

**no. 110**



## **International Union of Soil Sciences (IUSS)**

The IUSS Bulletin is the official Newsletter of the International Union of Soil Sciences. It is freely distributed through the IUSS website and a limited number of copies are printed. All contributions are welcome and should be sent to the editor.

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## Editorial

This is IUSS bulletin 110. Several of my colleagues have wondered whether there is still a need for a Bulletin – we are living in an era in which most information is only a few clicks away. That is: from the newest soil science publications to the upcoming soil science meetings. Most – if not all - of our active IUSS members can locate and access this information for free. So what is then the use and meaning of this Bulletin?

We are still having newspapers and magazines despite the overwhelming news available on the internet which is almost real-time with all the handheld cameraphones. Some people only read the BBC or CNN website to stay informed on world affairs. Fewer people have a newspaper subscription but do pick up local or international news from the internet or through free newspapers that are paid for by advertisements. Although that model may work perfectly for the information need of world citizens, it is different for members of a scientific union like the IUSS. Our newsletter is meant to brief us on our common goals and interests: the soil, and this Bulletin is primarily intended for our members, it informs about activities (past and upcoming) and glues our members to the union. This Bulletin is not quite real-time - just like much of our soil information – but with the monthly IUSS Alerts and planned changes in our website we strive to make it better.

At a recent IUSS Bureau meeting it has been decided that we shall no longer print copies of the IUSS Bulletin. Currently, 300 copies are printed of each issue and the cost is high whereas we serve only a small portion of our membership. Instead, the money that we save by not printing and mailing the IUSS bulletin can be used to make our website more professional (for example, introducing RSS feed and making it more interactive). The great majority of our members will benefit from such investments. The IUSS Bulletin will not disappear and it continues to be freely available as PDF and as HTMLs.

This Bulletin has a detailed report on the 18<sup>th</sup> World Congress of Soil Science and the breakdown of registrants and authors shows that there were people from all over the globe. There is information on the next World Congress to be held in Brisbane, Australia, and the summary minutes of the IUSS bureau meeting and reports of all four divisions. The IUSS is a founding partner of the UN proclaimed International Year of Planet Earth and Stephen Nortcliff, our Secretary General, has a seat on the management board. There is a soil science programme committee of which A. McBratney (Australia), J. Boettinger (USA), A. Bationo (Kenya), E. Frossard (Switzerland), L. Mendonça-Santos (Brazil), S. Nortcliff (UK), F.S. Zhang (China) and myself are members. We intend to develop and promote soil science activities that fall within the scope of the UN year. In this Bulletin there is a report on activities in many countries of the world. Please check the website [www.esfs.org](http://www.esfs.org) to see what activities are planned in your country.

Also in this Bulletin: some comments on the Future of Soil Science book and suggestions from Dan Yaalon on frontiers of pedogenetic research. We very much welcome such contributions! Furthermore: the "Five questions to a soil scientist" asked to three colleagues and the favourite soil science books of three others. Hans van Baren continues to review new books and reports and another 26 reviews are included (the other 549 reviews from 1999 to 2006 are on our website). There is much more to read in this IUSS Bulletin and if you have information or ideas to share we will happily include them in the next IUSS Bulletin!

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# 18<sup>th</sup> World Congress of Soil Science Organizing Committee Report

Lee Sommers and Larry Wilding, Co-chairs, Organizing Committee  
Don Sparks, IUSS Past President  
Gary Petersen, IUSS Past Vice President

The 18th World Congress of Soil Science (WCSS) returned to U.S. for the first time in 46 years on 9–16 July 2006 in Philadelphia, PA. With the theme, "Frontiers of Soil Science: Technology and the Information Age," the WCSS was truly international in scope as over 2,000 scientists from more than 100 countries attended. The WCSS included research symposia, discussions, award presentations, and product/service demonstrations on soils for all attendees.

## *Opening Session*

The WCSS was opened on July 10 by IUSS President Don Sparks. The opening ceremony included presentations by the following: Honorable Ruth Ann Minner, Governor of Delaware; Ambassador Kenneth Quinn, World Food Prize, and A. Colin McClung, 2006 World Food Prize Laureate; Michael Clegg, U. S. National Academy of Sciences; Bruce Knight, Chief, USDA-NRCS; and Ed de Mulder, IUGS Past President. The keynote presentation in the opening session was delivered by Jeffrey Sachs, Columbia University. His presentation was entitled "Soil Science and the Challenge of Sustainable Development".

Dr. Sachs is Director of the Earth Institute at Columbia University and serves as a Special Advisor to United Nations (UN) Secretary-General Kofi Annan on the Millennium Development Goals, which seek to reduce extreme poverty, disease, and hunger by the year 2015. He is also a noted economist and author of the *New York Times* bestselling book *The End of Poverty*. According to Sachs, anthropogenic climate change is one of the biggest challenges. "We are not sustainable," he said. The population is projected to increase at an "alarming" rate, and worldwide economic expansion means more demands on the ecosystem and extreme pressures on fellow species. Sachs said we have to remember that the problems don't stop at our borders when policy does and that we need to be able to find a pathway for the solutions. Sachs reinforced the central importance of soils, saying "the ecosystem comes back to the soil." With the atmosphere above and the hydrosphere below, the pedosphere is in the middle, strengthening the importance of the soil's role in the big picture. "Scientists must become leaders in sustainability," Sachs expressed. Soil scientists have a major role in understanding greenhouse gases and their effects, but much more needs to be done, he added. Unlike China, the Cerrado Region of Brazil, and India, Africa is still waiting to experience its Green Revolution. To help Africa and the world, the UN's Millennium Assembly gathered in 2000 and established goals to improve the world's sustainability. In 2005, the Assembly met again to reconfirm these goals and to urge the world's leading scientists to find solutions and practical pathways to obtain them by 2015. Among the goals was eradicating extreme hunger and poverty and ensuring environmental sustainability. Sachs noted that the policy makers are listening, as some recently attended the first African Fertilizer Summit, held in Abuja, Nigeria in June.

- "We need the IUSS to take on these challenges," Sachs said. "We need to get your knowledge scaled-up... where soils are at the center. For us at this meeting, things don't stop at the borders anymore." He called for action to be taken on five key issues:
- The Green Revolution in Africa.
- Soil degradation in Asia addressing salinization, water stress, erosion, and degradation of the resources.
- Climate change and all effects associated with it, such as moisture stress, water scarcity, global warming, and those effects yet to be seen.
- Eutrophication: the excess of nutrient loading.
- Biodiversity: macrodiversity depends on microdiversity.



The 18<sup>th</sup> WCSS team, thank you all!

#### *Gala Dinner and Awards Ceremony*

The Gala was held on Thursday evening, July 13. Prior to an evening of dancing to live entertainment, the IUSS recognized award recipients and honorary members. The following awards were presented:

#### *IUSS Awards*

##### 2006 Dokuchaev Basic Soil Science Award

Victor Targulian of the Institute of Geography, Moscow, Russia. Dr. Targulian has spent his 50-year scientific career developing a pedology model as a basic Earth and biosphere science.

##### 2006 Liebig Applied Soil Science Award

Rattan Lal of The Ohio State University. Dr. Lal is professor of soil physics in the School of Environment and Natural Resources, and director of the Carbon Management and Sequestration Center at the university. Since joining The Ohio State University in 1987, he has worked on soils and climate change, soil degradation, and global food security.

##### 2006 Kubiëna Medal

Herman Mùcher, University of Amsterdam, the Netherlands. Dr. Mùcher was unanimously awarded this medal for his outstanding research combining meticulous observations in the field, in the laboratory, and in thin sections.

##### 2006 Kubiëna Medal Posthumous Award

Posthumously to A. Jongerius, former Head of the Department of Micropedology and Mineralogy of the Dutch Soil Survey Institute (Stiboka) in Wageningen, the Netherlands. The award honors his memory and is an expression of appreciation for his outstanding and pioneering contribution to soil micromorphology

### *Honorary Membership to the IUSS*

The following individuals were honored by selection at the WCSS:

- Winfried E.H. Blum, professor of soil science and director of the Institute of Soil Research at the University of Natural Resources and Applied Life Sciences (BOKU) in Vienna, Austria
- Hans-Peter Blume, emeritus professor, Institute of Plant Nutrition and Soil Science, University of Kiel, Germany
- Johan Bouma, Wageningen University (retired), the Netherlands
- Seong-Jin Cho, emeritus professor, Chungbuk National University, Korea
- Jan Glinski, emeritus professor, Institute of Agrophysics in Lublin, Poland
- Marcel G.H. Jamagne, emeritus research director, the National Institute for Agronomic Research, France
- Donald R. Nielsen, emeritus professor, University of California-Davis, USA
- J.H.V. van Baren, IUSS (retired), Wageningen, the Netherlands
- Larry P. Wilding, professor emeritus, Texas A&M University, College Station, TX, USA

### *Closing Session*

The closing session of the WCSS was held on July 15. After introductory comments by IUSS President Don Sparks and the IUSS song, the following speakers presented an overview of the WCSS:

- Larry Wilding and Lee Sommers, Co-chairs of the 18<sup>th</sup> WCSS Organizing Committee, summarized the attendance and number of papers presented.
- Stephen Nortcliff, Secretary General of IUSS, presented a summary of the IUSS Council meetings and announced that the 2014 WCSS will be held in Seoul, South Korea.
- Don Nielsen, Chair of the U. S. National Committee of Soil Science/U.S. National Academy of Science, presented comments on behalf of the U. S. soil science community.
- Mary Collins, President of the Soil Science Society of America, acknowledged the supportive role of the Society in hosting the WCSS.
- Gary Petersen, IUSS Vice President, and Don Sparks, IUSS President, presented summary comments on their activities during the past four years with IUSS and organizing the WCSS.
- Roger Swift, incoming IUSS President, and Neal Menzies, incoming IUSS Vice President, were introduced and they presented a video as an introduction to Australia hosting the 19<sup>th</sup> WCSS in Brisbane.

### *Program*

The total number of papers presented at the 18<sup>th</sup> WCSS was 2, 636. The program consisted of 83 symposia all of which hosted both an oral session and a poster symposium. The program contained 64 oral sessions and 47 poster theater sessions. The program and abstracts are available via the internet at [www.18wcss.org](http://www.18wcss.org) and they will be available for searching and viewing until 2010.

### *Summary of Mid-Congress Tours*

The following is a brief description of the Mid-Congress tours held on Wednesday, July 12. The Rodale Institute ® Regenerative Agriculture Tour, Crystal Cave, and Cabela's Outfitters. Tour leader was John Chibirka, USDA-NRCS. For more than half a century, The Rodale Institute has promoted the message of "Healthy Soil, Healthy Food, Healthy People®" to a global audience. Situated on 333 rolling acres in Kutztown, Pennsylvania, this truly dynamic non-profit organization works to support the positive attributes of organic/ regenerative agriculture locally, regionally and internationally, based on scientific assessment, practical application and outreach. The Farm Tour provided a guided look at the Farming Systems Trial, plus a unique opportunity to see organic no-till research, mycorrhizal fungal studies and use, composting, and compost tea technology. Participants visited the museum exhibit "Food Essence of Life".



New Frontiers in Soil Survey. Tour was sponsored by the Chester County Conservation District and USDA-NRCS. Tour traveled through Southeast Pennsylvania to visit a MLRA Soil Survey Project Office and view the methods and technologies that are being used to update and maintain soil surveys on a Land Resource Area basis. Demonstrations will show how Geographic Information Systems, the National Soil Information System (NASIS), Global Positioning Systems, computer Stereo Analysis of landforms and digital soil maps, Spatial Analysis and other technologies are being used to update and maintain soil survey maps and data. Tour traveled through Lancaster County looking at land use changes and their influence on soil properties, Farmland Preservation and provided demonstrations of soil survey field data collection using methods that include soil property measurements, GPS, non-invasive geophysical tools (Ground Penetrating Radar and Electro-Magnetic Induction) techniques. Comparisons of historic soil surveys and maps with modern soil survey data was observed at the field sites.

Watershed Research and Management in Action. Tour was sponsored by USDA-ARS under the leader of Andrew Sharpley. The USDA-ARS Watershed Management research facility at Klingerstown, Pennsylvania was toured. The tour was shown how ARS is investigating the impact of agricultural management on water quality in several watersheds. Demonstrations were given of specialized equipment that quantifies surface and subsurface water movement and nutrient transport and local soils were viewed. State-of-the-art feed management for concentration animal feeding operations and its role in nutrient management planning strategies were observed.

Honey Hollow Conservation and Peddler's Village. Contact: John Chibirka Honey Hollow Watershed Conservation Area was the first small upland watershed in agricultural use to demonstrate that soil, water, and wildlife conservation and flood prevention could be achieved through cooperative local action. The Watershed consists of 5 farms totaling about 650 acres. Created in 1939, it was established when local farmers, dismayed about erosion of their fields, applied to the Soil Conservation Service for assistance in developing a comprehensive soil conservation plan. The landowners agreed to band together and carry out the soil and water conservation practices prescribed for each tract. Within two years terraces and diversions, hedges and ponds were built. The watershed retains the conservation measures adopted in the 1930's. Bucks County Audubon Society operates the Honey Hollow Environmental Education Center.

The du Pont Family Legacy. Tour was sponsored by the DuPont Company, Longwood Gardens, and University of Delaware. A full day tour was conducted of ancestral homes of members of the du Pont family that currently showcase the history of industrial development and technology, horticulture, and American art history. The tour visited the Hagley Museum and Library which collects, preserves, and interprets the unfolding history of American enterprise; Winterthur, the former home of Henry Francis du Pont, an avid antiques collector and horticulturist and; Longwood Gardens, one of the world's premier horticultural display gardens.

Cedar Meadows Farm and Lancaster County. Tour was sponsored by USDA-NRCS and Lancaster County, PA under the leadership of Ed White. The tour visited a 175 acre family farm raising vegetables and crops on hilly land in Lancaster County, Pennsylvania where the "Permanent Cover Cropping System" was pioneered, which includes no-tillage, cover crops, and effective crop rotations as a way to increase profits, enhance soil and water quality, and reduce pesticides. The tour traveled through Pennsylvania Dutch County and Amish Farms. After viewing a Preserved Farm in Lancaster County, Pennsylvania, the group discussed farmland preservation programs and examined soil profiles of the famous limestone soils of Lancaster County. At the Cedar Meadow Farm, farming systems and research has been conducted by Penn State University, University of Maryland, and the USDA-NRCS.



*Summary of Attendees*

Attendance: Regular registrants – 1,673; Student registrants – 396; Accompanying person registrants – 91; Total registrants – 2,133.

*Countries represented by registrants*

<b>Country</b>	<b>Number of Registrants</b>	<b>Country</b>	<b>Number of Registrants</b>
USA	981	Zimbabwe	3
Japan	103	Turkey	3
Australia	70	Sri Lanka	3
Germany	67	Congo	3
Canada	65	Burkina Faso	3
India	57	Estonia	2
South Korea	54	El Salvador	2
China	50	Azerbaijan	2
France	46	Denmark	2
Brazil	41	Bulgaria	2
Italy	39	Cuba	2
Spain	38	Cambodia	2
Netherlands	34	Ecuador	2
Mexico	28	Senegal	2
Russia	26	Ireland	2
United Kingdom	25	Uzbekistan	2
Thailand	17	Indonesia	2
Argentina	17	Jordan	2
New Zealand	16	Ukraine	2
Kenya	15	Pakistan	2
Taiwan	15	Kazakhstan	2
Poland	13	Portugal	2
Switzerland	12	Nepal	2
Sweden	12	Slovak Republic	2
Nigeria	12	Uganda	1
Belgium	12	Serbia	1
Hungary	12	Sierra Leone	1
Columbia	11	Singapore	1
Austria	11	Tanzania	1
Venezuela	10	Saudi Arabia	1
Scotland	10	Togoto	1
Iran	10	Bahrain	1
Vietnam	10	Uruguay	1
Czech Republic	9	Yemen	1
Israel	9	Algeria	1
Croatia	9	Togo	1
South Africa	9	Martinique-F-Wi	1
Chile	9	Iceland	1
Finland	7	Iraq	1
Ghana	7	Guadeloupe	1
Bangladesh	7	Ivory Coast	1
Egypt	6	Georgia	1
Greece	6	Cameroon	1
Philippines	5	Mauritius	1
Syria	5	Moldova	1
Cameroon	5	Morocco	1
Malaysia	5	Dominican Republic	1
Norway	5	Nicaragua	1
Romania	4	Peru	1
Honduras	3	Lithuania	1
		Madagascar	1



New Jersey Pine Barrens Soils Ecology. Tour was sponsored by Rutgers University and USDA-NRCS with the leadership of Joseph Heckman. The tour visited sites across the coastal plain of New Jersey to view the unique ecosystem known as the "Pine Barrens". Specialty agriculture in the area includes cranberry bogs and blueberry fields, was discussed at the Rutgers-NJAES/USDA-ARS Marucci Blueberry and Cranberry Research & Extension Center. In Batsto Village, the historical extraction of bog iron and production of glass from sand mines was presented.

Sustainable Systems and Crop Modeling Research at Beltsville Agricultural Research Center. Tour was sponsored by USDA-ARS under the leadership of V. R. Reddy. This tour encompassed some of the sustainable systems and crop modeling research at the Beltsville Agricultural Research Center (BARC) in Beltsville, Md. Tour included the Crop Systems and Global Change Laboratory's Soil-Plant-Atmospheric-Research (SPAR) facility, built to evaluate plant responses to important environment and soil variables. Cover crop research currently being conducted by the Sustainable Agricultural Systems Lab and the long-term Farming Systems Project (FSP) which contains conventional cropping systems and organic cropping systems for sustainable production of field crops were presented.

Animal and Natural Resources Research at the Beltsville Agricultural Research Center. The tour was sponsored by USDA-ARS under the leadership of V. R. Reddy. This tour encompassed the Hydrology and Remote Sensing Lab's (HRSL) OPE3 watershed where farming methods can be altered for better long-term environmental and economic consequences. The tour viewed the HRSL's and Natural Resources Conservation Service's Soil Climate Analysis Network (SCAN) site involving a cooperative nationwide comprehensive soil moisture, soils and climate system to support natural resource assessments and conservation activities. The Environmental Management and By-Product Utilization (EMBU) Laboratory studies natural metal hyperaccumulator plants growing on the metal rich soils and the Beltsville Composting & Research Facility led to development of criteria for pathogen reduction in manure compost, hybrid composting technologies, designer products, innovative uses, and novel delivery systems for field, landscape, and horticultural uses of compost in rural and urban settings.



Henry Lin explaining the physics of the soil

*Distribution of Papers Presented*

<b>Country</b>	<b>Number of Papers</b>	<b>Country</b>	<b>Number of Papers</b>
USA	734	Indonesia	5
India	207	Turkey	5
Australia	123	Finland	5
Russia	121	Norway	4
Germany	106	Cuba	4
Brazil	103	Cameroon	4
Iran	99	Jordan	4
South Korea	97	Ukraine	4
Japan	92	Sri Lanka	4
China	80	Burkina Faso	3
France	75	Bulgaria	3
Canada	65	Saudi Arabia	3
Spain	64	Azerbaijan	3
Italy	63	Slovak Republic	3
United Kingdom	40	Uruguay	3
Mexico	37	Denmark	3
Argentina	29	Senegal	3
Netherlands	27	Estonia	3
New Zealand	25	Algeria	3
Hungary	22	Iceland	3
Egypt	20	Serbia and Montenegro	2
Nigeria	16	Morocco	2
Poland	16	Togo	2
Taiwan	16	Slovenia	2
Sweden	13	Nepal	2
Chile	13	Ivory Coast	2
Belgium	13	Honduras	2
Bangladesh	13	Ireland	2
Kenya	12	England	2
Ghana	12	Madagascar	2
Switzerland	12	Guam	2
Colombia	11	Portugal	2
Israel	11	Mauritius	1
South Africa	10	Lebanon	1
Greece	10	Yemen	1
Philippines	10	Moldova	1
Czech Republic	10	Armenia	1
Thailand	10	Zambia	1
Austria	9	Botswana	1
Venezuela	9	Bahamas	1
Zimbabwe	8	Tunisia	1
Vietnam	8	Mongolia	1
Romania	7	Iraq	1
Uzbekistan	7	Guadeloupe	1
Croatia	7	Ecuador	1
Ethiopia	6	Kuwait	1
Kazakhstan	6	Guyana	1
Syria	6	Georgia	1
Pakistan	6	Peru	1
Malaysia	5	Tanzania	1

**Distribution of Authors - Total number of authors: 5,023**

Country	Number of Authors	Country	Number of Authors
USA	1591	Jordan	7
India	285	Pakistan	7
Australia	207	Ethiopia	6
Brazil	205	Ukraine	6
Japan	203	Sri Lanka	6
Germany	195	Slovenia	6
France	185	Cameroon	6
South Korea	169	Nepal	6
China	142	Denmark	6
Russia	139	Senegal	5
Italy	138	Ecuador	5
Canada	129	Honduras	4
Spain	128	Morocco	4
Iran	95	Uzbekistan	4
United Kingdom	86	Kazakhstan	4
Mexico	85	Tanzania	4
Hungary	62	Cuba	4
Argentina	56	Portugal	3
Netherlands	54	Estonia	3
New Zealand	44	Togo	3
Chile	39	Serbia and Montenegro	3
Bangladesh	34	Saudi Arabia	3
Switzerland	33	Ivory Coast	3
Belgium	31	England	2
Colombia	30	Azerbaijan	2
Poland	28	Mozambique	2
Thailand	26	Zambia	2
Nigeria	24	Kuwait	2
Taiwan	24	Peru	2
Kenya	24	Madagascar	2
Israel	23	Lebanon	2
Czech Republic	23	Algeria	2
Austria	23	Georgia	2
Finland	23	Guam	2
Greece	22	Brunei	1
Venezuela	22	Armenia	1
Sweden	21	Yemen	1
Ireland	19	Uganda	1
Egypt	19	Tunisia	1
Vietnam	18	Bahamas	1
Ghana	17	Singapore	1
South Africa	16	Saipan	1
Philippines	13	Bermuda	1
Croatia	13	Mongolia	1
Malaysia	12	Rwanda	1
Romania	12	Iraq	1
Indonesia	12	Guadeloupe	1
Norway	11	Eritrea	1
Burkina Faso	11	Gabon	1
Zimbabwe	9	Moldova	1
Syria	9	Mauritius	1
Uruguay	8	Mali	1
Bulgaria	8	Guyana	1
Turkey	8	Iceland	1
Slovak Republic	7	Botswana	1

# The 19<sup>th</sup> World Congress of Soil Science

## *Soil Solutions for a Changing World*

Plans for the next World Congress of Soil Science (19WCSS) to be held in Brisbane, Australia in the week of 1<sup>st</sup> - 6<sup>th</sup> August 2010 are progressing very well.

Under the Chairmanship of Steven Raine and Mike Grundy the Congress has now established a large number of committees dedicated to the planning of the scientific program, sponsorship, finance, field trips and the congress social program to name but a few. Our extensive committee has been drawn from numerous university campuses and scientific organisations and suppliers throughout Australia.

The congress theme is "Soil solutions for a changing world" and the congress website will be released in early June. The website will be constantly updated with key announcements relating to the program and notices relating to the calls for abstracts – please check regularly at [www.19wcoss.org.au](http://www.19wcoss.org.au) to keep to up to date.

Key dates to note:

Launch of congress website	June 2007
First announcement	June 2007
Release of sponsorship opportunities	September 2007
Call for abstracts	June 2008
Registration brochure and program release	July 2009

In addition to the technical side of the World Congress, please take the time to visit the many amazing parts of Australia. The conference website will detail a huge range of touring options to complement your trip to the Congress. To get a taste of Australia, please visit [www.australia.com](http://www.australia.com)

Carillon Conference Management has been appointed to manage the 19<sup>th</sup> World Congress. Should you require any information regarding the Congress plans, please direct them to [soil@ccm.com.au](mailto:soil@ccm.com.au)

Come and *Experience* Brisbane!

Roger Swift  
President, IUSS  
[rswift@uq.edu.au](mailto:rswift@uq.edu.au)

## Meeting of IUSS Bureau May 2-4, 2007, Brisbane

The IUSS Bureau consists of the President (Roger Swift), The Vice-President (Neal Menzies), the Secretary General (Stephen Nortcliff) and the Deputy Secretary General (Alfred Hartemink). The Bureau is defined in the Statutes as follows:-

### **D. The Bureau.**

- D1. The Bureau is the collective name for the IUSS Officers, i.e. the President, the Vice-President, the Secretary-General, and the Deputy Secretary-General. The President or Vice President of the Union chairs Bureau meetings.
- D2. The Bureau should meet preceding and at the World Congress of Soil Sciences and Inter-Congress meeting to facilitate the organization of the Executive Committee and Council meetings. Otherwise the members shall remain in regular contact with each other.

Whilst required to meet in conjunction with the World Congress and Inter-Congress Meetings, other meetings take place to ensure that the IUSS is working smoothly. This meeting of the Bureau took place to discuss a number of matters including the Inter-Congress Meeting in 2008 and the World Congress in 2010.

The following is a summary of some of the items discussed:

1. Planning towards the 19<sup>th</sup> World Congress of Soil Science – a report was tabled which described the progress in terms of establishing the local committees, the appointment of a Profession Conference Organiser, preliminary bookings at the



- Convention Centre and local hotels. Provisional plans for the scientific structure off the meeting will be circulated soon for discussion with Divisional Committees.
2. The Inter-Congress Meeting of Council will be held in Brisbane June 30 to July 4 2008. The plan is to have time for council Meetings and a one day scientific meeting and one day field excursion in conjunction with the Queensland Branch of Australian Society of Soil Science Inc. (ASSSI).
  3. The activities of the Divisions since the World Congress were discussed. It is with regret that we received the resignation of Prof. Oene Oenema as Chair of Division 4. Professor Lyn Abbot (First Vice Chair) has agreed to replace Prof. Oenema. It was stressed that the success of IUSS is dependent upon strong activity in the Divisions and their Commissions, which is itself dependent upon strong leadership from the Divisional Chairs in consultation with Commission Chairs and other Officers. The Divisional Vice Chairs nominated by ASSSI will play a lead role in helping to co-ordinate these activities.
  4. The Working Groups within IUSS need to be considered. Where there has been no evidence of activity within a Working Group, the Bureau will recommend to Council that the Working Groups be disbanded.
  5. The Bureau reviewed the audited accounts for 2006 and congratulated the Treasurer on his careful management of the IUSS funds. Together with the Chair of the Budget and Finance Committee (Robin Harris), the Treasurer has enabled the Bureau to closely monitor the financial situation and take action as appropriate.
  6. Concern was expressed at the very slow response from the Membership to the call for nominations for election to positions in the Union. To date the Secretary-General has received only a very small handful of nominations with a June 30 deadline approaching rapidly.
  7. Council has three Standing Committees: Budget and Finance; Statutes and Structures; Awards and Prizes. Consideration is being given to seeking new Chairs of these Standing Committees and with new Chairs new Committee members. These proposals will be made at the Inter-Congress Meeting of Council to allow a period of 'Shadowing' before the new Chairs take over in 2010.
  8. The Bureau considered the future of the printed version of the Bulletin. We currently print less than 300 copies per issue, but with mailing costs the expenditure per issue is c. \$4000. Many more Members access the Bulletin electronically. The Bureau considered that action should be taken to discontinue producing a printed version of the Bulletin.
  9. In 2006 under the Bureau called for contributions of short, easily readable papers addressing topics of importance to the general public. The contributions received had been welcomed but were considered by reviewers to be, in most cases too technical for the target audience. The Bureau decided to revisit this initiative and if necessary use the services of a professional writer to ensure that the material is better targeted.
  10. The President and Secretary-General recently attended the ICSU Meeting of Unions in Rome. This is an opportunity to meet and discuss with fellow scientific unions. IUSS has particularly close ties with a broad group of GeoUnions and has worked with them on a number of recent initiatives. The President and Secretary-General were able to make significant contributions to the initiation and development of a number of ICSU activities.
  11. IUSS is a founding partner of the International Year of Planet Earth (2008) and will seek to encourage active involvements amongst the Membership in the year and in the months preceding the launch in February 2008.

On the Friday the President and Secretary General visited the Brisbane Convention Centre to review the facilities and were impressed by the quality of the facilities and there suitability for the WCSS in 2010

Stephen Nortcliff  
May 2007

## Why should national societies subscribe to IUSS?

The International Union of Soil Sciences (IUSS) is the global union of soil scientists. The objectives of the IUSS are to foster all branches of the soil sciences and their applications, and to give support to soil scientists in the pursuit of their activities. In addition, the IUSS aims to put soils and soil science on the global agenda!

Annual subscriptions from National Soil Science Societies, either directly or indirectly via National Academies, are essential for maintaining a strong presence of the IUSS for effective promotion of soil science and its wide range of applications to fellow professionals, policy and decision makers, and the general public. This is critical to keep our discipline strong and viable and to enhance its visibility and impact in all parts of the world.

National Society members are part of the global community of soil scientists and national societies are qualified to send a representative to IUSS council meetings. IUSS Executive Committee members play leadership roles in promoting the shared missions of the IUSS and National Soil Science Societies. The Deputy Secretary General (Alfred Hartemink) maintains a comprehensive website with information and numerous links supporting soil science, and publishes the IUSS Alert each month and the IUSS Bulletin twice per year. The IUSS Alerts are sent out to more than 12,000 people in over 100 countries. This has resulted in a tighter soil science community with increased communication thanks to the internet and e-mail. In 2006, the IUSS website had over 120,000 visitors and the number increases each year. In 2006, the IUSS published the book *"The Future of Soil Science"* which can be freely downloaded from the IUSS website – like all IUSS Publications. It is our policy that IUSS soil information should be made readily and freely available to all people in the world, and we continue to fund activities and publications that fit our aims and mission.

The Secretary General plays a vital ambassador role in promoting IUSS and National Soil Science Societies interests, at the global level linking northern Soil Science societies with burgeoning southern hemisphere counterparts; within a European context by spearheading development of the Thematic Strategy for Soil Protection (providing two of the 12 co-chairs, Stephen Nortcliff and Winfried Blum); and by representing IUSS's membership in ICSU, links with UNESCO and other agencies to influence priorities in policies and draw attention to the potential for soil science and soil scientists to address many of the current problems facing the earth and its inhabitants. IUSS is actively promoting soil science on a global scale through the participation (with IUGS, IUGG and IGU) in the UN endorsed International Year of Planet Earth (2007-2009). IUSS is one of the founding partners. As part of the International Year of Planet Earth, there is a soil theme for the promotion of soil science headed by the IUSS Deputy Secretary General Alfred Hartemink. In 2006, the IUSS and International Year of Planet Earth published the brochure *"Soil – Earth's living skin"*, which has been widely distributed and can be freely downloaded from the IUSS website (it has been translated in French and Romanian). It is aimed at the general public.

The IUSS is the umbrella organisation for six important regional societies, one in Asia (the "East and South East Asian Confederation of Soil Science Societies"), three in Africa (the "African Soil Science Society", the "East African Soil Science Society", and the "West and Central African Soil Science Society"), one in Latin America (the "Latin American Society of Soil Science Societies"), and one in Europe (the "European Confederation of Soil Science Societies"). All these regional organisations act under the umbrella of IUSS and have specific tasks for promoting soil science.

Distinguished soil scientists are recognized internationally by election as IUSS Honorary members at each Intercongress meeting of the World Congress of Soil Science, and by presentation at each WCSS of monetary awards: the IUSS-Dokuchaev for outstanding basic research in soil science, and the IUSS-Liebig for outstanding contributions in applied soil science such as new discoveries and techniques that improve agronomic production and environmental quality. And last but not least, the internationally represented IUSS Divisions (Div. 1, Soil in Space and Time; Div. 2, Soil Properties and Processes; Div. 3, Soil Use and Management; and Div. 4, Role of Soils in Sustaining



Society and the Environment), Commissions and Working Groups, continuously address frontier soil science issues, challenges and opportunities by planning and executing scientific and educational programs that benefit professionals and assist in educating the general public and policy makers about the importance of soil science to the global society.

In summary, support from National Soil Science Societies is critical to the functioning of the IUSS and the promotion of soil science throughout the world.

R. Harris  
Chair of the Budget and Finance Standing Committee

A.E. Hartemink  
Deputy Secretary General

## **Divisional Reports**

### **Division 1: Soil in space and time**

#### *Commission 1.1 Soil Morphology and Micromorphology*

- Intensive Training Course on Soil Micromorphology, Barcelona, 8-19 January 2007
- Web Page was updated in 2006 by Brenda Buck. These responsibilities are now being passed to Dr. Phil Owens & Dr. Brad Lee, Purdue University, USA
- Assist USA scientists to write and submit an NSF proposal to hold a joint Chinese/USA Meeting in Chengdu in conjunction with the 13<sup>th</sup> International Meeting on Soil Micromorphology in 2007.
- Accept and judge applications to present the 1<sup>st</sup> bi-annual Young Micromorphologist's Publication Award, which will be presented at the 13<sup>th</sup> International Meeting on Soil Micromorphology, Chengdu, China 2008.

#### *Commission 1.2 Soil Geography*

This commission considers to deal with the following two areas:

- 1) realize pictures of different soil landscapes, in order to diffuse knowledge of the soil as "cultural heritage" and fundamental resource for Humans, all over the world. Quite recently, the Italian Soil Science Society published a calendar with Italian soilscapes, based on the Soil Taxonomy Orders. This is also done by SSSA
- 2) soil distribution models in different landscapes (Italian experience in the Alps and Mediterranean environment), and at particular sites like mine waste disposal, anthropogenic soils, etc.

#### *Commission 1.3. Soil Genesis*

*9th International Meeting on Soils with Mediterranean Type of Climate* 22 – 25 October 2007, Aix – en – Provence, France.

#### *Commission 1.3. Soil Soil Classification*

ISRIC – World Soil Information in Wageningen will host a meeting on *Computer-aided methods in soil classification* some time in October/November 2007.

#### *Commission 1.5. Pedometrics*

The next few years will be exciting and challenging for the Working Group on Digital Soil Mapping. The Working Group recognizes the worldwide need for timely and accurate spatial information on the functional properties of soils. Members of the Working Group have been instrumental in developing new technologies for measuring and predicting soil properties and we are keenly aware of the opportunities for dramatically improving access to soil scientific knowledge. We propose to make a new digital soil map of the world using state-of-the-art and emerging technologies for soil mapping and predicting soil properties at fine resolution. This new soil map will be supplemented by interpretations that assist



decisions for food production and hunger eradication, climate change, and environmental degradation. Annual Meeting of Pedometrics August 27 to 30, 2007 University of Tuebingen Institute of Geography Ruemelinstrasse 19-23 72070 Tuebingen Germany.

*Commission 1.6 Paleopedology*

Special Session devoted to Pedogenesis and Analysis Of Aeolian Deposits XVII INQUA Congress 2007 Cairns, Australia 28 July - 3 August 2007.

Ahmet Mermut  
Chair, Division 1

## **Division 2: Soil Properties and Processes**

Division 2 includes five Commissions covering the areas of soil physics (2.1), soil chemistry (2.2), soil biology (2.3), soil mineralogy (2.4), and soil chemical, physical and biological interfacial reactions (2.5). Since the last World Congress of Soil Science in Philadelphia, USA, the division and commission chairs and co-chairs were actively involved in the organization of several workshops, symposia, and conferences. First ideas for symposia to be organized at the 19<sup>th</sup> World Congress of Soil Science in Brisbane, Australia, were also discussed and proposals will be submitted soon. The idea of introducing additional Divisional Awards was discussed within Division 2 and a recommendation was submitted to the IUSS President and the IUSS Committee on Awards and Prizes. At the Division level, an interdisciplinary workshop entitled "Contaminant dynamics in periodically flooded soils" will be organized at the Eurosoil Congress 2008 in Vienna, August 25-29, 2008. Division 2 is also planning to hold a business meeting at the Eurosoil Congress 2008. Selected activities of the Commissions with Division 2 are listed below:

*Commission 2.1: Soil Physics*

Special session on "Modeling root growth and rooting patterns and their effect on movement and uptake of water and nutrients" at the Annual Meeting of the Biological Systems Simulation Group (BSSG), Beltsville, MD, USA, April 16-19, 2007.

Symposium on "EcoEngineering of Soil by Plants and Microbes" to be proposed for the EGU General Assembly, Vienna, Austria, April 13-18, 2008.

SSSA-ASA-CSSA sponsored book on "Recent advances in understanding and modeling of the effects of water stress on plant growth processes", to be endorsed by IUSS.

*Commission 2.2: Soil Chemistry*

Kerner-von-Marilaun Workshop (Austrian Academy of Sciences): The challenge of sustaining soils: lessons from historical experience for a sustainable future. Vienna, Austria, November 8-9, 2007.

Symposia at the Eurosoil Congress 2008: "Soil organic matter (S1)", "Buffering functions of soils (S13)", and "Organo-mineral interactions (S14)". Vienna, Austria, August 25-29, 2008.

*Commission 2.3: Soil Biology*

Third International Conference on "Enzymes in the environment", Viterbo, Italy, 15-19 July, 2007.

Technical session on "Ecological restoration of metal-contaminated soils using amendments: methods and technical performance measures", 9<sup>th</sup> International Conference on the Biogeochemistry of Trace Elements (ICOBTE), Beijing, China, July 15-19, 2007.

*Commission 2.4: Soil Mineralogy*

Planned involvement in the International Clay Conference, 2009.

*Commission 2.5: Soil chemical, physical and biological interfacial reactions*

Third International Conference on "Enzymes in the environment", Viterbo, Italy, 15-19 July, 2007.

Ruben Kretzschmar  
Chair, Division 2



## Division 3: Soil Use and Management

Members of division 3 are 5 commissions and several working groups. Commission 3.1 deals with 'Soil Evaluation and Land Use Planning', commission 3.2 with 'Soil and Water Conservation', commission 3.3 with 'Soil Fertility and Plant Nutrition', commission 3.4 with 'Soil Engineering and Technology', and commission 3.5 with 'Soil Degradation Control, Remediation, and Reclamation'. Active is the WG 'Urban Soils-Soils of Urban, Industrial, Traffic, Mining and Military areas (SU/SUITMA)'. Division 3 covers in part traditional fields of applied soil science. But it tries to expand into new fields which are coming up by land use change, today's economical, social and technological impacts and benefits. There is much to do to find soil ecological and soil technological answers on a fast running change of soil use and demands from soils. Therefore for the elections (end 2007/start 2008) of new officers of IUSS persons are asked (until end of May) to be candidates who feel responsible and capable to face these challenges of division 3 and its commissions. The work of the division 3 started in autumn 2006. Therefore many activities are in a planning phase.

### *Chair of Division 3*

Visit of the 4<sup>th</sup> Conference of Soil Science Society of Africa, January 2007. Recent main engagement in the preparation of the tour about urban soil classification in Germany of the IUSS WG WRB, August 2007, and the 4<sup>th</sup> SUITMA-Conference of IUSS Working Group Urban Soils, Nanjing, China, October, 2007. In 2007 he will also participate in the 9<sup>th</sup> International Meeting on Soils with Mediterranean Type of Climate, France, October 2007, and 5<sup>th</sup> Int. Congress of the European Society for Soil Conservation, June 2007, Italy, and some local conferences. For August 2008 a symposium (S18) on 'Urban and Anthropogenic Soils', chaired by Jaroslawa Sobocka, Slovakia is part of the third Eurosoil Congress 2008 in Vienna.

### *Commission 3.1*

Is active in the Brazilian No-Till-Congress for 2008 in Londrina, Brasil. A Division 3 meeting in Londrina, Brasilia is proposed. For 2008 the inclusion of IUSS at the REFINA (Redevelopment of Urban Land) Conference in Germany is considered by the vice-chair.

### *Commission 3.2*

Current focus of activities are a Bouyoucos meeting, reducing greenhouse gas emissions through better soil and water management, and sequestering soil carbon by soil and water management; producing biomass for conversion to biofuel in a sustainable manner. Wanted are contacts with colleagues who are interested and active in these topics.

### *Commission 3.3*

Chair takes active part at 10<sup>th</sup> International Symposium on Soil and Plant Analysis, Hungary, June 2007.

### *Commission 3.4*

Will organizing a symposium/workshop on soil engineering and some related issues in spring of 2008, preferably in May of 2008 in Korea.

### *Commission 3.5*

Has been engaged with the organisation of a number of workshops and conferences to promote both soil science as well as risk assessment, bioavailability and remediation. To this end the commission has either organised or is organising the following workshops and conferences:

- Chemical Bioavailability in the Terrestrial Environment held in Spain in September 2006;
- Human Health Risk Assessment to be held in Adelaide on 24<sup>th</sup> June 2007;

- Ecological Risk Assessment to be held in Adelaide on 24<sup>th</sup> June 2007;
- Contaminated Site Remediation Conference in Adelaide during 25<sup>th</sup> to 28<sup>th</sup> June 2007;
- Site assessment and planning workshop to be held in India in 2008;
- Remediation Action Planning to be held in China in 2008.

The commission 3.5 is also considering the organisation of mid term congress workshop in 2008.

All commissions and divisions are in the stage of preparing proposals for symposia for the 19<sup>th</sup> World Congress of Soil Science 2010 in Brisbane, Australia. Proposals for symposia are wellcome to the vice chair of division 3, email: [Mike.McLaughlin@csiro.au](mailto:Mike.McLaughlin@csiro.au), as main organisator, chair of division 3 [wolfgang.burghardt@uni-due.de](mailto:wolfgang.burghardt@uni-due.de) and to the chairs of commissions.

Wolfgang Burghardt  
Chair, Division 3

## **Division 4: The Role of Soils in Sustaining Society and the Environment**

This division takes soils information generated in the other three Divisions along with developing new scientific information and addresses public literacy in soil science, education, international conventions, consequences of human activities on soil ecosystems, policy issues, food security, history of the discipline, etc. It involves integration of scientific knowledge of soil so scientists, policy makers and specialists remote to soil science may understand soil as an essential natural resource at the Earth's surface. Division 4 seeks to provide soil science input into decision-making process and address special issues that will be brought to the attention of the IUSS, especially in relation with the human and socio-economic use of the soils.

### *Commission 4.1 - Soils and the environment*

Chair: B. Clothier

Sessions are being planned for the 2008 New Zealand / Australian Soils Conference in Palmerston North, New Zealand (December 2008). The program is not finalized and suggestions are welcome. This Commission will work with Commission 4.3 to present a joint session at the 2008 New Zealand / Australian Soils Conference on "Environment and Land-use Change".

### *Commission 4.2 - Soils, food security, and human health*

Progress in this area will be reported separately on the IUSS website.

### *Commission 4.3 - Soils and land use change*

Chair L. Condon

Dr Salcedo (vice-chair) and Professor Condon are planning a special issue of a journal (this is currently under consideration). The topic is the impact of land-use change on soil function in sustainable ecosystems. Knowledge of the effects of land-use change on soil function will be collated and implications for sustainable management of the soil resource in different regions of the world will be considered. Recommendations for future research in this area will be included. This Commission will work with Commission 4.1 to present a joint session at the 2008 New Zealand / Australian Soils Conference on "Environment and Land-use Change".

### *Commission 4.4 - Soil education and public awareness*

Progress in this area will be reported separately.

### *Commission 4.5 - History, philosophy, and sociology of soil science*

Chair E. Landa

Commission 4.5 released Issue #14 of its Newsletter in March 2007 (Eric Brevik, Editor). The second issue is planned for mid 2007.



A book called "Soil and Culture" is in preparation (Edward Landa and Christian Feller, Editors), and a contract has just been signed with Springer as publisher. The book will explore the cultural dynamics of soil as a key ecosystem component including (i) human perception of soil in ancient, indigenous, and modern societies-their practices and religious & ethical beliefs, (ii) depictions of soil in art, literature, and elements of popular culture, (iii) use of soil materials as an artistic medium, (iv) human interactions with soil in urban landscapes/living space, diet, war, and criminal investigations, and (v) the role of unconscious in the perception of soils and elaboration of scientific theories in soil science.

Lyn Abbott  
Chair, Division 4

## The Future of Soil Science: Some thoughts on the IUSS book \*

by  
Alain Ruellan\*\*

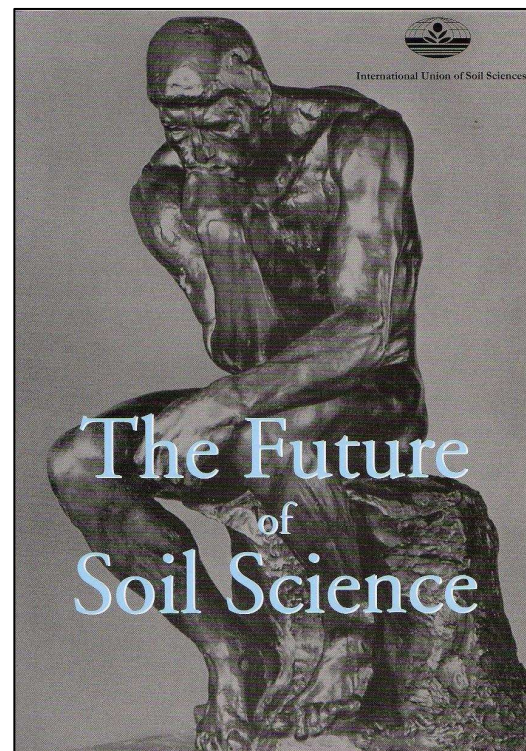
The future of soil science can be approached in two different ways:

- an applied approach: the soil study as a function of the changing needs of human societies (the needs for food, the environmental needs, the urban and industrial needs, etc.);

- a more fundamental approach: the study of soil milieu as such, for its own sake; what the soil is, how it functions, how it is formed and transformed, the role it plays in the functioning of our planet Earth; how human societies become major actors of its evolution...; the results of this fundamental approach should facilitate applied research.

Reading the recently published IUSS book\* I was struck by the importance taken by the first approach: for the majority of the 55 authors of this book, the future of soil science should be considered in terms of the services it can render human societies. Few consider the discovery of the nature of soil covers and of soil systems to be a priority. Does this imply that for the researchers concerned with soil science -and more generally, for the general public- the pedosphere has not yet acquired (or has already lost) the status of a natural milieu that merits independent and specific research in the same way as the lithosphere, the hydrosphere, the atmosphere, or the biosphere, each of which being the subject of precise scientific disciplines? This question is vital for the future.

**1** – Thanks to the wide range of proposals the book contains, it is a rich and interesting work. Yet, in my opinion, it includes nothing particularly original or particularly innovative. The proposals put forward by the authors are well argued and complementary, but the



\* IUSS, 2006 "The Future of Soil Science", edited by A.E. Hartemink, 165 pages.

\*\* Alain Ruellan, [ruellan@agropolis.fr](mailto:ruellan@agropolis.fr)

needs of today are mainly defined as being the needs of tomorrow. "Soil science - Fiction" has yet to find its authors!

However, what did strike me is that it tends to be a little self-complacent: everyone appears to be content with what soil science has already achieved for the benefit of human societies, and the future is envisaged with respect to a balance that is considered to be positive. But, is this really true? Just an example: one claim frequently made in this book is that soil science would have contributed to increase world agricultural production. Is this true? This issue can also be considered from a quite different point of view: the increase of agricultural production over the past 50 years was made possible more by the agronomical sciences, rather than by soil science. And the problem is that the increase of agricultural production occurred to the detriment of the soils and to the detriment of everything related to the soil (water, the air, life). As a matter of fact, the specialists in soil science were unable to convince their agronomist colleagues that to better produce without damaging the environment, they also needed to take into account the complexity and diversity of the soils and of the other natural environments. Throughout the 20<sup>th</sup> century, the intensification of agriculture and of many other human activities, took place not with the help of the soils, but against the soils.

It is my belief that the weakness of basic research in soil science is the main reason for the lack of respect for the soils on the part of agronomists, but also urban planners, developers, architects, ecologists... And this lack of respect finally affects society as a whole: this partially explains how difficult it is to include the discovery of the soil in the most important discoveries that children need to make.

**2** – Thus, in my opinion, concrete proposals for the future of basic research are the main elements missing from the "Future of soil science" book.

The soil is a natural environment, a natural body full of lives. Soil science should consequently be both a natural science and a life science with the central aim of understanding the living soil milieu: the study of its nature at all spatial and temporal scales; the study of the relations and interactions between the soil and the other environments (the lithosphere, hydrosphere, atmosphere, biosphere ... anthroposphere); the study of the soil functions. In my opinion, the main focuses of research should thus be the following:

- Soil covers and their spatial and temporal continuity and discontinuity are not yet well known and understood. What are the pedological dynamic units? How are they distributed in space? What are the different stages in their evolution? What are the causes of heterogeneity within soil covers?
- Soil covers continually evolve and undergo transformation: this is well known. Many of the mechanisms involved in the evolution of soils have already been identified and measured. However, in most cases, the different speeds at which the morphological, mineralogical, biological, physical and chemical characteristics of the different types of soil covers appear and disappear remain unknown. At what speed are soils created from rocks? At what speeds are clay eluviated horizons created and transformed? Erosion is recognized and has been measured; but the same cannot be said of the transformation fronts that cross soil covers (biological fronts, eluviation and illuviation fronts in various soil components, structural transformation fronts, etc.). Depending on the case, the pedological speeds can vary from a few seconds to a thousand years.
- The enormous biological wealth of soils remains to be discovered: both the biological diversity and the variety of biological functions. The biological weathering of rocks, the biological genesis of minerals and structures of soils, the cycles of greenhouse gases... are examples of research domains that need to be developed.
- From the moment Man started exploiting the soils, relations were created between soil systems and social systems: these relations need to be better understood. Furthermore, in recent decades, Man has become, progressively but rapidly, the main engine of soil covers evolution. Due to atmospheric and climatic changes, of human origin, all soil covers are now influenced by human activities. What are the



changes that happen, concerning soil constituents, soil morphology, soil dynamics, but also concerning mineral and biological, hydric and gaseous flows?

*So, what should the IUSS do?*

From July 1994 to August 1998, I was President of the ISSS (The International Society of Soil Science, which became the IUSS during my Presidency). It was during this period that the administrative and scientific reorganization of the actual IUSS was initiated and developed.

As soon as I began my function of President, during the closing session of the 15<sup>th</sup> World Soil Science Congress in Acapulco, I drew the attention of the Assembly to the need to enhance the identity and the autonomy of Soil Science: "First, let's remain ourselves. Soil is an environment in itself, which deserves to be studied as such. Soil scientists should not always have to account for the relation of the soil to its possible uses. We still have to do a lot of fundamental research to get a better knowledge of the soil systems and their dynamics. We have to accelerate the implementation of this research, both in the field and in the laboratories"\*.

This has been the preoccupation: of my Presidency; of the 16<sup>th</sup> World Congress of Soil Science in Montpellier; of the construction of the actual scientific organization of IUSS.

The identities of the soil, and of the soil science, should continue to be among the primary concerns of the IUSS. We need to situate ourselves as an independent science, with respect to other fundamental sciences, and with respect to the users of the soil, that is the users of the results of soil science.

In my opinion, the IUSS needs to clearly take a stand:

- For the existence, in the universities and research institutes, of independent soil science research and teaching units. These independent soil science units would provide a basis for the possible creation of more finalized multidisciplinary research units. Multidisciplinary research cannot succeed without good specialists in each discipline: these specialists need to be trained in specialized monodisciplinary teams (knowing that the "monodisciplinarity" of soil science already implies a lot of "pluridisciplinarity").
- For the development of education about soil in primary and secondary schools, with the aim to awake children's interest for the soil and its functions; this could even lead, why not, to the birth of vocations, of passion for the soil. A science that is completely cut off from the people has little chance to succeeding, and there is an urgent need for soil science to find its roots in the general population.
- For the identification, recognition and certification of a professional category 'specialist in Soil Science'. This specialist could be a researcher, teacher, engineer, or technician (see study undertaken by AFES, French Association of Soil Science).

## Where are the frontiers of pedogenetic research?

Comments by  
D. H. Yaalon

Kudos to the IUSS Bulletin Editor for posing pertinent questions and inviting discussion from members. With respect to the **Future of Soil Science** book (Hartemink 2006), with brief contributions from 55 soil scientists, it is evident that their generally optimistic view see the need for more soil sustainability and environment oriented research. Only a few mention the need to enlarge the research scope to the holistic traditional agronomic and soil productivity approaches. Only two contributions points out actual problems or directions of research that genetic pedology should cope with in the future. Have we solved all soil genesis problems and need just to broaden or deepen our understanding of it? Far from it. I suggest that there are still many lacunae in our understanding of reconstructing soil and landscape processes in many actual and past soil landscapes and

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\* Ruellan, A. – "Editorial". ISSS Bulletin, 86, 1994/2, p.4

shall mention just a few of these in the following. Soil genesis research has been directed since V. V. Dokuchaev time (1846- 1903) by the concept of soil formation factors, as brilliantly formulated by Hans Jenny (1899-1992) in 1941. Actual processes were relegated to poorly defined and almost 'mystical' terms like 'podzolization', 'laterization' or 'Verbraunung' and even 'leaching' or 'salinization' were not really well understood processes. It was only towards the end of the 20th century that Roy Simonson (USDA) grouped the multitude of observed processes active in soil formation into four general groups of additions, transformation, transfer, and removals - though lacking the important connotation of time. Both concepts are still the core paradigms in understanding soil genesis. Only few tried to combine both the multiple process and factor functions into an integrated landscape picture by adding changes over time or the energy concept in. New and improved methodology borrowed from other sciences were always the pathfinder of better understanding of soil formation.

Geologists have for a long time used thin section slides in microscopic investigations of the minerals in rocks. When Walter Kubiena (1897-1970) applied this method to soils, micropedology was born and provided important information on soil morphology and bioprocesses within the soil. But it was only in the 1950' that clay cutans and movement were recognized as significant and common processes in soil genesis. There is no doubt that this methodology, now supplemented by additional highly sophisticated modern non-destructive methods capable to identify and observe even the processes of the micron sized components in soils, will help to understand the origin, reactions and responses of the multifaceted structure and variability of various pedons which are still largely unknown. Are gravity, moisture or biota the prime movers and how are the frequently sharp horizon boundaries and lateral variability the result of the dynamic pedoenviroment? There is much still to be learned to understand the soil forming processes in many pedons and the pedological landscape, I shall list two examples from the semiarid and tropical region to illustrate this.

#### *Airborne solutes and dust additions in semiarid regions with limited leaching*

The semiarid to subhumid regions cover worldwide a similar area as the temperate regions so dominant in agroproduction to feed humanity and thus also in the history of soil research. Already early in the last century it was recognized that many of the most fertile soils were formed on loess, recognized by some as a dust derived sedimentary deposit. Gradually it became evident that not only the glacially derived and wind transported silts were significant contributors to the pedosphere but that, beside the medium distance transported silts, desert derived dust of smaller particle sizes is an important contribution to all soils (and oceans) of the world. Recent estimates speak of annually over 200 million tons of dust carried in the atmosphere and added to soils. We need better evaluation of the effect of this continuous addition on the properties of the pedons. But rainfall too contains dissolved compounds as shown by numerous measurements. Dew in deserts also contains similar airborne salts. In semiarid regions leaching of the solutes is not complete and they accumulate in the soil profile, frequently as pedogenic calcrete pedolith.

In some regions the origin of Ca in the calcrete has been a subject of speculation. Recent research in South Australia (Lintern et al., 2006) has convincingly documented by isotope analyses of Sr and C that the overwhelming majority of the Ca in the calcrete pedolith is of atmospheric source, rather than from the local bedrock or soil mineral origin, even far from the coast. Surely this kind of evidence must spur other to reexamine the effect airborne additions to any soil, be it as dust or solutes, easily affected by variable climatic conditions or change over time. There is much learn in these kind of topics.

#### *The mystique of desilication in the humid tropics.*

Fe-oxihydrate cum Al-hydroxide and kaolinite rich pedo-landscapes are the most common in current and past tropical humid regions. Though the nature and occurrence of 'laterization' has been discussed in many thick volumes, the actual desilication process of the compound silicates in the source materials and selective enrichment of hydrous oxides in the acid tropical pedoenvironment producing the extensive red Oxisols and Ultisols (Latosols previously) is still not well understood. The ubiquitous silica is much less soluble



than the Al- or Fe-oxides in acid environments, so how is it preferentially removed in solution? Incongruous dissolution of silicates has been postulated but this theory does not explain the selective dissolution and removal of quartz silica. A suggestion has been made by Charles Weber (1993) that the alkaline gut of humus eating termite ants, reaching a pH up to 12, might be responsible for making silica soluble and enabling its removal in the leaching solution. It has been suggested that the locally high intestinal pH was evolutionary developed to make phosphate needed in nutrition soluble and available to the termites and surrounding biota, but might have been equally responsible to reach the high pH needed for significant quartz dissolution. This is certainly a worthwhile idea to examine and test further. It may thus turn out that biota driven processes are a major force also in humid tropical pedoenvironments. We know too little how these and other biota function in soils and effect its processes, so there may be some surprises if studied in detail. There is much to do in this direction.

These are only two examples of some challenges in pedogenetic research which hopefully will attract young people to make their future contribution in this broadening field. Many more project and research ideas can be based on the just published reports of the American workshop report *Frontiers in Soil Science*. It is sad that we cannot agree on one definition, just as our prestige is not the highest for having two or more and are different world classifications and numerous country or ethnic local soil classifications. We shall probably have to live with this condition for some time ahead.

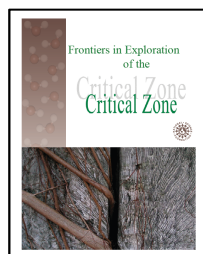
## IUSS Alerts October 2006 – May 2007



### Information for and from the global soil science community

**IUSS Alerts** are e-mailed to more than 12,000 people in over 100 countries. If you have information to share please send it to [alfred.hartemink@wur.nl](mailto:alfred.hartemink@wur.nl) Below are the still relevant contributions that appeared in the IUSS Alerts between October 2006 and May 2007.

#### Critical zone publications



The Critical Zone encompasses Earth's outermost surface defined from the vegetation canopy to the zone of groundwater. This zone, the interface between Earth materials and the biotic world, modulates the transfer of nutrients into terrestrial lifeforms. In this photograph, a tree root anchored onto the Key Largo Limestone, an exposed reef with fossilized hermatypic corals, is shown. The limestone is overlain by thin soil in the Windley Key Fossil Reef Geological State Park, forcing plants to anchor themselves directly to the bedrock for stability and nutrients. To understand processes in such settings, scientists from multiple disciplines must unravel similarly complex inter-relationships within the hydro-, litho-, and biosphere. Report can be downloaded [www.iuss.org/Critical%20zone%20booklet.pdf](http://www.iuss.org/Critical%20zone%20booklet.pdf)

#### The World Association of Soil and Water Conservation

The World Association of Soil and Water Conservation (WASWC), a global forum for scientists and conservationists in soil and water, is now offering online products and services to academics and professionals all over the world. They include Newsletter,



Journal, Proceedings, Special Publications, Photo websites, a.o. Members will have a chance to be among thousands of specialists in various fields. We would like to invite all IUSS Alert readers to be our Guest members by accessing the website <http://waswc.ait.ac.th> using username **waswc** and password **291785** - you are welcome to sign up as paid members, the annual fee is US\$5-10.

### Soils on YouTube and Google and Podcasts

Do you need soil video in the classroom? There are few useful ones on the web that can be downloaded for free - some cost money. Check: <http://video.google.com> and <http://www.youtube.com> (Google just bought YouTube so all video will be together one day). Click [here](#) for a video on the threats to Europe's soils.

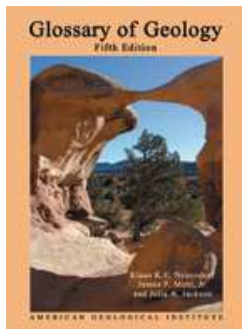
Some time ago I asked for podcasts on soils (pedocasts if you wish) and it seems that there are not many around yet. The Soil Association (UK) has a few podcasts on soils, click: <http://www.soilassociation.org/podcasts> Some universities offer their lectures as podcasts and even as video podcast (sometimes shortened to vidcast or vodcast).

### Wikipedology



Almost 1.5 million (English) articles are now available on [www.wikipedia.org](http://www.wikipedia.org) (the web based free encyclopedia) and many more in dozens of other languages. There is a reasonable amount of soil information on Wikipedia that is freely available but many branches are absent. There is a Wikiproject on soil and join this group to assure that soils are well-represented in the global knowledge tap as Wikipedia is now the first stop for many people in their search for information on science topics. Although anyone can edit any article, its accuracy on science topics is surprisingly high (Nature 5<sup>th</sup> October 2006). There are other initiatives underway that give more credit to authors like [www.citizendium.org](http://www.citizendium.org)

### Glossaries & Dictionaries

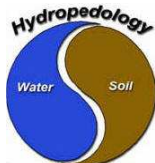


The American Geological Institute's geoscience resource publication is now available online. Available for both individual and institutional licensing, the "Online Glossary" is searchable using terms, words within terms or definitions, and categories. The "Online Glossary" offers all of the terms included in the latest print edition of the "Glossary" plus over 1,000 updates that have been made since the publication of the print edition in 2005.

The "Online Glossary" includes several enhancements over the print edition. Images are displayed for rocks, minerals, fossils and landforms. Most of the glossary terms are also available in

Spanish. To learn more about the "Online Glossary of Geology", access to a free 30-day trial, and licensing information: [www.agiweb.org/pubs/glossary/](http://www.agiweb.org/pubs/glossary/)

### Hydropedology newsletter (and others)



The Newsletter of the Hydropedology Working Group is available on the IUSS Website. This Newsletter full with news skillfully compiled by Dr Henry Lin is a must read for anyone interested in hydrology and pedology.

There are also other newsletters available on the IUSS website, like those of: Commission for History, Philosophy and Sociology of Soil Science, Commission Pedometrics and Commission on Paleopedology



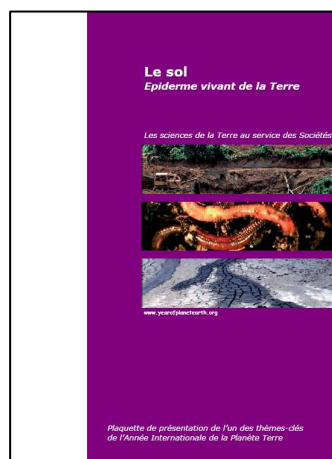
### European Soil Database – freely available



The publication **European Soil Database v2 Raster version - 1km x 1km** (which contains a 1km raster version of the vector based soil geometry of the European Soil Database) and **European Soil Database v2 Raster Library -1km x 1km** (which is a collection of prepared raster data files for most attributes of the SGDBE and PTRDB databases of the European Soil Database v2) are available. The European Soil Bureau Network decided that the vector versions of both the European Soil Database (ESDB) v1.0 and v2.0 could be now publicly and freely available. To register for access to and download of the data, please consult

[http://eusoils.jrc.it/ESDB\\_Archive/ESDB\\_Data\\_Distribution/ESDB\\_data.html](http://eusoils.jrc.it/ESDB_Archive/ESDB_Data_Distribution/ESDB_data.html)

### Year of Planet Earth brochure – now also in French



The French Soil Science Society (Association Française pour l'Etude du Sol) is happy to announce the release of the brochure "Le sol Epiderme vivant de la Terre". The International committee of the **International Year of Planet Earth** has produced a series of 12 brochures on the scientific themes and outreach program launched by the International Year. The one on the soil called "Soil - Earth's living skin" was written by David Dent, Alfred Hartemink and John Kimble. The brochures are targeted towards the general public, but they need to be translated to national languages and adapted to the local context. "Le sol Epiderme vivant de la Terre" is the translation into French by Roland Poss and Alain Ruellan. May this endeavour trigger other translations into many other languages! The brochure is here [www.iuss.org](http://www.iuss.org)

### UNESCO and SCOPE Policy Briefs

UNESCO and SCOPE have recently developed a new series of policy briefs that focus on emerging and critical environmental issues. The briefs are based on the contributions of international experts at multidisciplinary workshops and are designed to review current knowledge, highlight trends and controversies, and open perspectives for policy planners, decision makers and stakeholders in the community. The three briefs published to date can be downloaded from the SCOPE website <http://www.icsu-scope.org> UNESCO-SCOPE Policy Briefs Series.

Copies can also be ordered from the Secretariat (see website).

1. Indicators of Sustainability, Reliable Tools for Decision Making
2. The Global Carbon Cycle
3. How to improve the dialogue between science and society; the case of global environmental change

Additional policy briefs scheduled for publication in 2007 including biodiversity in soils and sediments and the nitrogen cycle.

### Land Degradation Assessment in Dryland Areas (LADA Project)

The project aims to assess causes, status and impact of land degradation in drylands and to explore the means for reversing and mitigating these trends. It is funded by the Global Environmental Facility (GEF), implemented by the United Nations Environmental Programme (UNEP) and executed by the Food and Agriculture Organisation of the United

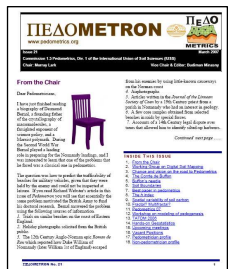
Nations (FAO). The project has established a web-based LADA Virtual Centre: <http://lada.virtualcentre.org>

## New IUSS Newsletters



### Pedometron issue no. 20

The 20th issue of Pedometron, the newsletter of the Pedometrics Commission of the IUSS, is now published. It is a Bumper Issue with reports on the 18th World Congress of Soil Science, the second Global Workshop on Digital soil mapping, the Richard Webster Medal, the Working Group on Digital Soil Mapping, Research Notes: Trends in pedotransfer function research, a book review and an article on Sudoku, soils and sampling: compulsory reading!



### Pedometron issue no. 21

This 21<sup>st</sup> Pedometron newsletter (first one was published in 1991) is the biggest so far and compiled by the Commission chair Murray Lark and Vice chair Budiman Minasny. In this new Pedometron issue there is an article on plans and activities of the IUSS Working Group Digital Soil Mapping, on early pedometric problems and early pedometricians, on nominations for the best paper awards in pedometrics (a good tradition), on soil bibliometrics and the *h* index, on variability of SOC, fractals and multifractals (not of your bones), on the Pedometrics conference in

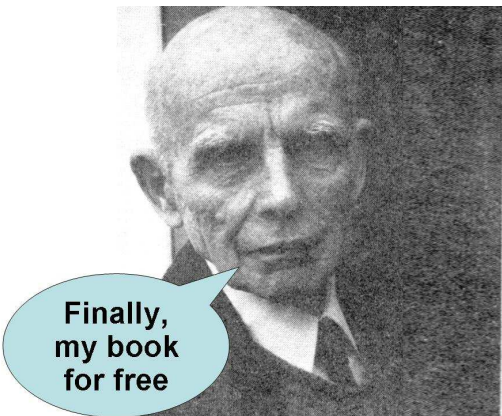
August 2007 (Germany), reports of conferences and courses, vacancies, and a short profile of a pedometrician and non-pedometrician. Click [here](#) for the PDF.

## Soil history



The 14<sup>th</sup> Newsletter of the Commission on the History, Philosophy and Sociology of Soil Science of the IUSS and the SSSA Council is the first produced by the new Commission chair ED Landa and the Vice Chair Christian Feller. The newsletter starts with an introduction by the new officers who are in charge since the 18<sup>th</sup> World Congress of Soil Science (WCSS). In this newsletter you find articles on the soil history website by Eric Brevik, CD with historical USA publications, full report on the 18<sup>th</sup> WCSS by Benno Warkentin including an overview of the presentations of soil history in different countries and parts of the world, an article by Rattan Lal on history of agriculture and the plough, an article by Benno Warkentin on the former British West Indies. The newsletter ends with a book review and the addresses of IUSS Officers (always useful).

## Free books on the web



Most scientific information is exchanged through our journals, but some of it takes places through books and reports. These are great times for those of us that like to chase information and be up to date with what is available. With [Google Scholar](#) you can pick up grey literature whereas with [Google Books](#) you can view parts of many soil science books, and sometimes the whole book. Now a collection of historic soil science and agricultural books (including those of von Liebig, Jenny, Albrecht,



Howard, King) can be freely downloaded from the holistic agricultural library, click [here](#). Dr Budiman Minasny from the University of Sydney scanned V.V. Dokuchaev's Russian Chernozem. It is a PDF of 48 Mb and if you like a copy send him an [e-mail](#). Keep reading folks!



### **EUROSOIL Congress 2008 "Soil - Society - Environment"** Vienna (Austria) 25-29 August, 2008

EUROSOIL 2008 is organised by the European Confederation of Soil Science Societies (ECSSS) in cooperation with the IUSS and the national Societies of Austria, Croatia, Czech Republic, Hungary, Slovak Republic, Slovenia and Switzerland. There will be 30 symposia, 9 workshops, several meetings and numerous pre - and post-congress excursions in Austria, Croatia, Czech Republic, Hungary, Slovak Republic, Slovenia and Switzerland. All information is now available, including deadlines and registration form, under [www.ecsss.net](http://www.ecsss.net) or contact Winfried Blum at [winfried.blum@boku.ac.at](mailto:winfried.blum@boku.ac.at)

## **Benin Soil Science Society request for collaboration**

We are National society of soil Sciences: Association Nationale des Sciences du Sol du Bénin (ANSSB). We need partnership to promote Soil sciences specialities in Benin.

### *The objectives of ANSSB*

- 1) To Promote soils sciences specialities and theirs applications in Benin and the world;
- 2) To enrich and manage soil to nourish Benin and world;
- 3) To Participate too agriculture development strategies and the reduction of extreme poverty in Benin and the world;
- 4) To create a lobby on national and international plans too soils sciences;
- 5) To participate to the world development partnership.

### *Activities of ANSSB*

- 1) The inventory of Benin soils sciences specialists;
- 2) To work to Benin participation too the International Union of Soil Sciences (IUSS) works and specializead organizations in soil sciences in the world with intention too follow world ordre of soil sciences;
- 3) To represent externally Benin soil sciences;
- 4) The participation too internationals scientists conferences;
- 5) To establish cooperation with specialized organizations;
- 6) To offer in Benin a soil sciences management organization;
- 7) To organize particulars studies: definitions, classifications, data bases of soil sciences according world order of soil sciences;
- 8)The development of differents uses of SOTER (numerals data bases and world levels on soil and terrain components at national and world levels) too others sciences affiliated too soil sciences;
- 9) To develop soil sciences research to solve soils problems which pose too farmers;
- 10) To restore and maintain soils fertility at optimum level;
- 11) The creation of Benin museum of soils and rocks;
- 12) Identification and inventory of all soils problem in Benin;
- 13) The monitoring and coordination of all soil sciences research studies in Benin;

- 14) Making Benin soils sciences works annual report according commissions and agro-ecologicals zones;
- 15) The constitution of National soil sciences library;
- 16) To organize soil sciences seminars;
- 17) To search scholarships students and grants for ANSSB specialists and organize training seminars in soil sciences;
- 18) The reception of students for soils sciences training;
- 19) Pratical training of students in soil sciences;
- 20) To search founds for all soil science studies in Benin;
- 21) The development in Benin of the news soil sciences specialities according the world order;
- 22) Suggestion of news research ideas to ANSSB specialists;
- 23) To develop with others actors, agriculture development strategies;
- 24) The creation and maintenance of ANSSB site web.

#### Administrative Office Adresses

Présidence : Laboratoire Des Sciences Du Sol , Eau et Environnement (LSSEE),

Dr AZONTONDE Anastase

E-mail : [anastase12000@yahoo.fr](mailto:anastase12000@yahoo.fr) or : [narcissewollo@yahoo.fr](mailto:narcissewollo@yahoo.fr)

## **International Year of Planet Earth**

### **Report of the second meeting of the IYPE National Committees**

### **Vienna, Academy of Sciences, Date: 17 April 2007**



Attending: Werner Piller (Austria National Committee (NC)), Veronica Stedra (Czech Republic NC), Dimitri Kaljo (Estonia NC), Denis Vaslet (France NC), Jean-Paul Cadet (France NC), Wolfgang Eder (Germany NC, Board Member), Leonello Serva (Italy NC), Uk Han (Korea NC), Grazina Skridlaite (Lithuania NC), Amga Tsolmon (Mongolia NC) , Johan Meulenkamp (the Netherlands NC), Arne Bjørlykke (Norway NC), Tadeusz Peryt (Poland NC), Victor Mocanu (Romania NC), Igor Broska (Slovak Republic NC), Cecilio Quesada (Spain NC), Holger Stunitz (Switzerland NC), Edmund Nickless (UK NC), Mateja Jemec (Slovenia NC), Jack Hess (GSA, USA), John LaBrecque (NASA, USA), Werner Janoschek (Meeting Chair, IYPE Goodwill Ambassador), Eduardo de Mulder (IYPE Executive Director Secretariat).

#### *Opening*

The IYPE Goodwill Ambassador, Werner Janoschek, opened the meeting and gave the floor to the meeting's host and Chairman of the Austrian National Committee, Werner Piller, who welcomed the participants. A group photo was then taken.

#### *Update IYPE*

The Executive Director informed the meeting about developments in the first quarter of 2007 when the IYPE triennium started with balloon launches in London (UK),



Chidambaram (India) and Sao Paulo (Brazil) and other events (e.g. in Tokyo, Japan). The first Board meeting took place on 9 and 10 January in London, UK. The Board decided to expand the Science Implementation Teams to 10 experts including some more engineers. An electronic ballot resulted in approval of the IYPE Statutes and Bye laws, approval of the Agreement on the Norway-based IYPE Secretariat, establishment of Regional Committees (first in East and Southeast Asia), a Vice Chair of the Science Programme Committee (John Dodson), two Senior Advisers and one Goodwill Ambassador. It also agreed to hold a second Board meeting in 2007 (20 & 21 June, in Paris). The Executive Director also reported that fundraising at national levels is going well and is improving out the international level. The Executive Director shared the remaining concerns for the Corporation with all present, mainly dealing with international fundraising and current vacancies on the Board. He distributed a new IYPE flyer among the participants.

#### *Website – web portal transformation*

The Executive Director informed the meeting about current efforts to upgrade the IYPE website to a web portal. The transformation involves four phases: conceptual, design, software engineering, and maintenance. The first phase explores options for parties and stakeholders to interact *via* closed sections (password access). Initially, such sections will be developed for Board members and for representatives of National Committees, to be followed for more sections later. Entries for donations and purchasing of IYPE items will be set up, as well as for open discussion and ideas fora. The first outlines of this conceptual phase have already been produced, as have those for the design phase, which will be realized by the same design house that produced the IYPE brochures. The Corporation now awaits a bid from a software engineering firm for that part of the process, as well as one for the maintenance. The current webmaster of the website has been invited to serve in the same capacity for the web portal, in close cooperation with the Secretariat. Once the bids for these activities have been received, the Geological Survey of Canada will be informed and invited to cover these costs as agreed with (former) Goodwill Ambassador Irwin Itzkovitch.

#### *Information from the National Committees*

*Lithuania:* Grazina Skridlaite informed the meeting that the Lithuanian IYPE Committee was initially established as a Working Group. Together with the Lithuanian Academy of Sciences, they produced a national IYPE Programme and presented that to the Ministry of Education and Science. The Working Group awaits formal approval by the government which is expected in May 2007. The IYPE Programme includes dissemination of information on the IYPE 2008 to the members of the Geological Society and the media; in addition, a call for IYPE initiatives from Geologists was made by the NC. A IYPE Programme was developed for both science and outreach activities, including publications on topics including mineral and alternative energy resources, water resources, natural resources for the public, medical geology, conferences and workshops, reconstruction of geological museums for the public, development of an Information Centre for Natural Sciences, as well as movies and competitions for school pupils. In 2006 and 2007, the IYPE logo was used on several occasions at conferences, workshops and exhibitions. A series of lectures on IYPE items was also presented to the general public. One expected challenge is fundraising, although geological companies are represented in the IYPE NC. Dr. Kaljo (Estonia) asked why the Lithuanian NC wishes to wait for formal approval. Dr. Skridlaite replied that this would make organizing events and fundraising much easier.

*Italy:* Leonello Serva informed the meeting that the MoU between the Corporation and the NC is now ready for signing. A Ministerial Decree was signed on February 19<sup>th</sup>, 2007, stating that the NC is to be presided over by the Minister of the Environment and that the Director of the Italian Geological Survey (APAT) is the President of the Technical Scientific Committee, composed of all Italian institutes dealing with the Earth sciences. The NC has already started its work, and its website is in progress. The Italian NC has produced its own logo (TERRRA). A national IYPE launch event is being organized for June 2007. The

NC includes a professional fund raiser who works on a percentage basis; the International Corporation has been invited to use these services as well. To that end a meeting with the Executive Director will soon be arranged. A major international Art exhibition on 'Planet Earth' will be held in Milano in 2008.

*France:* Denis Vaslet informed the meeting that the French National Committee consists of two bodies, the overarching Steering Committee chaired by Jean Dercourt and the Organising Committee, which Denis Vaslet chairs. One of the NC's first activities was a call for initiatives. That was quite successful as more than 120 are already listed. These include field excursions. A launch event on February 16<sup>th</sup> was hosted by BRGM in Paris, with excellent attendance including all major players in the Earth sciences in France. A small budget was provided by the Ministry of Research to cover the expenses of the Organising Committee. As to its programme, the French NC places much emphasis on the regions. On April 11<sup>th</sup> a presentation was given for the Minister of National Education and the Rectors of Regional Academies. This resulted in a formal engagement of French National Education with the IYPE. Moreover, scholars in the geology, soil sciences and geography communities will now collaborate in developing a new (2009?) education programme for the Earth sciences, including aspects of water, hazards, soils and population. This might well emerge as one of the IYPE's legacies after 2009. A Communication Plan was developed, and TOTAL contracted one person to implement it and to identify industrial sponsors, starting in May 2007. Moreover, the French NC is working together with the International Corporation on the realization of the international IYPE Launch Event in Paris, 12 & 13 February at UNESCO's HQ in Paris.

*Korea:* Uk Han told the meeting that the Korean NC was formally established in 2006, chaired by the Vice Premier, who is the Minister of Science & Technology. It consists of 7 sub committees on science, 5 on outreach and one planning and strategic subcommittee. Since its foundation, the KNC has held many meetings and opened an office on April 1<sup>st</sup>, based in the Korean Federation of Science and Technology Societies (KOFST) in Seoul, and staffed by two full-time people, including Uk Han who is the Secretary General of the KNC. The IYPE Office has produced a brochure which was distributed to all present at the meeting. As to fundraising, which is the responsibility of the planning and strategic subcommittee, Prof. Han expects half of the income to come from governmental organizations and the other half from industrial sources.

*The Netherlands:* Johan Meulenkamp informed the meeting that the NC was formally established in March 2007 and its first meeting will be held on May 9<sup>th</sup>. The Committee has 37 members covering a wide spectrum of knowledge and experience, stretching beyond the Earth sciences in the strict sense. As to the IYPE science programme, the Dutch focus will be mainly on environmental issues (coastal, land, climate, sea, river processes). Apart from geoscientists, engineers will be involved in realizing the programme. Significant attention will be paid to outreach (Geo-truck, Geo-debates, TV et cetera). Regions will be strongly involved in its implementation.

*Czech Republic:* Veronica Stedra said that the NC operates with support of the Ministry of the Environment and includes representatives of regional networks and consultants. In its first stage, the NC produced printed materials, such as a poster and a brochure, copies of which handed out to participants. The CNC maintains strong relations with the National UNESCO Commission and involves the 50 UNESCO Associated Schools in the Czech Republic, as well as paying significant attention to the UNESCO Decade on Education for Sustainable Development, run by the Ministry of Education. The CNC is currently working on further expansion of its website ([www.rockplanetyzeme.cz](http://www.rockplanetyzeme.cz)). The IYPE programme includes a painting competition for children, development of a virtual geological encyclopedia on the server of the Geological Survey (CGS), dissemination of geo-info to regions, Geoparks, schools and museums. A roving exhibition "The planet Earth: powerful and vulnerable" on the IYPE will start in Prague and will become permanent as a permanent legacy of the IYPE. The project "Geologists for Prague" will create a permanent geo-layer complementary with the Prague ZOO Park and the Botanic Garden. A special



point of interest in the Czech Republic will be on rehabilitation of old mining sites, undermined cities, and protection of underground space as potential locations for storing strategic reserves.



*Germany:* Wolfgang Eder told the audience that the German NC also includes UNESCO representation in addition to that from the geosciences. The NC is run under the supervision of the GeoUnion (former Alfred-Wegener-Foundation) with the leadership of its President Rolf Emmermann, GFZ-Potsdam, in cooperation with the Ministry of Education and Research (BMBF) and the German Research Foundation (DFG). It is in the process of approaching VIPs including Prime Minister Angela Merkel, former PM Gerhard Schröder, and Klaus Töpfer (the last UNEP Executive Director) as Patrons. Eder does not anticipate that the NC will generate as many funds as in 2002, when a very successful Year for the Geosciences was organized in Germany, but numerous existing and planned geo-related projects, funded mainly by the DFG and BMBF, will be designed according to the IYPE guidelines. In September/October a launch event might be held in the German Parliament House in Berlin, in the presence of all members of Parliament, for the purpose of politically addressing the IYPE and signing of the MoU with the International Corporation. A German brochure on the IYPE will be issued by the German UNESCO Commission, and a series of conferences, as well as exhibitions and "capacity building" events for schoolchildren, is planned in relation to the IYPE and Geoparks. Two new Geoparks are expected to be opened in 2008. Joint "transboundary" events (excursions, conferences) are being discussed with France, the Netherlands, and Poland. A German IYPE website, using the existing "Planet Earth" website of the BMBF-Ministry, is under construction.

*Spain:* Cecilio Quesada informed the meeting that the Spanish NC consists of two bodies, the Honorary Committee chaired by HH Princess Cristina de Borbón and consisting of five Ministers and the Presidents of the Senate and Congress, and an Executive Committee, chaired by the President of the National Committee for Geology, who is also the Secretary of the Honorary Committee. In 2007, the IYPE might face some competition from the recently proclaimed national Year for the Sciences. The IYPE MoU will be signed during a formal meeting of the NC in early June. The Science programme is already running, and a



special call for proposals on all ten IYPE themes has been issued by the Ministry of Research & Development, entitled 'Planet Earth'. That will be financed through existing funding mechanisms. The output will be available by 2010 and a special conference will be held in 2011. In 2008, the 4<sup>th</sup> IUCN World Conservation Congress will be held in Barcelona and will bear the IYPE logo. Other IYPE labeled events will be the World Water Forum (2008), the National Congress on Global Change (April 2007) and the National Geological Congress in 2008. This month, the SNC produced a brochure, which was handed out to the meeting participants. More such brochures will be produced later. A photo CD/DVD for education purposes in schools is expected soon. The SNC has signed a contract with the Association of Earth Science Teachers to prepare workshops for primary and secondary school children, as well as local field trips for students and the general public. The Spanish network of UNESCO Associated schools will host some of these events. In the Island of Tenerife, a weekly lecture series will be held from March to November 2007; a lecture will also be delivered at Madrid's Cosmocaixa Museum on 'What are these things made of?', the programme running from April 18 to June 6, 2007. From spring 2007 onwards lectures will be given by national and international experts in universities all over Spain. In June 2007, the SNC will be formally presented to the media and the formal opening ceremony of the IYPE will be held in the Parliament in January 2008. In December 2008, the formal closing ceremony will be held in the Senate. A TV documentary will be produced and broadcast on all ten IYPE themes from autumn 2007. The SNC will contribute to the UNESCO exhibit at UNESCO Headquarters in Paris in October 2007. IGME (the Spanish Geological Survey) will contribute to the *OneGeology* Project, which operates under the IYPE banner, and the SNC will cooperate in a transboundary project across the Pyrenees together with BRGM under the patronage of CGMW.

*Norway:* Arne Bjørlykke described the setting up of the 25 member NC that has organized a launch event in Oslo for 9 May at which both the Minister of Education & Science and the famous Norwegian rock artist, Morten Hartuk, will be present. The days of Geology (Earth Day, 22 of April) in 2007, 2008 and 2009 will all be dedicated to IYPE. An IYPE school programme in cooperation with the University of Oslo is being developed, aimed at recruiting more students in the Earth sciences. For the first time, Earth sciences are being taught at high schools in Norway. There are IYPE programmes in development at all Norwegian museums and IYPE science contests. Some 50 companies and institutions are being approached for support of the implementation of the Norwegian IYPE programme. The popular book on the Geology of Norway will be translated into English. The International Geological Congress (IGC33) will be held in Oslo, in August 2008. All ten IYPE themes will have the opportunity to convene a topical symposium and all NCs are invited to contribute to these symposia. Current and future Norwegian science programmes will be checked on issues that comply with the IYPE Science Programme and if so, labeled also as IYPE Projects.

*USA:* Jack Hess informed the meeting that the Geological Society of America (GSA) will dedicate its annual congresses for 2007, 2008 and 2009 to the 10 themes of the IYPE. He expects the formal launch of the USA NC later this year.

*UK:* Edmund Nickless said that the UK NC is entirely composed of members of the External Relations Committee (ERC) of the Geological Society, which is a Founding Partner of IYPE. The ERC is also the IUGS National Adhering organization. In 2007, the ERC will be occupied almost entirely by the activities of the bicentennial of the Geological Society. One of these activities was the joint IYPE-GeoSoc 4,567 balloon launch early in January 2007 in London. Other activities include 10 Shell-sponsored public lectures, 15 'local heroes' lectures, student essay competitions, and a bicentennial conference with public debate. Upon evaluation by the end of 2007, some of these (e.g. the public lecture and local heroes series) will be followed-up in 2008 and 2009 as IYPE activities, while new IYPE activities might be introduced too.

*Estonia:* Dimitri Kaljo informed the audience that the EstNC for the IYPE was established in June 2006 and is composed of representatives of universities, the Geological Survey,



institutes of hydrology, marine studies, UNESCO, the media, *et cetera*. The Committee operates under the Academy of Sciences. As the public profile for geology in Estonia was low in the 1990s, the EstNC is focusing on raising public awareness of the importance of the Earth sciences for society as well as seeking to persuade decision-makers of the value of the Earth sciences for further development of the nation. The EstNC has a commission on science and a very active commission on outreach/education; activities will include public lectures, TV and radio performances, publications, *et cetera*. Co-operation with different societies has been arranged. A project to secure some funds from the Ministry of Environment has been initiated. Dimitri Kaljo asked the Executive Director to send to the NC a draft MoU to be signed as soon as possible.

*Mongolia*: Amga Tsolmon informed the meeting that the Mongolian NC is well developed and will focus mainly on mining in 2007-2009. This is quite necessary as mining has a undeservedly poor public profile in the media.

*Romania*: Victor Mocanu said that the Romanian Committee for IYPE has been organized under the National Committee of Geologists which comes under the Academy of Sciences. The RNC tries to involve three ministries: Education & Research (Universities, Research Institutes, higher and elementary schools), Environment (Research Institutions and funds for research), and Economy and Commerce (funds for specific research on problems dealing with sustainable development and natural resources). The Romanian President, Emil Constantinescu, is ready to assist with the advancement of the IYPE and will send a supporting letter to the Corporation. The RNC aims to raise funds from the oil and gas industry, governmental bodies and from current research programmes. There is significant funding for science in Romania, but the challenge is to steer some of it to the IYPE activities. The ten science themes of IYPE closely match the current interests of Romanian experts as well as with the main research streams of the government. The most appealing IYPE issues for Romania are natural hazards, Geoparks, sustainable development, and environmental problems. In Romania, the IYPE is seen as an important vehicle with which to get the Earth sciences back on the education agenda. A website is in construction and the MoU with the Corporation is ready to be signed.

*Poland*: Tadeusz Peryt informed the meeting that the Polish NC for IYPE has two subcommittees, one mainly on science (chaired by Andrzej Zelazniewicz ) and the other mainly on outreach (chaired by the Vice Minister of the Environment Mariusz- Orion Jedrysek). The Polish NC is presided over by the Minister of the Environment. Both subcommittees have developed ambitious programmes. After the meeting, Zelazniewicz talked to the Executive Director about the planned activities of his subcommittee ('Planet Earth') which includes representatives of all Polish Earth Sciences institutions. Among other items, these plans include a roving outdoor exhibition, geoscience competitions and contests in schools throughout Poland, a prominent role for the Earth sciences in Warsaw's annual Festival of Science and in other university cities, guided tours of forthcoming Polish geosites and geoparks, the publication of brochures and flyers on the 10 IYPE themes, promotion of scientific research on these themes, preparation of special educational broadcasts, TV films and other shows, and the setting up of a dedicated IYPE website from 2007 onwards to provide authorized explanations and comments on Earth-triggered events in Poland and beyond, and to share results of scientific programmes such as IGCP, IODP and ICDP.

*Slovak Republic*: Igor Broska informed the meeting that the NC is running well and that they have already held two seminars. A new round of lectures will be held in the Museum. There will be an exhibition on dinosaurs, and a film on the history of the Slovak mountains will be produced, accompanied by a special publication on this topic.

*Austria*: Werner Piller mentioned that the ANC will have only limited support for its activities in 2007 but that significantly more is expected for 2008. Many organizations have expressed their keen interest in participating in the IYPE activities in Austria.

Although difficult to realize, Vienna's world-famous New Year concert still has a chance of being associated with the IYPE. The Museum of Natural History in Vienna plans to arrange for an Open Geology Hall. Moreover, activities at schools, Geoparks, popular books on geology, digitization and dissemination of old geo-manuscripts, and artist impressions will be prominent during the IYPE triennium.

Following this overview of National IYPE Committee activities by those represented at the meeting, the Executive Director presented some information on NCs that were not represented.



*Argentina:* a message was received that a NC will soon be set up in Argentina.

*Australia:* in 2008, the Australian Mint will produce a special series of IYPE coins.

*Mexico:* the Mexican NC will organize a meeting in May to be attended by the Executive Director.

*Brazil* has produced a series of cartoons by students in the Geosciences.

*Cuba:* during the triennium, a national drawing contest for children, entitled MY PLANET IS ALIVE ([www.scg.cu](http://www.scg.cu)), will be held. Lectures on GEOLOGICAL NATURE OF CUBA will be given and broadcast every week on Cuban TV. A website has been developed ([www.medioambiente.cu/upnatgeo/index1.html](http://www.medioambiente.cu/upnatgeo/index1.html)). Furthermore, the CNC for IYPE has already published 60 000 copies of a magazine on Cuban Geology and its relevance for society. The CNC hopes to publish a popular book (GEOLOGIA DE CUBA PARA TODOS) in 2008. Finally, 26 TV lectures in DVD format will be made available for schools, universities, and the public at large.

*China:* the Chinese National Committee for IYPE will probably be formally launched by mid May 2007.



*Iran*: has produced an information sheet and has made it available on the IYPE website (under the Iranian flag).

*Japan* has painted the IYPE logo on its largest deep drilling research vessel, the Chikyu ('Earth' in Japanese).

*Hungary*: the NC has developed a website ([www.ggki.hu/planet-earth](http://www.ggki.hu/planet-earth)) and will have its launch event in Budapest, in November 2007.

*Turkey*: the TNC for IYPE, operating under the national UNESCO Commission, held a meeting on March 7<sup>th</sup> in Ankara, attended by some 100 leading scientists in Turkey. In the meeting working groups produced science plans for all 10 IYPE science topics.

*Namibia*: the NNC for the IYPE has issued an attractive calendar showing national geological features.

Sweden announced the establishment of its NC website: [www.snkgkva.se/planetearth.htm](http://www.snkgkva.se/planetearth.htm)

*Tanzania*: the TNC for the IYPE is heavily involved in organizing an IYPE launch for Africa, to be held in May 2008 in Arusha, Tanzania.

CCOP Regional Committee: this Regional IYPE Committee comprises 11 geological survey organisations in East and South East Asia. As a contribution to the IYPE, the Committee will produce a book on GeoParks in the region.

United Nations: the UN will issue a series of 6 stamps celebrating the UN IYPE '08.

*Nature* will launch a new monthly, multidisciplinary journal in 2008, entitled *Nature Geoscience*.

### *Exhibitions*

The Chairman shared his concerns regarding the exhibition on "Planet Earth" to be shown during the UNESCO General Conference in October 2007. UNESCO invited the IYPE to organize that exhibition under the IYPE umbrella, but its Secretariat had to withdraw that offer and will now invite UNESCO Member States to comment on a strategic concept paper (under preparation) and to come forward with proposals. To bring these in line with the original UNESCO offer, the National UNESCO Commissions might be approached by the IYPE National Committees to deliver materials for the exhibition. As more explicit information is still needed from UNESCO, Wolfgang Eder suggested freezing all preparations for a period of two weeks (until May 1<sup>st</sup>). Cecilio Quesada stated that contributing nations should have the right to display the exhibit in their own countries once the General Conference is over. The following comment by Wolfgang Eder was received on 3 May 2007. On 3 May 2007 the draft strategic concept of UNESCO was received; this might allow, in consultation with UNESCO National Commissions, easy access for IYPE-related exhibits.

### *General discussion*

The Chairman gave the floor to the Executive Director who shared his observations with the meeting at large. He identified some common denominators in the presentations.

One such denominator was the regional scope of some of the NCs (a.o. France, the Netherlands, Spain) which was seen as a very important approach indeed, given that such an arrangement will involve more people directly and might generate considerable additional sponsoring from regional industries and (semi-) governmental bodies.

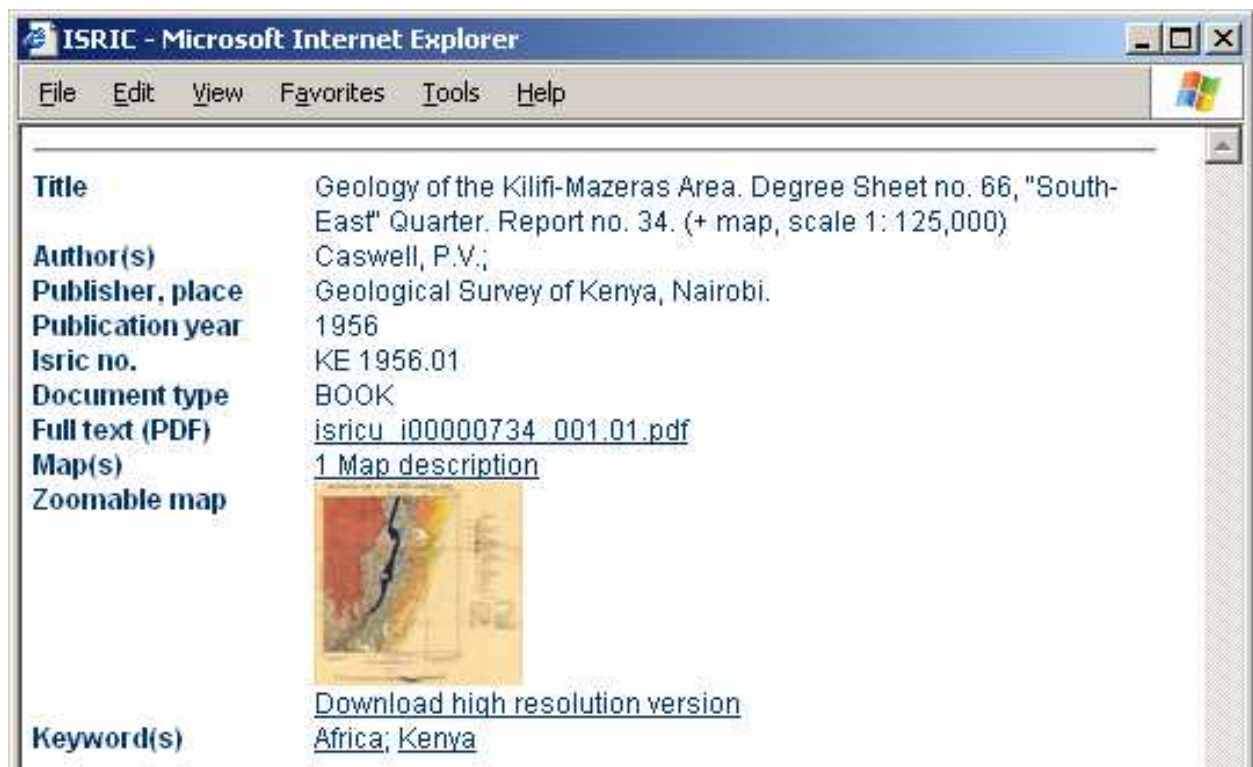
Direct political involvement is another denominator in view of the fact that one of the IYPE's ambitions is to convince politicians of the benefits that may be generated by the geosciences for the public good. This was highlighted, in particular, by Germany and Spain in their presentations, launch and closing events in the Parliament and Senate, involving the presence of politicians.

Another general issue is to do with the legacy that all would like to see left by the IYPE after completion of the triennium, i.e. by 2010. Amongst others, this was mentioned in the contribution by Spain (IYPE Science congress in 2011), France (new Earth science education programme) and by the Czech Republic (permanent base of Geoscientific Centre). Johan Meulenkamp urged that this should be the main drive behind the IYPE, creating a lasting legacy for public, scientists, and politicians alike. Veronica Stedra added that the publicity work of Peter Jakes (The Planet Earth) will be an integral part of this legacy in the Czech Republic. National Committees would appreciate greater clarity concerning co-funding of projects submitted by EoI forms. John LaBrecque (NASA) suggested that the IYPE should enter and thus strengthen existing major international projects such as the creation of a geosciences reference base in Africa (AFREF). This and similar actions would significantly contribute to a lasting legacy for the IYPE.

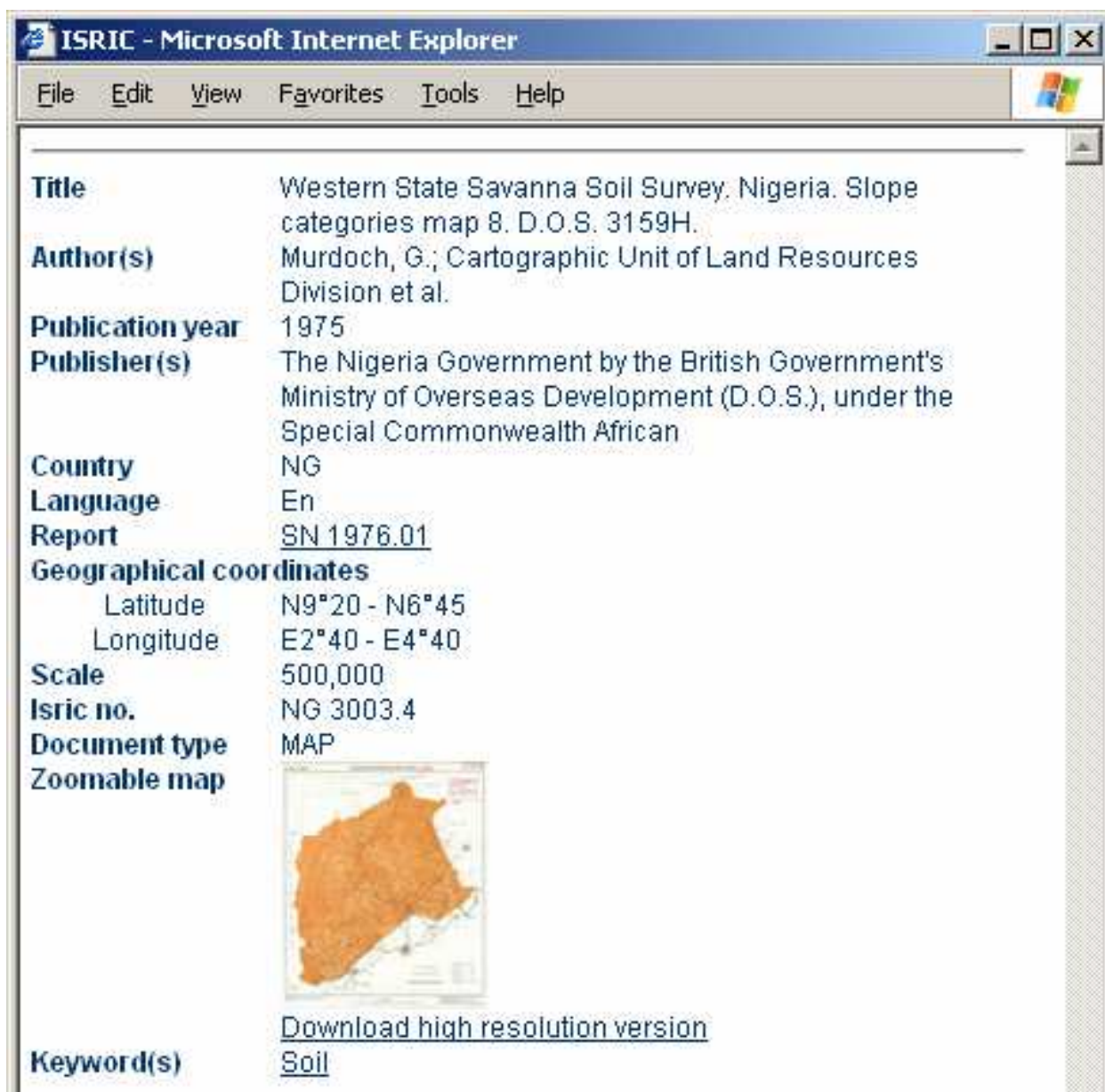
## **ISRIC – World Soil Information Soil maps and reports on-line**

Since its beginnings in 1966, **ISRIC - World Soil Information** has built up a collection of more than 20 000 articles, reports, books and maps, various digital databases and thousands of pictures in the fields of soils, land resources and management. During the past couple of years, more than 5000 of our maps have been scanned as a foundation for the European Digital Archive of Soil Maps (EuDASM), an ongoing collaborative project with the Institute for Environment and Sustainability (IES), Joint Research Centre (JRC), of the European Commission; this collection is available on-line and on DVD.

The functionality of the **ISRIC - World Soil Information Database** is also being improved in collaboration with Wageningen UR Library. New features include: on-line access to over 3500 digital maps that can be down-loaded at high resolution and viewed on screen with a zoom facility; some 110 full-text reports in PDF format; country-specific searches based on Google maps, as well as basic and advanced searches; and a pull-down menu that gives links related to soil science. Information about our scanned reports and maps (see Figures below) may be found through an Advanced Search, by ticking-off the appropriate boxes.



Example of a description for a soil report linked to a full text report and a zoomable map



**ISRIC - Microsoft Internet Explorer**

File Edit View Favorites Tools Help

**Title** Western State Savanna Soil Survey. Nigeria. Slope categories map 8. D.O.S. 3159H.

**Author(s)** Murdoch, G.; Cartographic Unit of Land Resources Division et al.

**Publication year** 1975

**Publisher(s)** The Nigeria Government by the British Government's Ministry of Overseas Development (D.O.S.), under the Special Commonwealth African

**Country** NG

**Language** En

**Report** [SN 1976.01](#)

**Geographical coordinates**


Latitude N9°20 - N6°45

Longitude E2°40 - E4°40

**Scale** 500,000

**Isric no.** NG 3003.4

**Document type** MAP

**Zoomable map** 

[Download high resolution version](#)

**Keyword(s)** [Soil](#)

Example of map description with a link to a zoomable map

The digitization of our holdings of *grey* literature and maps, which are often scarce or even unique, is a long-term activity. Text books previously held in the ISRIC library have been transferred to [Wageningen UR Library](#), which offers a document delivery service, to make them more widely accessible and to make room for new acquisitions of country soil reports.

Over 40 years since its inception, ISRIC's activities have evolved from collecting soils and data towards putting the data to work, particularly within multi-disciplinary, international [projects](#). Information about our mandate and objectives, role as ICSU World Data Centre for Soils, partnerships, current programs and services, and [staff](#) may be found at [www.isric.org](http://www.isric.org)

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on behalf of the ISRIC – World Soil Information Database team:  
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## High school students collecting soil data - Summary of a project in the Netherlands

Declining number of soils science students is a concern in many parts of the world. Here we report on a project in the Netherlands that has high school students collect soil data that are to be used by soil research institutes in the Netherlands. The project aims to stimulate the interest of high school students in soils as part of ecosystems and for the overall welfare of humans and the planet earth. High school students take measurements of soil properties and processes and those data are successively used by soil research institutes in the Netherlands. Students will increase their awareness on the importance and role of soil quality, the role of soil properties, soil organic matter and soil fauna, and the role of soils in the use of the land. This conjuncts with the trend that secondary education increasingly involves students in real-world and mutual learning situations. Students will be involved in research on macrofauna (e.g. counting earthworms under different types of land use); soil organic matter studies (e.g. decomposition of organic matter under different fertilizing regimes); carbon studies (hoe much C is fixed in different soils); soil monitoring (measurements in soils or traditional vs. organic farms).

The following Dutch research organizations benefit from the collected data and also provide technical guidance and assistance: RIVM (National Institute for Public Health and the Environment), Alterra, Wageningen University, and ISRIC – World Soil Information. Educational aspects and liaison with high schools is coordinated by SME Advies and Stichting Veldwerk Nederland. This project combines educational aspects with the collection of real-world data by The GLOBE Program ([www.globe.gov](http://www.globe.gov)) and present thus a win-win situation – both for the students and research organizations. It expands the communication networks between schools and research institutes and provides unique interaction between different stakeholders (students, researchers, land users).



There must be something in it for all of us.....



In close cooperation with high school teachers, existing GLOBE-protocols (e.g. gravimetric soil moisture, soil particle density, soil pH, soil fertility, etc.) have been translated in Dutch. New protocols and educational material has been developed. These focus in particular on the living component of the soil, i.e. macrofauna abundance and diversity, microbial activity, and humus profile development. Relevant courses such as biology, chemistry and geography are integrated in these lectures taking into account exam-requirements. These developments have been made in cooperation with all scientific and educational partners. Eleven Dutch secondary schools have been selected where the GLOBE-Soil module is tested and evaluated using educational and scientific criteria. Students will conduct field-research and send their data to the GLOBE-database as well as the Dutch soil research organizations. The test module will be evaluated and a more permanent module will be produced that will be used in more schools in The Netherlands, and also internationally. Our goal is to find as many schools as possible in The Netherlands and other European countries to work with the adapted soil module. Currently, 10 European GLOBE Country Coordinators are interested in these new protocols as a part of GLOBE Soil.

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## International Plant Nutrition Institute

We appreciate this opportunity to introduce soil scientists around the world to the new International Plant Nutrition Institute (IPNI). This organization officially began operations on January 1 of 2007, so the name may not be familiar yet to all readers.

In some respects, the launching of IPNI signals a paradigm shift. With its global, scientific basis, the organization will place strong emphasis on human and environmental concerns, as well as agronomic and economic. IPNI fully recognizes the value of soil science and other disciplines and the ongoing need for research and education.

**The mission of IPNI is to develop and promote scientific information about the responsible management of plant nutrients for the benefit of the human family.**

IPNI was established in late 2006 by a resolution adopted unanimously by its founding members. IPNI is a global, scientific, agronomic organization composed of fertilizer industry companies that are basic producers of nitrogen (N), phosphate (P), potash (K) and sulfur (S) for agricultural use. Large retail organizations may qualify as associate members and other non-profit associations or organizations who support the goals of IPNI are eligible as affiliate members.



**IPNI**

INTERNATIONAL  
PLANT NUTRITION  
INSTITUTE

IPNI is to provide a unified, scientific voice for the world's fertilizer industry; independent of the industry, but scientifically credible and recognized by governments, academia, NGOs, the public, and the industry. One of our goals is to define the basis for appropriate



use and management of plant nutrients, especially focusing on the environmental and economic issues related to their use.

#### *Member Companies*

There are seventeen founding members of IPNI. They are: Agrium Inc.; Arab Potash Company; Belarusian Potash Company; Bunge Fertilizantes S.A; CF Industries Holdings, Inc.; Groupe OCP; Intrepid Mining, LLC; K+S KALI GmbH; Mosaic; PotashCorp; Saskferco; Simplot; Sinofert Holdings Limited; Spur Ventures Inc.; SQM; Terra Industries Inc.; and Uralkali. During 2006, the Board of Directors of the Potash & Phosphate Institute (PPI) committed its staff to the new organization. PPI, with a heritage tracing back to 1935, ceased to exist at the end of 2006.

#### *Staff and Programs*

With this background, IPNI was able to “hit the ground running” with a well-known and respected staff of scientists in many key regions of the world, including China, India, Brazil, North America, Latin America-Southern Cone, Northern Latin America, and Southeast Asia. (The Southeast Asia Program is a joint Mission with the International Potash Institute.) We anticipate establishing scientific agronomic programs in Western and Eastern Europe as well as in the Middle East. Additional staff members are to be added in some existing programs. Directors and Deputy Directors of IPNI regional programs are all Ph.D. scientists, well known and respected in academic as well as industry circles.

Some important changes in staff responsibilities are already underway. Dr. Paul E. Fixen holds the title of IPNI Senior Vice President, Director of Research, and Americas Group Coordinator. Dr. Adrian Johnston is now IPNI Vice President and Asia Group Coordinator. Dr. Cliff Snyder has been appointed to the new position of Nitrogen Program Director. He will coordinate our focus on best management practices for N and related environmental issues, both in North America and internationally. Dr. Thomas Jensen, a respected soil scientist, has been hired to fill Dr. Johnston’s former role as Northern Great Plains Region Director, based in western Canada.

As the first President of IPNI, I see great opportunities for IPNI as a global organization ready to respond to the world’s demand for food, fuel, feed, and fiber. The current focus on biofuels and related shifts in crop production priorities add to the call for better understanding of fertilizer best management practices. Our scientific staff members are dedicated to help define the basis for appropriate use and management of plant nutrients, especially oriented to the environmental and economic issues related to their use. We provide comprehensive and regional information, based on science, to help farmers and the industry deal with environmental and agronomic problems.

#### *Communications*

IPNI will carry out a broad-based effort in educating, training, and communicating with diverse audiences in our program regions. *Better Crops with Plant Food* magazine, a quarterly publication, is now published by IPNI. Each regional program of the Institute also produces an array of communications, including print, software, and other media in local languages. Technical reports, manuals, proceedings, and even publications directed to young students all have their place in our programs. In some IPNI regions, harvest field days, television, and video presentations are a highly effective means to reach mass audiences.

#### *Website*

The new website (**[www.ipni.net](http://www.ipni.net)**) introduced with IPNI is intended to be a key link in the information transfer chain. For example, a research database accessible at the website contains a wealth of background information and reports on results of research projects in the IPNI program regions. Various portals – including N, P, K, secondary nutrients, and others – will facilitate searches for information and provide efficient navigation for visitors to the site.



*Common Goals*

IPNI seeks cooperation with a wide spectrum of companies, academic societies, organizations, agencies, associations, research facilities, environmental groups, NGOs, and individuals as we endeavor to follow a productive course. We see mutual benefit and strength in this approach and believe IPNI is well-positioned to join in the important work ahead.

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## Five Questions to a Soil Scientist

### Five Questions to Yona Chen

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Position: 1987 – Full Professor, researcher and University teacher  
1993 – 1997 – Dean, Faculty of Agriculture

*1. When did you decide to study soil science?*

The second year of my studies – in 1966

*2. Who has been your most influential teacher?*

Prof. Noam Lahav

*3. What do you find most exciting about soil science?*

Soil and water are the essence of life and health. The management of these two main resources is essential for the existence of mankind and any living organism on earth. Yet, soil and water are highly complex systems and therefore their management poses a multi-dimensional and multi-disciplinary challenge to soil and water scientists. This challenge attracted me to the profession.

*4. How would you stimulate teenagers and young graduates to study soil science?*

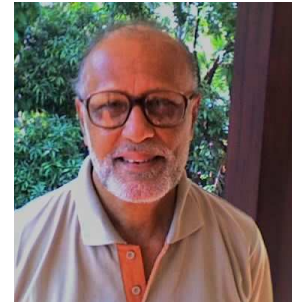
I would expose them to the essential functions of soil and water, the complexity of the system and to outstanding research on relevant topics. This exposure requires sophisticated lectures embedded with actual demonstrations.

### 5. How do you see the future of soil science?

Soil Science has to fully incorporate water sciences and deal with the following: (i) improved understanding of this complex porous medium; (ii) develop policies to protect soils against degradation; (iii) improve soil to ensure sustainable food production; (iv) develop remediation procedures for a wide array of presently common and future pollutants; (v) enhance carbon sequestration in soils; and (vi) develop procedures to reduce nitrogen loss to groundwater and the air.

## 5 questions to Prabhakaran Nair

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Position: Chairman of the Independent Expert Committee to advise the Genetic Engineering Approval Committee of the Government of India on the suitability of genetically modified crops in Indian agriculture (since August 2006)

### 1. When did you decide to study soil science?

To be quite frank, I did not decide to study soil science. It was purely an academic accident, perhaps, a very fortuitous one at that. I did my Master's and Doctorate degrees in Agronomy (Crop Production) in India, the former from the Agricultural College, Coimbatore, established by the British during the imperial rule of India, and the latter from the famous Indian Agricultural Research Institute in New Delhi in the mid sixties. Those days in India, only students with a background of pure chemistry went into soil science. But, I was an agricultural graduate and only had minimal knowledge of chemistry. It was in 1980 when I was selected for the prestigious Senior Fellowship of the world-renowned Alexander von Humboldt Foundation, and went on to work in the Institute of Plant Nutrition, in Giessen, affiliated to the Justus von Liebig University, headed by Professor Konrad Mengel, that I realized that without good grounding in soil science, I would n't make a good Agronomist. So, my studies in soil science actually began in 1980.

### 2. Who has been your most influential teacher?

Although I was exposed to some soil science in mid sixties, working under the supervision of late Professor Andre Cottenie, Director of the Laboratory of Analytical and Agrochemistry, at the Faculty of Agriculture, State University of Gent, Belgium, on a Post Doctoral Fellowship awarded by the Ministry of National Education and Culture, the real exposure to soil science began only in 1980 when I joined Professor Mengel. The pioneering work of Professor Cottenie in micronutrients exposed me to the idea that I needed to be well grounded in soil science, especially physical chemistry. But, it had to wait until 1980 to take shape, when I joined Professor Mengel. Thus, I would consider both Professor Cottenie and Professor Mengel, as my most influential teachers, but, it was the latter who really challenged me to understand a lot more of the intricacies of soil science, especially with regard to nutrient dynamics, which finally led to the development of "The Nutrient Buffer Power Concept"- a path breaking soil testing procedure, which, I believe, is recognized now, globally. I have been invited thrice to contribute chapters to the very prestigious publication *Advances in Agronomy*.



*3. What do you find most exciting about soil science?*

How a plant root absorbs nutrients from the soil matrix. A colossal amount of research, spanning more than a century, at tremendous cost, has gone into the question of defining the precise meaning of the term "available" nutrient. I believe, in the ultimate analysis, it is the plant and plant alone that will decide whether a soil nutrient is "available" or not. And this view has been shared by Mr. Peter Nye, of the Soil Science Department, Oxford. But then, it is our prime responsibility to tell the farmer, in as precise a manner as possible, what an available nutrient is and how best one could quantify this entity so that he reaps the maximum from his investments in fertilizers on the basis of our practical recommendations. I find this the most exciting field to explore, I still do not have all the answers, but, my research has come a long way in helping the farmers of the developing world.

*4. How would you stimulate teenagers and young graduates to study soil science?*

I think, I would start from grade I. Start with simple experiments like wetting a mass of soil, a clayey one and a sandy one, exposing both to sunlight for a fixed period of time, say an hour to two, and then ask the child to look at both and arouse his/her curiosity as to why the former is still moist while the latter turns dry. Take the child to a flowing stream and arouse his/her curiosity by dropping a pebble and a piece of paper and try finding out why the former sinks, while the latter floats. As for the graduates in soil science, the best way to enthuse them is to drive home vigorously the point that without soil there is no life on planet earth and soil, indeed, is **SOUL (S) OF (O) INFINITE (I) LIFE (L)**, an invaluable gift of God to life on earth and unless we manage it intelligently, humanity has no future.

*5. How do you see the future of soil science?*

Right now, the leaders of global soil science have a unique opportunity to impress upon political leadership that it is the intelligent management of global soil resources that will open up the greatest opportunity in producing food in abundance. Though the so-called "green revolution", the bedrock of which is the liberal and, more often than not, unbridled use of chemicals - fertilizers and pesticides -, produced an enormous quantity of food, the price we paid on the environmental front has been enormous. Professor Jeffrey Sachs elaborated on this point during his keynote address at the 18<sup>th</sup> World Soil Science Congress in Philadelphia, USA. Soil degradation, drying aquifers, vanishing bio diversity (due to continuous monoculture) is the price we paid for this increased food production. Asia, India, in particular, stands testimony to this environmental catastrophe. This, indeed, is a very great opportunity for soil scientists to tell the world leaders that one can still produce much food from the same patch of land without paying this price, if only we devise ways for it. I believe it is not easy task, as a lot of havoc created has to be undone. But, therein lies the greatest opportunity for committed soil scientists and I believe, the real future of soil science.

## 5 questions to Victor Chude

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Position: Soil Fertility Consultant (since 2002)



*1. When did you decide to study soil science?*

My decision to study soil science was taken as an undergraduate student in 1972 at the Department of Plant/Soil Science, University of Nigeria, Nsukka, Nigeria.

*2. Who has been your most influential teacher?*

Mr. Eshiett, a Principal Laboratory technologist at the University of Nigeria, Nsukka, Nigeria influenced me most.

*3. What do you find most exciting about soil science?*

The complex chemical reactions in soils and nutrient mobility are a few of the phenomena that I find most exciting in Soil Science.

*4. How would you stimulate teenagers and young graduates to study soil science?*

Most teenagers and young graduates see soil science as a very difficult subject and less remunerative compared to agricultural economists. Their concerns are understandable. Some of the positive ways to stimulate teenagers and young graduates to study soil science; include the introduction of simpler ways of teaching the subject matter, governments to award scholarships to soil science students and provision of job offers to students on graduation.

*5. How do you see the future of soil science?*

Soil Science may go into extinction especially in developing countries where soil is taken for granted. What is needed is for soil scientists to reposition themselves and task policy makers to recognize the importance of soil in agricultural development.

## **The favourite soil science books of Abdou A. Soaud**

Books are the main source to build up our knowledge. Each book, I have read, it put a new brick in my knowledge building. My undergraduate study (1974 - 1978) in Faculty of Agriculture, Cairo University was in Arabic and some translated soil terminologies in Arabic language weren't clear. I used to go to the faculty library to clarify such terminologies from English books. I started to read English soil science books intensively during my graduate studies (MSc and PhD) in Ghent University 1982 - 1990. Although I read many books at the beginning of my career in soil science, the following three books were my starting point to realise and understand the complexity of soil system and to initiate some research ideas in soil science field.

1. Brady, N. C. 1974. *The Nature and Properties of Soils* (8th ed.). MacMillan Publishing Co. Inc. New York.
2. Tisdale, S. L. and Nelson, W. L. 1975. *Soil Fertility and Fertilizers* (3rd ed.). Macmillan Publishing Co., Inc. New York.
3. Russell, E. W. 1973. *Soil Conditions and plant growth* (10th ed.). William Clowes & Sons, Limited London, Beccles and Clochester, U.K.

The first book in my choice was a first step to understand soil and its relation with environment. This book intensively covered all subjects of soil science including soil pollution, which helped me to select the subject of my MSc thesis "Behaviour of Fe and Mn in soils under anaerobic conditions". The supervisor of my MSc thesis, Prof. O. Van Cleemput, encouraged me to read more books during writing the dissertation and manuscripts. They were also important books to me but I can't mention all due to the limitation of choice.

The second book "Soil Fertility and Fertilizers" was important text book for soil fertility and plant nutrition course in my MSc program. The book presents the fundamental principles of soil fertility and fertilizer manufacture and use in a manner suitable for student of agriculture. During my PhD program on dynamics of nitrogen in soil and potato growth characteristics, I thought from the third book how to present and interpret the experimental data of soil-plant relationships.



## The favorite soil science books of Yeong-Sang Jung

As a soil scientist, serving since 1971, my favorite soil science books are *Advanced Soil Physics* written by Don Kirkham and Power, *Environmental Soil Physics* by Daniel Hillel, and *Soils in Our Environment* by Raymond W. Miller and Duane T. Gardner.

*Advanced Soil Physics* was published in 1971. This book was firstly introduced to me by Dr. S. H. Yoo, a former graduate student of Dr. Kirkham, and my advisory professor for MSc. At one glance, so many mathematics formulae were in the book. In 1977 I joined Dr. H. M. Taylor, USDA and the Iowa State University, I took calculus and applied mathematics classes. Then, I could take the advanced soil physics class of Dr. Kirkham. Though he was age of official retirement at that time, he guided enthusiastic lecture. Alas, I have missed Dr. Kirkham and Dr. Taylor for long time. This experience gave me firm theoretical foundation on water movement in soil, soil temperature changes and miscible displacement.

*Environmental Soil Physics* written by Dr. Hillel was published in 1998 by Academic Press, but the original version was the *Introduction to Soil Physics* published in 1980. Dr. Taylor gave me the book for review circulation to read, and recommended this book for soil physics class after my graduation. I have used this book as the text book in the soil physics class since 1981. The Korean version of this book was published in 1984. In 1998, *Environmental Soil Physics* was revised binding with the *Applications of soil Physics*. Therefore, it includes seven parts: Part I. Basic relationships; Part II. The Solid Phases; Part III; The Liquid Phase; Part IV The Gaseous Phase; Part V. Composite phenomena; Part VI. Field Water Cycle; Part VII. Soil-Plant-Water Relations; Part VIII. Appendices, of which volume was 771 pages. Each Part composed of two to five chapters introduces words of old wisdoms on to top. At the first chapter it starts with the poet saying, "All that we did, all that we said or sang Must come from contact with soil – William Buttler Yeats, 1865-1939". Student who read this book can obtain soil physics learning together with wisdom of old axioms and biblical depiction.

*Soils in Our Environment* written by Drs Miller and Gardner was published in 1998. This edition was dedicated to Dr. Miller who passed away in 1997 by Dr. Gardner. I usually introduce to soil science students to read this book. This book explains basic soil science with easy terms and with examples for practical application. Each chapter starts with Preview and Important Facts, and ends with practical application on farm emphasizing environmental role of agriculture, an importance on human life and nature.

I hope students who really want to study soil physics read these books.

Yeong-Sang Jung, Ph. D  
Professor in Soil Physics

President of Korean Society of Soil Science and Fertilizers  
Kangwon National University, R. O. Korea

## The favorite soil science books of Tom Goddard

First some context: I am neither an academic/educator nor a research scientist. I manage a soil and climate change section of an agriculture department in a province that contains about one third of the agricultural land in Canada. We do extension, technology transfer and applied research in the course of our duties across a wide range of soils and agricultural production systems. We also liaise or consult with colleagues in reclamation and forestry. Thus, our reference bookshelves are cramped with a diverse selection of reference material.

*Soil Sampling and Methods of Analysis*, edited by Martin Carter contains 75 chapters of soil physical, biological and chemical methodologies. It is a Canadian Society of Soil Science effort and a valuable reference when deciding on the most appropriate analyses for any particular problem; comparing data from different analytical techniques, or cross

referencing laboratory methods used by the industry. This book often “walks” into others’ offices and precipitates finger pointing in the blame game of who took the book last!

Earlier in my career, I relied upon general soils texts such as Soil Science by R.L. Hausenbuiller but now I find my needs are more detailed and specific. Soil Fertility and Fertilizers by Tisdale, Nelson and Beaton is a good, wide-ranging reference for the temperate soils we deal with.

My third choice was a bit of a tie between a statistics book and a mineralogy one. I chose the latter largely because I have colleagues that help me with statistics (I leave those books on their bookshelves). I get asked questions relating more to my perceived soils expertise and my work with different soil types, salinity, and processes leads me to refer to Minerals in Soil Environments. It has some good graphics that are useful in explaining principles and processes to others and very comprehensive discussions of all minerals and families of processes.

One book I am eagerly awaiting is currently being produced by the EC Joint Research Commission with a working title of Geomorphometry: concepts, software and applications. Landscapes are what soils are all about. As a field practitioner we know farmers farm landscapes, trees grow on landscapes, reclamation and remediation occurs on landscapes. Much of the knowledge in books however comes from labs and pedons. I think there are new tools emerging this decade that will allow us a fresh, more informed examination of landscapes.

What I would like to see is a book describing the range of agricultural practices around the world to grow the same crop and an analysis of how those practices are suited to soil/climate conditions versus culture and tradition. When I travel I am always intrigued at how we try to do the same thing (e.g. grow wheat) so differently in different areas. I have the need to learn more...

1. Soil sampling and Methods of Analysis, M.R. Carter, Ed, Canadian Society of Soil Science. 1993 Lewis Publishers, Boca Raton, USA 823p.
2. Tisdale, S.L., Nelson, W.L. and Beaton, J.D. 1985 Soil fertility and fertilizers, 4<sup>th</sup> ed. Macmillan Pub. Co., New York, USA 754p.
3. Minerals in Soil Environments, J.B. Dixon and S.B. Weed, Eds, Soil Sci Soc Am. Madison, Wisconsin, USA 1977. 948 p.

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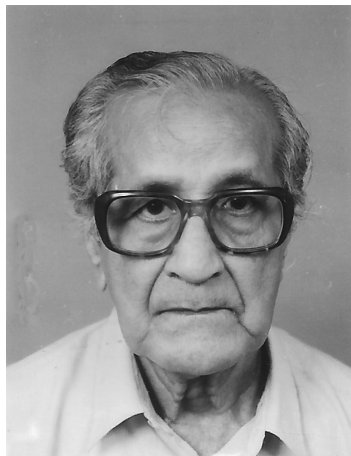
## **Awards, Medals, Prizes and Honors**

### **Pakistani Soil Scientist Earns Enormous Recognition**

ABDUL RASHID, the current President of Soil Science Society of Pakistan, has been appointed by promotion as CHIEF SCIENTIST and DIRECTOR GENERAL at National Agricultural Research Center (NARC), Islamabad. During Silver Jubilee Celebrations of Pakistan Agricultural Research Council (PARC) on 12–14 December, 2006, the President of Pakistan has recognized Dr. Rashid’s research contributions by conferring a PARC Silver Jubilee Award. Also, the Indian Society of Soil Science has conferred FELLOWSHIP upon Dr. Rashid during November 2006. Dr. Rashid has made significant contributions in the area of micronutrient research, which already brought him many honors, like Dr. Norman Borlaug Award, East West Center (Hawaii) Distinguished Alumni Award, and Editorial Board Membership of scientific journals published by Elsevier, Amsterdam and Taylor & Francis, Philadelphia.



## Obituary S.K. Mukherjee



Professor Sushil Kumar Mukherjee, an Honorary Member and a Past President of the Indian Society of Soil Science, and the first Indian to be an Honorary Member of the International Society of Soil Science (now International Union of Soil Science) breathed his last in Kolkata on November 17, 2006 (early hour of November 18, 2006 at 03:25 A.M.). Born on the first of January, 1914 in the district of Barishal, now a part of Bangladesh, Prof. Mukherjee obtained M.Sc. degree in chemistry from the University of Calcutta in 1936, and Associateship of the then Imperial (now Indian) Agricultural Research Institute, New Delhi in 1938. He joined the Calcutta School of colloid research led by Prof. Jnanendra Nath Mukherjee. His thesis, "Electrochemical properties of hydrogen clays", earned him the D.Sc. degree in Chemistry of the

University of Calcutta in the year 1945.

Professor Mukherjee started his professional career in 1943 with All India Soil Survey for Eastern India under the programme "Grow more food" campaign of the Imperial (now Indian) Council of Agricultural Research. During his service career Dr. Mukherjee held many prestigious positions. He rejoined the University of Calcutta as the first incumbent of the newly created Chair of Acharya P. C. Ray Professor of Agricultural Chemistry (1965-68). Subsequently, Professor Mukherjee became the Vice-Chancellor, University of Kalyani (1968-70), but before the completion of the term, he was invited by the Government of India to be a full-time member of the National Commission of Agriculture (1970-75). He returned to Calcutta as the Director of Bose Institute (1976), and within a year, became the Vice-Chancellor of the University of Calcutta (1976-78). Professor Mukherjee retired from active service in 1978.

A Fellow of the Indian National Science Academy and the National Academy of Agricultural Sciences, Professor Mukherjee has won several distinctions and awards. He obtained the J.B. Chatterjee Memorial Medal (1980) of the Calcutta School of Tropical Medicine, Acharya J.C. Ghosh Memorial Medal (1983) of the Indian Chemical Society, Golden Jubilee Award of the Indian Society of Soil Science (1984) for meritorious service to the Society and for the cause of soil science, Indian National Science Academy Silver Jubilee Commemoration Medal Lecture on Agricultural Sciences delivered at Madurai (1988), Distinguished Service Award of the Indian Science Congress Association during its Platinum Jubilee (1990), Honorary Membership of the International Society of Soil Science (1986), presently renamed as the International Union of Soil Science (the first Indian to have received such recognition), Dr. B.C. Roy Birth Centenary Oration (1992). Professor Mukherjee was conferred the Honorary (*Honoris Causa*) D. Sc. degrees of the University of Kalyani (1983), University of Burdwan (1988) and of the Bidhan Chandra Krishi Viswavidyalaya (2006).

Even after his formal retirement in 1978, Professor Mukherjee remained involved in varied activities. He had been associated at different periods with a number of learned organizations and institutions in advisory capacities. These include the Asiatic Society, Indian Chemical Society, Indian Society of Soil Science, Indian National Science Academy, Indian Science Congress Association, Indian Association for the Cultivation of Science, Bose Institute, Ramakrishna Mission Institute of Culture, Visva-Bharati, Bidhan Chandra Krishi Viswavidyalaya, West Bengal Academy of Science and Technology, Department of Science and Technology, and Member, State Planning Board of the Government of West Bengal, President - Pharmaceutical and Phytochemical Development Corporation Limited (A Government of West Bengal Undertaking), Paschimbanga Vigyan Mancha, Association of Scientific Workers of India, President - Ramakrishna Mission Seva Pratisthan, and so on. Professor Mukherjee had discharged for long the editorial responsibilities of the Indian



Journal of History of Science and the Everyman's Science, the scientific publication of the Indian Science Congress Association.

Professor Mukherjee is survived by his wife, Professor K.K. Rohatgi-Mukherjee. Professor Mukherjee was a selfless, dedicated and very popular teacher as well as a committed seeker of scientific truth.

## Reports of Meetings

### Lower Austria embraces the soil! May 2007

Early in May I joined a group of land managers, legislators, regulators and a small number of soil scientists in the Benedictine Monastery at Seitenstetten, Lower Austria to celebrate the launch of Lower Austria's initiative entitled 'Unser Boden – wir stehen drauf!' (see [www.unserboden.at](http://www.unserboden.at)). Lower Austria became a member of the European Land and Soil Alliance in 2003, and since this time has developed a programme to emphasise the importance of soil in most aspects of our daily lives, and stress the need to maintain and improve the quality of soil as a key component of strategies towards sustainable development. This programme has been undertaken with strong support by the Austrian Soil Science Society, who were represented at the meeting by their President, Andreas Baumgarten.



The launch of 'Unser Boden' May 2007; left to right DI Josef Plank, Stephen Nortcliff (IUSS), Andreas Baumgarten (Austrian Soil Science Society) and Father Michael (Prior of the Seitenstatten Monastery)

The meeting organised by Dr. Erwin Szlezak had three components; a small number of papers; a breakout session to discuss key themes; and the launch of the soil trail. These three sections were introduced by the premiere of a short film (available on CD) entitled 'Unser Boden – wir stehen drauf!'. This is a professionally produced non technical film which emphasises the theme of this initiative in Lower Austria – the importance of soils in most aspects of human life in both rural and urban environments (the soundtrack is available in both German and English). The two presentations from Dr. Wenzel Walter (BOKU, Vienna) and Stephen Nortcliff (IUSS) stressed the many functions that soils perform and the need to understand the inter-relationships between the soil and other environmental components. Plans for soil use and management should be based on this knowledge if soils are not to be damaged or destroyed. The breakout sessions focused on four themes: Intensive land management; Extensive land management; Energy production



from the land; Integrated land management. There was lively discussion both within these groups and during the plenary session which followed.

The final part of the meeting was attended by DI Josef Plank, the Minister for Agriculture and Environment in the Lower Austrian regional government who has been a driving force behind this initiative. In his introduction he stressed the need to acknowledge the soil's key role within the environment and the need to have policies which encourage the maintenance and improvement of soil quality as part of an integrated environmental management strategy. He also stressed that this initiative required the involvement of all the community and therefore was strongly in favour of actions to raise the awareness about the nature of soils, their dynamics and the key role they play in our lives.

Part of the outreach programme in Lower Austria has been the establishment of a 'Soil Trail' which would lead participants around the landscape, showing soils as part of the landscape and through the provision of permanent soil profile exposures with seating and display boards, allowing the public to see the soil profile in its entirety, together with other information about different aspects of the soil, such as the differences in soil texture, the fauna and flora of the soil, and the incorporation and decomposition of organic matter. The original plan had been for the Minister to lead the group around the 'Soil Trail' but the heavy rain on the day and indeed over the previous few days made this impracticable. Anticipating this the organisers launched the 'Soil Trail' in the cloisters of the monastery, using excellent soil monoliths as substitutes for the real soil profiles. DI Plank congratulated the mayors from Ardagger, Behamberg, St. Peter in der Au and Strengberg for their active participation in the programme and presented each with a box of postcards which featured the soil from their district. To emphasise the strong links with all members of the community a small party of school children and local villages joined the main group and explained how this programme had opened up the 'under ground' to them, showing them what a fascinating environment the soil is, and reinforcing their understanding of why it is important to protect the soil.

It was very pleasing to be involved in this launch. Through strong scientific and political leadership Lower Austria is making considerable stride in bringing an awareness to the population, young and old, of the key role soil plays in most aspects of our lives. We cannot ignore the soil! We cannot treat it like dirt!

Stephen Nortcliff  
Secretary General IUSS

### **GlobalSoilMap.net December 2006, New York, USA**

A workshop was held at the University of Columbia (USA) from 4 to 6 December 2006. The workshop was attended by 30 scientists from universities, research centres and developmental organizations across the globe. The group has formed a consortium that will seek funding for this major global effort. The PowerPoints presented during this three-days workshop and a list of participants is at [www.globasoilmap.net](http://www.globasoilmap.net) The Columbia University workshop followed several activities of the IUSS Digital Soil Mapping Working Group.

The consortium proposes to make a new digital soil map of the world using state-of-the-art and emerging technologies for soil mapping and predicting soil properties at fine resolution. This new global soil map will be supplemented by interpretation and functionality options that aim to assist better decisions in a range of global issues like food production and hunger eradication, climate change, and environmental degradation.

Consortium members include the Earth Institute of Columbia University, CIAT-TSBF-ICRAF in Kenya, ISSAS in China, EU-JRC in Italy, NRCS in N.America, Embrapa-CIAT in L. America and CSIRO in the Australia-Oceania region. The consortium will be lead by ISRIC – World Soil Information in Wageningen, the Netherlands.



The first globalsoilmap.net workshop in December 2006, New York

### **100 years of Soil Science in Romania 20-26 August 2006**

Romanian Society of Soil Science has jubilantly celebrated the 100 years anniversary in Cluj Napoca 20-26 August 2006. More than 150 scientists were participated in the meeting and 152 oral and 90 poster scientific papers were presented, most of which were in international caliber. Leaders and internationally renowned Romanian scientists were present during the meeting, together with some international figures. Following the two days scientific presentation, an excellent four days field excursion took place in the south and north of Cluj Napoca during which 14 profiles were examined.



The first field trip (23<sup>rd</sup> of August Wednesday) was made to western part of Transylvania plain and four profiles were examined. Agricultural Research Station and salt mine in Turda were also visited. Four profiles were examined in the second day of the field trip to eastern part of Apuseni Mountain. On 25<sup>th</sup> of August (Friday) a trip to Someş Valley-Chioaru Valley-Baia Mare Depression-Gutai mountains-Maramureş Depression were made



and 3 profiles were examined. The last day, August 26 Saturday, a trip was made to extreme north (Ukrainian Hungarian Border) Ouaş depression-Someş Plain Sighet-Sapanta-Huta Negreşti Ouaş-Satu Mare. The last three profiles were examined during this trip. The national food was just absolutely excellent, which was combined by unforgettable musical entertainment and national dancing.

The modern Romanian Soil Science is among the oldest one in Europe. Its "birth certificate" is represented by the law of establishing of the Geological Institute of Romania promulgated by the King Charles I<sup>st</sup> on 21 February 1906. The Geological Institute comprised two sections: the Geological and the Agrogeological (read Pedological). Therefore, 1906 momentum is considered as the very milestone in the history of Soil Science in Romania. During its centenary existence, the Romanian Soil Science achieved a deep knowledge of national soil resources and brought its own contribution to the conceptual development of the Soil Science world-wide. It also proved to be an important factor in international organization of Soil Science activity. In this respect, one have to mention the outstanding contribution of the Romanian soil scientists, mainly of Gh. M. Murgoci and his collaborators, in establishing in 1924 of the International Soil Science Society (IUSS) (the present day International Union of Soil Science). In 1964, Romania hosted the VIIIth International Congress of Soil Science under the leadership of Professor N. C. Cernescu who had been also president of the IUSS for the period 1960-1964.

The Romanian soil science has been involved in almost all activities initiated by IUSS (IUSS), FAO, UNEP, ISRIC, ESNB, etc., e.g. World Soil Map at 1:5 000 000 scale, European Soil Map at 1:1 000 000 scale, European Soil Database at 1:1 000 000 scale as well as in different other international or world-wide projects, e.g. GLASOD, SOVEUR, etc.

Romanian Soil Scientists attended the most WCSS starting with the first one held in Washington – 1927, and ending with the 18th which is held in Philadelphia – 2006. In some periods, Romanian representatives were elected in ruling positions of different commissions of the IUSS.

Long live Romanian Society of Soil Science!

Ioan Munteanu  
Ahmet Ruhi Mermut

#### **4<sup>TH</sup> International Conference of ASSS Ghana, January 2007**

The 4<sup>th</sup> African Soil Science Society International Conference which was hosted by the Soil Science Society of Ghana in partnership with other institutions such as the FAO and IUSS among others. The event took place from 7<sup>th</sup> to 13<sup>th</sup> January, 2007 at GIMPA International Conference Centre in Accra. The theme of the Conference was "*Impacts of climate change, global trade, urbanization and biotechnology on land use in Africa*". Over 150 participants from national, international and advanced agricultural research centres, Universities and NGOs in Africa, America, Europe and Asia attended the event.

The opening ceremony took place under the patronage of the President of the Republic of Ghana, ably represented by the Minister of Education, Science and Sports, Honourable Papa Owusu Ankomah, assisted by the Honourable Minister of Lands, Forestry and Mines, and a representative for the Minister of Food and Agriculture. During the 6-days conference, over 100 scientific Oral papers and posters were presented under the following five sub-themes: (i) Dynamics of land use, Local market; (ii) Global trade and land use patterns; (iii) Land management and biodiversity; (v) Land use changes in urban and peri-urban agriculture. A mid-conference technical and social visit to the Central Region of Ghana was undertaken on Thursday 11<sup>th</sup> January 2007, while a business meeting of the African Soil Science Society took place on Friday, 12<sup>th</sup> January 2007. Among other important outputs of this conference, the participants have highlighted the fact that:

1- New challenges in Soil Science have to deal with the achievement of Food Security in Africa as enunciated in: the World Summit for Sustainable Development, the World Food Summits (1996, 2001), UN reports and Africa Fertilizer Summit (Abuja, June 2006) and

Resolutions of African Heads of State and governments at the Summit on Food Security in Africa (December 2006).

2- Only a few countries in Africa have functional land use policy and promote the use of land use planning as a basis for rational agricultural production.

Based on the above observations, the participants have recommended the following:

1- The need for an active involvement of national Soil Science Societies in the implementation of the recommendations from the Africa Fertilizer and Food Security Summits held in 2006;

2- African Soil Scientists should incorporate some contemporary strategies such as GIS, remote sensing and precision agriculture into their activities to boost soil science research and agriculture production in Africa;

3- African soil scientists should come up with very well defined soil fertility policy papers to guide sector-based development;

4- The institutional linkage between National Soil Science Societies and Governments should be strengthened; and a closer relationship with international bodies such as The African Union (AU), IUSS, FAO, UNESCO, CGIAR Centres and others, should be reinforced; New Executive Committee Members were elected to reactivate the ASSS, liaise with IUSS Executive Bureau and organize:

i. In collaboration with other institutions, a workshop on the state of art of Conservation Agriculture and the way forward in Africa (October – September 2007);

ii. A technical meeting in early 2008 in Mauritius;

iii. The 5<sup>th</sup> ASSS International conference in 2009 in Cameroon;

The New Elected Executive Committee of the ASSS is constituted as follows:

POSITION	ELECTED	Country	E-MAIL
PRESIDENT	Dr. R.D. ASIAMAH	Ghana	<a href="mailto:soils@africaonline.com.gh">soils@africaonline.com.gh</a> <a href="mailto:asiamahrexford@yahoo.co.uk">asiamahrexford@yahoo.co.uk</a>
VICE PRESIDENT	Dr. M. YEMEFACK	Cameroon	<a href="mailto:yemefack@itc.nl">yemefack@itc.nl</a> or <a href="mailto:myemefack@yahoo.fr">myemefack@yahoo.fr</a>
SECRETARY	Dr. R. ZOUGMORE	Burkina Faso	<a href="mailto:robert.zougmore@messrs.gov.bf">robert.zougmore@messrs.gov.bf</a> or <a href="mailto:rb_zougmore@hotmail.com">rb_zougmore@hotmail.com</a>
VICE SECRETARY	Dr. FRED KIZITO	Uganda	<a href="mailto:fkizito@ucdavis.edu">fkizito@ucdavis.edu</a>
TREASURER	Prof. V. LALLJEE	Mauritius	<a href="mailto:vinodl@uom.ac.mu">vinodl@uom.ac.mu</a> <a href="mailto:vlalljee109@yahoo.co.uk">vlalljee109@yahoo.co.uk</a> <a href="mailto:Vide3q@yahoo.com">Vide3q@yahoo.com</a>
VICE TREASURER	Dr. VIDE ANOSIKE	Nigeria	
EX- OFFICIO	Prof. S.K.A.DANSO	Ghana	<a href="mailto:danso@libr.ug.edu.gh">danso@libr.ug.edu.gh</a> <a href="mailto:dansosk@yahoo.co.uk">dansosk@yahoo.co.uk</a>



Conference group photo taken in front of GIMPA International Conference Centre, Accra, Ghana

*Another report of this meeting*

Soil Science started its program of scientific conferences in 2007 from January 7 to 13 in Accra, Ghana. The event of 4<sup>th</sup> International Congress of Soil Science Society of Africa was finally planned and terminated by Lalljee, Kilsara, Kome and Dala Fall on the 18<sup>th</sup> World Congress of Soil Science 2006 in Philadelphia, USA, and executed and chaired by Asiamah, Ghana. After a long time African Soil Scientist south of the Sahel did met. Participants from 16 African countries and 4 others took part. About 120 colleagues were welcomed in Accra. 137 papers for oral presentation and posters were listed.

First of all it was good news that there are already strong national soil science societies in some countries of Africa. For Nigeria about 600 members have been listed, East Africa (Kenia, Tansania, Uganda) about 800 and Ghana about 50. One can assume that in Africa at least 2000 soil scientist are active. Thus for the international community of soil scientists this is very encouraging.

One main problem of soils of Africa was all the time visible at the sky. All days the sun was hidden by dust from soils of the Shahel. The Conference theme was 'Impact of climate change, global trade, urbanization and biotechnology on land use in Africa'. The importance for African countries was visible and lined out by the keynote address of the President of the Republic of Ghana, Mr. J. A. Kufour which was given by the Minister of Education Science, and Sports and opening speeches of three Ministers of the government of Ghana.

The presentations did bring very clear the problems of African soils and soil resources use on the point. Opposite to the excessive use of fertilizer in many European countries the application of fertilizer in Africa is nearly zero. Beside, rice is grown by dry farming. Both factors impacts negatively on crop growth leading to low yields. Farmer's income and life can only be secured by increasing the area used for farming. It was good demonstrated how the rain forest disappeared and a uniform landscape was established. Change to irrigated rice farming did increase yield level to three to four fold. The danger is the 'nutrient mining' that means soil nutrients will be soon exhausted. Economic conditions must develop such that farmers can buy and apply fertilizers. There is some hope that a strong increasing request of rice and maize on the global world market will provide also African farmers the financial facilities to use soils in a better way.

A bigger complex of presentations was devoted to the role of shrubs in semi-arid areas for soil use by agriculture. This was a very interesting demonstration of how vegetation resources can contribute to improvement of soil properties, carbon storage, water storage and to avoid soil degradation.

There are already strong groups working on soils of urban, industrial and mining areas. One of the big social tasks is the availability of soils for urban agriculture in cities. Pollution problems from ore mining and processing can be locally a big problem. Oil mining is another field about which reports on soils were presented. The fast extension of residential areas in costal and flood plains and sealing causes flood problems also in Africa.

There were many excellent contributions on the 4<sup>th</sup> Conference of Soil Science Society of Africa. They showed that the soil themes of the 21<sup>st</sup> century were well adopted and understood by our African colleagues. One of their problems is the low availability and particular maintenance of research equipment. They are still too much dependent from equipment use facilities outside their countries.

The very good managed and one day excursion was to South-West Ghana. It covered several thematic of soils, natural and human history of Ghana. At Okyereko a profile of an irrigated rice field was visited and discussed. The second profile was visited at the Kakum forest which is one of the last small residues of the African rain forest. The afternoon offered a view into the Kakum rain forest by walking through the canopy in some 40 m height on rope bridges. The end was a visit of Cape Town castle from where slaves were shipped.

During the conference was as new President of soil science society of Africa elected. We can congratulate Dr. R.D. Asiamah to this position and success. The 5<sup>th</sup> Conference of Soil Science Society of Africa will be in Cameroon in 2009.

The conference was held in the conference centre of GIMPA near the University of Ghana, Legon, Accra. The hard work of organizing the conference was done by Asiamah and many colleagues in Ghana, and his co-workers, in particular by Enoch Boateng. For the big success of the conference we have to thank them all.

Wolfgang Burghardt  
Chair of IUSS Division 3

### **Report on the 2nd Intensive Training Course on Soil Micromorphology Barcelona-Lleida, 8-19 Jan 2007**

The 2nd Intensive Training Course on Soil Micromorphology took place from the 8th to the 19th Jan 2007. It was organized by the Dept. of Environment and Soil Sciences of the U. of Lleida and the Dept. Of Crystallography, Mineralogy and Ore Deposits of the U. of Barcelona, and with the collaboration of the University of Ghent (Belgium). It was attended by 23 participants from 15 countries (Argentina, Chile, Denmark, Finland, France, Germany, Hungary, Iran, Ireland, Italy, Nicaragua, Portugal, Russia, Spain and USA), with diverse backgrounds as agronomy, geology, soil science, geomorphology or archaeology.



The lectures covered a broad spectrum of subjects, from basic principles of optical mineralogy to micromorphology of specific soil materials. Practical sessions included demonstrations of soil sampling in the field, visits to labs for preparation of thin sections or demonstrations of submicroscopic techniques. A weekend excursion, lead by Profs. J Porta, J Boixadera and EA FitzPatrick, was attended by eleven participants. Several soilscapes of Catalonia were visited, from semiarid environments near Lleida to oak mediterranean forests and rice fields of the delta of the Ebro river. The excursion finished with a paella at one of the mediterranean beaches. The group showed great interest in the course, especially for the chance to ask about their research, work with the different lecturers, and share their experiences with their colleagues. They were enthusiastic and worked till late with the microscopes, either with their own material or with sets of thin sections provided by the course. In spite of a flu virus that was flowing in the air, the course was a success in the sense that the participants learned the basic tools for the study of soil features and processes at a microscopical scale. Due to the positive experience, a third edition of the course will probably take place in 2009. We hope that the outcome of this course is twenty-three new micromorphologists in the world!

Rosa M Poch (UdL)  
Àngels Canals (UB)



**ICSU Young Scientists Conference  
4-6 April, 2007, Germany**

The International Council for Science (ICSU) was celebrating its 75<sup>th</sup> anniversary by organizing a conference for young scientists to discuss and address some of today's important scientific challenges in a multidisciplinary and international environment. This conference, entitled "Global Scientific Challenges: Perspectives from Young Scientists" was held on 4-6 April 2007 in Lindau, Germany.

I was lucky to participate in this conference being nominated by the International Union of Soil Sciences. The conference agenda, participants' presentations, videos, photos, and other materials are available on the conference website. Thus, in this brief report, I will address mainly my personal impressions about the conference, the impact that it had on me, and how it is affecting my current career development.

I was always convinced that my research should help to resolve problems that the society is faced with. For instance, I was always interested in the methodologies for remediation of metal-contaminated soils. This problem has become to be a global challenge. However, I never realized the importance of dissemination the results of my research beyond the frontiers of the soil science. Indeed, universities are generally requiring young scientists to publish in scientific journals rather than sharing scientific knowledge with the general public and the policy makers. The conference made me to decide writing extension papers and communicating my results through the media in hope that they can be integrated into decision-making processes.

The second topic that caught my attention at the conference was the issue of a growing necessity for international cooperation in scientific observations, monitoring, research, and assessment. Currently located in Chile, I see a need for effective partnerships between scientists in developing and industrialized countries. However, I personally feel that the current possibilities in building international scientific partnerships are quite limited or the international programs are too complicated to be accessed (as in the case of the European community projects). To this end, the International Council for Science may play an important role in encouraging the national science-funding agencies of the industrialized countries to have more effective and more easily-accessible programs for cooperation with developing countries.

Another topic that came across my attention during the conference was trans-disciplinary collaboration. Although a considerable progress has been made in breaking down the barriers among many traditional scientific disciplines (for instance, between earth sciences and biology, between environmental and medical sciences), there are still lots of barriers that currently impede the development of trans-disciplinary interaction and collaboration. On a personal level, I might be interested to develop my future research on the topics of soil and water contamination with a collaboration of human toxicologists. However, there might be some difficulties in getting such a trans-disciplinary research proposal funded. This is mainly because science-funding agencies review scientific proposal in commissions of specialist and still do not have effective mechanisms to accommodate trans-disciplinary proposals. This topic was extensively discussed at the conference.

In summary, the conference was a very enriching experience that certainly will affect and already affecting my career development as a young scientist.

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## **International Symposium on Balanced Fertilization for Sustaining Crop Productivity, Ludhiana, India**

More than 400 delegates from Australia, Bangladesh, Canada, China, Germany, India, Iran, Israel, Pakistan, Sri Lanka, Turkey, and USA participated in the *International Symposium on Balanced Fertilization for Sustaining Crop Productivity* held at the PAL Auditorium on the beautiful campus of the Punjab Agricultural University (PAU), Ludhiana, Punjab, India on November 22-25, 2006. I was the sole delegate from Canada. After the invocation and lighting of lamp, the inaugural session on November 22 included: (1) Welcome by Dr. B.S. Dhillon, Director Research, PAU (2) Introductory remarks by Dr. Hillel Magen, Director, International Potash Institute and Dr. J.S. Maini, Additional Secretary, Government of India (3) Special address by Dr. J.S. Samra, Deputy Director General (DDG), Indian Council of Agricultural Research (4) Inaugural address by Dr. G.S. Kalkat, Chairman, Punjab State Farmers' Commission (5) Presidential address by Dr. K.S. Aulakh, Vice Chancellor, PAU (6) Presentation of awards, and (7) Vote of thanks by Dr. G.S. Chahal, Dean, PAU.

About 30 oral papers were presented in eight technical sessions. More than 160 posters were presented in the following groups: Potassium in soils and fertilizers, modern balanced fertilization techniques, carbon sequestration in relation to balanced fertilization, role of potassium in pests and disease resistance and moisture stress in plants, quality improvements in bio-materials, nutrient management and recycling, alternate source of plant nutrition, and outreach activities involving balanced fertilization.



The inaugural session of the symposium at the PAL auditorium. (l to r) Drs. M.S. Brar, B.S. Dhillon, J.S. Samra, K.S. Aulakh, G.S. Kalkat, H. Magen, J.S. Maini, and G.S. Chahal (Photo courtesy of IPI).

The pre-symposium professional tour for the delegates from abroad on November 21 included a visit to a village and a greenhouse nursery. There was ample time to discuss village life, crops, extension, farm machinery, and related topics. At the symposium banquet on November 23, the cultural program included energetic bhangra and graceful gidda dances. The delegates participating in the post-symposium tour visited the historic city of Amritsar.

The symposium provided an excellent opportunity to network and learn about the latest research and technological developments from the leaders in their fields. It brought together a broad spectrum of interests and gave us an opportunity to meet old friends and make new ones.

The joint IPI-PAU symposium was organized by of the Punjab Agricultural University (PAU), the Potash Research Institute of India (PRII), and the International Potash Institute (IPI). It was co-sponsored by the Indian Council of Agricultural Research (ICAR), the Fertiliser Association of India (FAI), the Bangladesh Fertilizer Association (BFA), and the National Fertilizer Secretariat (NFS). The event was widely covered by the state media, and appeared in about 20 Indian newspapers in several languages. The large number of participants from Pakistan complemented the significant presence of the regional



researchers, officials, and industry representatives. The following Organizing Committee members and their dedicated team of volunteers are to be congratulated for an excellent symposium: Dr. M.S. Brar (Organizing Secretary), Dr. S.K. Bansal (Director, Potash Research Institute of India, Gurgaon, Haryana, India), Dr. Hillel Magen (Director, IPI, Horgen, Switzerland), Dr. Patricia Imas (IPI coordinator in the region, Beer Sheva, Israel), and Dr. Vladimir Nosov (IPI coordinator in the region, Moscow, Russia). I am grateful to the Organizing Committee for inviting me to present a plenary and a poster paper and to co-chair a session with Dr. Fasuo Zhang from Beijing, China. I would like to express my thanks to Mrs. Santosh Malhotra, Mr. Mukesh Kapoor, Mrs. Seema Kapoor, Mr. Vikas Malhotra, and Mr. Gurcharan Singh for their assistance.

My visit to India for participation in this symposium also gave me an opportunity to participate in the first-ever Alumni Meet at my *alma mater* Chandra Shekhar Azad University of Agriculture and Technology, Kanpur, Uttar Pradesh on November 11 and the inaugural session of the International Conference on Post-Harvest Technology and Value Addition in Cereals, Pulses and Oilseeds on November 27 there. I am grateful to Dr. V. K. Suri, Vice Chancellor for his kind hospitality.

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### **Indian Society of Soil Science organizes its 71st Annual Convention at the OUAT Bhubaneswar**

The Indian Society of Soil Science has its unique tradition of having held uninterruptedly its Annual Convention ever since its inception. It held its 71<sup>st</sup> Annual Convention at the Orissa University of Agriculture and Technology (OUAT), Bhubaneswar, Orissa during November 10-13, 2006. It was attended by more than 300 Soil Scientists. His Excellency Shri Rameshwar Thakur, Honorable Governor of Orissa, inaugurated the Convention on November 10, 2006. Dr. J.S.P. Yadav, the senior most Past President of the ISSS attending the Convention, presided over the inaugural function. Guests of Honor at the inaugural ceremony included Shri Surendranath Naik, Minister of Agriculture, Government of Orissa Dr. N. Panda, Chairman North West Orissa Development Council, and Prof. B. Senapati, Vice Chancellor, OUAT. In his inaugural welcome address, Dr. Yadav highlighted the glorious past of the Society and also lauded the significant contributions made by the Soil Scientists in developing technologies for protecting this valuable natural resource, increasing productivity and quality of the agricultural commodities.

Following Soil Scientists were presented the Fellowship and various Awards of the ISSS for 2006 by the Chief Guest. The Fellowship of ISSS was conferred on: i) Dr. Biswapati Mandal, Professor, Directorate of Research, BCKV, Kalyani; ii) Dr. D.D. Patra, Scientist F, Central Institute of Medicinal and Aromatic Plants, Lucknow; and (iii) Dr. Viraj Beri, Professor and Head, Department of Soils, Punjab Agricultural University, Ludhiana. Dr. M.C. Manna, Senior Scientist, and Dr. K.M. Hati, Scientist, Indian Institute of Soil Science, Bhopal were awarded the 12<sup>th</sup> International Congress Commemoration Award and Silver Jubilee Young Scientist Award, respectively. The Chief Guest, H E Shri Rameshwar Thakur, in his speech, emphasized on the role of soil scientists in managing a most valuable natural resource of soil.

During this Convention two special lectures were organized. The 24<sup>th</sup> Prof. J.N. Mukherjee - ISSS Foundation Lecture was delivered by Dr. Bijay Singh, National Professor (ICAR), Punjab Agricultural University, Ludhiana on the topic 'Enhancing nitrogen use efficiency in rice and wheat - challenges and options' on 10<sup>th</sup> November, 2006. The 33<sup>rd</sup> Dr. R.V. Tamhane Memorial Lecture was delivered by Dr. A.K. Singh, Project Director, Water Technology Centre, Indian Agricultural Research Institute (IARI), New Delhi. He delivered this lecture on the topic 'Exploiting water-nutrient-synergy - A must for evergreen revolution' on 11<sup>th</sup> November, 2006.



Half-a-day National Symposium on Nutrient Management in Acid Soils was held on afternoon of November 11, 2006 with Dr. N.N. Goswami, Former President of the ISSS in the Chair. Speakers at the Symposium included Dr. N. Panda, Former Vice Chancellor, Sambalpur University, Orissa and presently Chairman of the West Orissa Development Council, Dr. A.K. Sarkar, Dean, Faculty of Agriculture, Birsa Agricultural University, Jharkhand, Dr. M.V. Singh, Project Coordinator (Micronutrients), Indian Institute of Soil Science, Bhopal and Dr. D. Panda, Principal Scientist, Central Rice Research Institute, Cuttack. Recommendations emerging out of the deliberations brought out that the acid soils need to be ameliorated and not reclaimed for crop production. There is a need for development of integrated acid soil management strategy using small doses of lime, organic manures, inorganic fertilizers, tolerant crops and cultivars for improving crop production in this kind of problem soils. A National Seminar on 'Developments in Soil Science - 2006' was organized, in which a total of 22 papers in oral and 229 papers in poster sessions were presented on 10<sup>th</sup> afternoon, 11<sup>th</sup> afternoon and 13<sup>th</sup> November 2006 forenoon. Three posters were selected for the best poster presentation award.

The 71st Annual General Body Meeting of ISSS held on 11<sup>th</sup> November, 2006 with Dr. P.D. Sharma, Vice President of the ISSS in the Chair, was attended by 171 members of the Society. The business of the meeting as per the agenda, was transacted. The following were elected for the offices falling vacant for 2007 and 2008: Dr J.C. Katyal, Vice Chancellor, CCS Haryana Agricultural University, Hisar - President; Dr Anand Swarup, New Delhi - Vice President; Dr R.K. Rattan, New Delhi - Secretary; Dr S.K. Mahapatra, New Delhi - Joint Secretary. The 10 Councillors, declared elected were Dr Dharam Singh Dabas, Dr Madhumita Das, Dr K.B. Dudde, Dr R. Jeyakumar, Dr Sushanta Kumar Pattanayak, Dr K.P. Raverkar, Dr Rama Kant Singh, Dr Yadvinder Singh, Dr P.S. Sinsinwar and Dr K. Sudhir.

The concluding session on 13<sup>th</sup> November, 2006 was chaired by Dr. J.S. Samra, President of the ISSS. A review of the National Symposium on Nutrient Management in Acid Soils as well as the National Seminar was made. Dr. J.S. Samra, delivered the presidential address on the theme Future of Soil Science. He dealt in detail on emerging and exciting disciplines needing immediate involvement and input of Soil Scientists. An optional one-day field-cum-sight seeing trip was organized on 12<sup>th</sup> November, 2006 to have exposure of soil diversity in the state besides a trip to the famous Sun Temple in Konark and Lord Jagananatha Temple in Puri and also an pleasant evening on famous Puri sea beach.

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## Workshop of the Western Enviro-Agricultural Laboratory Association, Edmonton

The 18<sup>th</sup> Annual Workshop of the Western Enviro-Agricultural Laboratory Association (WEALA) was held at the Alberta Research Council, Edmonton, Alberta, Canada on April 4, 2007. The theme of the workshop was "*Advances in analytical technology*". Salim Abboud welcomed the delegates and chaired the Workshop sessions.



A key component of the meeting was an instrument vendor show with displays by instrument manufacturers and laboratory equipment suppliers featuring their new equipment currently on the market as well as other displays of interest to the laboratory community. The vendors included Agilent Technologies Canada, Anachemia Science, ATS Scientific, CEM Corporation, K'(Prime) Technologies, Lachat, Mandel Scientific, Mettler Toledo, Perkin-Elmer LAS Canada, and Varian Canada. The Workshop included following presentations: (1) "Improvements in automated efficiency: Nutrient determination using direct read discrete technology" by Dick Jadamec, Westco Scientific Instruments, Inc., Brookfield, CT, USA (2) "Overview of microwave sample preparation for digestion of plant, soil and fertilizer samples" by Elaine T. Hasty, CEM Corporation, Mathews, NC, USA (3) "Weighing the right way" by George Kameka, Mettler Toledo, Calgary, AB, Canada (4) "A septum-free design for TOC analysis: A look at challenging sample sets with direct injection" by David Nelson, Lachat-Hach Company, Loveland, CO, USA, and (5) "Greenhouse gas analysis by gas chromatography" by Darren Johnston, Varian Canada, Edmonton, AB, Canada. The organizing committee is to be complimented for an excellent program.

The Association held its Annual Business Meeting following the Workshop. The results of a recently-conducted round robin soil analysis study were discussed. The Executive for 2007-2008 consists of Trevor Sorensen (President), Edna Cabalo (Vice President), and Joel Crumbaugh (Secretary/Treasurer). The 19<sup>th</sup> Annual Workshop will be held in early 2008.

The Western Enviro-Agricultural Laboratory Association is a non-profit association of government, university, and private laboratories with common interests in promoting and improving the analytical chemistry industry. The objective of the group is to produce good analytical results. The association was founded by Jim A. Carson, Ray Grimson, Yash P. Kalra, Don H. Laverty, and Al Rasmuson in 1979. For further information, visit us online at [www.weala.com](http://www.weala.com).

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## Upcoming Meetings

For details on the Upcoming Meetings see: [www.iuss.org](http://www.iuss.org)

### 2007

5th Int Congress of the European Society for Soil Cons. 25-30 June **Italy**

Pedofract 3-6 July **Spain**

Field study on La Cerdanya soils 10-13 July **Spain**

9th Intern. conf. biogeochemistry of trace elements 15-19 July **China**

Enzymes in the environment 15-19 July **Italy**

Organic matter dynamics in agro ecosystem 16-19 July **France**

International symposium on forest soils 19-23 Aug **Australia**

Pedometrics 2007 27-30 Aug **Germany**

27th Congress of the Polish Society of Soil Science 3-7 Sept **Poland**

Mineral vs organic fertilization - conflict or synergism? 16-19 Sept **Belgium**

Green Revolution in Africa: Exploring the Scientific Facts 17-21 Sept **Tanzania**

Soils of urban, industrial, traffic, mining and military Areas 18-23 Oct **China**

Soils with mediterranean type of climate 22-25 Oct **France**

International symposium on soil water measurement 28 Oct-2 Nov **USA**

Soil forensics international workshop 30 Oct-1 Nov **UK**

ASA-CSSA-SSSA International annual meeting 4-8 Nov **USA**

Soil and wetland ecotoxicology 26-27 Nov **Spain**

### 2008

High resolution digital soil sensing and mapping 5-8 Feb **Australia**

IUSS Inter-Congress meeting 30 June-4 July **Australia**

33rd International geological congress 5-14 Aug **Norway**

EUROSOIL Congress 23-31 Aug **Austria**

13th Int Conference on soil micromorphology 11-16 Sept **China**

5th International conference on land degradation 18-22 Sept **Italy**

International congress of irrigation and drainage 13-19 Oct **Pakistan**

ASA-CSSA-SSSA International annual meeting 26-30 Oct **USA**

### 2010

19th World Congress of Soil Science, Brisbane, 1-6 Aug **Australia**

## New Publications<sup>1</sup>

**Soil and land evaluation methods (Metodi di valutazione dei suoli e delle terre, in Italian).** Costantini E.A.C. (coordinator). Edizioni Cantagalli, Siena, 2006, pp. 922, with CD-rom. ISBN 88-8272-288-0. Hardcover.

The book is a contribution to the synthesis of available knowledge on land evaluation and a pioneering opus on the environmental requirements of different types of landuse and crops. It will enhance the interest in soil science also by decision makers, planners and land managers. It will be supportive of sustainable landuse and of the protection of our soil resources. The manual offers a wide collection of methods of soil and land evaluation in agriculture, forestry, environmental sciences, as well as land planning. The text has a methodological introduction, useful for the choice of the land evaluation procedure, followed by a series of thematic chapters with specific examples. These regard the main applications of land evaluation in six different fields, that is, i) for general planning: land capability, land suitability for irrigation, soil pollution, soil erosion, and

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<sup>1</sup> The New Publication section is prepared by Hans van Baren ([hans.vanbaren@wur.nl](mailto:hans.vanbaren@wur.nl)). Should you have a publication that you would like to have included in the next IUSS Bulletin, ask your publisher to send a review copy to: ISRIC-IUSS, PO Box 353, 6700 AJ Wageningen, The Netherlands.



hydrological soil group assessment, land evaluation in developing countries; ii) land evaluation for local planning: wheat, corn, rice, alfalfa, potato, tobacco, soya, sugar beet; iii) land evaluation for niche cultures: spelt, truffle, manna ash, onion, prickly pear, lentil; iv) land evaluation for tree crops: ash, nut, cherry, citrus, vine and wine zoning, olive tree, peach, apple, kiwi, pear, plum, apricot, with cartographic examples; v) land evaluation for forest species and pasture: fir, spruce, pine, larch, pasture; vi) land evaluation for waste spreading and soil restoration. Finally, the tables for the attribution of the classes of soil and land suitability are supplied. The texts are also present in digital format in the attached CD-rom.

Request to: biblioteca CRA-Istituto Sperimentale per lo Studio e la Difesa del Suolo. E-mail: [biblioteca@issds.it](mailto:biblioteca@issds.it) Internet: [www.issds.it](http://www.issds.it)

**Avances en el conocimiento de los suelos de Chile (Advances in the knowledge of soils of Chile).** W. Luzio and M. Casanova, eds. Maval Press, Santiago of Chile, 2006, 393 p. ISBN 956-19-0532-9, softcover. Supported by University of Chile & Cattle and Agricultural Service (SAG) this book provides topics as soil genesis; morphological features of soils; physico-chemical properties of soils (pH acidity, alcalinity, adsorption and ionic exchange), chemistry, diagnosis and recovery of soils affected by salts; soil fertility and crops nutrition: experience developed in Chile; soil classification; soil cartography; isotopic technics applied to soil and plants studies; soil degradation and desertification; SIRSD: an instrument of promotion applied to soils of Chile. All the chapters are with emphasis in chilean soils.

Price: USD 40.00 + shipment costs (softcover)

Orders to: Department of Soil and Engineers, Faculty of Agronomic Sciences, University of Chile, Casilla 1004 - Santiago of Chile. Fax: +56-2-9785746. Email: [ingesu@uchile.cl](mailto:ingesu@uchile.cl); [wluzio@uchile.cl](mailto:wluzio@uchile.cl) [mcasanov@uchile.cl](mailto:mcasanov@uchile.cl)

**Where the Land is Greener. Case studies and analysis of soil and water conservation initiatives worldwide.** H. Liniger and W. Critchley, editors. WOCAT, 2007, xi + 364 p. ISBN 978-92-9081-339-2. Softcover.

This book, co-published by CTA, FAO, UNEP and CDE on behalf of the World Overview of Conservation Approaches and Technologies (WOCAT), contains examples of case studies of well-documented and interesting technologies and approaches from the WOCAT database. After an inventory lasting about 5 years, the number of technologies ended up at 42, while also 28 approaches are inventoried. Based on the expertise of about 100 scientists from around the world working in this intriguing subject, the book contains a wealth of information relevant to the subject in a broad sense. After presenting a listing of the policy points, which can be regarded as the conclusions of this in-depth study, Part 1 of this well-illustrated book is entitled: Analysis and policy implications. It contains chapters on the analysis of soil and water conservation technologies and approaches, concentrating on the issue of what works where, and why. and how the approaches are put into place. Part 2 is on the case studies in the following fields, collected in more than 20 countries: conservation agriculture (5 case studies); manuring/composting (3); vegetative strips (3); agroforestry (8); water harvesting (3); gully rehabilitation (3); terraces (9); grazing land management (4) and other technologies (4 case studies). Each case is covered in 4 pages. Several of the technologies are well-established; others are innovative, relatively unknown and full of promise. In the separate chapters many relevant data about the technology are given, aided by illustrative line drawings, graphs and photographs.

This book should receive a wide distribution, since it may give the reader/user an answer to the questions regarding practical soil and water conservation in order to get a greener land. See also [www.wocat.org](http://www.wocat.org) for details about WOCAT.

Price: USD 45.00. Orders to: Earthprint, at [www.earthprint.com/go.htm?to=wocat001](http://www.earthprint.com/go.htm?to=wocat001). For scientists from ACP (Africa, Caribbean, Pacific) countries working in agriculture and rural development, to receive the publication free of charge, see [www.cta.int](http://www.cta.int), or write to: CTA, P.O. Box 173, 6700 AD Wageningen, The Netherlands.

**Advances in Plant and Animal Boron Nutrition.** F. Xu, H.E. Goldbach, P.H. Brown, R.W. Bell, T. Fujiwara, C.D. Hunt, S. Goldberg and L. Shi, editors. Springer, Dordrecht, 2007, xvi + 401 p. ISBN 978-1-4020-5381-9. Hardcover.

This book contains the proceedings of the Third International Symposium on all Aspects of Plant and Animal Boron Nutrition, held in 2005 at the Huazhong Agricultural University in Wuhan, China. After a plenary review about the function of Boron in plant and animals, Part I, Boron in plants has the following chapters: Physiology and metabolism of boron in plants (6 papers); Boron nutrition and boron application in crops (13 papers); Genotypic differences of boron nutrition in plants (4 papers). Part II, Boron in animals and humans has 6 papers, while the closing Part III, Boron in plants has 7 papers. The book does not only present the latest developments in research, but suggests also future research issues. Price: EUR 160.45; USD 199.00; GBP 115.50. Orders to: Springer Customer Service, Haberstrasse 7, D-69162 Heidelberg, Germany. Fax: +49-6221-345-4229. Email: [orders@springer.de](mailto:orders@springer.de). Internet: [www.springeronline.com](http://www.springeronline.com).

**Digital Soil Mapping. An Introductory Perspective.** Developments in Soil Science, volume 31. P. Lagacherie, A.B. McBradney and M. Voltz, editors. Elsevier, Amsterdam, Boston, 2007, xxii + 599 p. plus 42 colour plates. ISBN 0-444-52958-6. Hardcover.

This book is based on contributions to a Global Workshop on Digital Soil Mapping, which was held in Montpellier in September 2004. Although it has been put into practice for several years through the development of soil databases, soil information systems and the increasing use of numerical techniques in the prediction of soil variability, the concept of Digital Soil Mapping (DSM) has only been introduced recently and this workshop is the first specifically devoted to it. The editors define DSM as "the creation and population of spatial soil information systems by numerical models inferring the spatial and temporal variation of soil types and soil properties from soil observation and knowledge and from related environmental variables". Eighty scientists, from soil surveyors to pedometricians, from 17 countries attended the meeting, which provided a large overview of the state of the art of this nascent discipline. The editors compiled in this book the best ideas and methodologies that emerged from this workshop. They envisage significant developments in the coming years, and from this perspective a Digital Soil Mapping working group was established within the IUSS. The book is dedicated to Dr. Jean-Marc Robbez-Masson, who was a major contributor to the workshop. He tragically lost his life in an accident in the Alps in July 2005.

Price: EUR 137.00; GBP 95.00; USD 165.00. Orders to: In the Americas: Elsevier, Customer Service Department, 11830 Westline Industrial Drive, St. Louis, MO 63146, USA. Email: [usbkinfo@elsevier.com](mailto:usbkinfo@elsevier.com). Internet: [www.elsevier.com](http://www.elsevier.com). In Europe, Middle East and Africa: Elsevier, Customer Service Department, Linacre House, Jordan Hill, Oxford OX2 8DP, UK. Email: [eurobkinfo@elsevier.com](mailto:eurobkinfo@elsevier.com). Internet: [www.elsevier-international.com/newcustomerservice](http://www.elsevier-international.com/newcustomerservice)

**Soil and Water Conservation Handbook. Policies, practices, conditions, and terms.**

P.W. Unger. Haworth Food and Agricultural Products Press, an imprint of The Haworth Press, New York, London, 2006, xiv + 248 p. ISBN 978-1-56022-330-6, softcover; 978-1-56022-329-0, hardcover.

This is a concise, compact encyclopaedia of the policies, practices, conditions and terms related to soil and water conservation. This handy A-to-Z guide contains descriptions of more than 700 entries, presented in a practical, non-technical format that is suitable for beginners as well as experts. Dr Rattan Lal calls it "an excellent reference source", Dr Gary Peterson states that "There is no other work like it to the best of my knowledge, and it is a legacy we will all appreciate into the long-term future".

Price: USD 29.95 (softcover); USD 39.95 (hardcover), plus handling and postage.

Orders to: The Haworth Press, 10 Alice Street, Binghamton, NY 13904-1580, USA. Email: [orders@haworthpress.com](mailto:orders@haworthpress.com). Internet: [www.haworthpress.com](http://www.haworthpress.com).



**Agricultural Sustainability. Principles, processes, and prospects.** S. Raman. Food Products Press, an imprint of The Haworth Press, New York, London, 2006, xxii + 474 p. ISBN 978-1-56022-311-5, softcover; 978-1-56022-310-8, hardcover.

This book provides a comprehensive examination of all facets of agricultural sustainability, from the evolution of the concept to the today's state of the art tools and techniques. Challenges to sustainability are clearly presented along with practical strategies to counter prospective problems. This vital resource considers options for the future but also reviews past approaches for their value in today's world. The book is extensively referenced and includes figures and charts to explain data. It includes a foreword by Dr M.S. Swaminathan, who advocates "the launching of an Evergreen Revolution in agriculture".

Price: USD 69.95 (softcover); USD 89.95 (hardcover), plus handling and postage. Orders to: The Haworth Press, 10 Alice Street, Binghamton, NY 13904-1580, USA. Email: [orders@haworthpress.com](mailto:orders@haworthpress.com). Internet: [www.haworthpress.com](http://www.haworthpress.com).

**Los suelos de los viñedos de la Denominación de Origen Somontano.** D. Badia Villas, J.A. Cuchí Oterino, C. Martí i Dalmau e J.C. Gascón. Prensas Universitarias de Zaragoza, 2006, 205 p. ISBN 84-7733-852-3. Softcover.

This book describes and shows the soils of the Somontano wines in the province of Huesca, which occupies the territory between the Ebro River and the Central Pyrenees in northern Spain. In the first chapters the geology, geography, climate, vegetation and soil use are discussed, followed by the relevant soil forming processes. Physical and chemical data are given in relation to their influence on the wines of Somontano. The different grape varieties in conjunction with climate and soils, as well as the management of the soils are presented in the next chapter. There is an interesting section with photographs, a morphological description and analytical data of the most important soils, classified according to WRB and Soil Taxonomy. It is a useful book for persons interested in the connection between soils and wines, and for visitors to this attractive region in Spain.

Price: EUR 27.00, plus forwarding charges. Orders to: Prensas Universitarias de Zaragoza, Edificio de Ciencias Geológicas, c/ Pedro Cerbuna, 12, 50009 Zaragoza, Spain. Email: [puz@unizar.es](mailto:puz@unizar.es). Internet: [www.puz.unizar.es](http://www.puz.unizar.es).

**Serpentine Geocology of Western North America. Geology, soils and vegetation.**

E.B. Alexander, R.G Coleman, T. Keeler-Wolf and S.P. Harrison. Oxford University Press, Oxford and New York, 2007, vi + 512 p. ISBN 0-19-516508-X. Hardcover.

Ultramafic, or "serpentine" rocks are unique in the continental crust of the earth in that their chemical composition is similar to that of the mantle, which is overlain by 30-70 km of continental crust, or much thinner ocean crust. There are several different kinds of ultramafic rocks that reach the surface of the earth in different ways. The main focus of this book is the effects of ultramafic rocks on terrestrial landscapes and ecosystems. The unique ultramafic rock chemistry is largely inherited by serpentine soils, which support unique suites of plants. Because the soils and vegetation are so unique, they warrant this comprehensive book. The geographical coverage is western North America. A large portion of the book is devoted to the principles of serpentine soil formation and serpentine plant ecology. Practically all principles of serpentine soil formation, vegetation distribution, and floristic development can be illustrated with examples from this region. These principles are applicable to serpentine soils on all continents, making the book pertinent to pedologists and ecologists around the world.

The topics of this book, which together make up geocology, span many disciplines. For this purpose, four co-authors from three disciplines have been selected to cover the entire spectrum of serpentine geocology with authority.

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**Moving People – towards collective action in soil and water conservation. Experiences from the Bolivian mountain valleys.** A. Kessler. Ph.D. thesis Wageningen University, 2006, 194 p. Also published as Tropical Resource Management Papers 78. ISSN 0926-9495. Softcover.

Land degradation in the Bolivian mountain valleys has increased in the past decades, and many cropland fields have been abandoned. Although farmers are concerned and urgent actions are required, no serious widespread actions are being undertaken. Several soil and water conservation (SWC) practices, mostly based on local knowledge, are available to control runoff and improve soil management. The challenge is how to motivate farmers to adopt these practices at a wide scale. Facing the challenge, a project validated a strategy for executing SWC practices within a holistic framework of rural development. In the first phase of this “logical strategy” the objective was to lay a solid foundation for sustainable development: to motivate farmers and achieve their genuine participation. In the second phase, SWC and development activities were executed. Two years after the project withdrawal, many farmers had lost motivation to continue with SWC. The main reason was that there was the lack of a catalyst to keep the process going. Active involvement of municipalities in rural development is therefore indispensable; they must provide follow-up activities. This requires well-trained and motivated actors. Moreover, micro-meso-macro linkages must work efficiently, with local experiences that feed sector-wide approaches for scaling-up SWC activities, and adequate strategies that support and motivate farmers to invest in sustainable land management. Moving people – at all levels – towards collective action in SWC; only then land degradation in the Bolivian highlands can be reversed.

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For a paid paper copy: Erosion and Soil & Water Conservation Group, Wageningen University and Research Centre, P.O. Box 47, 6700 AA Wageningen, The Netherlands. Email: [office.esw@wur.nl](mailto:office.esw@wur.nl). Internet: [www.esw.wur.nl](http://www.esw.wur.nl).

**Exploring socio-ecological niches for legumes in western Kenya smallholder farming systems.** J.O. Ojiem. Ph.D. thesis Wageningen University, 2006, v + 167 p. Also published as Tropical Resource Management Papers 89. ISSN 0926-9495. Softcover.

The author explores the potential of using herbaceous and grain legume species to improve soil fertility in the heterogeneous smallholder farming systems of western Kenya, where low soil fertility is responsible for low yields. The use of legumes is impeded by the high degree of biophysical and socio-economic heterogeneity that characterizes the farming systems. The socio-ecological niche concept was proposed as a framework for facilitating the identification and integrated assessment of biophysical and socio-economic factors that potentially influence the choice of legume technologies. The utility of this concept was tested in on-farm experiments and socio-economic surveys. The biophysical and socio-economic factors were integrated and analysed to identify legume species for different farmer resource endowment groups, agro-ecological conditions and field typologies. The study demonstrated the utility of the socio-ecological niche concept as a tool for facilitating the integration of legumes into farming systems to improve soil fertility and farm productivity.

For a paper copy and enquiries about downloading a free copy: Erosion and Soil & Water Conservation Group, Wageningen University and Research Centre, P.O. Box 47, 6700 AA Wageningen, The Netherlands. Email: [office.esw@wur.nl](mailto:office.esw@wur.nl). Internet: [www.esw.wur.nl](http://www.esw.wur.nl).

**Sustainable Land Management: Challenges, Opportunities, and Trade-offs.** Agriculture and Rural Development Series. World Bank, New York, 2006, 138 p. ISBN 0-8213-6597-5. Softcover.

Sustainable Land Management (SLM) is a knowledge-based procedure that integrates land, water, biodiversity and environmental management to meet rising food and fibre demands while sustaining ecosystem and environmental services and livelihoods. Due to varying combinations of political, social, and economic factors, the mining of the natural resources base that has supplied a rapidly growing global population and economy has resulted in significant unintended mismanagement and degradation of land and associated ecosystem services. Scientific advances in the quantification of SLM-based environmental services at field and watershed scales underpin the growing market on payments for environmental



services and incentives for SLM and the rehabilitation of degraded lands. This book highlights the global extent of land degradation, quantifies current SLM investments and identifies SLM priorities, opportunities, and challenges in the face of significant but unpredictable climate change.

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**Enhancing Agricultural Innovation. How to go beyond the strengthening of research systems?** Agriculture and Rural Development Series. World Bank, 2006, 180 p. ISBN 0-8213-6741-2. Softcover.

Knowledge intensiveness has featured prominently in most strategies to promote agricultural development. In the past strengthening research systems may have increased the supply of new knowledge and technologies, but that has not necessarily translated into enhanced agricultural growth. Knowledge converts into products and services through an innovative system – a network of organisations, enterprises and individuals focusing on bringing new knowledge into economic use, together with the institutions and policies that enable a well-functioning network. This book assesses the usefulness of the innovation systems concept in guiding investments to support knowledge intensive, sustainable agricultural development for developing countries and their collaborators.

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**The Rhizosphere. Biochemistry and organic substances at the soil – plant interface.** Second edition. R. Pinton, Z. Varanini and P. Nannipieri, editors. CRC Press, 2007, 456 p. ISBN 978-0-8493-3855-7.

In the rhizosphere, exudates from plants and micro-organisms as well as stable soil organic matter influence processes that can control plant growth, microbial infections, and nutrient uptake. As the chemistry and biochemistry of these substances becomes more and more clear, their study promises to shed light on the complex interactions between plant and soil micro flora. Maintaining the interdisciplinary approach of the first edition, this second edition summarizes information on soil science, agronomy, plant nutrition, plant physiology, microbiology, and biochemistry to provide a comprehensive overview of the most recent advances in the field. It presents new information on areas that are only recently gaining importance for understanding the complex biochemistry of the soil-microbe-plant interaction. New topics include the role of nutrient availability in regulating root morphology and architecture; the involvement of root membrane activities in determining and responding to the nutritional conditions in the rhizosphere; molecular signals between root-root and root-microbe, and gene flow and the evolution of rhizosphere organisms and their co evolution with plants.

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**Soil Carbon Management. Economic, environmental, and societal benefits.** J.M. Kimble, C.W. Rice, D. Reed, S. Mooney, R.F. Follett and R. Lal, editors. CRC Press, 2007, 288 p. ISBN 978-1-4200-4407-2.

In the United States, soil has fuelled the availability of abundant, safe food, thus underpinning economic growth and development. In the future, we need to be more vigilant in managing and renewing this precious resource by replacing the nutrients and life-sustaining matter that we remove for our own needs. Taking these issues into consideration, this book explores all of the advantages of effective soil carbon management. It provides a new conceptual framework to develop policies for managing

and enhancing soil C and presents new approaches to achieve environmental outcomes. In each of the 14 chapters, the book poses a problem or set of problems and then describes how effective soil C management can help to solve these challenges, listing the multiple benefits that arise from these practices. It addresses specific problems, such as soil erosion and land degradation and evaluates the advantages of soil C sequestration, specifically for policy development purposes. The policies discussed can be tailored to meet regional and local needs and constraints. The book also explains how to achieve an ideal environment by applying beneficial practices for farming and land management.

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**Biological Approaches to Sustainable Soil Systems.** N. Uphoff, A.S. Ball, E. Fernandes, H. Herren, O. Husson, M. Laing, C. Palm, J. Pretty, P.A. Sanchez, N. Sanginga and J.E. Thies, editors. CRC Press, 784 p. ISBN 1-5744-4583-9.

Global agriculture is now at the crossroads. The Green Revolution of the last century, which helped developing countries meet their food needs for several decades, is now losing momentum. Rates of growth in food production are now declining, with land and water resources becoming scarcer, while world population continues to grow. We need to continue to identify and share the knowledge that will support successful and sustainable agriculture systems in this new century. These depend crucially on soil. The book brings together 102 experts from multiple disciplines and 28 countries to report on the science and the innovation going on for sustainable soil system management. While accepting some continuing role for chemical and other external inputs in 21<sup>st</sup>-century agriculture, this book presents a variety of ways in which crops can be produced more abundantly and more cheaply with lessened dependence on the exogenous resources that have driven the expansion of agriculture in the past. With 50 self-contained chapters, this original work provides researchers, practitioners, planners and policy makers with a comprehensive understanding of the science and steps needed to utilize soil systems for the long-term benefit of humankind and the environment.

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**Modeling Phosphorus in the Environment.** D.E. Radcliffe and M.L. Cabrera editors. CRC Press, 2007, 432 p. ISBN 978-0-8493-3777-2.

This book combines traditional models with new approaches derived from modern technology and assesses the current state of modelling phosphorus (P). It describes basic approaches in modelling P, how the current models implement these approaches, and ways to improve them. It allows researchers, engineering consultants, soil and groundwater scientists, regulators and others to assess and consider all the models available for predicting the fate of phosphorus in the environment, so as to be readily able to select the model that best fits their own situation. Written by experts in the field, this book is the first single-source reference for information on basic approaches used in modelling phosphorus.

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**Böden der Trockentropen. Prozess- und Strukturindikatoren-gestützte Analyse geschichteter, polygenetischer und degradiertes Böden der Insel Socotra (Jemen).** Jemen-Studien Band 17. D. Pietsch. Dr. Ludwig Reichert Verlag, Wiesbaden, 2006, 327 S., 61 Farb- und 85 s/w-Abb. ISBN 978-3-895000-551-0. Kartoniert.

Dieses Buch behandelt erstmals Böden der tropischen Insel Socotra (Jemen) in ihrer Entwicklung und ihrer aktuellen Beschaffenheit. Da es bislang keinen zusammenfassenden Überblick zur Geographie der Insel gibt, wird es hier den Ergebnissen der Bodenuntersuchungen vorangestellt. Nach kurzer Darstellung der Bevölkerungsentwicklung, des geologischen Baus, des Klima und der Vegetation steht eine vergleichende Analyse der Substrate und Böden. Bei der Kennzeichnung der Böden wird besonderes Augenmerk auf die Polygenese gelegt, die sich diese sowohl an der Schichtung der bodenbildenden Substrate als auch an bestimmten Reliefpositionen nachvollziehen lässt. Da Socotra ein traditionell weidewirtschaftlich genutztes Refugium mit stark eingeschränkten Bodenressourcen sowie hoher Bio- und Geodiversität ist, sind hier in der Analyse der Böden auch die Folgen der Nutzung in Form von Bodendegradation berücksichtigt. Die Analyse der degradierten Böden zeigt unterschiedliche Degradationsstadien der Böden, die mit Hilfe von Prozessindikatoren der Bodenentwicklung genau bestimmt werden können. Die Synthese der Einzelergebnisse erfolgt auf der Grundlage von fünf Hypothesen zur idealisierten Horizontabfolge der Böden, zur schichtenkoinzidenten Bodenbildung, zu Schichtungsmerkmalen, zur Schuttdeckenverbreitung und zur Bodendegradation. Die Kennzeichnung der Böden basiert u.a. auf feldbodenkundlichen und mikromorphologischen Laboranalysen. Zur genauen Identifizierung und Klassifikation der Substrate wird hier eine Substratsystematik entwickelt, die sich auch auf andere tropische Regionen übertragen lässt.

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**Management Practices for Improving Sustainable Crop Production in Tropical Acid Soils.** IAEA Proceedings Series. F. Zapata, editor. International Atomic Energy Agency, Vienna, 2006, 350 p. STI/PUB/1285. ISBN 92-0-115206-X. ISSN 0074-1884. Softcover.

This publication is the result of a Coordinated Research Project (CRP), organised by the Joint FAO/IAEA programme on Nuclear Techniques in Food and Agriculture, which was carried out between 1999 and 2004. The overall objective of this CRP was to develop integrated soil, water, and nutrient management practices to increase and sustain productivity of tropical acid soils. According to FAO data, only 11% of the earth's surface is currently cultivated, and about 24% (3900 Mha) is potentially arable, most of which, 2500 Mha, is composed of acid soils with 1700 Mha in the humid tropics. Thus, the greatest potential for expanding agricultural land lies in the tropical forest and savannah regions, dominated by highly weathered, acid, infertile soils. With rising CO<sub>2</sub> levels in the atmosphere, soil acidification problems are likely to increase. The savannahs are mainly located in humid and sub-humid tropical areas and suitable for rainfed cropping conditions. The acid savannah soils are mostly considered marginal, because of their inherent low fertility and high susceptibility to rapid degradation. Management practices must be developed and improved to avoid further degradation of the resource base and to sustain crop production in tropical acid soils, which are mainly occurring in South America and Africa, but also in Asia. After a summary of the project, the first chapter is entitled: Integrated management of tropical acid soils (4 papers); the second chapter is Use of acid-tolerant and P-efficient plant genotypes (4 papers); the third and last chapter is about Ameliorating soil acidity and infertility of tropical acid soils (10 papers). A list of participants is added.

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**Soil Erosion in Europe.** J. Boardman and J. Poesen. Wiley, 2006, 878 p. ISBN 0-470-85910-5. Hardcover

This book provides a unique and comprehensive assessment of soil erosion throughout Europe, which is an important aspect to control and manage if landscapes are to be sustained for the future. Written in two parts, this book primarily focuses on current issues, area-specific soil erosion rates, on and off-site impacts, government responses, soil conservation measures, and soil erosion risk maps. The first section overviews the erosion processes and the problems encountered within each European country, whilst the second section takes a cross-cutting theme approach. The inventory reviews contemporary erosion processes and rates on arable and rangeland. The book is based on studies which have been carried out for five years by 145 erosion experts from 19 countries.

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**Soils on the Global Agenda. Developing international mechanisms for sustainable land management.** H. Hurni, M. Giger and K. Meijer, editors. Published by Geographica Bernensia on behalf of the International Union of Soil Sciences. Centre for Development and Environment, Bern, 2006, 63 p. ISBN 978-3-906151-93-X. Softcover.

This publication was prepared by the Working Group on International Actions for the Sustainable Use of Soils (IASUS) of the IUSS with support of the Centre for Development and Environment (CDE), University of Bern, Switzerland, through its "Sustainable Land Management Policies" and "NCCR North-South" programmes. The publication is based on the presentations and discussions made at a one-day symposium in September 2004 in the framework of the Eurosoil Conference held in Freiburg, Germany. The symposium focused on "Putting soils higher on the international agenda". Part I summarises the main activities and outcomes of the symposium. Part II contains the summaries or papers of the 9 presentations made. Based on the discussions held, a survey was conducted for consultation with a larger group of experts. In Part III the results of this survey and a workshop held in March 2006 are given as a number of priorities, as well as concrete actions at the international and regional levels. In the preface, the Secretary General of the IUSS, Dr Stephen Nortcliff, states that "I hope that participants at the IUSS World Soil Congress to be held in Philadelphia in July 2006 will perceive this outcome as an important initiative of the IUSS soil science community towards sustainable use of soils at the global level, and that a wider group of stakeholders in international organisations will take the necessary steps to give greater attention to soil issues in their activities."

Requests to: Prof. Hans Hurni [nccr-ns@cde.unibe.ch](mailto:nccr-ns@cde.unibe.ch)

**Soil Microbiology, Ecology, and Biochemistry. Third edition.** E.A. Paul, editor. Academic Press, an imprint of Elsevier, 2007, xx + 532 p. ISBN 978-0-12-546807-7. Hardcover.

This new edition contains fully revised chapters to address the importance of ecological advances in soil science. It also includes a number of new chapters, such as those about bioremediation, soil molecular biology, biodiversity and global climate change. The inclusion of ecology concepts reflects the broader applicability of the science. Especially great advances have been made in molecular techniques, the broader use of tracers, and maturation of modelling in interpretation of data and the development of new concepts. New chapters are also about invertebrate-microbial interactions, basic physiology, and ecological interpretations. Students of agriculture, forestry, ecology, and environmental science will find guidance through basic concepts and applications of various soil processes as well as being introduced to microbial processes in water and sediments. Compared to the second edition of 1996, the new edition has more interpretative diagrams to enhance learning.

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**Clay Swelling and Colloid Stability.** M. Smalley. Taylor&Francis, Boca Raton, London, 2006, xi + 249 p. ISBN 0-8493-8079-0. Hardcover.

This book is based on 36 publications from the author, putting emphasis on two significant paradigm shifts in colloid science that explain particle interactions for charged plates, stacks, suspensions, and pastes as well as spherical colloids. The author first discusses the replacement of the DLVO theory with the Coulombic Attraction Theory to explain the existence, extent, and properties of the two-phase region of colloid stability. Using the n-butylammonium vermiculite system as his model clay system, the author clarifies the flaws of conventional theories and presents the experimental details that form the basis of his new theories. He also provides rigorous derivations that place the new electrical theory for charged colloids on a firm foundation in statistical mechanics. Next, the author illustrates why a new, quantitative bridging flocculation model for polymer-stabilised colloids must replace the depletion flocculation model. The author also examines the discovery of the "dressed macrion" structure of clay plates in solution, the structure of a bridging polymer, and the distribution of polymer segments, and water molecules in the interlayer region. The book contains 30 tables, 130 figures, 200 equations and 300 references.

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**Handbook of Soil Analysis. Mineralogical, Organic and Inorganic Methods.** M. Pansu and J. Gautheyrou. Springer-Verlag, Berlin and Heidelberg, 2006, xix+ 993 p. ISBN 3-540-31210-2; 978-3-540-31210-9. Hardcover.

This is an updated version of the book in French "L'analyse du sol, minéralogique et minérale" written by the same authors and published by Springer in 2003 (ISBN 2-287-59774-3). For a review see the IUSS website. The book provides a synopsis of the analytical procedures for the physico-chemical analysis of soils. It is written to conform to analytical standards and quality control. It focuses on mineralogical, organic and inorganic analyses, but also describes physical methods when these are a precondition for analysis. It will help a range of users to choose the most appropriate method for the type of material and the particular problems they have to face. The methodological range is wide and each chapter presents both simple analyses and analyses that require sophisticated equipment. It is aimed at teams involved in practical field work and at researchers involved in fundamental and applied research. The volume includes concrete examples of the following methods: spectra, diffractograms, thermograms, chromatograms, electrophoregrams, ion-exchange methods, electrochemistry, biology, physical separation techniques, selective dissolutions and imagery. The methods selected apply to a wide range of bioclimatic zones: temperate, arid and (sub)tropical.

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**Measuring Vulnerability to Natural Hazards. Towards disaster resilient societies.**

J. Birkmann, editor. United Nations University Press, Tokyo and New York, 2006, 400 p. ISBN 92-808-1135-5. Softcover.

A seemingly non-stop series of disasters has shown societies worldwide seem unprepared for the threads posed by natural hazards: hurricanes, droughts, flooding, earthquakes, tsunamis, and forest fires are dramatic examples. The tragic impacts of these events drew short-term attention from policy makers, the media and the general public, but their

response was too late to prevent serious harm. Societies need to measure their vulnerabilities in advance, and make adequate provisions. To do so, they have to understand the complex relationships between natural hazards and the related social, economic and environmental vulnerabilities. Recognizing and measuring vulnerabilities is the first and perhaps most important step towards disaster resilient societies. This book presents a broad range of current approaches to measuring vulnerability and contains concrete experiences and examples from Africa, Asia, the Americas and Europe to illustrate the theoretical analyses. This critical review provides important conclusions which can serve as an orientation for future research towards more disaster resilient communities.

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**State of the World 2007. Our Urban Future.** O'Meara Sheehan, project director. L. Starke, editor. W.W. Norton & Company, New York and London, 2007, xxxi + 250 p. ISBN 978-0-393-32923-0. Softcover.

This annual publication of the Worldwatch Institute is published in 30 languages. The 2007 report is about cities, regarded as the key factor to tackle poverty and climate change. While cities cover only 0.4 percent of the Earth's surface, they generate the bulk of the world's carbon emissions. Nearly one half of all people live in urban areas and over 60 million persons, roughly the population of France, are now added to the planet's burgeoning cities and suburbs each year, mostly in low-income urban settlements in developing countries. This report is only marginally concerned with soils, in the chapter entitled "Framing the Cities", but forms a part of the aims of the Worldwatch Institute to work on progress toward a sustainable society.

Price: USD 18.95, plus handling and shipping. Orders to: Email: [wwpub@worldwatch.org](mailto:wwpub@worldwatch.org), or through the website: [www.worldwatch.org/pubs/sow/2007](http://www.worldwatch.org/pubs/sow/2007).

**Soil Fertility and Plant Nutrition in the Tropics and Subtropics.** A. Amberger. International Fertilizer industry Association and International Potash Institute, 2006, ix + 96 p. ISBN 2-9523139-0-3. Softcover.

This book discusses the possibilities and constraints to food production on the many different soils found in (sub)tropical countries. By indicating ways in which crop nutrition and hence crop production can be increased on these soils in developing countries, the author shows ways to ensure food security and improve livelihoods. The topics discussed in this small book are a synthesis of the authors considerable experience and a testimonial to his many years of collaborative scientific effort. The text is mainly based on his lectures at the university in Munich, Germany, and at congresses. The book also has a list of publications for further reading and 16 colour plates.

Requests to: IFA, 28, rue Marbeuf, F-75008, Paris, France. Fax: +33-1-53930545. Email: [publications@fertilizer.org](mailto:publications@fertilizer.org). Internet: [www.fertilizer.org](http://www.fertilizer.org).



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