beyond food and fuel

The Brazilian Soil Science Society and the Latin American Soil Science Society are pleased to welcome the international soil science community to Rio de Janeiro for the 21st World Congress of soil science . The Congress theme “Soils to feed and fuel the planet” is an invitation to answer the following questions:

- How to feed a hungry planet?
- How to fuel an energy-hungry planet?
- How to drink a thirsty planet?
- How to clean up our polluted planet?

The Congress will be held in RioCentro Exhibition & Convention Center, in August, 12 to 18, 2018. The city of Rio de Janeiro is a cosmopolitan metropolis, known worldwide for its scenic beauty and its natural resources, the city provides a harmonic and agreeable environment for its inhabitants and visitors, for both leisure and work, which combined with its infrastructure, makes Rio an important center for commerce and services with the advantage of modern and diversified industrial sector.

Visit: <http://www.21wcsc.org/>





ICSSPN 2018: 20th International Conference on Soil Science and Plant Nutrition

Paris, France, 25 - 26 January 2018

The ICSSPN 2018: 20th International Conference on Soil Science and Plant Nutrition aims to bring together leading academic scientists, researchers and research scholars to exchange and share their experiences and research results on all aspects of Soil Science and Plant Nutrition. It also provides a premier interdisciplinary platform for researchers, practitioners and educators to present and discuss the most recent innovations, trends, and concerns as well as practical challenges encountered and solutions adopted in the fields of Soil Science and Plant Nutrition.

Important Dates

Abstracts/Full-Text Paper Submission Deadline	July 14, 2017
Notification of Acceptance/Rejection	July 30, 2017
Final Paper (Camera Ready) Submission & Early Bird Registration Deadline	Dec. 12 2017
Conference Dates	Jan. 25 - 26, 2017

Further details: <https://www.waset.org/conference/2018/01/paris/ICSSPN>





Nanjing, China, 15 - 19 October 2017

The China Soil Microbiome Initiative (CSMI) and Global Soil Biodiversity Initiative (GSBI) are pleased to announce the second Global Soil Biodiversity Conference (GSBC2) will be held from 15-19 October 2017 in Nanjing, China.

GSBC2 is centered on the theme, Integrating Soil Biodiversity with Global Sustainability, and offers an exceptionally exciting program ranging from topics involving soil biodiversity and global issues on sustainability.

<http://gsbc2.csp.escience.cn/dct/page/1>

3rd International Conference on Air, Water, and Soil Pollution and Treatment (AWSPT'18)

The 3rd International Conference on Air, Water, and Soil Pollution and Treatment (AWSPT'18) aims to become the leading annual conference in fields related to air, water, and soil pollution and treatment. The goal of AWSPT'18 is to gather scholars from all over the world to present advances in the relevant fields and to foster an environment conducive to exchanging ideas and information. This conference will also provide an ideal environment to develop new collaborations and meet experts on the fundamentals, applications, and products of the mentioned fields.

AWSPT'18 will be held in Budapest, Hungary on April 8 - 10, 2018 at the Novotel Budapest Centrum

More details at: <http://awspt.com/>





A dialog with a puzzled profile

Danny Itkin

Are you a soil or a sediment?
Ask the oak, see if he knows.
Ask him whether these are peds
Or maybe a bedrock under his toes.

And if you're a soil, what are you?
It depends on the viewpoint, you see:
Some define me with Soil Taxonomy,
While others with WRB.

For Hutton and Lyell I'm a weathered rock,
Yet Hilgard and Dokuchaev dispute.
If you ask me, well I'm a 'pedosediment',
I couldn't care less for the suit.

If it helps you I'll be whatever it takes,
Making sure that no one will lose.
I know it depends very much on the platform
Where experts are setting the rules.

CONTACTS

DIVISION CHAIR

Christian Feller,
France
cristian.feller@ird.fr

1st VICE CHAIRPERSON

Cristine Muggler,
Brazil
cmuggler@ufv.br

2nd VICE CHAIRPERSON

Nilvania Aparecida de Mello,
Brazil
nilvania@utfpr.edu.br

COMMISSION 1

Chair

Masamichi Takahashi,
Japan
masamiti@affrc.go.jp

Vice-Chair

Ian Hollingsworth,
Australia
ian.hollingsworth@horizonsse.com

COMMISSION 2

Chair

Ganga Hettiarachchi,
USA
ganga@ksu.edu

Vice-Chair

Adelheid (Heide) Spiegel,
Austria
adelheid.spiegel@ages.at

NEWSLETTER EDITOR

Damien Field,
Australia
damien.field@sydney.edu.au

COMMISSION 3

Chair

Ryusuke Hatano,
Japan
hatano@chem.agr.hokudai.ac.jp

Vice-Chair

Jay Jabro,
USA
jay.jabro@ars.usda.gov

COMMISSION 4

Chair

Damien Field,
Australia
damien.feld@sydney.edu.au

Vice-Chair

Cristine Muggler,
Brazil
cmuggler@ufv.br

COMMISSION 5

Chair

Thomas J. Sauer,
USA
tom.sauer@ars.usda.gov

Vice-Chair

Richard Doyle
Australia
Richard.Doyle@utas.edu.au

