



Bulletin

of the International Union of Soil Sciences

Bulletin

de l'Union Internationale de la Science du Sol

Mitteilungsblatt

der Internationalen Bodenkundlichen Union

Boletín

de la Union Internacional de la Ciencia del Suelo

No. 98

2000/2

**INTERNATIONAL UNION OF SOIL SCIENCES
UNION INTERNATIONALE DE LA SCIENCE DU SOL
INTERNATIONALE BODENKUNDLICHE UNION**

Founded as International Society of Soil Science (ISSS)/Fondée comme Association Internationale de la Science du Sol (AISS)/Gegründet als Internationale Bodenkundliche Gesellschaft (IBG): 19-05-1924.

Full Members, Associate Members, Individual Members and Sustaining Members since/Membres à part entière, Membres Associés, Membres à titre Individuel et Membres Bienfaiteurs depuis/ Vollmitglieder, assoziierte Mitglieder, Einzelmitglieder und fördernde Mitglieder seit: August 1998.

A scientific union member of ICSU since/Membre scientifique du CIUS depuis/Wissenschaftliches Mitglied von ICSU seit: 1993.

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II. Soil Chemistry/Chimie du Sol/Bodenchemie

Prof.Dr. D.L. Sparks, Univ. of Delaware, Dept. of Plant & Soil Sci., Newark, DE 19717-1303, USA

III. Soil Biology/Biologie du Sol/Bodenbiologie

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IV. Soil Fertility and Plant Nutrition/Fertilité du Sol et Nutrition des Plantes/Bodenfruchtbarkeit und Pflanzenernährung

Prof.Dr. M.J. Swift, TSBF, P.O. Box 30592, Nairobi, Kenya.

V. Soil Genesis, Classification and Cartography/Genèse, Classification et Cartographie du Sol/Bodengenetik, Klassifikation und Kartographie

Prof.Dr. A.R. Mermut, University of Saskatchewan, Dept. of Soil Science, Saskatoon, Sask. S7N 5A8, Canada

VI. Soil Technology/Technologie du Sol/Bodentechnologie

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VII. Soil Mineralogy/Minéralogie du Sol/Bodenmineralogie

Prof.Dr. K. Stahr, Inst. f. Standortlehre u. Bodenk., Univ. Hohenheim, Emil-Wolff-Str.27, 70599 Stuttgart, Germany

VIII. Soils and the Environment/Sols et l'Environnement/Boden und Umwelt

Dr. Ch. de Kimpe, Agriculture Canada, Direction Générale de la Recherche Sir J. Carling Bldg. 725, 930 Carling Av., Ottawa, Ont. K1A 0C5, Canada



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Edited and published by/rédigé et publié par/redigiert und publiziert von/
redactado y publicado por:

International Union of Soil Sciences (IUSS)

Union Internationale de la Science du Sol (UISS)

Internationale Bodenkundliche Union (IBU)

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ISSN: 0374-0447

Copyright: IUSS, Gregor Mendel-Str. 33
A-1180 Vienna/Austria

Printed by: WUV-Universitätsverlag
A-1090 Wien, Berggasse 5
Tel: +43-1-3105356-0
Fax: +43-1-3197050

Layout: WUV-Universitätsverlag
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Fax: +43-1-3197050

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Price of a single copy: 25.00 US\$

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การประชุมวิทยาศาสตร์ทางดินของโลก

World Congress of Soil Science

Congrès Mondial de Science du Sol

Bodenkundlicher Weltkongress

Congreso Mundial de la Ciencia del Suelo



14-21 August 2002, Thailand

Soil Science : Confronting New Realities in the 21st Century

E-mail : o.sfst@nontri.ku.ac.th <http://www/17wcss.ku.ac.th>

THE SEVENTEENTH WORLD CONGRESS OF SOIL SCIENCE

INVITATION

On behalf of The Soil and Fertilizer Society of Thailand, The International Union of Soil Sciences and the Ministry of Agriculture and Cooperatives, Thailand, I would like to confirm our commitment and intention on the organization of the Seventeenth World Congress of Soil Science in Bangkok, Thailand, during 14-21 August 2002. With all the kind cooperation rendered to us by individual renowned soil scientists and organizations, I can promise you that we will have one of the most fruitful and enjoyable Congress.

We look forward to welcoming you at the Congress.

Sompong Theerawong, IUSS President
President, 17th World Congress of Soil Science

CONGRESS THEME

Soil Science: Confronting New Realities in the 21st Century

CONGRESS VENUE

Queen Sirikit National Convention Center, Thailand

CONGRESS DATE

14-21 August 2002

17th WCSS SCIENTIFIC COMMITTEES

Sompong Theerawong, Advisory Member
Irb Kheoruenromne, Advisory Member
Lek Moncharoen, Advisory Member
Amnat Suwanarit, Chairperson
Tasnee Attanandana, First Vice-Chairperson
Supamard Panichsapatana, Second Vice-Chairperson

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Tawachai Na Nagara
Omsub Nopamornbodi
Pisoot Vijarnsorn
Sumitra Poovarodom
Anchalee Suddhiprakarn
Pramuanpong Sindhusen
Manu Srikhajon
Juckgrit Homchan
Bunvong Thaiutsa
Taweesak Vearasilp
Preeda Parkpian
Prapai Chairroj
Kamron Saifuk, Committee and Secretary
Aniruth Potichan, Committee and Assistant Secretary
Kumut Sangkhasila, committee and Assistant Secretary

Central Committees

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Patma Vityakon
Charlchai Tanavud
Chairatna Nilnond
Sathien Phimsarn
Pitayakon Limtong
Phichit Ponsakul
Monkol Panichkul
Kannika Yoothong
Prasat Kesawapitak
Patcharee Saenjan

GENERAL INFORMATION

CONGRESS ACTIVITIES

1. Plenary Session (the 1st day)
2. Symposia of Commissions, Sub-Commissions and Working Groups (Six parallel Symposia each day, half a day for each Symposium oral presentations)
3. Special Symposia and Workshops organized by other Organizations
4. Poster Session (related to 2)
5. Pre-Congress Tours, Mid-Congress Tours and Post-Congress Tours
 - 5.1 Tours in Thailand-Technical and Cultural
 - 5.2 Tours in Asia and Australia
 - 5.3 Special tour programs for accompanying persons of the participants
6. IUSS Business Meeting: Council Meetings, Meetings of Divisions, Commissions, Sub-Commissions, Working Groups, Standing Committees and other special group meetings

TENTATIVE PROGRAMME

DATE / TIME *ACTIVITY*

13 AUGUST 2002 (Tuesday)

1300-2000 On-site Registration

14 AUGUST 2002 (Wednesday)

0830-1200 On-site Registration

Opening Ceremony

1330-1730 Plenary Lecture

15-17 AUGUST 2002

Symposia: Morning Session

0830-1010 First Part

1010-1030 Break

1030-1150 Second Part

1150-1300 Lunch

Poster Session

1300-1400 Poster Papers

Symposia: Afternoon Session

1400-1540 First Part

1540-1600 Break

1600-1720 Second Part

18 AUGUST 2002 (Sunday)

All day Mid-Congress Tours

19-20 AUGUST 2002

Symposia Programme

(Same as for 15-17 August 2002)

21 AUGUST 2002 (Wednesday)

Symposia: Morning Session

0830-1010 First Part

1010-1030 Break

1030-1150 Second Part

Afternoon Programme

1330-1500 Closing Ceremony

14-21 AUGUST 2002 On-site registration all day, everyday

REGISTRATION

1. IUSS Members (350 USD)
 2. Non-IUSS Members (400 USD)
 3. Young Scientists (150 USD)
(students under 30 years old with valid institution I.D. card)
 4. Accompanying person (150 USD)
- Registration fees (1-3) cover entries to all scientific events at the venue, Congress documents abstracts, Transactions of Symposia and welcome party.
 - The accompanying person registration fee (4) covers entries to exhibition at the venue, welcome party and a complimentary day-tour programme.

Late registration: a surcharge of 20% for payment received after 31 December, 2001.

ACCOMMODATION

Hotel Rates

A	100	USD up
B	80-100	USD
C	60-80	USD
D	40-60	USD

For accommodation close to venue, reservation will follow first come first serve basis. (Current exchange rate: 1 USD = 41 TB)

TIMETABLE AND DEADLINES

30 April 2001	Closing date for abstract submission
30 May 2001	Fourth Announcement
31 December 2001	Final date for registration of Authors and submission of papers
31 December 2001	Final date for participant registration without late fee
14-21 August 2002	The 17 th World Congress of Soil Science

COMMISSION I
SOIL PHYSICS

01 Effect of soil structure and properties on preferential flow dynamics and pollutant transport in soils

Stress should be laid on the transport of aqueous solutions and contaminants that can affect soil and water quality and human health. Special attention will be given to combining soil structure data and measurements in order to model water and mass transfer. An important aspect should be to consider soil as a structured and non-rigid material in preferential flows.

Keywords: soil structure, hydraulic conductivity, preferential flow, mass transfer, water quality, contaminants.

Convenor: Hans-Joerg VOGEL

Univ. of Heidelberg, Institute of Environmental Physics, Im Neuenheimer Feld 229, D-69120 Heidelberg, Germany.

Email: hjvogel@iup.uni-heidelberg.de

Thai co-convenor: Somphob JONGRUAYSUP

Soil Science Div., Dept. of Agriculture, Phahoyothin Road, Chatuchak, Bangkok 10900,

Tel: 66 2 579-7516,

Email: sompob@doa.go.th

02 Landscape scale research: methodology, concepts and consequences for soil and water quality

Papers dealing with research methodology according to the scale of investigation and the factors to be taken into account so as to understand and predict environmental problems. Particular attention should be paid to describing soil variability, the processes at this scale and their evolution over time.

Keywords: catchment, field scale, runoff, soil variability, modelling, transport processes.

Convenor: Chris MORAN

Land and Water, GPO Box 1666, Canberra ACT 2601, Australia,

Tel: 61 2 6246 5926, Fax: 61 2 6246 5965,

Email: chris.moran@csiro.au

Thai co-convenor: Monkol PANICHKUL

Soil Science Div., Dept. of Agriculture, Phahonyothin Road, Chatuchak, Bangkok 10900, Tel: 66

2 579-7514, Fax: 66 2 940-5942,

Email: monkolpa@doa.go.th

03 Influence of biological activity on soil physical properties

This symposium address the role of biological activity in soil structure formation, degradation and remediation, in relation to soil management practices. Consequences for soil organic matter, and for the development of plant and micro-organisms, in systems subjected to high constraints.

Keywords: soil structure, soil management, micro-organisms, fauna, organic matter.

Convenor: Bev D. KAY, Professor

Soil Conservation and Management, Dept. of Land Resource Science, Univ. of Guelph, ON, N1G 2W1, Canada,

Tel: 519 824 4120 ext 2484,

Fax: 519 824 5730,

Email: bkay@lrs.uoguelph.ca

Thai co-convenor: Prasop VIRAKORNPHANICH

Development of Vegetable and Fruit Production in Northeast, Dept. of Agriculture, P.O. Box 19, Muang, Khon Kaen 40001,

Tel: 66 43 261-306/7, Fax: 66 43 261-308,

Email: prasop@doa.go.th

04 Use of soil data in predicting soil physical properties: importance, limitations and conditions of validation

New concepts and tools have been developed over recent years in order to use soil data for predicting physical properties. Which types of soil data are needed? How to use these data to carry out a diagnosis on soil physical quality? Which are the conditions of validation, according to the surrounding environment, in particular in terms of chemical and climatic conditions and of soil management?

Keywords: water retention, porosity, texture, structure, organic matter, physico-chemical data, clay.

Convenor: Daniel TESSIER

INRA, Soil Science Unit, route de Saint Cyr, F-78026 Versailles, France,

Tel: 33 1 30 83 32 43, Fax: 33 1 30 83 32 59,

Email: tessier@versailles.inra.fr

Thai co-convenor: Tawachai Na NAGARA

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Tel: 66 2 579-6511, 66 2 561-4681,

Fax: 66 2 561-4681,

Email: ttnagara@doa.go.th

COMMISSION II SOIL CHEMISTRY

05 Properties, functions, and dynamics of organic matter in tropical soils

The role of SOM in tropical soils is paramount. In many tropical regions, there is great concern over soil degradation and loss of SOM via erosion processes. This symposium will explore chemical and microbiological aspects of SOM dynamics and processes in tropical soils.

Keywords: C and N cycling, soil degradation, C sequestration, management and dynamics of SOM.

with WG. MO

Convenor: Ladislau MARTIN-NETO

EMBRAPA/CNDDIA, Rua XV de Novembro 1452, 13560, 970 Sao Carlos SP, Brazil,

Fax: 55 162 725 958

Thai co-convenor: Sumalee SUTHIPRADIT

Dept. of Agricultural Science, Natural Resources and Environment, Naresuan Univ., Phitsanulok 65000,

Email: osfst@nontri.ku.ac.th

06 Frontiers in the chemistry and biochemistry of the soil rhizosphere

The chemical and biological processes of the soil rhizosphere are greatly influenced by intense interactions of soil minerals with microorganisms, microbial metabolites, root exudates, and organic components.

Keywords: root exudates, rhizosphere, microbial metabolites, organic acids.

with C. IV; WG. MO

Convenor: P.M. HUANG

Dept. of Soil Science, Univ. of Saskatchewan, Saskatoon, Sask. S7N 0W0, Canada,

Email: huangp@sask.usask.ca

Thai co-convenor: Paiboon PRABUDDHAM

Dept. of Soil Science, Kasetsart Univ., Chatuchak, Bangkok 10900,

Tel: 66 2 942-8104, Fax: 66 2 942-8106,

Email: osfst@nontri.ku.ac.th

07 Effects of soil chemical and biochemical processes on soil global climate change

There is a veritable need to better understand the relationship between greenhouse gas (CO₂ and CH₄) emissions from soils and global change. This symposium will focus on processes of accumulation and decomposition of soil organic matter and propose new techniques and soil management practices to better control organic mineralization and reduce greenhouse gas emissions to the atmosphere.

Keywords: greenhouse gas emissions, mineralization, SOM decomposition.

with C. VII, VIII; WG. MO

Convenor: Alessandro PICCOLO

Dept. de Scienze Chimico-Agrarie, 80055 Portici, NA, Italy

Thai co-convenor: Pirmpoon KEERATI-KASIKORN

Dept. of Land Resources and Environment, Fac. of Agriculture, Khon Kaen Univ., Muang, Khon Kaen 40002,

Tel: 66 43 364-639, Fax: 66 43 244-474,

Email: pirm@kku.ac.th

08 Use of molecular scale techniques in determining contaminant speciation and soil remediation

This symposium will focus on the use of molecular scale techniques, including spectroscopic, microscopic, and others, complimented by macroscopic approaches, to study the speciation, transformation, transport, immobilization, and bioavailability of nutrients, metals, oxyanions, radionuclides, and organic chemicals in the soil environment and impacts on chemical and biological remediation.

Keywords: in-situ spectroscopic and microscopic techniques, mechanisms of soil chemical reactions, contaminant speciation and remediation.

with WG. MO

Convenor: Donald L. SPARKS

Dept. of Plant and Soil Science, Univ. of Delaware, 153 Townsend Hall, Newark DE 19717-1303, USA, Tel: 302 831 2532, Fax: 302 831 0605,

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Email: agrtna@nontri.ku.ac.th

COMMISSION III

SOIL BIOLOGY

09 Composition of soil microbial and fauna communities: new insight from new technologies

The proposed session would address new methodologies including molecular techniques linked with taxonomy, function, global distribution, GIS and soil biota for predicting soil type and plant diseases, and the spatial relationships of soil biodiversity to plant communities. In addition, full genome sequences for some important soil microorganisms are becoming available in 2000 and the analysis of this new information should be ready for summarization in 2002.

Keywords: biodiversity, microfauna, mesofauna, taxonomy, function.

Convenor: L. Anne GLOVER

Dept. of Molecular and Cell Biology, Univ. of Aberdeen, IMS, Foresterhill Aberdeen AB25 2Z, Scotland,

Tel: +(0)1224 273099, Fax: + (0) 1244 273144,

Email: L.a.glover@abdn.ac.uk

Thai co-convenor: Omsub NOPAMORBODI

Dept. of Agriculture, Phahonyothin Road, Chatuchak, Bangkok 10900,

Tel: 66 2 579-0574,

Email: omsub@doa.go.th

10 Research to enhance carbon sequestration in soils

This session would include following topics: (1) What level of sequestration can be expected, (2) New advances in C and N dynamics (3) Application of new methods to characterize the molecular-scale nature of SOM. (4) Challenges in measurement and monitoring methods for soil C sequestration, and (5) Regional and larger-scale analyses of strategies for soil C sequestration that include environmental and economic issues.

Keywords: C storage, C sequestration, SOM, N dynamics.

Convenor: Gary K. JACOBS

Oak Ridge National Laboratory, Bethel Valley Road, P.O. Box 2008, Oak Ridge, Tennessee 37831-6605, USA,

Tel: 865 576 0567 Fax: 865 574 7287,

Email: jacobsgk@ornl.gov

Thai co-convenor: Ampan BHROMSIRI

Fac., of Agriculture, Chaing Mai Univ., Chaing Mai,

Tel: 66 53 944-037, Fax: 66 53 944-666,

Email: am_b@yahoo.com

11 Microbial processes and populations in sub-merged soils

The proposed symposium will bring together expertise in rice soils and wetlands with talks addressing such issues as maintenance and turnover of soil organic matter; effects of fluctuation aerobic and anaerobic microbial populations on nutrient and C dynamics; microbial parameters as indices of soil productivity; and linkages of microbial activity and diversity to rate processes governing organic matter and nutrient dynamics.

Keywords: wetlands, SOM, sustainability, nutrient dynamics.

Convenor: Roland BURESH

Agronomy, Plant Physiology and Agroecology and Soil & Water Sciences Division, International Rice Research Institute, P.O. Box 3127, 1271 Makati City, Philippines,

Tel: 63-2-845-0563, Fax: 63-2891-1292,

Email: r.j.buresh@cgiar.org

Thai co-convenor: Archara NUNTAGIJ

Soil Microbiology Research Group, Dept. of Agriculture, Chatuchak, Bangkok 10900,

Tel: 66 2 579-0065, 66 2 579-7522/3 ext. 333,

Fax: 66 2 561-4763,

Email: achara@doa.go.th

12 Manipulating soil microbial and enzymic activities

This symposium will cover following topics : soil ecology and its manipulation; the potential of inoculant technology in the 21st century; microbes and enzymes in bioremediation; advances in rhizobial and mycorrhizal technology; biocontrol agents and their place in the reduction of pesticide usage; manipulation of biogeochemical cycles and the impact of changes in climate and land use; plants and microbes 'designed' to suit soils, climates and consumer needs.

Keywords: microbial inoculant, biocontrol, bioremediation, biogeochemical cycle.

Convenor: R.G. BURNS

Dept. of Biosciences, Univ. of Kent, Canterbury, Kent CT2 7NJ, UK,

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Thai co-convenor: Nantakorn BOONKERN

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Tel/Fax: 66 44 224-750,

Email: nantakon@ecs.sut.ac.th

COMMISSION IV SOIL FERTILITY AND PLANT NUTRITION

13 Management of organic matter for soil fertility improvement in humid tropical environments.

The conversion of tropical rain forest to agricultural land use brings many challenges to the soil scientist. This symposium will offer the opportunity for review of current ideas about the optimal approaches to soil fertility management for the future – comparing the traditional practices of shifting cultivation, the impacts of high-input agriculture and attempts to bring forward practices which combine the best of both.

Keywords: shifting cultivation, organic matter, fertilizers, fallows, nutrient cycling.

Convenor: Bernard VANLAUWE

International Institute for Tropical Agriculture (IITA), c/o Lambourne & Co., Carolyn House 26 Dingwell Rd., Croydon CR9 3EEUK,

Tel: +234 22 412626/ 400300,

Fax: +874 1772276 (IN MARSAT),

Email: iita@cgiar.org

Thai co-convenor: Manas SANMANEECHAI

Dept. of Soil Science and Conservation, Fac. of Agriculture, Chiang Mai Univ., Chiang Mai 50000, Tel.: 66 53 944-037.

Email: smanas@ksc.th.com

14 Soil fertility as an ecosystem concept

The relationships between soil and plant are integral to ecosystem productivity and its sustainability over time. These relationships can be described over a range of scales in time and space (e.g. for a plot, a farming system, a watershed) and are the product of a variety of interacting soil properties and feed-back effects. This concept of soil fertility as an ecosystem property goes beyond the conventional agronomic equation of soil fertility with nutrient availability. The papers in this symposium should explore these issues within the context of sustainable soil management.

Keywords: soil fertility, ecosystem services, nutrient cycling, biota, quality.

Convenor: Michael J. SWIFT

Tropical Soil Biology and Fertility Programme (TSBF), P.O. Box 30592, Nairobi, Kenya,

Tel: +254-2-622657, Fax: +254-2-622733,

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Thai co-convenor: Amnat SUWANARIT

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15 Perceptions of soil management: matching indigenous and scientific knowledge systems.

Many societies have developed particular and detailed ways of describing and relating to the soil – which often go beyond the merely utilitarian. Although Western science tends to promote the idea of a homogenous method the perceptions of scientists from the different 'sub-disciplines' of soil science also vary. This symposium will explore the lessons to be learned from comparing differing concepts of the soil.

Keywords: knowledge, ITK, reductive science, culture.

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16 Mechanisms and indicators for efficient nutrient use through integrated soil management

Integrated soil fertility management, the combined use of organic and inorganic sources of nutrients has been widely accepted as the necessary approach to combat nutrient depletion and promote sustainable agricultural production. Advocacy of the approach assumes an increase in the efficiency of nutrient use but there is little agreement as to indicators of this effect. Nor are the mechanisms whereby it occurs generally agreed. This symposium will review current research on these topics.

Keywords: nutrients, efficiency, immobilisation, indicators, INM.

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17 Use of natural nutrient sources and amendments: which, where, when and how?

Natural sources of nutrient, such as phosphate rock, are still under-exploited in many parts of the world, and the value of other amendments such as volcanic ash and sediments tend to be underestimated. This is at least partly to be ascribed to the low nutrient availability of the nutrient in these sources. Papers may report on the results of the monitoring of such inputs, of experiments on the use of such inputs under field conditions and on the development, performance and sensitivity of relevant models.

Keywords: phosphate rock, volcanic ash, sediments, lime, valuation, test, models.

Convenor: Bert JANSSEN

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COMMISSION V

SOIL GENESIS, CLASSIFICATION AND CARTOGRAPHY

18 Anthropogenic factor of soil formation

This symposium is intended to look at the human influence on physical, chemical, and biological characteristics of soils in the past and present from the point of view soil classification, genesis, and use and management including quality loss and degradation. There are many places in the world in which the human influence has changed the soil quality drastically yet these changes are not properly recognized. Marks to identify the kind of human influence on soils will also be part of this symposium.

Keywords: soil genesis, anthropogenic influence, soil classification, soil quality and management.

Convenor: Rudi DUDAL

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19 Soil system and land use

Examples of soil systems; morphology of soil at different scales (from landscape to micro), vertical and lateral differentiation of soil profiles, past and present; relationship between soil systems and human activities; the development of human activities according to the soil systems; the transformations of soil systems by the human activities; consequences of soil system transformations; how to discover and represent structural analysis; soil management according to soil systems.

Keywords: soil morphology, structural analyses, soil management, human influence.

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20 Arid and semi-arid soils: records of past climates, carbon sequestration, genesis and management

Genesis of arid and semi-arid soils (especially the formation of calcic, gypsic, and salic horizons); management problems; and the use of these soils for archaeological interpretations are the main focal points of this symposium. The role of arid soils in carbon cycle and carbon sequestration; paleoclimate reconstruction are not well understood in the past and it is the aim of this symposium to bring together soil scientists, geologist and archaeologist to fill the interdisciplinary gap.

Keywords: genesis, formation of calcic gypsic and salic horizons, soil management, archaeology, carbon cycle (sequestration), paleoclimate.

Convenor: Brenda BUCK

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21 Soil classification, accomplishments and future

Presently there are many national soil classification systems and the World Reference Base. All these systems are developed and enhanced our knowledge of the soil resources. Because these soil classification systems represent and foster our understanding and helps communication on the world soil resources, we need to continue to widen our understanding. The purpose of this symposium is to bring scientists together to examine issues related to further developing and strengthening our understanding of soil classification systems for better use and management of soils.

Keywords: soil classification, soil taxonomy, national soil classification systems, soil classification paradigms.

Convenor: Mabel Susana PAZOS

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COMMISSION VI SOIL TECHNOLOGY

22 Technologies to overcome rootzone soil constraints

This symposium will discuss (1) the occurrence of soil constraints to agricultural productivity, particularly in subsoils, caused by sodicity, salinity, acidity, poor soil structure, poor biological health and ion toxicities, and (2) management strategies to overcome these constraints and remediation measures including agronomic practices and microbial methods.

Keywords: subsoil constraints, salinity, sodicity, acidity, biological health, ion toxicity.

Convenor: Pichu RENGASAMY

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23 Models and parametric methods for predicting soil degradation

This symposium will discuss (1) the soil processes leading to its degradation including all aspects - chemistry, physics and biology (2) quantification of the processes (3) modelling the processes and predictive parameters and (4) decision support systems for degraded soils.

Keywords: soil degradation, soil processes, modelling, parameters for predicting soil degradation, decision support system.

Convenor: Edward T. ELLIOTT

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24 Use and abuse of industrial and urban wastes in agricultural soils

This symposium will discuss (1) use of soils and clays for waste management which includes containment, re-use and disposal (2) use of wastes as resources for the improvement of soils and landscapes (3) strategies and policy development in the management of urban and industrial wastes, and (4) diagnosis and monitoring of soil pollution.

Keywords: waste management, re-use, soils and clays, diagnosis and monitoring of soil pollution, strategy and policy development.

With Com. VIII

Convenor: Jock CHURCHMAN

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**COMMISSION VII
SOIL MINERALOGY**

25 Mineralogy and geochemistry of regolith

The transition of rock to soil is a long lasting sequence of processes. This is especially the case in landscapes of the tropics. Knowledge of neoformation changes taking place in the regolith allows not only a better understanding of weathering processes and mineral neoformation as a consequence of climate and the geochemical environment but also a better insight into the influence of mineralogy and geochemistry on fertility, hydrology, stability and contaminant mobility in soils.

Keywords: weathering, geochemical environment, tropical climate, secondary minerals.

Convenor: Rob W. FITZPATRICK

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26 Reaction of soil minerals on changes of climate and land management

Soil minerals are the memory of the soils, left to be recorded through the period of soil development. Climate and land management changes can alter the soil mineralogy as a whole or partially within the soil body. Soil environment changes such as drained acid sulfate soils, secondary saline soils, man made and rehabilitated mine soils affect mineral assemblages of soils including changes in the silicate, oxide, and carbonate in soils.

Keywords: heritage, soil memory, climatic marker, paleoenvironment, mineral stability, equilibrium.

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27 Mineralogy and micromorphology of pedogenesis including isotope methods and dating of soil processes.

The qualitative and quantitative assessment of soil genesis often needs insight into the changes in the nature of pedogenic minerals as well as their arrangement within the soil matrix. In order to

reconstruct the conditions of active or past processes isotope abundance in soil minerals may be used for the assessment of environmental conditions and for age determination. Spectroscopic analysis of soil minerals are also widely used in this field of research.

Keywords: soil genesis, micromorphology of weathering and neof ormation, isotope fractionation.

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28 Soil mineralogy in relation to soil fertility and toxicity

Modern electron optical, spectrometer and microanalytical methods enable soil scientists to identify the minerals that control the solubility and bioavailability of nutrient and contaminant elements. *Studies of contaminated soils have identified heavy metal compounds and for heavily fertilized soils the associations of sorbed phosphate with soil minerals can be distinguished.* Such information is invaluable in research aimed at managing and remediating soils and sediments contaminated by nutrients and heavy metals.

Keywords: heavy metals, contamination, pollution, microanalysis, sorption.

with Com. II, IV

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COMMISSION VIII

SOIL AND THE ENVIRONMENT

29 Urban and sub-urban soils: specific risks for human health (Urban agriculture)

There is a growing concern regarding the management of urban and sub-urban soils, which has been underestimated. Excess applications of fertilizers, pesticides, and hazardous wastes may have a direct impact on human health, and as sources of soil and groundwater contamination, they create a further risk for human health.

Keywords: urban agriculture, food production, heavy metal, plant uptake.

Convenor: Jean-Louis MOREL

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30 Food security and land use

World's population now exceeds 6 billion, and continues to increase. The responsibility of the agri-food sector is to assist in developing policies that will ensure safe food availability in a global market, considering that one third of the world's land is presently used for agricultural production. There are therefore very close links between food security and environmental issues that will be discussed in this symposium.

Keywords: sustainable intensive agriculture, productivity index, maximum yield, optimum yield.

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31 Exploring the attitude towards soil and land use

Global issues such as soil degradation and sustaining soil functions in agro-ecosystems bring social aspects to the technical knowledge base of soil science. Indigenous soil knowledge broadens our approaches to use of soils. It is thus important to look at different cultures, and across time in a culture. Have our ideas evolved, and where are we now? Can a study of these differences guide us in confronting these new realities of the 21st century?

Keywords: global land ethic, on-farm research, indigenous soil knowledge, new teaching requirement.

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32 Soil indicators for sustainable land use

Soil indicators are important for assisting decision-makers in the development of policies regarding land use and management. Indicators are also useful for monitoring our progress towards sustainable land use. Such indicators are being developed by several countries and also examined at the international (e.g. OCDE) level. The objective of the Symposium will be to evaluate the progress in the development and use of the soil quality indicators for sustainable development.

Keywords: soil quality, soil functions, soil health, land management.

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SUBCOMMISSION A

SALT AFFECTED SOILS

33 Salt affected soils and the environment

This symposium will address the information on soil salinity including its development and distribution naturally or human induced into agricultural land, surface and underground water; and its impact on the environment. Papers dealing with research methodology, planning and management of salt-affected soils in inland and coastal and their impact on the environment including soil, water, quality, vegetation and crops and living organism are most welcome.

Keywords: salinity, water quality, wetlands, ecology, impact, restoration.

Convenor: Jorge BATTLE-SALES

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34 Salinization, water management and policy

Soil salinization in suitable agriculture land has been expanded rapidly due to sea water aquaculture, pumping of underground water, seawater and freshwater irrigation development and mis-agricultural management. The discharged water into surface and underground water need to be properly managed. This symposium will deal with concepts, planning, and management policy, and monitoring technology to control salinization and introduce water management systems.

Keywords: salinization, brackish water, incentives, policy, irrigation, salinity control, modelling.

Convenor: Donald SUAREZ

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SUBCOMMISSION B

SOIL MICROMORPHOLOGY

35 Soil micromorphology to quantify soil structure qualities

The characterization of the soil pore system; the types of soil structure and their changing following agricultural activity and seasons; soil pore system, water retention and water movement; soil porosity as an indicator of soil degradation aspects (compaction, crusting, etc.).

Keywords: micromorphometry, porosity, quantification, soil degradation.

Convenor: Fabio TERRIBILE

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36 Soil micromorphology and submicroscopy for interpretation of soil qualities

Micromorphology as a tool to deduce processes of soil formation and transformation; natural and human induced processes; chronology of past and present processes; influence of processes on soil quality; relation between soil management practices and micromorphological characteristics; micro-morphology and experimental pedology; quantification of processes.

Keywords: micromorphology, pedogenic processes, chronology, micromorphometry.

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SUBCOMMISSION C

SOIL AND WATER CONSERVATION

37 Identification and determination of soil quality parameters to evaluate the sustainability and socioeconomic impacts

The soil and water conservation involve the productivity and socioeconomic development for agricultural sustainability under the specific agro-ecological condition. The parameters to evaluate soil quality should deal with the bio-physical characteristics as well as soil resilience and soil loss tolerance both on theoretical and methodological approaches.

Keywords: soil quality, health, productivity, and environmental functions; total impacts of degradation on soil quality; economic feasibility of restoring soil quality.

Convenor: Sonia Carmela Falcı DECHEN

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38 Advances integral modeling to make decision in soil conservation

At this decade, soil information systems for soil conservation is quite essential as well as the integral modeling in soil conservation for decision making. Strategies research should be made on a constructive and innovative direction on the concept of conservation and development for sustainable agriculture.

Keywords: transforming information into decision aids; combining and sharing databases, models, and experiences; science-based and realistic scale conservation planning.

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SUBCOMMISSION E FOREST SOILS

39 Amelioration of degraded soils through afforestation

Vast areas of land which have previously been supporting forests, are degraded. Inappropriate soil management (e.g., heavy machinery), mining, land pollution and inadequate drainage, has caused soil degradation by erosion, changing physical (compaction, reduced infiltration), chemical (salinity, excessive acidity, nutrient losses), and biological (soil C, microbial-activity, mineralization) properties in soils. Amelioration by afforestation is an important issue in 21st century.

Keywords: afforestation, erosion, mining, pollution, compaction, chemical and biological properties.

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40 New developments in the evaluation and management of forest soils

Evaluation of soils for forestry is required for proper selection, establishment and productivity of tree species. Due to limitation in the classical soil survey many recent developments in the field and laboratory techniques have occurred which included: remote sensing, radiometry, IR and NIR spectroscopy, stable isotope analysis. GIS and other land based techniques are used to assess soils on a regional scale. Potential use of these techniques and recent improvements in managing forest soils will be explored.

Keywords: forest management, site evaluation, remote sensing, isotopes, GIS.

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SUBCOMMISSION G SOIL REMEDIATION

41 Techniques for remediation of contaminated soils: physicochemical techniques

The symposium will focus on the validation and application of in situ remediation techniques that are based on changing the speciation and mobility of organic and inorganic pollutants in soils. Technologies involving active (e.g. electrochemical) and passive (e.g. use of soil amendments) will be covered. There will be special emphasis on the applications of these technologies under field conditions and how their use relates to current national criteria for soil remediation.

Keywords: soil remediation, electrochemistry, soil washing, soil amendments, field trials, legislation.

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42 Techniques for remediation of contaminated soils: biological techniques

This symposium will cover important aspects of fundamental research and innovative technologies for soil remediation, and include both Phyto- and Bioremediation. It will focus mainly on in situ techniques, risk assessment and legislative aspects relevant to bioremediation. Technologies covered will include land farming, composting, biopiling, air-sparging, biofilters, phytoremediation and phytoextraction. Target pollutants include inorganic pollutants, heavy metals, POPs, oils, petroleum hydrocarbons, etc.

Keywords: soil remediation, risk assessment, bioremediation, heavy metals, POPs, oils, petroleum hydrocarbons.

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WORKING GROUPS & STANDING COMMITTEES

CR: Cryosols

43 Cryosols and cryogenic environments in the 21st Century

This symposium will focus on current research activities relating to Cryosols, with special attention being paid to those activities involving present-day issues such as global climate change at high latitudes and how the management and use of these soils affect the cryogenic environment. Since most Cryosols contain large amounts of carbon and ice, climatic changes and human activities may have a great effect on them. Therefore, future research activities should be directed towards acquiring a greater understanding of these soils and the associated environments in order to provide the information needed to deal with the diverse situations that may arise. The papers presented at this symposium will provide some indication of where we are and what we need to do to deal with some of the challenges facing us in the future.

Keywords: permafrost-affected soils, cryosols, permafrost, global climate change.

Convenor: Charles TARNOCAI

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44 Global and national digital data bases on soil and terrain conditions, their compilation and uses

The IUSS Working Group on a World Soil and Terrain Digital Database (WG/DM) has been promoting the updating of geo-referenced information on soil patterns, landform and soil profile data. FAO, UNEP and ISRIC in cooperation with national institutes have produced such material at different levels of spatial resolution, as well as its practical applications. The completion of this effort is now becoming urgent, e.g. in view of the Kyoto Protocol on Climate Change, for up-to-date, reliable and easily accessible information on land conditions. The WG/DM intends to have relevant papers published in a special issue of a peer-reviewed international Journal.

Keywords: digital soil information; carbon sequestration; land degradation; land use planning; food security.

Convenor: Wim SOMBROEK

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GC: Soils and Global Change

45 Soil carbon dynamics and the greenhouse effect

The symposium will discuss state-of-the-knowledge in soil C dynamics in relation to the accelerated greenhouse effect. The principal objective is to deliberate the importance of world soils in the global C cycle in a warmer earth. Specific issues to be discussed include effects on soil C (inorganic and organic) dynamics of land use and management, soil erosion and sedimentation, and desertification control and soil restoration. Ancillary benefits of soil C sequestration, including on-site and off-site benefits, and societal value of C will also be debated.

Keywords: soil organic matter, greenhouse effect, soil restoration, soil quality, carbon sequestration.

Convenor: Rattan LAL

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AS: Acid Sulphate Soils

46 Acid sulphate soil management in tropical environments

This symposium will examine the management of acid sulphate soils in tropical environments. In particular papers are sought on the short and long-term environmental consequences of the use of these soils for agricultural production.

Keywords: acid sulphate soils, pH, pyrite, acidity, tropical environments.

Convenor: Freeman COOK

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Thai co-convenor: Jumpol YUVANIYAMA

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MO: Interactions of Soil Minerals with Organic Components & Microorganisms

47 Soil mineral – organic component – microorganism interactions and the impact on the ecosystem and human welfare

The objective of this symposium is to provide a forum for interactions among soil and environmental scientists to integrate our knowledge on physical/chemical/biological interfacial interactions in soil systems and their impacts on human welfare which include global ion cycling and climatic changes, biodiversity, biological productivity and human nutrition, geomedicine, biotechnology, ecotoxicology and human health, remediation and restoration technology, and celestial exploration.

Keywords: Mineral – organic component – micro-organism interactions, interactive soil processes, porosity, transformation and transport, biomolecules, nutrients, pollutants, ecotoxicology, remediation, human health, global changes, space exploration.

with Com. I, II, III, VII

Convenor: P.M. HUANG

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PM: Pedometrics

48 Development in soil data processing

This symposium will focus on ongoing research results within the framework of pedometrics aiming at presenting the state-of-the-art in soil data processing. Topics include analysis of spatial and temporal variability of soil properties; development of decision support systems; assessment of error propagation; quantification of uncertainty and fuzziness of information and evaluation criteria; soil process simulation modelling; design and evaluation of sampling schemes and incorporation of exhaustively sampled information.

Keywords: soil data processing, decision support systems, error propagation, evaluation criteria, soil process, spatial variability, temporal variability.

Convenor: Marc Van MEIRVENNE

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PP: Paleopedology

49 Paleosols as a memory for understanding landscape history and environmental problems

This symposium focuses on unburied paleosols or relict soils formed under a different constellation of soil forming factors mainly a different climate and with it vegetation. The knowledge of

their genesis is essential for understanding soil behaviour, landscape history and for a proper appreciation of many modern environmental problems.

Keywords: relict paleosol, paleosol memory, landscape history, environmental problems.

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PS: Paddy Soils Fertility

50 Sustainable paddy soil ecosystem: a global challenge

To discuss and exchange information on the current initiatives on bio-organic farming on paddy soils; to discuss cost-effective and sound technologies to improve productivity of derelict paddy soils; Evaluate the Valuation Techniques for Irrigation Water Use to resolve emerging conflicts on water demand and pricing between agriculture and urban and industrial sectors; to elaborate impacts of expanding the cultivation of paddy soils on food security and global climate change.

Keywords: food security; bio-organic farming; derelict paddy soils; water valuation and management; carrying capacity; environment and global climate change.

Convenor: Rogelio N. CONCEPCION

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PT: Pedotechnique

51 Manufactured, amended, and intensively tilled soils and substrates

Specific soil and substrate volumes and profiles like urban tree soils, sports grounds, potting soils, dikes, road sides, and revegetated and remediated areas. Measurements and description of initial conditions and source materials, and of final conditions; definition of allowable ranges of properties; development of processing equipment and procedures; optimization of specifications; testing unusual materials that are considered for installation.

Keywords: horticulture, urban horticulture, sports grounds, civil engineering, revegetation, remediation.

Convenor: Jos KOOLEN

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RS: Remote Sensing for Soil Survey

52 Remote sensing for data fusion and GIS as tools in land evaluation and degradation studies

This symposium deals with topics on application of remote sensing techniques to soil and land resources studies. The topics include databases for land resources information, surface modelling, extracting remote sensing data for soil chemical properties, DEM and GIS for soil mapping and combining remote sensing data with field data, changing monitoring, disaster management, multitemporal remote sensing-derived LAI as indicator of land qualities and multitemporal approaches to studies and to achieve sustainable land use.

Keywords: remote sensing techniques, data fusion, surface modelling, DEM, GIS, land evaluation.

Convenor: Michel A. MULDER

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SM: Environmental Soil Mechanics

53 Coupled hydraulic and mechanical processes in structured soils – a challenge to define sustain-ability

The determination of hydraulic properties of structured soils requires amongst others pore or volume rigidity which neither by mechanical nor by pore water suction effects will be altered. However, natural soil processes like swelling and shrinkage or stress effects may induce soil volume, functions, and changes in ecological functions as soon as the internal strength (= history of the soil) is exceeded. During the symposium more detailed information about such coupled processes will be given.

Keywords: soil hydraulic properties, pore continuity changes, pore strength, mechanical stress, volume deformation.

Convenor: Rainer HORN

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SP: Soil and Groundwater Pollution

54 Vadose zone management strategies to prevent groundwater pollution

Chemical pollution generated by agricultural, industrial and municipal activities has contaminated soil and groundwater worldwide. Management strategies that target the rooting zone offer opportunities for preventing or limiting groundwater pollution and for soil remediation. The symposium is seeking papers on experimental and numerical modeling techniques that focus on management of the vadose zone. Interdisciplinary contributions among soil physicists, chemists and biologists are encouraged.

Keywords: unsaturated zone, contaminant transport, vadose zone-groundwater coupling, soil remediation.

Convenor: Jan W. HOPMANS

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SU: Soil of Urban, Industrial, Traffic and Mining Areas

55 Improving knowledge about soils and their functions in urban, industrial and mining areas for a better life:

Humans are establishing a new environment for soils and create new soils. This is most pronounced in urban, industrial and mining areas. In these areas soils will go on to contribute essentially to life quality. We have to improve the knowledge for both: the features of these categories of soils and their potential to fulfill functions. In addition we have to learn more about the special fields of the use of soil information.

Keywords: soil functions, urban soils, industrial soils, mine soils, traffic soils, soil information, soil degradation, soil use, environment and soils.

Convenor: Wolfgang BURGHARDT,

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CES: Education in Soil Science

56 Soil education and public awareness

The symposium will deal with: how to speak about soil on global and interdisciplinary perspectives such as soil in the ecological and human systems, and presentation of examples of education experiences including field works. Specific topics include pedagogical strategies, formation of the teachers, educational role of soil science specialists.

Keywords: soil education, global soil, interdisciplinary approach, soil science teachers, soil science specialist, pedagogical strategies.

Convenor: Mireille DOSSO

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FA: Soil Organic Fertilizers and Amendments

57 Soil properties as influenced by the addition of organic fertilizers and amendments

The Symposium will focus on the influence of organic fertilizers and soil amendments on soil physical, chemical and physical properties, and soil fertility. It will also discuss the effect of these materials on soil development along with environmental issues related to their uses.

Keywords: organic fertilizers, soil amendments, soil properties, environmental issues.

Convenor: Tom SIMS

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58 Soil organic fertilizers and amendments: an outlook on key environmental and sanitary issues

The symposium will encompass the discussion on different aspects of the effect of organic fertilizers and amendments added to the soils. These include the Kyoto Protocol, the role of soil organic fertilizers and amendments on the completion of nutrient cycles, recombinant DNA in soil from the use of organic fertilizers and amendments and the risk of TSE/BSE infection from the use of organic fertilizers made of animal residues.

Keywords: Kyoto Protocol, organic fertilizers, soil amendments, nutrient cycles, recombinant DNA, TSE/BSE infection, animal residues.

Convenor: Paolo SEQUI

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Special Symposium

59 Towards integrated soil, water and nutrient management in cropping systems: the role of nuclear techniques

This Symposium focuses on soil organic matter dynamics and nutrient cycling, evaluation and management of nutrient sources, water management and conservation, soil erosion and sedimentation, plant tolerance to environmental stress, environmental and pollution studies and advances in nuclear-based methodologies and instrumentation

Keywords: fertilizers, isotopes, plant nutrition, soil degradation, soil fertility, water.

Convenor: Phillip CHALK

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SG: Soils and Geomedicine

60 Comparison of bedrocks, soils, chemical climate and pollution as geomedical factors

Much interest has been shown in recent years on the influence on human health from soil pollution. Less attention has been paid to health problems associated with natural chemical and physi-

cal factors of the soil and bedrock. Most frequently these problems are associated with local geochemistry, but influence of climate on the cycling of chemical substances in the environment may also play a significant role. The symposium will discuss the relative importance of these factors to human and animal health.

Keywords: geomedicine, bedrock, soil, health, natural factors, chemical climate, pollution.

Convener: Eiliv STEINNES

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IC: International Soil Convention

61 Soil Convention

A background to the rising interest in the global community of the environmental benefits to soil through the introduction of a global policy for sustainable use of soils and an international environmental law instrument; the international actions for furthering sustainable use of soils; progress made in the development of the global sustainable soil convention.

Keywords: sustainable use of soils, soil convention, international environmental law and policy, soil and land degradation, global soil policy, sustainable land management.

Convener: Hans HURNI

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62 WOCAT: World overview of conservation approaches and technologies

A multi-institutional, world-wide programme called WOCAT: World Overview of Conservation Approaches and Technologies was launched in 1992. To date, more than 25 institutions from over 20 countries have joined the WOCAT global network, and about 300 individuals have submitted databases on successful Technologies and Approaches in Soil and Water Conservation. Participants of this symposium will obtain an overview of current WOCAT activities and main results in different countries, with an emphasis on internet online data and on SE Asia.

Keywords: soil and water conservation (SWC), SWC technology, SWC approach, evaluation of SWC, standardised data base, internet online data, decision-support system (DSS).

Convener: Hans Peter LINIGER

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POSTER SESSION

Content of each paper displayed on poster board should include;

1. Title of Paper
2. Names of Author/s
3. Abstract
4. Objectives
5. Materials and Methods
6. Important Findings
7. Relevant List of References

The actual area for display on board is 90 cm (horizontal) x 120 cm (vertical). All characters on board should be legible from a distance of 2 meters.

ABSTRACT

An abstract of 500 words is required for each Symposium paper. The abstract should contain brief note on materials and methods, clear objective/s and highlight/s of the findings and discussion. It is essential since the abstract will be reviewed by the Convenors and members of the Scientific Committee for selection as oral paper or poster paper. Early submission of abstract is advised to facilitate further communication. Author is requested to list three numbers of the Symposia, according to the preference for paper submission. Results of the review will be sent back to the author promptly for further necessary action.

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- E-mail attachment to abstract@17wcss.ku.ac.th in one of the following formats: **MS Word 95, 97 or 2000** (earlier versions of Microsoft Word are acceptable)
- **Times (New) Roman script; left and right margins spaced at 30 mm; top and bottom margins at 35 mm**
- **Title in English**, bold 18 point letters, centred, maximum 2 lines
- **Surnames of the author/s** in bold, 12 point capital letters, **first names** in bold 12 point letters. **Name of the author presenting the paper at Congress, must be underlined**
- **Institution/s** and **Full address/es** of author/s in 12 point letters, authors' titles not necessary to be included
- **Text in English**, 12 point letters, with single spacing between the lines, justified. **A maximum of 500 words in single A4 page (210x297 mm)**
- **Maximum of 6 Keywords in English**

THE 17th WCSS TOURS

I. PRE- AND POST-CONGRESS TOURS

Specific details of the tours will be provided to those who register. Late applicants to tours may have to pay a surcharge of 20% and registered participants who cancel after the cut-off date will be charged 20% of the tour cost. Tours will be cancelled if a minimum number of participants have not registered and paid. Registered participants of cancelled tours have the option to change to another tour or the money is refunded.

A – Pre-Congress Tours

B – Post-Congress Tours

A1- B1: Northern Thailand Tour

Duration: 6 days, 5 nights. Itinerary: Bangkok – Phetchabun – Sukhothai – Lampang – Chiang Mai. (Distance: approximately 1,000 km).

The excursion will emphasize the diversity of the regions beginning from the Central Plain via Pasak valley to the North. An important soil in the Central Plain is the acid sulfate soil. Management of these soils has been a major challenge. Just north of Bangkok, reclamation of an acid sulfate soil for orchard farming will demonstrate some of the successes that have been achieved. The Pasak valley is characterized by a different landscape with soils derived from basic igneous rocks. These soils are intensively cultivated. Further north, the highlands of Pitsanulok and Chiang Mai present other land use and conservation problems. The area is greatly affected by human activities and mitigation technology to reduce land degradation will be demonstrated. Traditional and cultural systems are very important to the region and participants will have an opportunity to appreciate how these affect land use and management. Historical and cultural sites like Sukhothai Historical Park, a world heritage center, handicraft manufacturing, elephants at work, hill tribe villages and ancient temples provide a glimpse of the traditions and heritage of the region.

Cost of the tour: Single US\$ 700, Double US\$ 600 per person.

A1- Northern Thailand Tour starts in Chiang Mai and ends in Bangkok from August 8, 2002 to August 13, 2002. Price does not include flight to Chiang Mai.

B1- Northern Thailand Tour begins in Bangkok and ends in Chiang Mai from August 22, 2002 to August 27, 2002. Price does not include return flight to Bangkok.

*Remarks: Arrangements can be made for participants who would like to prolong their stay in Chiang Mai or arrive earlier.

A2-B2: Northeast Thailand and Laos Tour

Duration: 6 days, 5 nights from August 22, 2002 to August 27, 2002. Itinerary: Bangkok – Buriram – Udon Thani – Nongkhai – Vientiane (Laos) (Distance: approximately 850 km)

Known as Isan in Thai, the Northeast presents diversity in terms of landscapes and soils, land use, history and cultural heritage. From Bangkok to the Northeast Plateau, we will visit orchard farming on typical Acid Sulfate Soils of the Bangkok Plain, a dairy farm, and pasture as well as rugged limestone landscape and soils at the escarpment front. On the Northeast Plateau, the tour presents different kinds of landscape, soil type, land use and management. The region consists mainly of sedimentary rocks formed during late Cretaceous to Triassic. Typical sandy soils, lateritic soils, and salt-affected soils will be observed and management problems evaluated. Locally Tertiary basaltic terrain is present with different kind of landscapes and soils. The famous Mekong River, bordering the Northeast and Laos,

is a highlight of the tour. Historically, the river was the lifeline of communities along its banks, aspects of which can still be observed. Along the tour, different kinds of native vegetation like Dipterocarp and dry evergreen forests that are constantly being reduced through shifting cultivation and a variety of land use types including paddy rice, annual upland crops, and tree crops will be shown. This is also one of the few places in the world where inland salt harvesting is taking place and the economic and ecological dimensions of this will be presented.

Isan – the golden gateway to Indochina, is also a region of fascinating historical interest. Stunning and amazing, the largest ancient Khmer style stone temple, a world prehistoric archaeological heritage center of Ban Chiang, and a well-preserved site of dinosaur fossils are among major Isan attractions. At Nongkhai province, a boat trip along the Mekong River will be arranged to enter Laos.

Cost of the tour: Single: US\$ 800, Double: US\$ 700 per person. (NOTE: Tour price does not include cost of return flight to Bangkok. Participants must have visa for Laos).

A3-B3: Southeast Thailand Tour

Duration: 4 days, 3 nights, from August 22, 2002 to August 25, 2002. Itinerary: Bangkok – Pattaya – Chantaburi – Koh Chang Island – Bangkok (Distance: approximately 400 km).

This gem of a tour combines the study of landscapes, soils and agriculture with urbanization and industrialization along the southeast coast. Leaving Bangkok, we will traverse the Bangkok Plains with acid sulfate soils where land-use on one of the most acid soils of the world will be presented. The undulating granitic uplands present another major land-use problem. Intensive cassava (tapioca) cultivation is associated with some of the most extensive soil erosion problems and efforts to contain this will be demonstrated. The tour will spend a night at Pattaya, an unrivalled beach resort with its fine sand, blue sky and limpid sea. However, the negative impacts of tourism are also readily evident. Further to the east, other aspects of land use and management on the granitic terrain will be shown. Near the gem-capital of Chantaburi, a sandy soil with spodic horizon will challenge conventional theories on soil genesis. This is followed with a project on coastal zone management for aquaculture and mangrove conservation. Gem mining from the colluvial material derived from weathering products of Tertiary basalt will be visited along the trip to Chantaburi and impact on land is demonstrated. The area is famous for its fruits and a variety of fruits will be presented for tasting. The fruit culture dates back to several Centuries and this long tradition has been maintained and enhanced. The last night is at an island resort that requires a short ferry ride to reach. The Koh Chang National Marine Park may have less social life when compared with Pattaya, but it affords a tranquil escape amid idyllic surroundings.

Cost of the tour: Single: US\$ 500, Double: US\$400 per person. The tour begins and ends in Bangkok and cost includes last night in Bangkok. Arrangements can be made for persons wishing to spend additional days at Koh Chang.

A4 – B4: Southern Thailand Tour

Duration: 5 days, 4 nights. Itinerary: Bangkok – Hua Hin – Surat Thani – Phang-nga – Phuket. (Distance: approximately 950 km).

Peninsular Thailand is the neck of land connecting continental Thailand with the Malay Peninsula. The backbone is formed by granitic hills whose uplift also resulted in the exposure of sedimentary rocks like shale and sandstone. On the western coast, limestone hills form the classical tropical tower-karst topography. These haystacks are present inland and also dot the shallow waters of the Andaman Sea, giving a surrealistic charm unchallenged in the world. The Pleistocene coastal areas are speckled with

peat and mangrove swamps. The people, to diversify the agriculture and maximize the productive capacity of the land have exploited the combination of landform, climate and soils. Plantation agriculture dominates the southern part with rubber, oil palm, coconut, and fruit trees being the basis of the agro-economy. The coastal platform is also abundant with marine life, which is being managed for human consumption. Deforestation, urbanization, tourism, and mismanagement of land cumulatively threaten the environment.

The Southern Thailand Tour is designed to present a glimpse of tropical weathering and soils, the agriculture, and the land-people interaction. The land/sea interface is an integral part of the life of the coastal inhabitants. Tourism along the coast and erosion in the uplands is threatening this fragile balance. Solutions to sustainable development are generally elusive and some will be presented. Participants will have an opportunity to study the change from rock to soil via the pallid, mottled zones, and geomorphic transformation of the land. Soils on recent marine and fluvial terraces, including wetlands show the diversity of soil resources and conditions of the region. Highlights of the tour include visits to plantations, supra-aqueous ecosystems, village in the sea, and the »island in the sun – Phuket«

Cost of the tour: Single: US\$ 600, Double US\$: 500 per person.

A4 starts in Phuket on August 9, 2002 and ends in Bangkok on August 13, 2002.

B4 starts in Bangkok on August 22, 2002 and ends in Phuket on August 26, 2002.

*Remark: arrangements can be made for participants wishing to stay additional days at the island resort of Phuket. Cost of flight from or to Bangkok not included in the price.

B5: Taiwan Tour

Duration: 7 days, 7 nights from August 22, 2002 to August 28, 2002. Itinerary: Bangkok – Taipei – Ilan – Hualien – Taitung – Kengting – Kaohsiung

From North to east and then to South of Taiwan, passing through the volcanic national park, tectonic plate gorge national park, tropical national park, and beautiful seashore landscape, the tour will cover a wide landscape conditions. The tour will travel from sea level to about 3,000 meters, to demonstrate soils and land use developed from a subtropical to sub-alpine humid forest climates. Despite the small size of the island, there is a tremendous diversity in ecosystems. It will show the effects of climate, vegetation, geology and geomorphological factors on the differentiation of major soils. Highlights include volcanic soils (Andisols), Inceptisols with placic horizon, Spodosols on steep slopes, Histosols in the high mountains, Mollisols and Vertisols on the alluvial terraces, and Ultisols and Oxisols on older sediments. This differentiation has consequences on land use and ecology. The tour will also focus on different agricultural, forestry and pastoral activities and reveal the touristic and cultural richness of the regions, including the representative songs, dance, and scenic sites.

Cost of the tour: Single US\$ 1,200, Double US\$ 900 per person. Price does not include cost to and from Taipei. Participants must have visa for Taiwan.

B6: Yunnan Tour

Duration: 6 days, 6 nights from August 22, 2002 to August 27, 2002. Itinerary: Bangkok – Kunming – Wang Jai – Yuanmou (Soil Forest) – Minority Village – Kunming (Distance: approximately 1,200 km).

A frontier province in the southwest of China, Yunnan, straddles the Tropic of Cancer.

The SHASEA (Sustainable Agriculture in South-East Asia) research team is investigating the effectiveness of soil conservation treatments validated in plot experiments in actual field conditions. This is being achieved by the development and scientific evaluation of modified and novel cropping practices in a representative highland catchment in northeast Yunnan. The Wang Jia Catchment covers 57.2 hectares near Kedu, in Xundian County, northeast Yunnan. The project consists of an evaluation of the effects of modified cropping practices on maize productivity and soil properties. Selected soil conservation treatments have been implemented in the catchment and the environmental and socioeconomic impacts of environment management are being assessed. Evaluated effects include physical, chemical and ecological impacts, the conservation of natural resources, management of wastes, returns for stakeholders, poverty alleviation, income augmentation and rural development. This holistic approach has not been attempted previously in the regions. The catchment is being used as an experimental area and training model for sustainable agricultural development in the South China highlands. Wang Jia is representative of about 85% of upland Yunnan and typifies the Yunnan countryside.

"The Three Forests of Yunan", namely, the Stone Forest in Lunan Yu, the Soil Forest in Yuanmou and the Sand Forest in Luliand, are well-known for their exotic picturesque landscapes which will impress you forever.

Cost of the tour: Single: US\$ 800, Double: US\$ 700 per person. Price does not include flight to and out of Kunming. Participants must have visa for China.

B7: South – Western Australia Tour

Duration: 5 days, 4 nights from August 22, 2002 to August 26, 2002.

This tour will focus on soils and issues of particular importance in southwestern Australia. The region experiences a Mediterranean climate but due to the widespread persistence of Tertiary lateritic soils there are many unique problems for soil scientists involved in land management, agriculture, forestry, hydrology, contamination science and mineral exploration.

Aug. 21. Arrive in Perth, accommodation in a city centre hotel, welcoming dinner at central restaurant;
Aug. 22. Depart Perth for Darling Range to view bauxite laterites, deep weathering, bauxite mining and mine rehabilitation. Opportunities to walk in native eucalyptus rainforest and observe wild flowers. Return to Perth.

Aug. 23. Depart Perth for Wundowie, Bakers Hill and York to view the dissected laterite terrain of the intermediate rainfall zone. Plain topics will be pedogenesis, salinisation, land degradation and remediation, silcrete and ferricrete formation and soil fertility. Return to Perth.

Aug. 24. Depart Perth and travel north via soils on marine and terrestrial sediments. Visit Cervantes to view the Pinnacles a dramatic landscape of calcrete pillars in a mobile coastal dune field. Visits to irrigated horticulture enterprises and an agricultural research farm to examine soil constraints to productivity. Return to Perth.

Aug. 25. *Depart Perth and travel south via the Swan Coastal Plain inspecting soils developed on alluvium and coastal dunes.* The soils range in age from Recent to Tertiary and consequently exhibit a diverse range of pedological features. Mineral sands mining on ancient strand-lines will be visited with associated land rehabilitation including man made wet-lands for migratory birds. The premium wine growing area of Margaret River will be visited to relate wine quality to soil conditions. Return to Perth.

Aug. 26. End of tour; depart Perth.

Cost of the tour: Single: US\$ 800, Double: US\$ 700 per person. Price does not include travel to and from Perth. Participants must have visa to enter Australia.

B8: Philippines Luzon Island Tour

Duration: 6 days and 5 nights from August 22, 2002 to August 27, 2002. Itinerary: Metro Manila – Mt. Pinatubo – -Banaue rice terraces – -Los Banos – -Manila. Distance: approximately 1,200 km.

As a consequence of the 1991 explosive volcanic eruption of Mt. Pinatubo, major portions of deposits on the surface of hills and mountains were mobilized due to heavy rains from 1992 up to 1999. Since then, the Lahar affected agricultural areas have continuously been rehabilitated by the Department of Agriculture to restore its productivity.

On the way to Banaue we can see the grassland plains configured by the rolling hills, while rice fields are on the valleys and alluvial plains. There is a zigzag road where the rain swept eroded mountains could be viewed. The slow climb accents the continuing problem of erosion not only of the mountains on one of the sides but also of the riverbanks on the other side. The Banaue Rice Terraces considered as one of the Eight wonders of the world covers an area of about 40,000 hectares which was constructed 2,500 years ago. Essentially, the system is based on the construction of stonewalled terraces along hilly slope to conserve soil and water. The rice terraces are within the province of Ifugao, which is in the Cordillera Central Range. The uplift was greatly affected by diastrophism faults from northwest to northeast. At the southeastern side of the Cordillera, the volcanic formation consisting primarily of andesitic-basaltic pyroclastic flow deposits.

The International Rice Research Institute (IRRI) is located in Los Banos, Laguna, at the foot slope of Mt. Makiling, a dormant volcano. We expect the travel to be very long and tedious, but exhilarating and challenging. It is worth the effort and educational.

Cost of the tour: Single: US\$ 700; Double; US\$ 600 per person. Price does not include flight to and from Manila.

A5: Peninsular Malaysia Tour

Duration: 6 days, 5 nights from August 8, 2002 to August 13, 2002. Itinerary: Kuala Lumpur – Lumut – Ipoh – Penang – Bangkok.

Peninsular Malaysia, with liquid sunshine, is an example of vegetation, soils and land use in a humid tropical climate. With no dry season, the dominant process of continuous leaching and weathering. The unique character of the soils and the specific land use results from this special agro-environment. A significant part of the wealth of the country comes from the plantation agriculture of mainly rubber and oil-palm with smaller contributions from coconut, and other crops. Padi rice dominates the lowlands. Forest ecosystems comprise natural and managed and these provide a variety of forest products. Malaysia is known for its production of tin; other mineral resources are in lesser quantities.

The tour traverses the agriculturally better developed west coast, starting from the capital and passing through tin-mining areas and ending in Penang. The Rubber Research Institute is a world's premier institute for this crop and participants are briefed on recent technology and will be able to evaluate two of the rubber-growing soils of the country. Moving northwards along the coastal plain, the landscape changes to oil-palm and coconut cultivation. Soil constraints and aspects of management of these crops will be presented. Close to Penang is the large rice-growing area of Malaysia. Staff of the rice research station will present research on all aspects of rice management. Rice soils are messy and participants must be prepared to have dirty boots. These soils seldom dry out and the effects of continuous water-logging with only an occasional oxidation of surface layers, presents unique features to the soil. Discussions during the tour will focus on environmental impacts and other constraints to agricultural development in the country. The tour ends in the metropolis of Penang, an island where participants may have difficulties in leaving.

Cost of the tour: Single: US\$ 700, Double: US\$ 600 per person. This cost includes accommodation/transport and drink/food but not dinners. It also does not include cost of airfare from Penang to Bangkok.

B9: Sabah Tour

Duration: 6 days and 5 nights from August 22, 2002 to August 27, 2002. Itinerary: Bangkok – Kota Kinabalu (via Kuala Lumpur) – Sandakan – Lahad Datu – Tawau – Kota Kinabalu.

Tropical rain forests and the highest mountain (Mt. Kinabalu) in S.E. Asia are the unique features of the State of Sabah, Malaysia. The selected route traverses the cross-section of the country, passing through virgin jungle, with occasional small communities and ending in the eastern part of the State, which is the new agricultural domain. Agricultural systems from traditional slash and burn to modern plantations can be seen. Landscapes and soils vary with the lithology and geomorphology. Native flora and fauna are fascinating and the participant will be able to share a banana or two with an orangutan. If lucky, they may see the dancing of the king cobra. Soils, ranging from recent alluvials, Andisols on basalts, Oxisols (some with a net positive charge), and Ultisols on ultrabasic rocks will be seen. Crops include rice, cocoa, oil-palm, and spices. Home gardens grow a variety of fruit trees and flowers. The tropical jungle may be viewed from sea-level up to about 13,000 feet. The summit of Mt. Kinabalu provides a most picturesque view that you do not want to miss.

Cost of the tour: Single: US\$ 700, Double: US\$ 600 per person. Price does not include travel to and from Kota Kinabalu. Participants must have visa for Malaysia.

II. CONGRESS DAY TOURS

During the congress, six special daily tours will be conducted in Bangkok and surrounding areas. These tours offer not only an amazing variety of touristic spots but also scientific interests. So, while you are in Bangkok and have a full-day break during the Congress, why not spend it to visit some of the wonderful sites Bangkok and its vicinity has to offer.

C – Congress Day Tours

C1: Acid Sulfate Soil Area and Ancient City

Stretching north of Bangkok is a vast area of Acid Sulfate Soils, which is worthy to visit since it has been utilized not only for agriculture but also urbanization and industrialization. Tour will also include a visit to Ayutthaya Ancient City and the Royal Summer Retreat of Bang-Pa-In, a fairy tale scene of architectural wonders. Ayutthaya was the Thai capital for 400 years until its destruction in 1707. The ruins of numerous temples offer wonderful scenery and are now one of the world heritage sites.

C2: Mangrove Forest, Shrimp Farm, Salt-Making Field, Floating Market and Home-made Sugar from Coconut

Just southwest of Bangkok, there occurs a wide strip of active tidal flats adjacent to the upper part of the Gulf of Thailand. Originally, Tropical Mangrove Forest occupied these areas. To date, they have been opened to various uses and undoubtedly such human activities affect soil and ecosystems. During the trip, we will visit a shrimp farm, salt-making field, mixed orchard farming and coconut orchard on raised-bedding, and traditional factory for making sugar from coconut juice. Included in the tour, is a visit to the bustling floating market and view typical Thai life on the canals — these are unforgettable experiences.

C3: Rose Garden, World's Tallest Buddhist Monument, Sugarcane Bowl and the Bridge over River Kwai

The highlight of the tour is the visit to the famous Bridge over the River Kwai. Allied Prisoners Of War during World War II built it. We will also visit a variety of interesting places like Rose Garden, a country resort, cultural center and beautiful theme park, and the Phra Pathom Chedi, the world's tallest Buddhist pagoda. Also en route are the vast areas of sugarcane plantations on alluvial fans with well-drained Alfisols. If time is available, we will visit a typical sugar factory located along the levee of the Maklong River.

C4: Temple and City Tour

This tour features visits to the Royal Grand Palace, the uniquely impressive residence of Kings chosen by the first monarch of Chakkri Dynasty; the dazzling Wat Pra Kaew and its revered Emerald Buddha, and Wat Arun (Temple of Dawn) and its impressive 280 feet pagoda decorated with colorful Chinese porcelain. The tour will be complimented with the Chao Phraya River cruise to witness traditional Thai houses, temples, hotels and towers along the river while enjoying fine luncheon. The tour will conclude with a shopping trip to Jim Thompson Thai House, a unique house of the legendary silk merchant, which contains collection of art objects displayed in a traditional Thai House setting.

C5: Degraded Land Improvement Project and Pattaya

On the east of Bangkok, there occurs Khao Hin Son Royal Development Study Center, initiated by His Majesty the King. At the center, we will visit the degraded land improvement project. Ene route is Wat Yan Na Sung Worn, where 15 years ago, the land was degraded by severe erosion and supported very few plants. With great efforts, the area has been developed for recreation and faith. The tour will conclude at the Pattaya beach resort, a colorful and vibrant place that offers a lazy time at the beach and an enormous variety of water sports or on-shore entertainment.

C6: Acid Sulfate Soil Area, Vertisols Region and the Ancient City of Lop Buri

The trip commences with a site at Wang Noi, where an acid sulfate soil has been utilized for paddy and orchard farming under the Chao Phraya irrigation project. Further north from the Bangkok Plain is the rugged area of limestone, Terra Rosa, Mollisols and Vertisols that are exclusively used for various upland crops. From there the tour will conclude with Lop Buri where some remarkable ruins dating from the pre-Thai Khmer period and from 17th century are located and where King Narai held court. Historically, Lop Buri is one of the most intriguing towns in the whole of Thailand.

The cost per person for each special day tour is US\$ 50. The tours will leave the hotels at 7.30 a.m. and return by 6.00 p.m.

GENERAL INFORMATION ON THAILAND

Climate

Thailand enjoys a tropical climate with 3 distinct seasons- summer from March through May, rainy with plenty of sunshine from June to September and cool from October through February. The average annual temperature is 28° C, ranging, in Bangkok, for example, from 30° C in April to 25° C in December. The average temperature in August is 28° C

Passport

A valid passport is required for all people entering Thailand. Passport must be valid for longer than the period of stay in Thailand.

Visas

Temporary visitors to Thailand for the purpose of pleasure who are exempted from applying for entry visas, and who can stay for a maximum of 30 days in Thailand, must be of the nationality of and holding valid passports of travelling documents issued by:

Americas	: Argentina, Brazil, Canada, Mexico, and U.S.A
Asia	: Bahrain, Brunei, Indonesia, Israel, Japan, Kuwait, Malaysia, Oman, Philippines, Qatar, Republic of Yemen, Saudi Arabia, Singapore, The Union of Myanmar, Turkey, and United Arab Emirates.
Pacific	: Australia, Fiji, New Zealand, Papua New Guinea, Vanuatu, and Independent State of Samoa
Africa	: Algeria, Djibouti, Egypt, Kenya, Mauritania, Morocco, Senegal, South Africa, and Tunisia
Europe	: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxemburg, Netherlands, Norway, Portugal, Slovenia, Spain, Sweden, Switzerland, and U.K.

Language

English is widely understood particularly in Bangkok where it is almost the major commercial language. English and other European languages are spoken in most hotels, shops and restaurants, in major tourist destinations, and Thai-English road and street signs are found nationwide.

Currency

The Thai unit of currency is the baht. The baht is divided into 100 satang. Copper coins are valued at 25 and 50 satang. Silver coins are in denominations of 1 and 5 baht. A 10 baht coin is composed of both silver and copper. Banknotes are valued at 10 baht (brown), 20 baht (green), 50 baht (blue), 100 baht (red), 500 baht (purple) and 1000 baht (grey).

CORRESPONDENCE

All correspondence should be directed to

The Secretariat, 17th WCSS

17th WCSS Office

Kasetsart University, PO Box 1048 Bangkok 10903, THAILAND

Tel: (662) 9405787, 9405707-8

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Email: osfst@nontri.ku.ac.th

<http://www.17wcss.ku.ac.th> or <http://www.sfst.org>

PROPOSAL FOR PRIZES AND AWARDS BY THE IUSS

According to the new Statutes of the IUSS its activities include "establishing prizes or awards to encourage and recognize excellence in the disciplines" (1998, Rules of the IUSS, Article A3f) . Most international scientific societies recognize excellence in research, and honor in this way distinguished members both in mid-career and life achievements. Following a proposal by a Council member and some discussions on the topic, the Secretary General established a small Awards Committee with the request to propose appropriate rules for the awards.

The following award proposals developed by the team relate to recognizing separately a) outstanding research in fundamental pedology/soil science and b) applied soil science research for the benefit of mankind. The two proposals will be voted on at next Council meeting in Bangkok 2002 and incorporated in the Byelaws of the IUSS for its implementation. Though administered by the IUSS it is hoped that in due time the means for the remuneration will be covered. from legacies and/or donations. Comments on this will be welcome by the Secretary General.

INTERNATIONAL UNION of SOIL SCIENCE AWARD COMMITTEE IUSS DOKUCHAEV AWARD IN BASIC SOIL SCIENCE

A. Status: Special Committee

B. Composition and Tenure:

The award committee is composed of five persons, including the Chair. The committee is made up of the chairs of CIP, CSS, CST, The President, Secretary General. The term of service on the committee is for eight years. The Chair, is the chairperson of CIP.

C. Functions:

1. To encourage nominations for the award.
2. To become familiar with the guidelines and procedures for the awards and to be responsible for seeing that all nominations fulfill the required criteria of eligibility for the award.
3. To evaluate nominations and to select from among those nominated the most outstanding nominee for the award. The committee does not need to make a selection if it feels no candidates of sufficient quality are nominated.

D. Procedures:

1. The IUSS Secretary General distributes the nominations to the committee members and advises them of the scoring or ranking procedure to be followed. The Chair transmits any special instructions to the members.
2. The Chair reports the results of the committee's selection process to the President.
3. The President presents the award at the IUSS World Conference. The Chair provides the statement to be read at the presentation.

E. Secretary General Responsibilities:

The IUSS Secretary General:

1. Cooperates with the Award Committee in its activities, as appropriate or in response to need.

2. Notifies the Award Committee directly or via the Award Committee Chair of all deadlines on award selection, annual report, etc.
3. Receives and takes action directly, or by referring to the IUSS Executive Committee, as appropriate, all suggestions and/or recommendations for action from the Award Committee.

F. Description of Award:

The IUSS Dokuchaev Award is presented to recognize outstanding work in the area of basic soil science/pedology. The award consists of a certificate and an honorarium of \$1,000.

G. Awards Criteria:

The principal criteria for choosing the recipient are demonstration of excellence and creativity in basic work related to the understanding of fundamental problems in soil science; soundness of reasoning ability and/or technical skill; originality and significance of research contributions to basic soil science/pedology.

H. Format for Nominations:

A format guide, approved by the IUSS Executive Committee is published in the Bulletin of the IUSS issued each year. The Chair and Award Committee members shall receive a copy of this guide at the time it is mailed from the IUSS office.

I. Eligibility of Nominations:

Nominations for this award are accepted only from individual active members of the IUSS. Members of the Executive Committee and members of the Award Committee are not eligible to submit nominations.

J. Eligibility of Nominees:

Membership in the IUSS is required for this award. The award is intended, however, to recognize outstanding research for person with active years ahead. Contributions on which the nomination is based must have been made within the past 10 years.

L. Scoring or Ranking Procedure:

Nominations are ranked by all committee members. One-half of the total number of award nominees (x) are ranked 1 thru x with the rest of the nominees given $x + 1$. Each member's ranking is conveyed in writing to the Chair, who totals the points received by each nominee. The award recipient is the nominee receiving the lowest score. The Chair may vote in all selections, but the Chair's selections must be made before seeing the selection of other members. The award need not be presented in a given cycle if it is judged that nominees do not meet the criteria.

M. Revising Guidelines or Procedures:

The Award Committee may recommend changes or revisions relative to criteria, description, and selection process of recipients, etc., for this award. All recommendations must be approved by the IUSS Executive Committee before said recommendations may be implemented. It is preferable to submit recommendations through the Chair. However, recommendations may be submitted through the President or directly to the IUSS Executive Committee.

**ANNOUNCEMENT OF MEETINGS
ANNONCES DE RÉUNIONS
ANKÜNDIGUNG VON TAGUNGEN**

*You are cordially invited to participate in the
5th International Symposium on Plant-Soil Interactions at Low pH (PSILPH)
to be held in South Africa, 12 - 16 March 2001*

VENUE : Alpine Heath Resort and Conference Village (www.suitehotels.co.za) situated in the Drakensberg in the KwaZulu-Natal Province. Alpine Heath is in a rural area characterised by acid soils.

DATE : 12 - 16 March 2001

NOTICE OF INTENT : Please complete the form attached and return to the Organising Committee as soon as possible, but no later than end February 2000.

LANGUAGE MEDIUM : English

SYMPOSIUM THEME : INTEGRATED MANAGEMENT AND USE OF ACID SOILS FOR SUSTAINABLE PRODUCTION. The following sessions are envisaged

- Global extent, development and economic impact of acid soils
- Effect of excessive soil acidity on the natural resources, agriculture and forestry
- Nutrient use efficiency in acid soils
- Microbial and faunal activity in acid soils
- Diagnosis and amelioration of surface and subsoil acidity
- Plant tolerance and adaptation to soil acidity
- Sustainable farming and forestry systems to prevent soil acidification

Each session will be introduced by one or more keynote speakers, followed by selected volunteer papers, and structured discussions.

A mid-week field visit to long-term crop production experiments on acid soils simultaneously comparing different tillage practices, and to conservation practices used in commercial, developing and communal farming will illustrate attempts to establish the sustainable management of acid soils.

SYMPOSIUM PROCEEDINGS : Papers will be peer reviewed and edited by an editorial committee. Subject to acceptance by a review panel, manuscripts will be published in a Proceedings.

CALL FOR PAPERS AND CALENDER : Submit to the Organising Committee

- | | |
|--|--------------------|
| Proposed titles and concise, descriptive summaries of papers | - 30 March 2000 |
| Abstracts of papers accepted | - 30 June 2000 |
| Final manuscript | - 30 November 2000 |

GUIDELINES TO AUTHORS will be distributed in May 2000 to those whose papers were accepted.

SECOND ANNOUNCEMENT will be sent only to those who respond to this 1st Announcement the end February 2000

PRE- AND POST-SYMPOSIUM TOURS AND A COMPANION PROGRAMME to be announced in the 2nd NOTICE

SUMMARY OF DATES FOR SUBMISSIONS

- | | |
|-----------------------------------|-------------------|
| - Notice of intent | End February 2000 |
| - Descriptive summaries of papers | 30 March 2000 |
| - Abstracts of papers accepted | 30 June 2000 |
| - Final manuscript | 30 November 2000 |

ORGANISING COMMITTEE CORE GROUP : Mara de Villiers (Convener), Dr Mart Farina (International Steering Committee Member) and Keith Taylor (National Department of Agriculture, who hosts the Symposium).

CONTACT PARTICULARS ORGANISING COMMITTEE, 5th PSILPH

Private Bag X79
Pretoria 0001
South Africa

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Fax + 27 12 323 1157
e-mail mara@igkw2.agric.za

NOTICE OF INTENT

To : Mara de Villiers
Private Bag X79
Pretoria 0001
South Africa

Fax + 27 12 323 1157
e-mail mara@igkw2.agric.za

5th PLANT-SOIL INTERACTIONS AT LOW pH SYMPOSIUM 2001

NAME :
TITLE :
ADDRESS :
COUNTRY :
Telephone : _____ Fax : _____
E-mail : _____

- Intend to attend the Symposium
- Intend to present a volunteer paper. My preferred form of presentation
- Oral presentation Poster Either

Preferred session :

Provisional title of paper :

- Will be accompanied by guest(s)
- Would like to receive information on the Pre- and/or Post-Symposium tours

HUMIC SUBSTANCES SEMINAR V

Northeastern University, Boston, MA, USA
March 21-23, 2001

Call for Papers

Humic substances are the brown biomaterials in sediments, soils and water. They form colloids and have fantastic surface properties (e.g. with clays) and unique characteristics. Their properties and important environmental roles justify detailed study as molecules and materials. A growing number of companies are supplying humic products for agricultural and environmental applications.

Papers on the structures, properties and applications of humic substances are invited. New work only, please.

The proceedings will be published.

Registration limited to 120: US Residents \$150, all others \$125 and certified students \$100.

Only 25 slots are available for the exhibition of products and services.

Special nearby hotel rates.

Deadline for abstracts and registration December 30, 2000.

For additional information please contact:

Dr. Elham Ghabbour, Barnett Institute, 341 Mugar Hall,
Northeastern University, Boston, MA 02115, USA.
Phone 617 373 7988; fax 617 373 2855;
e-mail eghabbou@lynx.neu.edu;
www.hagroup.neu.edu

International Symposium of IUSS Sub-Commission A - Salt Affected Soils

»Sustained Management of Irrigated Land for Salinity and Toxic Element Control«

Riverside, California, June 25-27, 2001

The Symposium will consist of 3 days of invited and volunteered oral presentations and posters. Its goal is to present research and management approaches for environmentally responsible, cost effective, sustainable agricultural production on salt and toxic element affected soils. The conference will consider technology for rapid measurement and assessment of salinity as well as chemical transport modeling, agronomic practices (such as plant selection), and management practices such as methods of reclaiming salt, sodic or toxic ion affected soils while minimizing adverse effects of drainage return flows on receiving ecosystems.

Sessions will consist of panel discussions, oral talks, and poster sessions organized around the following themes:

- 1) Measurement and assessment of salinity at the field and district scale;
- 2) Management practices for control of B, As, and Se in soils and drainage waters;
- 3) Modeling for salinity, sodicity and toxic element control;
- 4) Reclamation of saline, sodic or toxic element affected soils; and
- 5) Irrigation with low quality waters, management practices and plant selection;

There will be a dinner banquet on the evening of June 27th. On June 28th, there will be an optional field trip to Coachella and Imperial Valleys, including a visit to the Salton Sea.

For more information on scientific issues, please contact:

Dr. Donald Suarez

George E. Brown, Jr., Salinity Laboratory

450 West Big Springs Road,

Riverside, California 92507, USA

Tel: +1-909-369-4809; Fax: +1-909-342-4962;

E-mail: dsuarez@ussl.ars.usda.gov

or:

Dr. John Letey

2440 Geology Building

University of California

Riverside, California 92521, USA

E-mail: john.letey@ucr.edu

Website: www.ussl.ars.usda.gov

For questions concerning schedules and logistics, please contact:

UC Center for Water Resources

4501 Glenwood Drive

Riverside, California 92501, USA

Tel: +1-909-787-4327; Fax: +1-909-787-5295

INTERNATIONAL WORKING MEETING ON MICROPEDOLOGY
Gent, July 9-13, 2001

organised by the
International Training Centre for Post-Graduate Soil Scientists (ITC) and
Ghent University, Belgium

Call for papers

Both oral and poster presentations are welcome. The official language of the meeting will be English; posters will also be accepted in French, German and Spanish.

Proposed topics

1. Advances in methods and techniques

1.1. Preparation techniques

1.3. Micromorphometry

1.2. Observation techniques

1.4. Data recording and terminology

2. Soil micromorphology applied to:

2.1. Soil and regolith genesis

2.5. Sedimentology

2.2. Weathering and alteration

2.6. Agronomy

2.3. Palaeopedology

2.7. Environmental studies

2.4. Archaeology

Depending on the interests of the persons responding to the first circular, topics may be added or broadened and the organisation of special symposia can be considered.

Accommodation

Accommodation, from student rooms on the campus to four star hotels, is available at walking distance (less than 15 minutes) from the Geological Institute. As the campus can easily be reached by public transport from the historical part of the town, some participants may prefer to stay in a hotel in the town centre.

The prices range from 75 to 150 Euro per night in the centre and from 40 to 75 Euro in the area closer to the Institute. A student room will cost about 15 Euro. More information can be found on the website: <http://www.gent.be/gent/english/index.htm> .

Registration fee

- | | |
|-------------------------|------------------|
| 1. Participants | maximum 100 Euro |
| 2. ITC-alumni | maximum 75 Euro |
| 3. Students | maximum 50 Euro |
| 4. Accompanying persons | 20 Euro |

Prices for 1-3 include participation in the formal sessions and the symposia, abstracts of oral and poster presentations, coffee breaks, social events and the mid-conference excursion.

The price for accompanying persons includes social events and the mid-conference excursion. If sufficient interest is shown, a partners program could be organised (not included in the fee).

Deadlines

Preliminary registration: **1st October 2000**

Final registration, submission of abstract and payment: **1st February 2001**

Extended abstracts: **1st April 2001**

The second circular will be mailed in **November 2000** to the persons who responded to the preliminary registration form. All the correspondence about the meeting will by preference be done by email (iwmm@rug.ac.be).

Updated information and registration forms can be found at the ITC website:

<http://allserv.rug.ac.be/~amtanghe/PLRprog.html>.

As in the past, the course "Concepts of Micropedology" (G. Stoops), which is part of the curriculum of the post-graduate program "Physical Land Resources", will be open to outside students and others. This year it will again be organised as an intensive course, from 27/03/2000 to 07/04/2000, from 9 a.m. till 6 p.m.. Information: Prof. Dr. G. Stoops: georges.stoops@rug.ac.be

INTERNATIONAL WORKING MEETING ON SOIL MICROPEDOLOGY

JULY 9-13, 2001

organised by

ITC - GHENT UNIVERSITY, BELGIUM

Name (Prof./Dr./Mr./Mrs./Ms.).....

First name.....

Affiliation.....

Address.....

.....

.....

Tel:.....Fax: ..

email:.....

I'm a student (proof to be presented at registration)

Accommodation: Student home Hotel near Institute Hotel town centre

N° accompanying persons:

I intend to present the following communication(s):

1. Title:.....

.....

Presentation: oral or poster

Topic:.....(see proposed topics)

2. Title:.....

.....

Presentation: oral or poster

Topic:.....(see proposed topics)

Mail or fax this form to:

Prof. Dr. G. Stoops

ITC, Ghent University

Krijgslaan 281, S8, B 9000 Gent, Belgium

email: iwmm@rug.ac.be Fax: +32-9/264 49 84

Reception of registration forms will be acknowledged by email.

**INTERNATIONAL SYMPOSIUM
FUNCTIONS OF SOILS IN THE GEOSPHERE-BIOSPHERE SYSTEMS
Moscow, Russia, August 26-29, 2001**

FIRST ANNOUNCEMENT

Organizers: IUSS, Com. V and VIII; Dokuchaev Soil Science Society; Russian Academy of Sciences; Moscow State University, Faculty of Soil Science

Theme: The problem of interaction between soils and other natural systems has been mostly interpreted by soil scientists all over the world in the context of the influence of biota, hydrosphere and lithosphere on soils. This influence is being usually investigated as the basic factor of soil genesis, evolution, diversity and functioning at global, regional and local scales. However, the response impacts of soil on other natural systems, perceived as the geosphere—biosphere functions of soil, were paid much less attention to. Meanwhile, these very functions are responsible for the great environmental importance of the soil mantle of the globe for maintaining the sustainable development of the biosphere and the commonwealth of people.

In the last decade, both the basic and applied branches of many Earth and Life sciences (geology, biology, ecology, geography, etc.) are facing the problems of the influence of soils and soil mantle on the atmosphere (global warming and soil gases emission), hydrosphere (contamination and remediation of fresh water), biosphere (importance of soil in maintaining the biodiversity and bioproductivity), and lithosphere (erosion control and conservation of soils and landscapes, generation of the terrestrial fine earth and accumulation of sediments). The present-day global process of soil degradation is exponentially reducing the reproduction of the life diversity on Earth and threatens the sustainable functioning of the biosphere.

In 1980–1990-s, fundamental pioneer studies within the framework of the above-mentioned problems were carried out in Russia, and a new scientific research area »Structure-functional role of soils in ecosystems and biosphere« developed. Therefore, the Dokuchaev Soil Science Society of Russia is planning to organize this Symposium which will enable the soil scientists of the world and Russia to share their ideas and data concerning this problem, and to coordinate the prospects of future investigations.

Main topics:

I. SOIL FUNCTIONING IN ECOSYSTEMS

1. Biogeochemical cycles in natural and managed ecosystems.
2. Soil influence on biotic and ecosystem processes.
3. Soil functioning and biodiversity.

II. SOIL-ATMOSPHERE RELATIONSHIPS

1. Soil as a source of CO₂, CH₄, N₂O.
2. Heat and moisture exchange in the soil-atmosphere system.
3. Solid particles in the atmosphere: sources, fluxes and precipitation.

III. SOIL INFLUENCE ON THE HYDROLOGICAL AND HYDROCHEMICAL CYCLES

1. Regulation of hydrological cycle by soils
2. Role of soils and regoliths in formation of the water composition and quality
3. Soil as the buffer and filter for pollutants

IV. SOIL FUNCTIONS IN THE LITHOSPHERE

1. Soils and weathering mantle as generators of disperse materials in the lithosphere
2. Interactions of soil and geomorphic systems: natural and human-induced aspects
3. Role of soils in denudation and sedimentation processes.

V. SOIL AS A RECORD OF GEOSPHERE-BIOSPHERE INTERACTIONS

1. Recent and inherited features in soils.
2. Soil recording capacity and types of soil memory.

VI. SOIL AS A NATURAL RESOURCE FOR HUMAN SOCIETY

1. Functions of soils in man-affected ecosystems.
2. Soil as a finite and unrenewable resource.
3. Soil resources and civilization in the past, present and future.

Language: English, Russian

Programme: Oral presentations, posters, one-day field excursion

Participation fee, accommodation: information will be provided in the Second Announcement, December, 2000

Abstracts: the texts should be submitted electronically as a MSWord attached file, in English, Times 12 font, single spaced on one page (format A4 with 2 cm free space at each margin). The texts should be submitted to e-mail:

Deadline for abstracts is January 1, 2001.

For further information, please contact:

Nina P. Matekina, Olga V. Andreeva

Faculty of Soil Science,

Moscow State University

119899 GSP, Moscow, Russia

Tel. 7-095-939-35-23, 7-095-939-37-74

Fax. 7-095-939-09-89 for N.Matekina

E-mail: NPM@soil.msu.ru; kust@soil.msu.ru

Information in Internet: <http://soilinst.msu.ru>

NOTICE OF INTENT

International Symposium: "Functions of Soils in the Geosphere-Biosphere Systems"

SURNAME:

FIRST NAME(S)

AFFILIATION

MAILING ADDRESS

PHONE:

FAX:

E-MAIL

PROPOSED TITLE OF THE PAPER

Please return this form not later than October 1, 2000 as hard copy or electronically

**BIOGEOCHEMICAL PROCESSES
AND CYCLING OF ELEMENTS IN THE ENVIRONMENT**

**15 International Symposia on Environmental Biogeochemistry (ISEB 15)
September 11 - 15, 2001, Wrocław, Poland**

Main topics

1. Bioweathering and Biosynthesis of Minerals in Natural and Urban Environment
2. Interaction and Transformation of Organic and Inorganic Components
3. Biogeochemical Processes and Cycling in Aquatic Systems
4. Xenobiotics and Heavy Metals in Contaminated Ecosystems
5. Recycling of Municipal, Agricultural and Industrial Wastes
6. Biogeochemical Processes in Extreme Environments

Information

http://www.ar.wroc.pl/~weber/iseb15.htm

e-mail: iseb15@ozi.ar.wroc.pl

fax: +48 71 3284849

phone: +48 22 3205631, +48 22 3205632

ISEB 15 Chairperson

Jerzy Weber

Agricultural University of Wrocław, Institute of Soil Science and Agricultural Environment Protection, ul. Grunwaldzka 53, 50-375 Wrocław, Poland, E-mail: weber@ozi.ar.wroc.pl

PRE-REGISTRATION FORM / NOTICE OF INTENT

Please, complete this Pre-registration Form and send by mail, fax or (preferably) e-mail.

If send by fax or mail, please use CAPITALS.

Family name First name

Affiliation and mailing address

.....

.....

E-mail Fax

I am interested in the ISEB 15 and I would like to receive further information on the conference.

I would like to be informed by:

E-mail only mail only both E-mail and mail

I plan to submit a paper to ISEB 15 on topic:

**3rd International Conference on Land Degradation and
Meeting of the IUSS Subcommission C – Soil and Water Conservation
September 24-28, 2001 – Rio de Janeiro, Brazil**

Organized under the auspices of the IUSS Working Group on Land Degradation and Sub-commission C and the Brazilian Society of Soil Science

Chairman of the Organizing Committee: Dr. Antonio Ramalho-Filho (Embrapa Soils)

Conference Symposia

- I. Conceptual framework
- II. The land resource base
- III. Land degradation assessment
- IV. Case studies of land degradation: lessons learned
- V. Monitoring land quality and global climate change
- VI. Conserving the land
- VII. Rehabilitating degraded land
- VIII. Regulating sustainable land use (responses)

For **further information**, please visit: <http://www.cnps.embrapa.br/ICLD> or contact:

Dr. Beáta Madari - ICLD3 Conference Secretary

Embrapa Solos

Rua Jardim Botânico, 1024

22460-000 Rio de Janeiro, Brazil

Ph/Fax: +55 21 294-8039; Ph: +55 21 274-4999; Fax: +55 21274-5291

E-mail: icld3@cnps.embrapa.br

The Organizing Committee will be pleased to receive everyone in the Conference. If you are interested in participating, please submit the form below to the address above. Please use CAPITALS. The form of Note of Intent also can be submitted through the homepage.

Note of Intent to Participate

Surname:

First name(s):

Affiliation

Address

City: Country:

Zip Code: Phone No.:

Fax No.: E-mail:

I wish to present a volunteer paper: ORAL POSTER NONE

Provisional title of paper:

I will be accompanied by number of guests (provisionally).

I am interested in the mid-conference technical tour

I am interested in the post-conference tours

My companion is interested in social tours during the Conference

VI International Symposium and Field Workshop on Paleopedology (ISFWP)

with pre- and post-conference field trips

Mexico City, October 2001

Second Announcement and Call for Papers

Paleopedology Symposium organisers: Instituto de Geología and Instituto de Geofísica, Universidad Nacional Autónoma de México (UNAM) and Working Group of Paleopedology IUSS. Organising Committee: J. Urrutia-Fucugauchi (Chairman), A.Bronger (Co-chairman), A.O. Makeev, E. Solleiro-Rebolledo (Secretary).

The Symposium organisers are planning a four-day program consisting of three session days interrupted by a one-day mid-symposium field trip.

Pre-conference field trip to area of volcano Toluca: Late Pleistocene and Holocene Andosols buried under ash and pumice flows with special attention to landscape and paleoclimate development. 2 days costs US\$ 150

Mid-conference field trip to Teotihuacan Archaeological Zone, visiting the lacustrine sedimentary sequence of Texcoco ex-lake. 1 day. Costs US\$ 50 (including lunch meal and entrance to the Archaeological site)

Post-conference field trip to Tlaxcala state: relict polygenetic Luvisols with tepetates (indurated horizons in volcanic sediments). 2 days. Costs US\$ 150

Price of both two-days excursions include bus transportation, one-night hotel, excursion guide and lunch meals, one breakfast, and one dinner. Maximum number of participants: 40 per excursion.

Tentative program:

1. Paleosol-sedimentary sequences (loess, alluvial, lacustrine, volcanic, etc.) as a record of the Pleistocene and Holocene environmental change. Special emphasis will be made on paleoecological interpretation of buried Andosols, paleosols with vertic properties and indurated horizons (tepetates) in the regions of active Quaternary volcanism.
2. Magnetic properties of Quaternary and pre-Quaternary paleosols and sediments as paleoclimatic indicators.
3. Polygenetic models of pedogenesis in relation to Quaternary climatic change. Emphasis will be given to non-glaciated subtropical and tropical regions.
4. Biomorphs (pollen, phytoliths, macroremains) in paleosols: research and interpretation problems.
5. Paleopedology and archaeology. Paleopedological evidences of ancient man-induced environmental change.
6. Dating of paleosols.

Tentative schedule of the Congress

October 7-8	Arrival of participants, registration
October 6-7	Pre-conference field trip
October 8	Opening Ceremony
October 8-9	ISWP sessions
October 10	Mid-conference field trip
October 11	ISWP session (cont.) Paleopedology Business Meeting. Closing Ceremony
October 12-13	Post-conference field trip

Abstracts

Contributors are invited to submit their papers electronically as a Word 6.0 for Windows attached file. Please prepare your abstract in English, Times 12 font, single spaced on one letter-size page including line drawings, tables, references etc., within the format 2cm free space on each margin

Contributors will be informed within 4 weeks about acceptance as oral or poster presentation. A booklet of abstracts will be issued at the start of the meeting.

All abstracts must arrive latest by **March 31, 2001**:

From contributors of both Americas, Australia and New Zealand:

Alan Palmer, Soil and Earth Science, Institute of Natural Resources, Massey University, Palmerston North, New Zealand, Phone: (64 6) 356-9099 extn 7746, Fax: (64 6) 350-5632, E-mail: A.S.Palmer@massey.ac.nz

From contributors of Europe and Africa to:

Arnt Bronger, Department of Geography, University of Kiel, D-24098 Kiel, Germany. Phone: (49 431) 880 2952, Fax:(49 431) 880 4658. E-mail: bronger@geographie.uni-kiel.de

From contributors of NIS and Asia to:

Alexander Makeev, Institute of Soil Science MSU-RAS, Moscow, Russia. Phone/Fax (7 095) 932 91 95, e-mail: makeev@fadr.msu.ru

Participation fee: US\$ 130. This will cover all sessions, abstract volume, program, bag with conference materials, coffee during the breaks, lunch meals during the session days, transportation from hotel to meeting place and from meeting place to hotel at the beginning and the end of sessions.

Payment after June 30: US\$ 160. Student fee US\$50

Accommodation:

In Mexico City, where the conference will be held, double-bed rooms and single-bed rooms are available for about:

Hotel Lisboa:

Single-bedroom: 32.00 USD

Double bedroom: 38.00 USD

Hotel Benidorm:

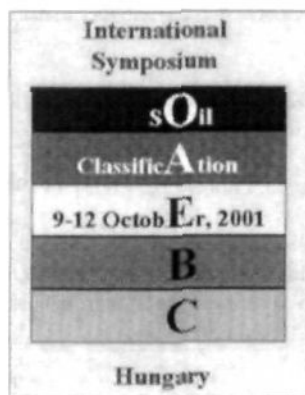
Single-bedroom: 52.00 USD

Double-bedroom: 62.00 USD

All correspondence should be addressed to:

Dr. Elizabeth Solleiro-Rebolledo, Instituto de Geología, UNAM. Circuito de la Investigación Científica, Ciudad Universitaria, C.P. 04510, Mexico City. E-mail: solleiro@geologia.unam.mx, Fax +52-56-22-43-17.

First Circular



SOIL CLASSIFICATION 2001 Developing the Basis for the Systems of the Future October 9-12, 2001, Hungary

Organized by:

The Hungarian Society of Soil Science

The International Union of Soil Science

Cosponsored:

The Joint Research Centre, JRC

The Hungarian Ministry of Agriculture and Rural Development

The Natural Resources Conservation Service, USDA

The Food and Agriculture Organization of the United Nations

Objectives

1. To discuss new philosophies, concepts, and principles or the need for such to enhance classification systems to better serve the users of information,
2. To report on the status of national, regional, and/or international soil classification systems,
3. To recommend changes where specific weaknesses exist in current systems,
4. To evaluate the changing demands of society and increase the use of information technology to lay the basis for the systems of the future,
5. To improve the sharing and correlation between national systems.

Sessions of the symposium

1. Review of basic concepts and principles for classification systems,
2. Reports on status of national classification systems,
3. Future trends for soil classification,
4. Special classification problems and reports,
5. Evaluation and testing of WRB,
6. Correlation and harmonization of national soil maps and classification systems.

Program

8 October: Opening session and reception, Budapest.

9-12 October: Symposium, Velence

Two days of oral presentations from invited and voluntary speakers followed by discussions.

Posters are welcome. One day field tour that will stimulate soil-specific discussions.

One day of breakout sessions that will address specific themes.

13-15 October: 3-day post symposium tour. The tour will include stops and discussions of soil profiles developed under different soil forming environment. Soils will range from Luvisols Chernozems, Phaeozems to Solonetz.

Location:

Velence (50 km SE from Budapest). Bus transportation will be provided from Budapest to Velence on morning 9 October, and from Velence to Budapest on morning of 13 October.

Accommodation

Prior and after the symposium in Velence hotel rooms can be reserved in Budapest.

9-12 October: Lakeside Velence. Hotel Juventus: 35 USD/day (including meal).

Language

The official language of the symposium will be English

Registration

Registration fee: 250 USD (includes: welcome reception, transportation to/from Velence, one-day conference tour, symposium abstracts).

Post symposium tour participation fee: 200 USD (includes transportation, double room hotel accommodation, meals).

Important dates

March 15 Response to first circular in order to receive second circular.

May 15 Distribution of second circular with registration and accommodation forms.

July 15 Deadline of submission of registration fees and abstracts.

Scientific Committee: Erika Micheli, Chair (Szent Istvan University, Hungary)
Ahmet R. Mermut (IUSS), George Várallyay (HSSS), Luca Monatnarella (JRC),
Hari Eswaran (NRCS, USDA), Freddy Nachtergale (FAO).

Information/questions

Dr. Erika Micheli, Szent Istvan University, Dept. of Soil Sci. and Agricultural Chemistry
2100 Gödöllő, Hungary, Fax: 36 28 410 804, Phone: 36 28 410 200/1812
Email: sc21@spike.fa.gau.hu, Web site: <http://www.fa.gau.hu/~Soil21/>

Pre-registration form

SOIL CLASSIFICATION 2001

International Symposium , October 9-12, 2001, Hungary

Name:

Institution:

Address:

Email: Fax: Phone:.....

I am interested to attend the symposium:.....yesno

I am interested to submit a contribution in session:

Title of contribution:

Preference:oralposter

I am interested to participate in the 3-day post symposium fieldtrip:yesno

Fax, mail or email to:
Dr. Erika Micheli, Szent Istvan University
Department of Soil Science and Agricultural Chemistry
2100 Gödöllő, Hungary
Fax: 36 28 410 804, Phone: 36 28 410 200/1812
Email: sc21@spike.fa.gau.hu

Publish or Perish (4) – Electronic Publishing

Alfred E. Hartemink

ISRIC, PO Box 353, 6700 AJ Wageningen, The Netherlands

e-mail: Hartemink@isric.nl

fax: ++ 31 317 471 700

Reality is what I see, not what you see.

Anthony Burgess (1917-1993)

1. Introduction

In order to catch the attention of busy readers a paper has to start with a bold statement, and whether that statement is entirely true is less relevant. So I thought of starting with a quote from Burgess' masterpiece »A Clockwork Orange«, but instead I come up with the following: The best the British have given to the world so far are the BBC, Nature and The Economist.

I am sure that many of you would disagree and perhaps find British cuisine, poetry, football or pop-music the best it has brought forward. But I do have some arguments for this statement. Firstly, the BBC is free of advertisements and can be relied on as a source of news information, which is important in a world where information is imperative and where commercialisation has become a new sort of religion. The Economist and Nature deal with society and science, and reports are usually factual, critical and fairly unbiased. Many other journals claim to do this as well but none are as good, or they are written in a language I cannot understand. Both The Economist and Nature have a long tradition of publishing, a very experienced writing staff, and occasionally publish articles that look ahead: what's in the future of science and society.

In July 1999 The Economist published "The road to 2050 – A survey of the new geopolitics" in which they looked into political and cultural developments up to the year 2050. Nature has started publishing the Millennium Essays in which scientists from various disciplines have given us a glance of their thoughts on the future. There is also an excellent essay on soil science (Yaalon, 2000). It is interesting that these future outlooks are either short term based on extrapolation of the recent past and therefore fail to excite, or they are long-term predictions and thus become science-fiction - a literature genre which I find indigestible. The risk of predictions is not whether they excite or can be checked, but whether they are utterly wrong in the end which is likely to occur in a speedily changing society. Let us look at some examples which have almost become classical.

When home videos became affordable in the 1980s, numerous people believed that cinemas and theatres would eventually have to close their doors. People would simply drive to a videostore, collect their favourite movie and sit and watch in the comfort of their homes at a convenient time. At the same time, personal computers became available. Firstly in the offices and some years later at people's homes. Many believed that unemployment rates would increase dramatically as man would be replaced by the machine. Some thought that it would result in paper-free offices (saving the trees) and that people would communicate by exchanging floppy disks. The brightest prophets foresaw that books and magazines were no longer needed - we would just read from the screen.

As we now know, these predictions have not all come out. Theatres and cinemas are flourishing businesses. People like to go out and socialize and the quality of the video is not quite matching the 35 mm film. The personal computer brought many things but few redundancies, and unemployment in Western Europe is lower than it was for many decades. With the personal computers came the printer. In the mid-1980s noisy matrix printers were the standard, but these have been replaced by fancy laser printers, which produces paper that looks good and can be sent around. Laser printers are also fast and in many offices there is more paper than ever floating around. Paper consumption keeps on increasing in many institutes. For example at ISRIC, paper consumption has increased from about 1.5 million

sheets of A4 in 1990 to 2 million in 2000 without an increase in the number of staff. Over the same period the cost of paper decreased by 10 to 15%. The use of note-pads at ISRIC has almost disappeared and so has the demand for diskettes whereas the consumption of CD ROMs has grown exponentially following the introduction of affordable CD writers some years back. So the dream of the paper-free office was not realized. Also books are still being printed and the number of titles keeps on increasing each year. For example, in Japan 66,000 new titles were published in 1998 compared with 48,000 in 1993 (The Economist, 2nd October 1999).

The personal computer brought us things we could not have thought of 20 years ago. An important change is that personal computers are not so personal anymore because they are all hooked up to networks in offices and eventually the entire world. The apparent contradiction of this situation is that society as such is getting more and more individualised whereas at the same time people are de-individualised by being hooked up to the biggest computer network in the world: the internet. The PC has become the people's computer.

The internet has caused already many changes and its effects will continue to evolve. It will affect the exchange of scientific information and many traditional ways will be replaced by internet based media. This paper looks at some of the main aspects of electronic publishing of science. Firstly, developments and trends in electronic publishing and science are summarised, followed by a discussion on electronic publishing in soil science. A brief overview of the future outlook of our scientific journals is given in the next »Publish or Perish« column. I have restricted myself, as the first paragraphs suggest, to some of the ideas published in Nature and The Economist on the subject of electronic publishing. The paper is therefore not an authoritative review of electronic publishing but aims to contribute to the discussion on the future of publishing in soil science.

2. The world goes electronic

Small things can have big effects. The Dutch biologist and writer Dr Tijs Goldschmidt, studied the spreading of starlings in the USA. In the 19th century, there was the American Acclimatization Society in New York which aimed to bring in each and every bird mentioned in the works of Shakespeare and that was not present in the USA. Very noble, and thus in 1890 and 1891 European starlings were released in New York. For several reasons the starling population boomed and currently there are hundreds of million starlings in the USA. It is considered a plague as they severely compete with natural birds and because flocks of starlings darken American skies. »Poetry can change a landscape«, was his conclusion and what started as a admirable initiative resulted in something totally unforeseen (Goldschmidt, 2000).

There is an interesting analogy between this story and the internet. Internet will not change the landscape but will change society and our way of thinking. Not all at once but perhaps at a faster rate than the spreading of starlings in the USA. The internet is nothing but a network of information resources (Tu, 2000) and when it started, no one foresaw the tremendous growth it would make. It continues to grow exponentially and it is predicted that by 2002 global telephone communication will equal no more than 1% of the internet traffic (Queau, 1999). There are various reasons for its growth (porn seems to be a driving force), but a major factor is that it was made available free by the scientists who developed it. Just imagine how the web might look today had it been invented by Microsoft and made proprietary (Anon., 2000).

Books on the WWW

The Japanese are the bookworms of the world reading no fewer than 1.5 billion books a years as they commute long hours on trains so packed that nobody can open a newspaper (The Economist, 2nd October, 1999). As elsewhere, the book industry in Japan has realised that today's publishing with nearly half its stock winding as pulp is a rotten way of doing business. Therefore in November 1999 a trial started in which some 500 people have been given electronic-book readers, a gadget the size of a paperback with a screen like that of a laptop computer and a slot to take a memory card that can store three of four novels. This is following the trend away from paper-based products as the technology for down-

loading and displaying text electronically gets cheaper, more convenient and easier on the eyes. But the road to electronic publishing is littered with abandoned attempts to avoid paper and ink, because e-books can be relatively easily pirated. Also the quality of print has not been matched yet by a liquid-crystal screen (The Economist, 2nd October, 1999).

Go to any search engine on the web and type ELECTRONIC PUBLISHING and there will be hundreds of URLs offering e-books. Some books are offered in PDF format or HTML format, others are available on CD ROM (not quite electronic). One of the main book sellers on the WWW has recently opened an e-book store. The Amazon e-book store supports the Microsoft Reader format, which allows customers to download titles to a laptop or PC, and download digital audio titles. Download times are estimated to range between 2.3 seconds to 2 minutes, according to connection speed. »E-books are already opening up a whole new world for readers,« said Lyn Blake, Amazon.com Books general manager. »What's exciting for readers is that we are just scratching the surface today with the technology and the content, and the potential for both is amazing. While customers will continue to be impressed with the technology as it advances, we think it's the unique and exclusive content that will really delight customers. The e-book store also offers recent best sellers and traditional works. The store features more than 30 free e-book titles available for download, providing customers a risk-free opportunity to experience e-books and test drive the reader,« said Blake. Other WWW book sellers deliver similar features, but some famous authors have used the internet to get around the publishers and regular publish chapters which can be downloaded after entering your credit card number.

Scientific journals on the WWW

The exchange of scientific information is currently in a period in which most journals are offered as printed copy, and as soft copy delivered via e-mail or papers can be downloaded from the internet. It is, however, a transition period as in the future the printed version of a scientific journal is likely to disappear. At least that seems to be opinion of the major publishers and experts.

A chief-executive of Elsevier Science, the main scientific publisher in the world which aims to reinvent itself as internet company, thinks that within two years the printed version of many journals will no longer exist and that articles will only be available on the internet. Articles will be offered through the internet, they will reviewed through the internet and will be made available on the internet. This seems to drastically reduce subscription prices and the USA is upfront with this technology. Elsevier Science hopes that by 2002 more than 60% of its scientific revenues will come from internet projects. An interesting development is that Elsevier Science attempts to make older material available and that it is possible to click through in the list of references to the next paper.

Experts believe that the plethora of print journals is doomed to extinction as it makes no economic sense and is increasingly a hindrance to science itself (Butler, 2000d). Not all journals will disappear and journals whose content can command a large readership will continue to exist and flourish in print as their economics are akin to those of the magazine market. The bulk of journals are consulted no more than 50 times a year in a typical library, and only 15% is consulted more than 250 times. Subscribing just to the handful journals will save several thousand dollars whereas the costs of print are difficult to justify for most journals. Therefore in a free-market, high-cost/low-circulation journals would be forced to go electronic, or disappear (Butler, 2000d).

Developments in science journals on the web are rapid. Since 1995 there is an Journal of Electronic Publishing which is published by the University of Michigan Press: <http://www.press.umich.edu/jep/>. This journal regular published feature article on progress of the electrification in the class and lecture room as well as in the publishing of science. In many disciplines of science there are electronic journals, especially in the biomedical sciences where there seems to be so much need for prompt publication of a research finding. They have also more money than in other sciences although competition is stiff.

Some concerns have been expressed by librarians to increase the efforts to provide electronic services. The call has recently come from German's science council, the Wissenschaftsrat, which finds that there as yet no satisfactory solutions for reliable long-term archiving of digital media (Schiermeier, 2000). They further pointed out that contrary to many predictions the emergence of electronic publications has not led to a decrease in print publications.

Internet publishing also renews some hostilities between commercial publishers and those who believe that scientific literature should be available free on the internet (Macilwain, 2000). It mainly concerns the battle between the bio-medical CrossRef (from the commercial publishers) and PubMed Central which is the US National Institutes of Health's (NIH) repository for peer-reviewed primary research reports in the life sciences (for details see <http://pubmedcentral.nih.gov>). PubMed Central is a free online public archive of peer-reviewed and non-peer-reviewed literature in biology which began accepting journal articles in January 2000. Biomedical research has set up a similar site (BioMed Central) and according to some of electronic publishing experts "...scientists will soon find that unless their papers are freely available, they might as well not be written" (Butler, 2000c). That is probably exaggerated but the idea of a seamless, searchable and freely accessible database is exciting. There are many other initiatives under way.

Early 2000 the initiative was taken for a Europe-based global website of the scientific literature, E-biosci, which was endorsed by research organisations, commercial publishers and the EU (Butler, 2000a). The E-Biosci website would hold abstracts covering a range of disciplines, linked to the full text of the articles. It would be much more complete than PubMed. Whether it is free would be a 'per publisher' decision (Butler, 2000a). Another recent initiative was taken by HighWire Press which is a not-for-profit organisation set up by Stanford University in 1995. The goal is to provide free access for all life sciences by making the back issues available representing more than 137,000 articles (Butler, 2000b). Late 1999, some 12 major commercial publishers agreed on a deal to link journals on the web and as many as 3 million articles across thousands of journals will be linked. It is expected that eventually between 5 to 10 million articles and their references will be interconnected in this way. Not for free of course.

Search engines

With the advent of the internet, the publication of science can be democratised as the dissemination of scientific information no longer needs to be regulated by publishers via peer review and by librarians through their purchase of the journals (Allen et al., 1999). Although this deregulation will speed the flow of valuable information around the world, a negative side effect may be the increase exposure of students and the public to misleading or biased science or to opinion masquerading science (Allen et al., 1999). Search engines should be assisting in this respect, meaning that they should indicate somehow the quality or origin of the information. Finding good quality science on the web through search engines is not easy.

Locating science on the web can be tedious business because much information is not well structured. Previously one would walk into a library and search either in cardboxes, microfilm, or computers to the locations of journals or books. Now it is possible that scientists download papers and information from behind their desk – provided they can find it. Search engines cover only parts of the web and it has been estimated that Northern Light, the search engine with the largest coverage, is estimated to index only 38% of the web in 1999 (Albert et al., 1999) to 25% in 2000 (Butler, 2000e). Other engines seem to index only 7 to 16% of the web. Overall there are substantial limitations to search engines and they have bigger implications for scientists than for regular consumers (Butler, 2000e). Some have argued that standardized addresses would make the web easier (Rajkumar, 2000). The pressing question is, however, not what percentage of the web a search engine covers, but how much of the web is worthy of coverage and how to identify that fraction (Fainzilber, 1999) A science-oriented search engine, together with a set of scientific metadata to help us trawl the oceans of information, seems to be needed (Gardner, 1999)

3. Soil science going electronic

Before discussing the status of electronic publishing in soil science, I would like to take a step back and see how scientific publishing started. Scientific journals first developed in the 17th century to systematize the letters and circular letters through which intellectuals interested in science had begun communicating their discoveries to each other. In January 1665, *Le Journal des Sçavans* appeared in France

and in the same year The Philosophical Transactions of the Royal Society of England were first published (Burnham, 1992). The Philosophical Transactions was in fact an attempt to deal with the enormous volume of correspondence that the Royal Society had engendered. In the decades that followed a large number of other journals appeared and by the 19th century the explosion in scientific communication was well under way (Burnham, 1992). Science's exponential growth over the last three centuries has been astonishingly steady. The doubling time in the number of journals since 1700 has been around 15 years and, because journals expand in size, the doubling time in the number of papers has been about 10 years (Kealey, 2000).

The first soil science journal appeared at the close of the 19th century and a large number of soil science journals saw the light in the 20th century. Table 1 presents some of the main agricultural and soil science journals and their first year of publication. Prior to the second World War, there were only few scientific journals in which soil investigations were published. A considerable number of journals was established directly after the war and another peak occurred in the early 1980s. Only two journals were established in the 1990s and both focus on soil biology. It should be noted that there are some other soil journals as well like the Journal of the Indian Society of Soil Science which is published since 1953.

Table 1. Some of the main agricultural and soil science journals and their first year of publication

Journal	First published	Journal	First published
Pochvovedenie	1899	Australian Journal of Soil Research	1963
Journal of Agricultural Science	1905	Geoderma	1967
Agronomy Journal	1907	Soil Biology and Biochemistry	1969
Soil Science	1916	Commun. Soil Science and Plant Analysis	1970
Journal of Plant Nutrition and Soil Science ¹	1922	Catena	1973
Tropical Agriculture	1924	Agricultural Systems	1976
Experimental Agriculture	1933	Field Crops Research	1977
Soil Science Society of America Journal	1936	Agriculture, Ecosystems & Environment	1980
Journal of Soil and Water Conservation	1946	Soil and Tillage Research	1980
Plant and Soil	1948	Nutrient Cycling in Agroecosystems ²	1980
Advances in Agronomy	1949	Biology and Fertility of Soils	1985
(European) Journal of Soil Science	1949	Soil Use and Management	1985
Australian Journal of Agricultural Research	1950	Arid Soil Research and Rehabilitation	1987
Netherlands Journal of Agricultural Science	1953	Soil Technology ³	1988
Soil Science and Plant Nutrition	1955	Land Degradation and Development ⁴	1989
Outlook on Agriculture	1956	European Journal of Soil Biology	1992
Canadian Journal of Soil Science	1957	Applied Soil Ecology	1994

1 Zeitschrift für Pflanzenernährung und Bodenkunde

2 Up to 1996 the journal was titled Fertilizer Research

3 Soil Technology merged with Soil & tillage Research in 1998

4 Up to 1997 published as Land Degradation and Rehabilitation

It is unlikely that the coming 100 years will yield a similar impressive list of new journals in soil science. Perhaps in some hundreds year from now historians will summarize the developments as follows: in the 19th century the systematic study of soils started and was made a true science when agrogeologists and agricultural chemists combined their efforts; in the 20th century a large number of soil science subdisciplines developed, many journals were started and hundreds of thousand papers were written; in the 21st century these journals gradually disappeared again when the world went electronic. I think there are two reasons why the number of soil science journals will decrease the coming century. Firstly, science demonstrates diminishing returns and one day science's exponential demands on national incomes will become excessive causing the rates of scientific growth to slow (Kealey, 2000). That economic law is likely to affect soil science and to some extent that is already occurring in a number of countries. Secondly, the current number of journals is too large which requires too much time to monitor the large number of publications in order to keep abreast of developments in any field of

interest. Internet journals may postpone a decrease in number of soil science journals, but the effect will be only temporarily. Titles will merge and journals will disappear. There is scope, however, for a review journal in soil science particularly now information and review papers are scattered over a great number of soil science journals. Except for *Advances in Agronomy* which has regularly papers on soil science there is no review journal solely dedicated to soil science. It may be one of the very few new soil science journal to emerge in the 21st century.

A fascinating book on the literature of soil science was edited by Peter McDonald from Cornell in 1994 (McDonald, 1994). The book contains 14 chapters on subjects like characteristics of soil science literature, bibliometrics of tropical soil science, core monographs in soil science, and soil science societies and their publishing influence. The book has not received a lot of attention in the soil science community (it is widely available on second hand book websites). Nowhere in the book it is mentioned that publishing media will change in the future. It seems that for soil science the WWW was out of sight in 1994.

Going electronic – a new paradigm?

The ideas of the American philosopher Thomas Kuhn (1923-1996) entered the world of soil science in the 1990s when some started to speak about „paradigms“. In short, Kuhn unleashed the notion that science is not a smooth, authoritative progression, but lurches forwards in a series of semi-rational fits. Kuhn, who was based at Harvard and influenced by Aristotle, has been much criticised because paradigm shifts are more gradual and less irrational than he had proposed. His theories on paradigms are not easy to apply in soil science as changes seem to go gradually with fuzzy boundaries. For example, it is not likely that Dokuchaev's and Jenny's CLORPT will be replaced by something else or that someone discovers that plants suddenly require 26 elements or only 6 to come to maturity.

With all respect for Kuhn and his faithful followers, I do believe that currently something is taking place that, if you wish, could be named a paradigm shift. And that is the internet or the linking of billions of pieces of information from computers all over the globe. For the first time since scientific publishing started in the 17th century there is major change coming up in the exchange of scientific information. The internet is ideal for aiding the core journal function of regrouping work scattered across many disciplines (Butler, 2000d). This is particular important for soil science with its many specialisations which are essentially interdisciplinary in character. Currently there are many journals which occasionally publish a paper on soils and climate change. There is no better mechanism than the web to trace and keep abreast of developments in a particular area of research.

We are currently in a period of transition, and most soil science journals offer print copy and on-line versions. There is little difference between the journals of the commercial publishers and those of national soil science societies and both offer similar packages. Since most soil science journals have a relatively low circulation it is likely that they will either go electronic or disappear – at the least that is the experiences in many other science journals (Butler, 2000d). Therefore soil scientists should become involved in the discussion on what will happen with our journals - the main outlet for our investigations and an important evaluation criterion for institutes and individuals. If we do not get involved the publishers will sort it out for us. Currently there is only one journal which is fully electronic: *Sciences of Soils* which started in 1998 - see <http://hintze-online.com/sos/index.html>.

Another electronic development which is taken place is that soil science textbooks are being replaced by CD ROMs. Some years back when Prof. Alex McBratney reviewed the second edition of White's »Principles and Practices of Soil Science«, he wondered how much longer the textbook as we have to come to know it will last, and whether the next edition of White's book will be on CD ROM or perhaps on a publishers' home page. Since then a number of soil science CD ROMs have appeared and it is likely that an increasing number of introductory and advanced soil science texts will be published in electronic format in the future. The problem with a number of these CD ROMs is that they are little else than a book in electronic format having the additional possibility of clicking highlighted text. Not much is gained by that. For the advancement of soil science much more can be expected from electronic publishing on the internet.

Electronic publishing

Some believe that scientific publishing means that »...scientists have to take full control of the publishing process and that they insist that it is free, untaxed by the parasites in the publishing world« (Macilwain, 2000). The web would be ideal for that as it allows a continuum of publication that has become possible in the electronic environment (Elliott and Frankel, 1999). Electronic publishing means that papers can be widely distributed for a very reasonable price but it all depends on how the internet will evolve. The internet revolution is depending on many factors including burgeoning bandwidths and new digital formats. The computer brought us speed and convenience – the internet brings us quantity and even more convenience.

Currently our scientific output increases with about 5% per year meaning that each year some 500 papers extra are being produced (Hartemink, 1999). Quality control is mainly guaranteed by the peer-review process but if we move to electronic publishing can quality be guaranteed, will we write differently, and is peer review going to be abolished? And will it affect the way we conduct soil science and how will impact or citation be measured? These are difficult questions and I will attempt to address some of them.

It is likely that electronic publishing will affect the style of scientific writing (Gerstein, 1999). The length of on-line articles will be less restricted and it will be possible to use hypertext and to connect to supplementary material on other websites or in external databases. This enables to reduce the size of the main text and to make it less technical, moving the details to linked sections. The use of hypertext in papers raises the issue whether authors will be free to modify linked material in their own websites, or whether the content related to a paper should be frozen on submission, which is especially relevant to refereeing (Gerstein, 1999).

Will internet publishing affect peer review? New systems may develop by which manuscripts are put in a internet archive of un-reviewed papers for some months after a first quick screening by a specialist. Other specialists in the field may give comments and the author considers these and resubmit the manuscript to an editor, who makes the final decision. Then the paper may either be removed or put in the peer reviewed archive. Will it work? I don't think so because not many people will voluntarily look for papers to review, and those who do give their comments might not be the busy specialist whose opinion you are after. Such an open system will not be easy to maintain and editors remain needed. Open systems go round the publishers but it requires a drastic change of culture in publishing soil science. A more radical approach would be to break the link between publishing and peer review altogether. In effect, the journals would be »hollowed out« so that they merely act as service bureaux providing peer-review and editing services. They would no longer handle printing, publishing and distributions, this would be done on the internet, via a distributed global database which is currently being set up under the banner of the Open Archives initiatives. Journal subscriptions would be abolished, and the review process would be financed by fees paid directly by scientists' institutions, using the money that would otherwise have been paid for subscriptions (The Economist, 13th May 2000). This plan, which has been long-championed by someone at the University of Southampton, is likely to work if all institutions in the world which have publishing staff, would have a large number of subscriptions to reduce. In effect the system is based on page charges – those who publish pay for refereeing and everyone has free access to all information.

Closely related to the question how the internet will affect scientific publishing is the question whether the internet will affect the way we conduct science. It seems to be occurring in other disciplines. For example, in bio-informatics using intelligent search engines and a large number of databases on the web, new combinations of information can be made. "Surfing on DNA" yield novel insights or information on functions of unknown genes. Could something similar be done in soil science using bits of information published on the web to create something new? It all depends on the quality and quantity of soil information which is put on the web. It also relies on the availability of databases, soil information systems and metadata and the willingness of institutes to put it on the WWW. In a rapidly commercialising world where information is valuable, that willingness may be limited. I do think, however, that free availability of information of good quality would be beneficial for the advancement for soil science.

What about developing countries?

Three-quarters of the earth's population does not have a telephone, let alone access to the internet. The internet is also not evenly spread over the world. Of some 360 million internet users round the world, only 3.1 million are thought to be in Africa, and most of them are either in South Africa or north of the Sahara. Nigeria probably has 100,000 users and Kenya has even fewer (The Economist, 9th September 2000). In 1997, something like 84% of global expenditure on information and communication technologies took place in North America, Western Europe and Japan. Such spending encourages what has been called "The digital divide". It is for these reasons that some fear electronic publishing, because it will affect the availability of soil science information to developing countries where telephone lines are unreliable and internet connections are not available or slow. It will exclude them from access to information as well as to contribute because submissions need to be electronic. The fear is certainly justified in many countries, but it is questionable whether it remains valid in the long-term. Firstly, scientific information is currently also problematic in developing countries because many libraries had to cut their subscriptions to scientific journals because of extraordinary price increases. This also happened in many libraries of developed countries. Electronic journals which are cheaper, will increase the potential availability of soil science articles in developing countries, but much depends on the publishers. The remaining hurdles are obviously related to telephone lines, optic-fibre cables, bandwidths and internet providers. Developments in these areas in many developing countries seem to proceed. Internet in Africa is spreading fast and has tripled in 1999. In August 2000, Somalia became the latest African country to offer local access to the internet, and for the first time surfers can use the net in Kiswahili. Internet cafes have been springing up in African cities wherever people have the money to use them. On a larger scale, an East African company, Africa Online, based in Nairobi works in eight countries. Also the UN has put its faith in the internet as a means for poor countries to leapfrog stages of development, and the SG speaks of building "digital bridges". The internet could be a way round one of Africa's greatest weaknesses: its feeble infrastructure like poor roads but it will remain affected by uncertain power supplies and bad telephone lines. Computers and the internet make the contact richer and cheaper: e-mailing a 40-page document from Madagascar to Ivory Coast costs 20 cents, faxing it about \$45 and sending out by courier \$75 (The Economist, 9th September 2000). In summary internet is spreading fast in many developing countries which may enhance the availability of scientific information. Since we are currently in a transitional period it is hoped that improvements in the reliability and availability of the internet are as fast as the speed with which journals go out of print.

4. Some conclusions

As made clear in the introduction of this paper, it is difficult to predict where technological advances will be taking us and wrong predictions are easily made. That certainly applies to electronic publishing which is still in its infancy. Soil science journals are in a period of transition between the printed copy and the download. Many libraries seem not be able to make up their mind whether to go electronic and to drop print subscriptions. The same applies to the publishers which still have to consider the realities of a changing market and the needs of their customers (Reader, 1999). I have no doubt that we will be moving to the download stage only, and think that it will enhance the distribution and availability of soil scientific information. Moreover it will save paper - scientists will still print the articles they would want to read, or have, but will not bother about the other 80 or 90% of the articles in the same journal issue.

A point of concern is that soil scientists are not actively involved in the discussion on electronic publishing. We therefore may end up with publishing systems in which we as a scientific community had little or no say. If large databases of soil science information are being formed by combined effort of the commercial publishers, it is important that the journals of the national societies link up so that practising soil scientists have access to both information sources.

The internet will change the way soil scientists conduct literature searches and will result in on-line publishing which will look different from our current publications. We should not forget, however, that the format in which we exchange soil scientific information is only of secondary concern. The primary goal of scientific publication is, after all, not validation but communication (Liu, 2000), but more

importantly the overall goal of soil science is to contribute to society - now and in the future. Perhaps we can do that even better through the internet.

I started this article with some notes on the future and predictions suggesting that it is unlikely that paper free offices will ever occur. This reflects in which century I was brought up where pens and paper were the first thing one received entering primary school. Times are changing and at many primary schools pen and paper are being replaced by keyboard and computer screen and young children learn to play on-line. Within 40 years society will be led by those for whom handwriting is perhaps as obsolete as the sliderule is for us. It is impossible to make any serious predictions on the effects that may have for soil science and society at large.

Acknowledgements

I had again the good fortune that my colleague and IUSS Deputy Secretary General Drs JHV van Baren, has been so kind to carefully read through this article and suggest a number of improvements. Many thanks Hans.

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THE SOIL CAMPAIGN

Call for input for the constitution of educational references

The Soil Campaign
Alliance for a responsible, plural and united world
Foundation Charles Léopold Mayer

Dear colleagues,

The absence of soil, as subject matter, in the basic teaching programs (3-10/11 years) as well as in the medium and secondary teaching (12-18/19 years) has been highlighted, at the occasion of several international meetings, by Soil Scientists and by representatives of civil society working for a sustainable use of soil resource.

This lack in general teaching, both public and private, is a serious handicap to popular awareness on soils issues. It is reinforced by the absence in the educational and para-educational networks (book-stores, libraries, medias, ...) of specific educational materials on soils while there are some on rocks, minerals, water, plants, animals, mushrooms etc.

The experience suggests that a minimum knowledge on soil is necessary for all citizens of the Earth *in view of the rehabilitation of soils in people's culture. This rehabilitation appears, today, as a prerequisite for the success of all policies of soil preservation, including through legal means.* The community of Soil Scientists must contribute to this effort.

From the outset, the Soil Campaign emphasised, as part of its concerns, the necessity of teaching about soil as a prerequisite. It launches, in the framework of the "Intercultural Series for the Future" of the Foundation Charles Léopold Mayer, a call to the community of Soil Scientists for the production of educational references on soils intended for the general teaching.

Concretely, if you are interested and wish to contribute to this project :

You are asked to produce, in your own culture and as a Soil Scientist, a lesson on soil, of maximum 2 A4 pages or 6000 signs, intended for 10 to 12 years old children. This lesson must be written in your own language, with a version in English.

Contributions will be presented, for validation, to the Commission " Soil Education and Public Awareness " of the International Union of Soil Science-IUSS – at the occasion of the 17th World Congress of Soil Science (Bangkok, 2002).

The lessons validated will be illustrated by a specialist and will be published under the title " **Tell me a story on soil** " - **Collection of Educational References on Soil, intended for the teaching of the basic curriculum.** This collective work will be submitted to UNESCO for sponsorship. The objective is its official recognition by UNESCO as an educational tool useful for Soil education, thereby, its translation in various languages and its circulation in the world will be made easier.

Address your contributions by postal mail, fax or e-mail, before the 31.12.2001, to:

Prof. Dr Rabah Lahmar

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Fax : +33 1 43 14 75 99; +33 4 67 27 04 56; e-mail : pms@echo.org

Signed

Prof. Dr. **Rabah Lahmar**, The Soil Campaign – **PMS-**

Prof. Dr. **Mireille Dosso**, Chairperson of the Education in Soil Science Committee of the International Union of Soil Science - **CES-IUSS**

Prof. Dr. **Alain Ruellan**, Former President of the International Soil Science Society –**ISSS-**, now **IUSS**

Appel à contribution pour la constitution de références éducatives

Le Programme Mobilisateur Sols Alliance pour un monde responsable, pluriel et solidaire Fondation Charles Léopold Mayer

Chers collègues,

L'absence du sol, comme matière, dans les programmes d'enseignement de base (3-10/11 ans) de même que dans l'enseignement moyen et secondaire (12-18/19 ans) a été soulignée, à l'occasion de plusieurs rencontres internationales, par les spécialistes du sol et par les représentants de la société civile œuvrant pour une utilisation durable de la ressource sol.

Cette lacune dans l'enseignement général, public et privé, est un sérieux handicap à une prise de conscience populaire à la problématique des sols. Elle est renforcée par l'absence dans les circuits éducatifs et para-éducatifs (librairies, bibliothèques, médias, ...) de matériel éducatif spécifique aux sols comme il en existe sur les roches, les minéraux, l'eau, les végétaux, les animaux, les champignons etc. L'expérience suggère qu'un **Savoir Minimum** sur le sol est **Indispensable** à tout Citoyen de la terre (le **SMIC pédologique**) pour la réhabilitation du sol dans la culture populaire. Cette réhabilitation apparaît, aujourd'hui, comme un préalable à la réussite de toute politique de préservation des sols, y compris par des lois. La communauté des spécialistes du sol doit contribuer à cet effort.

Le Programme Mobilisateur Sols a inscrit, dès le départ, le préalable de l'enseignement du sol parmi ses préoccupations. Il lance, dans le cadre de la **Bibliothèque Interculturelle** de la **Fondation Charles Léopold Mayer**, un appel à la communauté des spécialistes du sol pour la production de références éducatives sur les sols destinées à l'enseignement général.

Concrètement, si l'idée vous intéresse et si vous souhaitez contribuer au projet :

il vous est demandé de produire, dans votre propre culture et en tant que spécialiste du sol, une leçon sur le sol, de 2 pages A4 maximum ou de 6000 signes, destinées à des enfants de 10 à 12 ans d'âge. Cette leçon doit être rédigée dans votre langue, avec une version en anglais.

Les contributions seront présentées, pour validation, aux travaux de la Commission "Soil Education and Public Awareness" de l'Union Internationale de Science du Sol -UISS- à l'occasion le 17^{ème} Congrès Mondial de Science du Sol (Bangkok, 2002).

Les leçons validées seront illustrées par un spécialiste et éditées sous le titre "**Raconte moi le sol**" - **Collection de Références Educatives sur le Sol, destinées à l'enseignement du premier cycle.** L'ouvrage collectif sera présenté à l'UNESCO pour parrainage. L'objectif étant sa reconnaissance officielle par l'UNESCO comme un outil pédagogique utile à l'éducation au Sol et, de ce fait, sa traduction dans diverses langues et sa diffusion dans le monde seront facilitées.

Adressez vos contributions par courrier postal, fax ou e-mail, avant le 31.12.2001, à :

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Prof. Dr. **Alain Ruellan**, Ancien Président de l'Association Internationale de Science du Sol –**AISS-**.

SOILS – THE SKIN OF THE EARTH

Announcement and call for cooperation

A team of (soil) scientists and film producers has started to prepare the campaign SOS - 2002 (Save Our Soils). Taking part are a.o. Profs. Mireille Dosso, Alain Ruellan and Rabah Lahmar. It is the aim to make a multimedia package, entitled Soils - The Skin of the Earth. A 240-minutes program under the name It's Dirty - Soils of the World, will be presented on TV channels in Germany and France. The team also plans to have articles in German and French newspapers, an educational film for schools, various exhibits, and a DVD-ROM. The team is looking for active cooperation and promoters of this initiative. IUSS members, who are interested in participation, can contact:

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AUSBILDUNG IN BODENWISSENSCHAFTEN

Neue Wege an der Universität Hohenheim

An der Universität Hohenheim gibt es 4 Professuren für Bodenkunde, die in Bodengenetik und Gesteinskunde, Bodenchemie, Bodenphysik und Bodenbiologie spezialisiert sind. Darüber hinaus existieren in den Nachbar-Instituten Fachgebiete der Kulturtechnik, Landschaftsökologie, Pflanzenernährung und der Ökonomie, die das Angebot der Bodenkunde ergänzen. Die traditionelle Ausbildung an der Universität sah eine Grundausbildung in Bodenkunde und die Vertiefungsfächer Ökologische Bodenkunde und Standortkunde für Studenten der Agrarwissenschaften, Agrarbiologie, Biologie, Geographie und Geologie vor.

In den letzten 3 Jahren wurden alle Studiengänge im Agrarbereich der Universität reformiert. Die Reform umfasst folgende Punkte:

a) Alle Lehrveranstaltungen werden in Module von 60 Unterrichtsstunden eingeteilt. Diese Module werden einzeln geprüft und nach dem ECTS-System (Europäisches Credit Transfer System) bewertet. Das Studium wird vom Diplom-Studium in ein Bachelor- und Master-Studium umgewandelt und ein Teil der Ausbildung wird in englischer Sprache abgehalten.

b) Für die **BODENWISSENSCHAFTEN** ergeben sich damit **4 neue Möglichkeiten in Hohenheim** zu studieren:

1. Bachelor of Science in Agrarwissenschaften 6 Semester mit **Vertiefung Bodenwissenschaften**. In den ersten zwei Jahren sind zwei Module Bodenwissenschaften Grundausbildung verpflichtend. Im dritten Jahr werden 10 Module in Bodenwissenschaften – je eines in Pedologie, Bodenchemie, Bodenbiologie, Bodenphysik und ein integriertes bodenwissenschaftliches Projekt durchgeführt. Dazu können 5 weitere Module frei gewählt werden. Der Bachelor in der Vertiefung kann auch nach einem Vordiplom in Agrarwissenschaften oder Geoökologie in einem Jahr erworben werden.

2. Master of Science – in **Bodenwissenschaften** eine zweijährige Ausbildung nach einem Diplom oder einem Bachelor of Science. Dabei ist wieder je ein Modul in den beim Bachelor genannten Fachrichtungen und in Geologie und Geomorphologie verpflichtend. Die übrigen Module werden frei gewählt. Hier werden auch Ökologische Standortkunde, Pflanzenernährung, Landschaftsökologie,

Bodensanierung, Bodenschutz und Bodenrecht angeboten. Nach einer Master-Thesis wird das Master-Diplom erreicht.

3. Im November und Dezember jeden Jahres werden zwei Module von je 3,5 Wochen mit **Soil- and Water-Resources** und **Tropical Soils and Land Evaluation** in englischer Sprache angeboten. Diese beiden Module gehören zu dem englischsprachigen Studiengang Tropical Masters in Agriculture. Diese Module können auch einzeln absolviert werden. Die Teilnehmer erhalten bei erfolgreicher Abschlußprüfung ein Zertifikat.

4. Andere Module aus dem Studiengang, insbesondere vertiefende Praktika in Bodenbiologie, Bodenchemie, Bodenphysik, Bodengenetik und Bodenkartierung, Standortskunde sowie Bodenkundliche Exkursionen können auch einzeln gewählt werden. Der Zeitbedarf für diese einzelnen Blöcke beträgt 1 Woche bis 15 Wochen. Ein Teil dieser Module kann bei Bedarf auch in englischer Sprache angeboten werden.

Die Universität Hohenheim strebt an, den Anteil der Ausländer (z.Zt. 10 %) zu erhöhen. Sie bittet deshalb Interessenten mit deutschen oder englischen Sprachkenntnissen sich zu bewerben. Die Universität verfügt über keine Mittel für Stipendien. Bewerber, die sich bei Stiftungen um Stipendien bemühen, können bei Eignung aber von der Universität Hohenheim ein Unterstützungsschreiben erhalten.

Bewerbungen und Informationen erhalten Sie über Prof. Dr. Karl Stahr und Frau Dr. Friederike Lang, Universität Hohenheim, Institut für Bodenkunde, 70593 Stuttgart; Fax: 0711-459-3117, e-mail: Kstahr@uni-hohenheim.de, <http://www.uni-hohenheim.de/zsb> – Zentrale Studienberatung, Universität Hohenheim, 70593 Stuttgart, Tel: 0711/459-2064.

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Committee on Budget and Finances (CBF), instead of ad-hoc committees at Congresses.

Chairperson: Dr. W.R. Gardner, College of Natural Resources, Univ. of California, Berkeley, CA 94720, USA; <wgardner@cc.usu.edu>.

Members: Prof.Dr. W.E.H. Blum (Austria), Dr. D. Gabriels (Belgium),Dr. P.U. Luescher (Switzerland), Dr. W.G. Sombroek (The Netherlands) and one representative of the regional Society of Africa, East/Southeast Asia and Latin America.

Committee on Education in Soil Science (CES), with particular attention to secondary school/college level

Chairperson: Prof.Dr. M. Dosso, CNEARC, B.P. 5089, 1101 Av. Agropolis, 34033 Montpellier, France; <dosso@cnearc.fr>.

Members: Rabah Lahmar (Algeria), Pamela Hazelton (Australia), Stephen Nortcliff (Great Britain), John Hatzopoulos (Greece), Mamadou Khouma (Senegal), Angélique Lansu (The Netherlands), Bruce James (USA).

Committee on History, Philosophy and Sociology of Soil Science (CHP)

Chairperson: Prof.Dr. Dan H. Yaalon, Inst. of Earth Sciences, The Hebrew University, Jerusalem 91 904, Israel; Fax: +972-2-566-2581; <yaalon@vms.huji.ac.il>.

Members: to be defined

IUSS Representatives in Committees/Commissions of International Organizations:

ICSU-SCOPE	Scientific Committee on Problems of the Environment: Dr. F. Fournier (France).
ICSU-CSFS:	Scientific Committee on Sciences for Food Security: Prof.Dr. W.E.H. Blum, (Austria).
ICSU-IBN	International Biosciences Networks: Prof.Dr. P.A. Sanchez (USA).
ICSU-IGBP	International Geosphere-Biosphere Programme: Dr. J. Kimble (USA)
ICSU-COSPAR	Committee on Space Research: Dr. Karale (India).
ICSU-CODATA	Committee on Data for Science and Technology: Prof.Dr. M.F. Baumgardner (U.S.A.).
IUBS-UNESCO-TSBF	Dr. J. Kimble, USA

**ACTIVITIES OF COMMITTEES, COMMISSIONS, SUB-COMMISSIONS,
AND WORKING GROUPS
ACTIVITÉS DES COMITÉS, COMMISSIONS, SOUS-COMMISSIONS
ET GROUPES DE TRAVAIL
AUS DER TÄTIGKEIT VON KOMITEES, KOMMISSIONEN, SUBKOMMISSIONEN
UND ARBEITSGRUPPEN**

COMMITTEE ON EDUCATION IN SOIL SCIENCE (CES)

MEETING OF OSNABRÜCK (Germany)

From 10 to 14 September 2000, 10 persons participated in the CES meeting in Osnabrück (Germany) where the soil part (Faszination Boden) of the Universal Expo 2000 (Hannover) was organised.

The meeting was very well organised by the Expo-Office of the city of Osnabrück.

The program was:

- 10/09: visit to Expo 2000 (Hannover).
- 11 and 12/09: visit of "Fascination Soil" (Osnabrück).
- 13/09: meeting of CES.
- 14/09 : visit of the exhibition "Abenteuer BodenΣ" (part of "Fascination Soil")

The 10 participants were: Mireille DOSSO (Chairperson, France), Jose AGUILAR (Spain), Albert BOS (The Netherlands), Costanza CALZOLARI (Italy), Carlos DORRONSORO (Spain), Raoul DUDAL (Belgium), Pamela HAZELTON (Australia), Rabah LAHMAR (Algeria), Angelique LANZU (The Netherlands), Alain RUELLAN (France).

About "Fascination Soil": the CES has been very interested and impressed by the work done to present, for all public, what is soil, how soil is interesting, beautiful and useful, but also what are the problems in relation with soils. The effort made before and for Expo 2000, will continue after: it is a very nice example of what can be done about soil education and the CES recommends the visit for all scientist interested by science and popular education.

The program of the 13/09 meeting was:

- Transformation of CES from Standing Committee of IUSS to Commission of IUSS.
- CES activities in each country, since 1998 World Congress (Montpellier).
- Future activities of CES, mainly for the next World Congress (Bangkok 2002).

The main conclusions of the meeting are:

- CES is happy with the transformation to a Commission: **"Soil education and public awareness"**. For the election of the first Chairperson of this Commission, the participants will support the candidature of Prof.Dr Mireille DOSSO, to ensure the continuity of the work done until now.
- The inventory of the activities, of the countries represented at the meeting, shows the existence of many actions. But three main problems appear: a large dispersion of the actions; an absence of governmental policies and supports, about soil and soil education (the example of Germany and Osnabrück is exceptional); too many educational products and actions have a pessimistic view about soil situation.
- The symposium that will be organised during the 17th Congress of Bangkok will have the following name and thematic: »Soil education and public awareness«. The symposium will deal with how to speak about soil, including global and interdisciplinary approach (soil in the ecological and human systems): presentation of examples of educational experiences, including field works; pedagogical strategies; formation of the teachers; educational role of soil science specialists. Prof.Dr Mireille DOSSO is the convener of the symposium. Dr Patricia MERSINGER, Managing Director of Fasz-

ination Boden, will be asked to give an invited paper.

- Prof. Dr. Rabah LAHMAR has made the proposal to construct a book dealing with how to speak about soil to the children: contributions will be asked to soil specialists of different countries and cultures. The Foundation Charles Leopold Mayer (Switzerland) may support this project. The document can be completed by an information about what is taught about soil in the Universities of different countries. CES supports this proposal.
- Mr. Albert BOS, from ISRIC, is making an inventory of the soil museums around the world. He also started with an inventory of websites dealing with soil education. He will send, very soon, a first list to the members of the CES, asking them to have a look at the sites and to give an opinion about each site. The list, with the opinions, will be put on a website, in which all the relevant educational products found on the web will appear. This webpage can be produced at ISRIC and the results can be presented at the Bangkok Congress.
- Having noticed that many times the subject SOIL is not at all, or not enough, or wrongly being mentioned in relevant websites, Albert Bos believes that this information can be improved and enlarged. He proposes to CES and its members and to the soil scientist in general to be more active in the public debate, and defend the interest of our science. This can also be done with trying to improve soil science information on the web. CES agrees with this proposal.
- It is decided to publish a Newsletter of the CES (and of the future Commission). It will be tried to publish 2 Newsletters each year.

**THIRD INTERNATIONAL SYMPOSIUM OF THE WORKING GROUP MO
of the International Union of Soil Sciences (IUSS)
"Soil Mineral-Organic Matter-Microorganism Interactions and Ecosystem Health"
Naples-Capri (Italy) 22-26 May, 2000**

The Working Group M.O. (Interactions of Soil Minerals with Organic Components and Microorganisms) of the International Union of Soil Sciences (IUSS) was founded in 1990 at the 14th World Congress of Soil Sciences (Kyoto, Japan), with Dr. P.M. Huang being the Chairman. The Working Group MO in the last 10 years has facilitated, promoted and catalyzed the collaboration among scientists of different disciplines in Soil Science and Environmental Science. It organized two International Symposia; the first by Dr. Huang in Edmonton (Canada) in 1992 and the second by Dr. Berthelin in Nancy (France) in 1996. Specialized and shorter co-sponsored meetings were also held in Mexico in 1994 and in St Louis (USA) in 1995. Following these Symposia and Meetings, six volumes or special books have been published in the last 6 years.

The 3rd International Symposium of the Working Group M.O. of the IUSS »Soil Mineral-Organic Matter-Microorganism Interactions and Ecosystem Health«, was held in Naples-Capri (Italy) on May 22-26, 2000. It was cosponsored by the Commissions II (Soil Chemistry), III (Soil Biology), VII (Soil Mineralogy) and VIII (Soils and the Environment) of the IUSS, by the University of Naples "Federico II" and by the Società Italiana di Scienza del Suolo (SISS).

The aim of the Symposium was to provide a forum for the interactions of soil chemists, soil mineralogists, soil microbiologists, soil biochemists and environmental scientists to stimulate and promote discussion, exchange of information and knowledge and to bring together scientists from around the world who do not normally interact or attend the same scientific meetings.

The Symposium was held at the University of Naples "Federico II" in the Aula Magna (Opening Session), the historical Real Museo Mineralogico (oral sessions) and the historical Real Museo Zoologico (poster sessions).

More than 220 scientists of 33 different countries (Australia, Austria, Bangladesh, Canada, Chile, China, Columbia, Czech Republic, Denmark, Egypt, Finland, France, Germany, Hungary, Israel, Italy, Japan, New Zealand, Poland, Spain, The Netherlands, Rumania, Russia, USA, UK, South Africa,

Korea, Sri Lanka, Switzerland, Taiwan, Sweden, Zimbabwe) participated at this scientific event. About 200 papers were presented at the meeting. The participants of the Symposium represented several subdisciplines of Soil Science as well as Ecology, Environmental Science, Toxicology and Health Science.

The programme consisted of six sessions:

1. *Ecological significance of interactions of metals and metalloids with soil colloids, enzymes and microbial biomass*
2. *Dynamics and mobility of nutrients and inorganic pollutants in soil environments*
3. *Dynamics and transformations of organic pollutants in soil and their impact on ecosystem health*
4. *Effects of soil colloids on microorganisms and immobilization and activity of biopolymers*
5. *Bioavailability of metals, metalloids and xenobiotics adsorbed on mineral-organic components*
6. *The role of minerals-organic-matter-soil biota interactions in the restoration of perturbed ecosystems.*

The introductory lectures were given by Drs G. Stotszy, A. Page and R. Burns.

Each session was introduced by outstanding invited scientists: Drs G.L. Sparks (USA), R. P. Dick (USA), P.M. Huang (Canada), Senesi (Italy), C. de Kimpe (Canada), T.A. Jackson (Canada), H. R. Schulten (Germany), S. Staunton (France) A. Piccolo (Italy), J. Torrent (Spain), C. Jafvert (USA), P. Ruggiero (Italy), J.-M. Bollag (USA), P. Sequi (Italy).

Forty-five presentations were delivered and concurrently 145 posters were also exhibited during the Symposium. The volume of extended summaries of all the submitted papers was published and it was distributed among the participants.

On the last day a closing session was held in Capri at the Hotel "La Residenza". Drs P.M. Huang and C. De Kimpe presented two keynote lectures.

The Symposium ISMOM 2000 was an excellent and exciting opportunity for scientists from around the world to meet each other to discuss on many topics of mutual interest in this important area of science and to stimulate research leading to an integration of knowledge on "soil minerals-natural organics-microorganisms" and their impact on agricultural production and environmental protection.

A book containing selected papers presented at the Symposium will be published in 2001 by Elsevier in the series "Developing in Soil Sciences" (eds, A. Violante, P.M. Huang, J.-M. Bollag, L. Gianfreda)

The IUSS Working Group MO will hold a Symposium entitled "Soil Mineral-Organic Component-Microorganism Interactions and the Impact on the Ecosystem and Human Welfare" at the 17th World Congress of Soil Science in Bangkok, 2002.

You are cordially invited to present papers and participate at the Symposium.

The Forth Symposium of IUSS Working Group MO will be held at the Pennsylvania State University (Chairman Dr. Jean-Marc Bollag) in 2004.

Antonio Violante
Chairman Symposium ISMOM2000

World Reference Base for Soil Resources ...

... on the move ...

Since its endorsement by IUSS, at the event of the 16th World Congress of Soil Science at Montpellier in 1998, the Working Group RB has been very active at various fronts.

Field testing and promotion of WRB has been implemented through soil correlation exercises. The field excursions through Vietnam and China in 1998 were reported upon in the IUSS Bulletin 1998-2. Below follow some highlights from the soil correlation tours in Sicily (Italy), Georgia and Benin (West-Africa).

Sicily (September 1999)

The WRB meeting in Sicily was programmed at the event of the launching of the Italian version of FAO World Soil Resources Report Nr. 84. From 16–19 September 1999, Italian soil scientists met with international WRB participants in meetings as well as during field trips in order to exchange ideas on WRB. Furthermore some general conclusions were drawn from the 4 WRB field trips which were conducted since Montpellier 1998.

Some 60 agronomists, foresters and soil scientists discussed the Sicilian experience in regional soil surveys and their applications, while at international level the IUSS working group on the World Reference Base and FAO had been invited. Representatives from various other Mediterranean countries (France, Spain, Syria, Algeria) and EU members of the WRB Working group (Belgium, Denmark, Germany, the Netherlands, U.K.) attended too.

As Italy does not have a national system of soil classification, it has chosen to adapt the IUSS/FAO World Reference Base for Soil Resources (WRB) as classification system. The system was presented to the meeting by the soil correlator for Italy responsible for the preparation of the national soil map, Dr Costantini, and by the Chairman of the WRB working group, Professor Deckers.

The meeting was followed by a field tour, during which the main soils of the island were shown. This led to a discussion of the specific agricultural management aspects required by each of them. In addition, the soil classification criteria were checked for their relevance as indicators for management interventions and their consistent use elsewhere was discussed with the international members of the working group.

The field correlation allowed various concepts to be tested and enhanced mutual understanding on future changes to be made to the reference WRB system and will be published by FAO.

Caucasian Georgia (July 2000)

Some 12 people from six countries were representing the Working Group RB on this tour which was organised by Prof. Tengiz Urushadze from the Tbilisi Agricultural University. The tour covered more than 1000 km and most of the main zones of the country.

The profiles examined were in general well selected representatives of the soils they were supposed to typify. They therefore provided a fair test for the WRB.

Various problems and opportunities for improvement were noted and discussed, such as the definitions of the Cambic and Mollic horizons, Humic Cambisols rather than Mollic Cambisols, how to classify an argic horizon developed in a saprolite, and priority listing of WRB qualifiers. Last but not least, reflections were made on the usefulness of WRB for instantaneous soil classification.

The 1:500,000 Soil Map of Georgia is almost ready for printing and is required by the government. Professor T. Urushadze is keen to include the WRB classifications on the map as well as the Georgian names and their translation into English (with nomenclature based on the Soviet Union classification).



Who is used to digging soil pits???

Therefore, a small group (Urushadze, Blume, Bronger, Poetsch, Purnell) went through the legend of the map and suggested WRB equivalents. This will permit the prompt publication of the map. The tour was a success in enabling a number of soil scientists to familiarise themselves with some of the main soils of Georgia in their geomorphologic and climatic settings, and in demonstrating that the WRB works without major difficulties and provides a sound base on which to build a soil database for Georgia.

West-African soil correlation meeting (WASCO) (October 2000)

A West-African soil correlation meeting was organised by R. Sant'Anna from the FAO Regional office. A group of some 20 experts from English and French speaking West-African countries convened for three days at Abomey, to discuss the state-of-the art of soil survey and classification in West-Africa.

This meeting was purposely organized parallel to the International Symposium on 'Balanced Nutrient Management Systems for the Moist Savannah and Humid Forest Zones of Africa', which was held at Cotonou, Benin. A one-day joint in-door session was followed by a joint field day during which the usefulness of WRB was discussed to cater for soil fertility problems and sustainable management of West-African lands. Refinements in the definition and types of plinthic and petroplinthic horizons, which have considerable extent in the region were discussed.

The WASCO workshop recommended the use of WRB as a reference soil correlation system for West Africa and would welcome further training through national workshops on the subject. The participants suggested that the expertise of African soil specialists would more intensively be used to further improve WRB and endorsed its use in future regional soil inventories based on the SOTER methodology.

J. Deckers, F. Nachtergaele and O. Spaargaren
WRB Taskforce

**REPORTS OF MEETINGS
COMPTE-RENDUS DE RÉUNIONS
TAGUNGSBERICHTE**

**INTERNATIONAL SYMPOSIUM AND FIELD WORKSHOP ON
PALEOPEDOLOGY "PALEOSOLS AND MODERN SOILS AS STAGES
OF CONTINUOUS SOIL FORMATION"**

(Suzdal, Russia, 10-16 July 2000).

The Symposium was organised within the scientific program of the III Congress of Dokuchaev Soil Science Society in the ancient city of Suzdal, Vladimir region, 230 km east of Moscow. It was attended by 45 participants: 30 from Russia and 15 from 5 foreign countries. Discussed were 24 oral and 2 poster presentations, which are summarised in a publication. We also had numerous guests – participants of the Third Congress. Symposium had three-day oral presentations, interrupted by one-day mid-symposium field trip. The morning session of the first day, held in the beautiful Gallery of Our Savior and St. Euphimius Monastery, was combined with the Paleopedology Symposium of the Third Congress. The Secretary-General of the IUSS gave an opening speech. After opening words of Dr. Alexander Makeev, *secretary of the INQUA/IUSS Paleopedology Commission, presentations focused on developments in paleopedology in Russia.* The next 2 days the sessions took place in halls of the Main Tourist Centre of Suzdal. The papers discussed the following topics:

Polygenetic concepts of Quaternary paleosols; Buried Quaternary and pre-Quaternary paleosols as tools for reconstructing and modelling environmental changes; Methodological recognition of soils with relic properties: definition, classification and modelling.

Paleosol magnetic properties; Rates of development of pedogenic features; and; Environmental implications of paleopedogenic features for agriculture, forestry etc.

Intensive discussions were held about the correlation between Middle-Late Pleistocene pedostratigraphic schemes of Central Europe and the Russian Plain, as well as about the paleoenvironmental interpretation of the last (Eemian – Mikulino) interglacial paleosols.

In the mid-conference tour we visited Vladimir Opolie (from the Russian word polie-field), where we could observe paleocryogenic features in the gray forest soils, now cultivated. During this excursion, we also visited the marvellous Archangel Michael Monastery where the Museum of agricultural exploration of Vladimir Opolie is located and the ancient St. George cathedral, in the city of Yur'ev-Pols'kii. Two post-conference tours followed the Symposium. In the first excursion we observed fantastic Late Pleistocene loess-soil-cryogenic formation of the Vladimir Opolie, in the Bogolyubovo section on the right bank of the Nerl River. Additionally, we went to the famous Sungir Palaeolithic campsite where artefacts are scattered in Late Pleistocene Bryansk paleosol. This excursion finished with a cultural program visiting the great XII-XIV century monuments of Vladimir. This well-organized tour ended at the Golobovo section in Kolomna Opolie, where a Middle -Late Pleistocene loess-paleosol sequence is exposed with four well-developed interglacial paleosols. The participants had the opportunity to visit very large and well-prepared exposures.

The excellent team of local organisers, Drs. A.O. Makeev, A.A. Velichko, T.D. Morozova, E.Yu. Yakimenko, V.P. Nechaev, K.G. Dlussky, and N.O. Bader led the cultural and scientific program that allowed us to enjoy wonderful paleosol-sequences, combined with cultural highlights.

It was decided to have the next INQUA-IUSS paleopedology meeting in 2001 in Mexico.

Elizabeth Solleiro-Rebolledo, UNAM, Mexico.

DOKUCHAEV SOIL SCIENCE SOCIETY CONGRESS

The III Congress of Dokuchaev Soil Science Society (DSSS) at Russian Academy of Sciences was held in the ancient town of Suzdal, Central Russia, July, 11-15, 2000. About 500 participants (total number of DSSS members is 1700) from 51 regions of the country attended the Congress. There were also 34 foreign participants from 15 countries. The guests of the Congress were IUSS Secretary General W.E.H. Blum (Austria), Prof. L.Wilding (USA), President of Belorussian SSS Prof. N.I.Smeyan, Prof. A.Karklins (Latvia), Honorary member of DSSS Prof. I.A.Krupennikov (Moldova).

The Congress was opened by DSSS President Prof. G.V.Dobrovolsky. The representatives from IUSS and national SSSs of Azerbaijan, Belorussia, Estonia, Latvia, Moldova, Tajikistan, Ukraine and USA, Russian Academy of Sciences and other organizations addressed greetings to the DSSS Congress.

After Plenary lectures of G.V.Dobrovolsky, W.Blum, A.L.Ivanov, G.A.Zavarzin, L.Wilding, A.N.Kashtanov, L.L.Shishov, V.I.Kiryushin, and V.S.Stolbovoi the work of the Congress began under the motto "Soils in XXI century". 11 Symposia and 18 Commissions, Subcommissions and Working Groups meetings on different basic and applied fields of soil sciences included 263 oral papers and many posters.

The presentation of newly published Russian versions of two well-known books "Opportunities of Basic Soil Science" (USA) and "Referentiel Pedologique" (France) was held in Suzdal. Prof. L.Wilding handed certificates of American Soil Science Society to DSSS President Prof. G.V.Dobrovolsky, DSSS Vice-president Prof. V.O.Targulian and Prof. M.I.Gerasimova for this work.

Four field excursions to different areas near Suzdal were organized. Deep and long trenches exposing pronounced surface soil diversity and paleosol phenomena were demonstrated for DSSS Congress participants.

The elections of the President and members of DSSS Central Council were held on the last day. The newly-elected leaders of DSSS are:

President – Prof. G.V.Dobrovolsky
First Vice-president – Prof. S.A.Shoba
Vice-presidents - Prof. B.F.Aparin
Prof. I.M.Gadziev,
Prof. A.N.Kashtanov,
Prof. L.L.Shishov,
Prof. V.O.Targulian

Executive Secretary – Dr. I.N.Lubimova

On the closing ceremony President G.V.Dobrovolsky thanked the host of the Congress the Vladimir Research Institute of Agriculture for the activity in organization of the forum.

S.Goryachkin, V.Targulian

A Report on the International Symposium on Sustainable Land Management: Paradigms for the New Millennium

8-10 August 2000, Seri Kembangan, Malaysia

The symposium, organised and sponsored by the Malaysian Society of Soil Science (MSSS), was held at the Mines Beach Resort, Seri Kembangan, Selangor, about 15 km south of Kuala Lumpur. It consisted of two days of oral and poster presentations and discussion, and a one-day field trip. The opening ceremony of the symposium was officiated by the Honourable Minister of Land and Cooperative Development, Malaysia.

This effort by the MSSS received the support of several national and international organisations, especially the Malaysian Ministry of Science, Technology and Environment, Asia Soil Conservation Network (ASOCON), International board for Soil Research and Management (IBSRAM) and Food and Fertilizer Technology Center (FFTC), who were the co-sponsors.

Sixty papers, dealing with various subjects related to sustainable land management, were presented. Twenty-four of these papers were presented as posters. The papers were organised into six large groups as follows:

- Assessment and Monitoring of Sustainable Land Management
- Sustainable Land Management in relation to Food Production
- Land Degradation and Land Quality
- Mitigation Measures in Sustainable Land Management
- Land Development and Land Use Pattern
- General Considerations in Sustainable Land Management



The Hon. Minister of Land and Cooperative Development of Malaysia, Dr. Tan Sri Datuk Kasitaly Gaddam opening the Conference

Each oral paper presentation was followed by a question-and-answer session. The poster papers were on display for two full days and a special discussion session was organised. »sustainable use of marginal sloping uplands« and »Oil palm empty fruit bunch as a source of nutrients and a soil ameliorant in oil palm plantations«, were adjudged as the two best poster papers.

Participants from ten countries attended the symposium:

Austria (1), Indonesia (8), Malaysia (98), New Zealand (1), Philippines (1), P.R. China (3), Sri Lanka (1), Taiwan (1), Thailand (1), Vietnam (2), USA (1).

The Society has printed a book containing the abstracts (and extended abstracts) of the papers and will be publishing a proceedings of the symposium.

Ghulam M. Hashim
President, MSSS
Kuala Lumpur, Malaysia



Audience of the Conference

British Society of Soil Science Eurosoil 2000 meeting

The British Society of Soil Science (BSSS) has broken new ground through hosting the first Eurosoil 2000 Conference at Reading University between 4-7 September 2000. The idea for this meeting arose through a casual conversation between Professor David Powlson (current President of the British Society of Soil Science) and Professor Paolo Nannipieri (Italy) and several other European soil scientists back in 1996. BSSS put the idea to all Soil Science Societies in Europe and received unanimous support. BSSS Council endorsed the proposal in 1998. All administrative details were conducted by the Society Administrative Office at the Macaulay Land Use Research Institute in Aberdeen with local help from staff and students at the Department of Soil Science, University of Reading.

The 297 delegates, from 30 nations, were subjected to a hectic three-day programme but were agreed on the success of the meeting and eagerly await Eurosoil 2004. Several features of the meeting were significant. Whilst the standard of presentations were exceedingly high, it was the high proportion of young scientists from throughout Europe which was most noteworthy and given their enthusiasm and commitment, there will hopefully be many more »Eurosoils«.



Meeting of presidents and representatives of European National Soil Science Societies

The opening session comprised four speakers; the presidential Address, an opening address by Professor John Lawton, Chief Executive of NERC and two scene-setting talks – one from Professor Bouma, the Netherlands and one from Dr. Mark Kibblewhite, Environment Agency. Thereafter the meeting broke into parallel sessions with seven different themes, each with a keynote speaker and a programme of oral presentations organised by a Convenor and Co-convenor. The full listing is provided below:

A Protection and Remediation of European soils/includes chemical pollution; acidification and physical damage including erosion.

Convenor – Professor S MacGrath, Rothamsted, UK;

Co-convenor – Professor J. Rubio, Valencia, Spain;

Keynote Speaker – Dr. W. Peijnenberg, The Netherlands.

B Genetic and functional diversity of the soil population.

Convenor – Professor A G O'Donnell, Newcastle, UK;
Co-convenor – Professor P Nannipieri, Firenze, Italy;
Keynote Speaker – Dr. K Ekschmitt, Giessen, Germany.

C Soil organic matter - concepts, methods, models (includes global change and C sequestration)

Convenor – Professor D Hopkins, Stirling, UK;
Co-convenor – Dr. G Guggenberger, Bayreuth, Germany;
Keynote Speaker – Dr. E Gregorich, Ottawa, Canada.

D Soil quality – concepts, indicators, applications

Convenor – Dr. D Rimmer, Newcastle, UK;
Co-convenor – Dr. G Bachmann, Germany;
Keynote Speaker – Professor D Davidson, Stirling, UK.

E Managing nutrients to meet agricultural and environmental objectives (may be subdivided into sessions dealing with N, P, S and other nutrients).

Convenor – Dr. S. Robinson, Reading, UK;
Co-convenor/s – Professor L Kauppi, Helsinki/ Dr. U Skiba, UK;
Keynote Speaker – Professor S Jarvis, IGER, UK.

F Soil Science and Land Use Planning.

Convenor – Mr. M Jarvis, SSLRC, UK;
Co-convenor – Professor J. Deckers, Belgium;
Keynote – Dr. J. Van Orshoven, Belgium.

G Soil Structure: habitat and reservoir.

Convenor – Professor I Young, University of Abertay, UK;
Co-convenor – Dr. C Chenu, France;
Keynote – Dr. W Otten, Cambridge University, UK.

Besides the oral presentations there was a display of 112 posters with a high standard of presentation. The Society awarded prizes for the best poster in the different categories with winners from three researchers at the Centre for Molecular Ecology, University of Newcastle, the Department of Soil Science, University of Grenada and the University of Rennes, in France.

As well as a much appreciated wine reception after the poster session, the Conference dinner was preceded by a whisky reception sponsored by the MacAllan distillery, an insistence by the organiser that this historic event should be toasted with a quality malt.

The final day (Thursday 7th) was devoted to two fieldtrips where delegates had the option of a visit to Rothamsted or an excursion to examine soils of the High Weald. Both trips were much appreciated by those attending, an opportunity to examine soils in the field always being appreciated, in particular by ageing or budding pedologists.

During the meeting, Presidents and representatives of the national European Soil Science Societies met and decided not only to hold Eurosoil 2004 in Germany but also to create a European Soil Science Societies Webpage where Societies could advertise their meetings and provide information of soils interest within their country. Responsibility for both items was accepted by Professor M Frielinghaus, Institute of Soil Landscape Research, Germany, on behalf of the German Soil Science Society.

Dr. J.H. Gauld, Administrative Officer
British Society of Soil Science, Aberdeen, U.K.

Pedological excursion to Andalusia, October 28 - November 5, 2000

The Austrian Soil Science Society together with the Consejo Superior de Investigaciones Científicas/Sevilla organized a pedological excursion in memoriam of Prof. Walter Kubierna, the most renowned Austrian soil scientist of the past. Prof. Kubierna stayed in Spain at the CSIC for many years in the forties and fifties of our century. Exactly 50 years ago he investigated the soils in Southern Spain, where he described a significant number of soil profiles. Thirty years ago Prof. Kubierna passed away in Austria.

The pedological excursion was attended by 29 participants from Austria and guided by Prof. Diego de la Rosa, Prof. Guillermo Paneque and Prof. Jose Luis Mudarra. Technical help was provided by Mr. Juan Antonio Moreno, Mr. David Moreno and Mrs. Valeria Castillo. The Austrian Soil Science Society cordially thanks the Spanish colleagues for their outstanding support of the excursion. Prof. W.E.H. Blum and Prof. O. Nestroy led the discussions at the soil profiles.

In total 12 sites were visited touching different climatic zones (thermo- and mesomediterranean), geological substrates (e.g. young marine sediments, alluvial sediments, marl, peridotite and limestone) and vegetation covers. The soils studied ranged from young and Regosols to Cambisols, Luvisols, Ferralsols and highly fertile Vertisols, the "Chernozems of Andalusia". Very interesting discussions concerned the classification of the profiles using different systems (FAO 1988, WRB 1998, US Soil Taxonomy, Austrian systematic 1969 and 2000). Prof. G. Grabherr/University of Vienna and other participants added valuable information about the plant societies.

The Austrian Soil Science Society looks back to a highly successful excursion and thanks everybody who contributed to the organization, publishing of the excursion guide and the discussions at the sites.

Martin H. Gerzabek, President,
Austrian Soil Science Society
Vienna, 2000 11 09



Participants of the pedological excursion to Andalusia/Spain. Left to right: 1 - Prof. de la Rosa (Sevilla), 4 - Prof. W.E.H. Blum (Secretary General of IUSS, Vienna), 7 - Prof. Paneque (Sevilla), front row 4th from the left: Dr. Gerzabek (president, Austrian Soil Science Society, Vienna)

**NEWS FROM REGIONAL AND NATIONAL SOCIETIES
NOUVELLES DES ASSOCIATIONS RÉGIONALES ET NATIONALES
BERICHTE DER REGIONALEN UND NATIONALEN GESELLSCHAFTEN**

Czech Society of Soil Science

This is the Board of the Czech Society of Soil Science, elected for the period 1999-2002.

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	Dr. Svetlana Zlatusková, Research Inst. for Soil and Water Conservation, Brno.
Address:	Czech Society of Soil Science, Department of Soil Science and Geology, Czech University of Agriculture, 165 21, Prague 6 – Suchbát, Czech Republic. Tel.: +420-2-2438 2751; Fax: +420-2-2092-1644; E-mail: boruvka@af.czu.cz .

Sociedad Paraguaya de Ciencias del Suelo (SOPACIS)

En fecha 24 de marzo de 2000 se realizó la Asamblea General de Constitución de la Sociedad Paraguaya de Ciencias del Suelo (SOPACIS). Esta sociedad de carácter civil, científica y sin fines de lucro tiene como finalidades, entre otros:

- Congregar a personas e instituciones para el desarrollo de la ciencia del suelo en el Paraguay;
- Promover el estudio y conocimiento de los suelos del Paraguay;
- Desarrollar y difundir el conocimiento de métodos científicos y de técnicas sostenibles para el uso, manejo y conservación del suelo en el Paraguay;
- Constituirse en un organismo de consulta, seguimiento, evaluación y pronunciamiento sobre el uso del recurso natural suelo.

La Comisión Directiva electa durante esta Asamblea está conformada de la siguiente forma:

Presidente:	Prof. Ing. Agr. (M Sc) Arnulfo Encina Rojas.
Secretario Ejecutivo:	Ing. Agr. (M Sc) Carlos Leguizamón Rojas
Secretario de Finanzas:	Ing. Agr. (M Sc) Enrique Franco Serafini
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Síndico Titular:	Ing. Agr. (M Sc) Miguel A. Ken Moriya
Síndico Suplente:	Ing. Agr. (M Sc) Antonio Dacak

Estamos confiados en que la SOPACIS podrá responder a los muchos desafíos que se tiene en el área de la ciencia del suelo en el Paraguay y por supuesto apoyar el estudio de esta ciencia a nivel internacional. Queremos hacerle participe de este evento, para nosotros tan importante, y expresar nuestro más grande deseo de iniciar un relacionamiento cordial y estrecho con cada una de las sociedades de ciencias del suelo afiliada a la Unión Internacional de la Ciencia del Suelo.

Prof. Ing. Agr. Arnulfo Encina Rojas, Presidente
Casilla de Correo 1618, Asunción - Paraguay
Tel: 0981-422321 - 0971-221650, Fax: 595 -21- 585612, E-mail: bibagr@agr.una.py

Societas Pedologica Slovaca

International contacts

The Societas Pedologica Slovaca (Soil Science Society of Slovakia) and the Soil Science Society of Austria, have maintained a very close relationship since the eighties, especially through Prof. Othmar Nestroy. They have organized several remarkable actions together, focused on the mutual exchange of experience referring to the soils and landscapes of both countries. Both Slovakian and Austrian soil scientists have greatly profited from these endeavours.

In October 2000, this very close and promising collaboration was also extended to the soil scientists of Switzerland. Members of the Societas Pedologica Slovaca, together with four members of the Soil Science Society of the Czech Republic visited Switzerland. They were guests of the Swiss Soil Science Society. The new president of the Soil Science Society of Switzerland, Prof. Dr. Reiner Schulin (Institute of Terrestrial Ecology, ETHZ) has chosen several members of his Society to co-operate with the visitors, providing information on Swiss soils and land recognition, and other interesting topics: Dr. Moritz Müller, Prof. Dr. Karl Peyer, Dr. Matthias Baltisberger, Dr. Marianne Bodenmann, Dr. Franz Borer, Dr. Bernhard Buchter, Andreas Chervet, Prof. Dr. Peter Germann, Rudolf Hanic, Prof. Dr. Hans Sticher, Roland Schafflitzel and Dr. Peter Lüscher.

This was a very important step in the process of mutual information exchange and personal contacts. All the participants of the action had very good opportunities to learn about soils in the central part of the country, especially in the regions of Bern, Zurich, Solothurn, Murten and Davos. The project took place under the auspices of Prof. Juraj Hrasko, the Slovakian Ambassador in Bern. The members of the Societas Pedologica Slovaca are grateful for having been given the opportunity to acquaint themselves with the soils and the landscape of Switzerland and reciprocally are inviting the Soil Science Society of Switzerland to visit Slovakia and obtain information about soils and land there.

Dr. Pavel Jambor, President
Societas Pedologica Slovaca
Gagarinova 10, 827 13 Bratislava, Slovak Republic



Participants of the excursion in Switzerland

Soil Science Society of America (SSSA)

New officers took over during the Annual Meeting in November 2000 in Minneapolis:

SSSA President Robert J. Luxmoore,
SSSA President-Elect John W. Doran, and
SSSA Past President Donald L. Sparks

The following soil scientists received distinctions:

Rufus L. Chaney the Environmental Quality Research Award,
James M. Tiedje the Francis E. Clark Distinguished Lectureship on Frontiers in Soil Biology Award,
Dale W. Cole the Sergei A. Wilde Distinguished Lectureship on Forest Soils Award,
David A. Laird the Marion L. & Chrystie M. Jackson Soil Science Award,
Harold E. Dregne the Soil Science Distinguished Service Award,
Dennis Keeney the Soil Science Distinguished Service Award,
Cornelius H.M. van Bavel the Soil Science Distinguished Service Award,
P.M. Huang the Soil Science Research Award,
Jonathan A. Sandor the Soil Science Education Award,
James Thomas Sims the Soil Science Applied Research Award,
B.A. Stewart the Soil Science Professional Service Award,
Malcolm E. Sumner the International Soil Science Award.
SSSA Fellows: M. A. Arshad, Mark L. Brusseau, Donald A. Graetz, Don B. Jayner, Thomas E. Loynachan, Ravendra Naidu, David E. Radcliffe, Charles W. Rice, Curtis J. Richardson, Jerry C. Ritchie, Kate M. Scow, David M. Sylvia, Michael J. Vepraskas, C. Wesley Wood.

**INTERNATIONAL RELATIONS
RELATIONS INTERNATIONALES
INTERNATIONALE BEZIEHUNGEN**

CGIAR Mid-term Meeting 2000.

This meeting took place in Dresden, Germany, from 21-26 May. The theme of this year's meeting was Charting the CGIAR's Future-A New Vision for 2010, concentrating on the presentation of a new vision and strategy for the CGIAR by the Technical Advisory Council (TAC). The strategy is essentially two-pronged, focusing on continuing what the CGIAR has done best in the past, whilst making a serious attempt to reach the poor in less favoured environments that the Green Revolution bypassed. The new vision, entitled A Food Secure World for All, consists of seven key issues: 1. Focus activities to reduce poverty, hunger, and malnutrition in developing countries; 2. Use modern science to help solve difficult productivity and institutional problems; 3. Give highest priority to the research needs of South Asia and Sub-Saharan Africa; 4. Adopt a regional approach to research planning; 5. Diversify and closely integrate partnerships at the regional level; 6. Adopt a task force approach to the organisation and delivery of products and services; and 7. Continue to serve as a catalyst, organiser, coordinator and integrator of global research in agriculture, forestry and fisheries.

The overall funding for the CGIAR research agenda was down USD 10 million from the approved target of USD 340 million. The funding forecast for 2000 is USD 340 million.

A decision was taken to start moving away from explicitly referring to those centres that come under the aegis of the Consultative Group of International Agricultural Research as the "CGIAR Centres". In future they will collectively be called "The Future Harvest Centres". In the interim, they will be known as "The Future Harvest Centres, supported by the CGIAR".

Prior to the CGIAR meeting, the inaugural meeting of the Global Forum on Agricultural Research (GFAR) was held, with the theme Strengthening Partnership in Agricultural Research for Development in the Context of Globalisation. Approximately 500 participants from public and private sectors were represented. At the conclusion of the meeting, the Dresden Declaration, Toward a Global System for Agricultural Research for Development, was adopted. The Declaration requested policy and decision-makers to strongly support the on-going renewal of agricultural research for development through the formulation of a global strategic research agenda, and the establishment of a specialised agricultural and knowledge information system.

*XXXth annual meeting of ESNA
(European Society for New Methods in Agricultural Research) and of the working group
soil-to-plant transfer of the International Union of Radioecologists (UIR) in Keszthely/Hungary,
26-30 August 2000*

Report of the Chairman of working group 3 (soil-plant relationships)

The annual meeting of working group 3 dealt with 24 contributions, 14 were presented orally and 10 as posters by scientists from 11 countries.

The first paper by Matin/IAEA introduced the IAEA co-ordinated research programme »The classification of soil systems on the basis of transfer factors of radionuclides from soil to reference plants«

and the principle concepts behind this approach. A couple of talks addressed the time dependent radionuclide transfer into plants and translocation within plants following soil and/or foliar contaminations. Brambilla/Italy presented a detailed model study on translocation of Cs, Sr and Zn from green plants into tomato fruits. Oncsik/Hungary demonstrated the seasonality effect with respect to Cs-transfer into rice grain following contamination of rice plants at different growth stages. In a related poster Haak/Sweden described the reduction half-times of Cs and Sr in grass and cereals during the first weeks after an artificial contamination. The data of both contributions are useful for radiological assessment models, especially concerning the first year after a fallout. Effects of soil characteristics and yearly variations on Cs-transfer into soybean and sunflower applying the fluxes concept were reported by Skarlou/Greece. Goncharowa/Byelorussia presented a plant physiological study on the impact of macronutrient cations on the Cs and Sr influx into roots of cereals. Zibold/Germany presented a well calibrated model of Cs-fluxes in forest ecosystems based on a forest site near Lake Constance. After correction with different parameters it could be concluded that the decrease of the ^{137}Cs -contamination levels of mushrooms at present follows its physical decay.

Soil management and questions of plant nutrition were addressed in several presentations. Gerzabek/Austria reported on sensitive organic carbon pools in soil which react more rapidly to management changes and are related to soil microbial activity. Hegedüs/Hungary compared two long-term field experiments in Europe with respect to soil organic matter and biological properties.

Use of mineral fertilisers was discussed in several papers. Budoï/Romania presented mathematical solutions to the problem to derive optimum complex fertilisers from fertilisers containing more than one macronutrient. The optimum use of phosphorus and complex fertilisers was elaborated in a couple of papers elucidating Turkish conditions (Brohi/Turkey), orchards (Stanica/Bulgaria) and extremely sandy soils (Gavrilita/Romania). In the latter mentioned poster it could be shown that fertilisers in tablet form may decrease nitrogen losses in sandy soils considerably. Budoï/Romania especially reported on the optimum pH and base saturation conditions to optimise plant growth. The respective recommendations for more than 500 plants will appear in the proceedings. The application of foliar fertilisers was addressed by Özcan/Turkey, Brohi/Turkey, Soare/Romania and Dana/Romania. The latter paper related the micronutrient content of hybrid maize seeds obtained by foliar fertiliser application to the seed quality. Two presentations focussed on grapevine nutrition. A detailed study on the optimum potassium fertilisation level taking into account cation ratios in soil and plants and grape juice quality parameters was presented by Licina/Yugoslavia. The plant physiological aspects of lime induced chlorosis was explained by Serdinescu/Romania. It could be concluded – as already shown in literature – that not the low Fe-content of grapevine leaves are the reason for chlorosis, but the inactivation of Fe. Differences between sensitive and tolerant varieties could be shown by quite simple cation ratios, which might be useful for selection purposes.

Additional posters presented data on e.g. heavy metal adsorption in soil (Madjar/Romania) and micronutrient and heavy metal distribution in soils of Vojvodina (Sekulic/Yugoslavia).

The proceedings of the meeting will be published later this year.

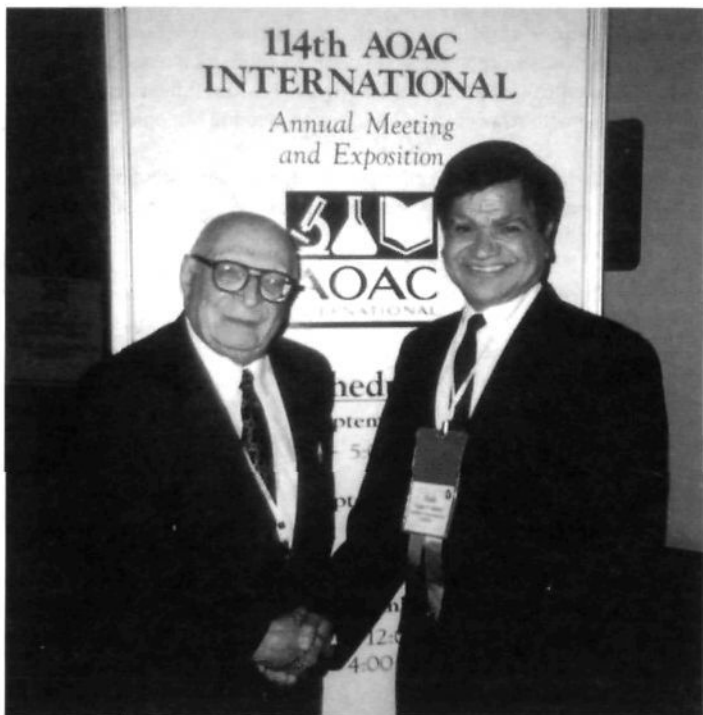
The participants of the working group sessions thank the local organisers Prof. Szabo and Dr. Karpati for their efforts and the warm welcome.

The XXXIth annual meeting of ESNA will be held in Chania/Greece during the second week of September 2001.

Martin H. Gerzabek (martin.gerzabek@arcs.ac.at)
Chairman working group 3
Soil-plant relationships
Liaison officer of IUSS to UIR
Keszthely, 29.08.2000

AOAC International Annual Meeting and Exposition, Philadelphia, USA

The AOAC INTERNATIONAL is the world's leading professional scientific association dedicated to the validation of analytical methods and quality laboratory measurements. The 114th Annual Meeting and Exposition was held at the Adam's Mark Hotel in Philadelphia, Pennsylvania, USA, September 10-14, 2000. The theme of the meeting was "Leading the revolution in laboratory quality". This meeting was of a great historical significance. It is here in Philadelphia, the City of Brotherly Love, that the Association was founded on September 9, 1884. The AOACI continues its tradition of focusing on cutting-edge information from the world's leading scientists and laboratories. At the "Welcome to our world", President's Welcome Reception and Awards Ceremony on the evening of September 10, President George H. Boone officially welcomed the delegates and guests to the meeting. This was a gala Awards Ceremony. We celebrated the diverse countries and cultures of our members from around the world.



Yash P. Kalra (right) congratulating William Horwitz, "Mr. AOAC", as he is often referred to, on doing an excellent job of editing the 17th edition of the *Official Methods of Analysis*.

The keynote speaker, Bernard A. Schwetz, Acting Deputy Commissioner and Senior Science Advisor, U.S. Food and Drug Administration, discussed the continuing needs for methods, method validation, and the growing demand for laboratory quality assurance and laboratory accreditation in the United States and around the world.

In order to increase the membership, the Association had a member-get-a-member campaign. On September 13, the *Member Recognition Program* was launched at a special recognition luncheon. Members who had attained the milestone anniversaries of 5, 10, 25, and 50 years of membership in the Association were recognized.

The following courses provided hands-on training on (1) ISO 17025 management systems for the laboratory (2) Auditing ISO laboratory management systems (3) Quality assurance for analytical laboratories and (4) Quality assurance for microbiological laboratories. It was a unique opportunity for world's leading scientists to make their contributions to the symposia. The state-of-the-art products and services were displayed by over 100 leading suppliers at the Laboratory Exposition. It gave the delegates an opportunity to discuss their instrument requirements with the exhibitors.

There were symposia, forums, workshops, committee meetings, and special events; an action-packed week indeed! Latest information was available on laboratory accreditation, proficiency testing, nutraceuticals and dietary supplements, food analysis, food safety, food labeling, genetically modified organisms, etc. The meeting provided ample opportunity to discuss papers one-on-one with presenters at poster sessions on chemical and biological analysis in areas such as soil, water, fertilizers, foods, beverages, feeds, pesticides, human and animal drugs, hazardous wastes, forensic, and other related disciplines. It was a good opportunity to broaden professional horizons and develop global relationships with distinguished scientists from around the world.

The AOACI is dedicated to analytical excellence. It operates three methods validation programs. The following soil analysis methods are currently under the AOACI validation procedure in collaboration with the Soil Science Society of America Committee S889 "*Coordination of Official Methods of Soil Analysis*": (1) Nitrates in soil (2) Plant available phosphorus in calcareous soils (3) Plant available phosphorus in non-calcareous soils (4) Plant available potassium for soils: Ammonium acetate method (5) Plant available zinc, manganese, copper, and iron for soils: DTPA (diethylene triamine penta acetic acid) method (6) Calcium carbonate in soils, and (7) Lime requirement determination in soils.

I congratulate the AOACI Board of Directors and the staff on a superb meeting. The next two meetings will be held in Kansas City, Missouri, September 9-13, 2001 and Los Angeles, California, September 22-26, 2002. Further information is available from meetings@aoac.org.

Yash P. Kalra, Canada
Chair, Methods Committee on Environmental Quality
E-mail: ykalra@nrca.nrc.ca

INTERNATIONAL CONFERENCE ON:
**'THE FUTURE OF THE MEDITERRANEAN RURAL ENVIRONMENT: PROSPECTS
FOR SUSTAINABLE LAND USE AND MANAGEMENT'**

Menemen, Turkey, May 8-11 2000

The Mediterranean environment is one of the particularly fragile environments of the world and its natural and managed ecosystems are experiencing major changes from a range of political, technological and environmental interacting forces. Rural areas, which comprise a substantial part of the region, are subject to pressures of water shortage, land degradation, loss of biodiversity, falling commodities and depopulation. The objective of the International Conference on 'The Future of the Mediterranean Rural Environment: Prospects for Sustainable Land Use and Development' was to consider these changes in the light of the future sustainable development of the Region and to identify the scientific basis for future policy and its use by those responsible for the development of the Mediterranean rural environment.

The Conference, which was held at the beautifully located and well appointed International Agro-Hydrology Research and Training Centre in Menemen, Turkey, was sponsored by the International Union of Soil Sciences, the European Society of Ecological Economics, the International Geosphere-Biosphere Programme, and the United Nations Convention to Combat Desertification, and organised

by Cranfield University, UK and the General Directorate of Rural Services, Turkey. Around 125 representatives of government, policy making organisations and the private sector attended together with socio-economic experts and biophysical researchers from institutes as far afield as Japan. Secretary-General Professor Winfried E.H. Blum was one of the lead speakers.

There were 100 research presentations on themes including Soil Resources, Water Resources, Land Use and Management and the Urban-Rural Interface. One of the main intentions of the Conference was to develop a set of Recommendations that could be made available to governments, policy making organisations, the private sector and others interested in sustainable land use and management. As a basis for drawing up these Recommendations there were Working Group Sessions on Soil and Water Resources, Agriculture, Forestry and Biodiversity, and the Urban-Rural Interface. An all-day Field Excursion in was also organised to see first hand some of the main problems facing the Mediterranean Region and possible solutions.

The Conclusion and Recommendations from the Conference are being distributed as widely as possible to those responsible for the management and use of the Mediterranean rural environment in the hope that they will be taken into account in building its future sustainable development. IUSS members can see a copy of the Conclusions and Recommendations of the Conference by visiting the following site: <http://www.silsoe.cranfield.ac.uk/menemen>

Professor Peter Bullock,
Cranfield University, U.K.
(Chair, Organising Committee)

A Conference on:

**” Soils in Central and Eastern European Countries (CEEC),
in the New Independent States (NIS), in Central Asian Countries (CAC)
and in Mongolia (M) -Current situation and future prospects .”**

was held at the Research Institute of Crop Production in Prague, Czech Republic, from 26 to 29 August 2000

This Conference was organized by the **Soil Campaign of the Alliance for a Responsible, Plural and United World**, with the support of the Charles Leopold Mayer Foundation, the European Commission (European Soil Bureau and TACIS Programme), the Czech University of Agriculture and the Research Institute of Crop Production of the Czech Republic.

The participants in the Conference (about 60 people) were:

- delegations from 25 countries out of the 29 countries considered (Albania, Armenia, Azerbaijan, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Estonia, Georgia, Germany, Hungary, Kazakhstan, Latvia, Lithuania, FYR of Macedonia, Moldavia, Mongolia, Poland, Romania, Russia, Tajikistan, Ukraine, Uzbekistan, Yugoslavia);
- The Secretary-General of the International Union of Soil Sciences;
- The Secretary of the European Soil Bureau;
- Participants from western countries (Australia, Canada)
- The 3 facilitators of the Soil Campaign.

The official languages of the Conference were English and Russian, with simultaneous translation.

The main originality of the Conference was the diversity of participants’ responsibilities : scientists (in various fields : soils, environment, agronomy, economy, law, anthropology), **political leaders** (government members, parliament members , senior civil servants, heads of administrations), **members of the civil society** (NGOs, journalists, managers). Even though scientists were more numer-

ous than others in the Conference, **discussions were, as wished by the organizers, mainly political in nature** : (political, social and economic; local, regional and global) causes and solutions of soil deterioration and its consequences were addressed, in view of better managing soil resources.

The Conference drew from texts sent by the participants to the Soil Campaign, on its demand, at the beginning of the year 2000. On the basis of these contributions (distributed to all participants at their arrival), the facilitators of the Soil Campaign prepared 3 reports, opening the debates of the Conference itself :

- 1. Review of the current state of the soils in the CEEC-NIS-CAC-M : degradations (and improvements) of soils, what they are, what is known about them, their causes and consequences.** This first report was the subject of discussions on the first day of the Conference, (Saturday 26 August).
- 2. Review of the current policies, regulations, actions implemented (whether of scientific, technical, educational, economic, social, or legal nature), in every country, to compensate, foresee and prevent soil deterioration.** Respective roles of actors : Governments, Parliaments, NGOs, soil users; local, regional, international ones. Ongoing collaborations and partnerships. This second report was the subject of the debates of the second day of the Conference, on Sunday 27 August.
- 3. Future prospects : what are the urgent needs; the priorities for regional and international solidarity.** This third report was the subject of discussions of the third part of the Conference, on Monday 28, and Tuesday morning, 29 August.

From this Conference, very fruitful in discussions and concrete proposals, we learnt the following main conclusions and recommendations :

- A - All participants recognized the quality of the approach adopted for this conference: diversity of participants and summary reports prepared by the organizers.** The participants recommended that similar meetings, associating scientists and politicians, governmental and non-governmental entities, take place in every country and at a regional level. They also recommended to spread the results of the Conference. The dialogue has started: it will continue within the networks that are going to be built.
- B - All participants agreed that soil deterioration is mainly the result of local and global economic systems: poverty and productivism (either linked to a liberal economy or to a planned economy) are the two main reasons for soil deterioration.** As a result, one doesn't prevent soil deterioration through merely technical approaches: it is primordial to refine this argument and to publicise it; international solidarity must act in this sense. The problems raised, in turn, by the constitution of big collective properties and later by the splitting up of these properties, are significant ones.
- C - Participants highlighted that regulation, about the protection and management of soil resources and of their functions, is for sure indispensable, but provided that it is rooted in popular awareness and demand.** Existing regulations are not effective on the field (neither implemented nor respected). Every country must therefore pursue its legislative efforts (development and implementation), while an international framework is necessary (Convention on Soils): international solidarity must contribute to this.
- D - Education and communication about soils, are therefore indispensable. It is necessary to make soil, its functions, and the necessity of its good management, a popular, attractive and preoccupying issue.** Education about soil must be developed from an early age on. Here again, international collaborations and partnerships are indispensable.

Rabah Lahmar, Mireille Dosso, Alain Ruellan

Let's not forget the technology!

I have been concerned for some time by some by the changes that are taking place in soil and water conservation. Quite correctly, it has been recognized that soil conservation programs are unlikely to succeed unless the landusers themselves are closely involved in the whole process of identifying the problems, working out the solutions and implementing the programs. Certainly, programs like the Landcare Program in Australia have made substantial progress and farmer groups have achieved impressive results.

Unfortunately, this has led some to the conclusion that all governments need do is provide the facilities for farmers to work together and that they will then be able to develop their own solutions and implement the required measures largely by themselves. I think that it is partly because of this approach that so little research is now being done, in spite of the fact that land degradation is now being recognized as a growing problem in so many parts of the world. Little research is now being done in Africa in spite of the devastating effects of land degradation over much of that continent. In other parts of the developing world the situation is not much better. Even in countries like Australia and New Zealand, many of the formerly strong soil conservation institutions have been weakened or closed. As social and economic conditions change, the needs of technology change and soil conservation programs will only succeed if the right technology is available. While the farmers can do much innovative work and are constantly coming up with new solutions, there are limits to what they can achieve without outside help and I believe that there is now a pressing need to support them with more and better scientific research into the processes of land degradation and its control.

Also, if extension workers are to win the respect of the farming communities in which they live and work, they must be given the necessary technical training and be equipped with the skills that field workers need to be able to operate effectively. Unfortunately, some now see the role of soil conservation extension workers only as »facilitators« whose job it is to create the conditions for the landusers to be able to do everything themselves. On a recent visit to Australia I was surprised to learn that there is now a shortage of skilled extension staff, able to help farmers with those basic but still very necessary jobs like designing and building farm dams and surveying and constructing contour systems. This is in spite of the remarkable growth of the Landcare movement.

By all means let us encourage the full participation of the farmers and other landusers in soil conservation programs but, in doing so, let us not forget the continuing need for research and training.

David Sanders
President, World Association of Soil and Water Conservation.
sanders@clara.net

**APPOINTMENTS, HONOURS, PERSONAL NEWS
NOMINATIONS, DISTINCTIONS, INFORMATIONS PERSONNELLES
ERNENNUNGEN, AUSZEICHNUNGEN, PERSÖNLICHE NACHRICHTEN**

Dr. T.J. Marshall recently received an Order of Australia Medal as part of the 2000 Queen's Birthday Honours List. Dr. Marshall was Federal President of the Australian Soil Science Society at the time of the 9th World Congress of Soil Science in Adelaide. He also held positions in the ISSS Commissions on Soil Physics and Soil Technology.

Dr. Roger Swift, past Chief of the Division of Soils, CSIRO, and more recently CSIRO Land and Water, was awarded a Fellowship of the Australian Academy of Technological Sciences and Engineering, late in 1999.

Dr. Yash P. Kalra was installed President of the Soil and Plant Analysis Council at the American Society of Agronomy meeting in Minneapolis, November 2000. He has previously served as President of the Canadian Society of Soil Science (CSSS), Western Enviro-Agricultural Laboratory Association (WEALA), and the Group of Analytical Laboratories (GOAL).

IN MEMORIAM

Prof. Dr. Dimitar Stoichev

(1942–2000)



The Bulgarian Soil Science Society with regret and sorrow announces that on September 16, 2000 suddenly died the distinguished Bulgarian soil scientist and agroecologist Prof. Dr. Dimitar Stoichev.

Prof. Dr. Stoichev received academic education at the Timiriazev Agricultural Academy in Moscow. He started professional career as an assistant professor in soil science in the Agricultural University in Sofia, where he obtained a Ph.D. degree. Later he earned Dr. Sc. degree in N. Poushkarov Institute of Soil Science and Agroecology in Sofia with the dissertation "Some ecological aspects of anthropogenic loading of the soils".

His scientific interests were in the field of soil anthropogenic loading, the migration of the chemical elements through soil profile and protection of groundwater quality. His broad knowledge and scientific ideas were realized in many national and international projects dealing with geochemical cycle of nutrients, soil degradation, and ground-

water protection. He is author and co-author of more than 100 research publications of papers, monographs and numerous scientific reports in international congresses, symposiums and workshops.

He was an active member of the Bulgarian Soil Science Society and of the International Union of Soil Science. He was director of the N. Poushkarov Institute of Soil Science and Agroecology and a member of the Supervisory Board of the National Centre of Agricultural Sciences.

We will remember Prof. Dr. Stoichev as a hearty colleague, full of scientific ideas and enthusiasm for work.

Bulgarian Soil Science Society
Prof. Raina Dilkova

**MEETINGS, CONFERENCES, SYMPOSIA
REUNIONS, CONFERENCES, SYMPOSIA
TAGUNGEN, KONFERENZEN, SYMPOSIEN**

Important Notice

IUSS, as a Scientific Union Member of the International Council for Science (ICSU), subscribes to the principle of free movement of bona fide scientists; patronage or sponsoring will therefore automatically be withdrawn if the country of venue denies or purposely delays visa awarding to any IUSS member who wishes to participate in the meeting concerned.

2001

International Soil Erosion Research Conference and 2nd International Symposium and Exhibition on Preferential Flow, Honolulu, HI, USA, January 3-5, 2001.

Information: ASAE Meetings and Conferences, 2950 Niles Road, St. Joseph, Michigan 49085, Tel: +1-616-429-0300; Fax: +1-616-429-3852; Website: <http://asae.org/>.

32nd Annual Conference and Expo of the International Erosion Control Association, Las Vegas, USA, 5-9 February, 2001.

Information: IECA, P.O. Box 774904, Steamboat Springs, CO 80477-4904, USA. Fax: +1-970-879-8563. Homepage: www.ieca.org.

XIX International Grassland Congress »Grassland Ecosystems: An Outlook into the 21st Century«, Sao Pedro, Brazil, February 10-21, 2001.

Information: XIX International Grassland Congress, ESALQ, Av. Padua Dias, 11, 13418-900 Piracicaba, SP, Brasil; Fax: +55-19-429-4215; Tel: +55-19-429-4134; E-mail: igc2001@esalq.usp.br; Website: <http://www.igc2001-brazil.org.br/congressinfo.htm>

International Conference on Managing Soil Resources of the Tropics for Sustainable Agricultural Productivity, Tamale, Northern Region, Ghana, West Africa, February 26-March 2, 2001.

Information: The Secretary, Planning Committee, International Soil Science Conference, Savanna Agricultural Research Institute, P.O. Box 52, Tamale, Ghana-West Africa; Tel.: +233-71-22411/23251; Fax: +233-71-23483; E-mail: sari@africaonline.com.gh.

The 2001 Dahlia Greidinger Symposium: »Fertilisers and Resource Mangement for Food Security, Quality and the Environment«, Haifa, Israel, March 4-6, 2001.

Information: The International Fertiliser Society, P.O. Box 4, York, YO32 5YS, United Kingdom; Tel. & Fax: +44-1904-492-700; E-mail: secretary@fertiliser-society.org.
or: Prof. em. Josef Hagin, Technion – Israel Institute of Technology, Faculty of Agricultural Engineering, Haifa 32000, Israel. Websites: <http://www.technion.ac.il>; <http://www.fertiliser-society.org>.

5th International Symposium on Plant-Soil Interactions at Low pH (PSILPH), KwaZulu -Natal Province, South Africa, 12 - 16 March, 2001.

Information: Mara de Villiers, Private Bag X79, Pretoria 0001, South Africa; Fax: +27-12-323-1157; e-mail mara@igkw2.agric.za

Productive Use and Rehabilitation of Saline Lands, Launceston, Tasmania, Australia, 20-23 March, 2001.

Information: Conference Design, P.O. Box 342, Sandy Bay, TAS 7006, Australia. Fax: 3-6224-3774. E-mail: mail@cdesign.com.au. homepage: www.cdesign.com.au/pursi.

Humic Substances Seminar V, Boston, USA, March 21-23, 2001.

Information: Dr. Elham A. Ghabbour, Barnett Institute, 341 Mugar Hall, Northeastern University, 360 Huntington Ave., Boston, MA 02115, Tel: +1-617-373-7988; Fax: +1-617-373-2855; e-mail: eghabbou@lynx.neu.edu; Website: www.hagroup.neu.edu.

8th Multidisciplinary Conference on Sinkholes and the Engineering and Environmental Impacts on Karst, Louisville, USA, April 1-4, 2001.

Information: PELA – P.E. LaMoreaux and Associates, Inc., 106 Administration Road Ste 4, Oak Ridge TN 37830, USA; E-mail: pela@icx.net, Webpage: www.pela.com/8thcon.htm.

Workshop on »Soil Systems in the Context of Climate Change«, Trieste, Italy, 2-6 April, 2001.

Information: ICTP, attention Mrs. G. De Meo, Strada Costeira 11, I-34014 Trieste, Italy. Fax: +39-40-2240585. E-mail: smr1304@ictp.trieste.it.

Asian Agriculture Congress: »Food Security and Environment Protection in the New Millennium, Manila, Philippines, 24-27 April, 2001.

Information: The Asian Agriculture Congress, IPB, College of Agriculture, UPLB, College, 4031 Los Banos, Laguna, Philippines. E-mail: asian@laguna.net.

2nd International Symposium of the Mediterranean Group of Pesticide Research (MGPR): Pesticide in Food and the Environment in Mediterranean Countries« and the MGPR Annual Meeting 2001, Valencia, Spain, May 10-12, 2001.

Information: Miguel Gamon Vila, Lab. Agroalimentario CAPA-GV, c/Pintor Goya, 8, 46100 Burjassot, Valencia, Spain; Tel: (+34) 6 36-31-551; Fax: (+34) 6 39-00-510; E-mail: Miguel.Gamon@agricultura.m400.gva.es.

1st International Conference on Soils and Archaeology, Százhalombatta, Hungary, May 30 – June 3, 2001.

Information: Prof. György Füleky, Faculty of Agricultural and Environmental Sciences, Szent István University Gödöllő, H-2103 Páter Károly u. 1, Hungary. Tel: ++36-28-410-200/1817/1014/1027/1030; Fax: +36-28-410-804; E-mail: fuleky@fau.gau.hu.

6th International Symposium: In Situ and On-Site Bioremediation, San Diego, California, USA, June 4-7, 2001.

Information: Battelle, 505 King Avenue, Columbus, Ohio 43201-2693, USA; or Carol Young, Tel: (+1)614-424-7604; Fax: (+1)-614-424-3667; E-mail: biosymp@battelle.org; Website: www.battelle.org/conferences.

3rd International Conference on Ecosystems and Sustainable Development (ECOSUD 2001), Alicante, Spain, June 6-8, 2001.

Information: ECOSUD 2001, Conference Secretariat, Wessex Institute of Technology, Ashurst Lodge, Ashurst, Southampton, SO40 7AA, Tel.: 44(0)23-80-293223; Fax: +44(0)23-80-292853; E-mail: shanley@wessex.ac.uk.

International Scientific Conference: »Humic Substances in Ecosystems 4«, Raèkova dolina, Slovakia, June 10-14, 2001.

Information: Ing. Erika Tobia_ová, Dept. of Pedology and Geology, Agronomy Faculty, Slovak Agricultural University, Tr. A. Hlinku 2, 949 76 Nitra, Slovakia, E-mail: tobiasov@uniag.sk; Tel.: +421-87-650-5394; +421-87-650 8399; Fax: +421-87-511-560.

2nd International Conference »Protection and Recultivation of Odra-Basin Areas: Land Management in River-Basins«, Zielona Góra, Poland, 21-22 June 2001.

Information: Prof. Dr. Henryk Greinert, Head of the Zielona Góra Division of the Polish Soil Science Society, Technical University of Zielona Góra, Department of Environment Remediation, 50 Podgocma Str., 65-246 Zielona Góra, Poland; Tel: +48-68-328-2492 or -2639; Fax: +48-68-324-5597 or +48-68-3270735; E-mail: dziekanat@brick.wbis.pz.zgora.pl; andgrein@poczta.wp.pl; Website: www.pz.zgora.pl/wbis/zodnowy/der.htm.

International Symposium of IUSS Sub-Commission A: »Sustained Management of Irrigated Land for Salinity and Toxic Element Control«, Riverside, California, USA, June 25-27, 2001.

Information: UC, Center for Water Resources, 4501 Glenwood Drive, Riverside, CA 92501, USA; Website: www.ussl.ars.usda.gov.

International Conference on »Sustainable Soil Management for Environmental Protection – Soil Physical Aspects« Firenze, Italy, July 2-7, 2001.

(organized by IUSS Commission I – Soil Physics)

Information: Dr. Olga Grasselli, Mrs. Miranda Morandi, Istituto Sperimentale per lo Studio e la Difesa del Suolo, Piazza M. D'Azeglio 30, 50121 Firenze, Italy; Tel: +39-055-249-1255; Fax: +39-055-241485; E-mail: marcello.pagliai@data.it

3rd International Conference on Mycorrhizas, Adelaide, Australia, July 8-13, 2001.

Information: Prof. Sally Smith, Dpt. of Soil & Water, Waite Campus, University of Adelaide, PMB 1, Glen Osmond, South Australia, 5064, Australia; Tel.: +61-8-8303-7351; +61-8-8303-6511; sally.smith@adelaide.edu.au.

International Working Meeting on Micropedology, Gent, Belgium, July 9-13, 2001.

Information: Prof. Dr. G. Stoops, ITC, Ghent University, Krijgslaan 281, S8, B-9000 Gent, Belgium. Fax: +32-9-264-49-84; iwmm@rug.ac.be.

3rd International Conference on Mycorrhizas (ICOM3), Adelaide, Australia, 8-13 July 2001.

Information: Sally Jay, PO Box 2331, Kent Town 5071, Australia; Fax: +61-8-8362-0038; E-mail: icom3@camtech.net.au; Web: http://www.waite.adelaide.edu.au/Soil_Water/3icom.html

Detecting Environmental Change: »Science and Society«, London, UK, July 16-20, 2001.

Information: Dr. Catherine E. Stickley, Environmental Change Research Centre, Department of Geography, University College London, 26 Bedford Way, London WC1H 0AP, UK.

6th Scientific Assembly of the International Association of Hydrological Sciences (IAHS): »A New Hydrology for a Thirsty Planet«, Maastricht, The Netherlands, July 18-27, 2001.

Information: IAHS Maastricht 2001, The Netherlands Institute of Applied Geoscience TNO – National Geological Survey, PO Box 6012, 2600 JA Delft, The Netherlands. Fax: +31-15-256-4800; E-mail: j.hooghart@nitg.tno.nl; Website: <http://www.wlu.ca/~wwwiahs/index.html>.

7th International Symposium on Soil and Plant Analysis: »Fine tuning soil and plant analysis for economic and environmental betterment«, Edmonton, Canada, July 21-27, 2001.

Information: Anette Palm, Palm International Conferences, Turnstrasse 11, 67706 Kriekenbach, Germany. Tel: (+49)6307-401103; Fax: (+49)6307-401104; E-mail: palmmail@convservices.de, Website: <http://www.ISSPA2001.COM>.

14th International Plant Nutrition Colloquium, Hannover, Germany, July 27 – August 3, 2001.

Information: IPNC Secretariat, Institute of Plant Nutrition, University of Hannover, Herrenhaeuser Str. 2, 30419 Hannover, Germany; Fax: +49-511-762-3611; E-mail: ipnc@mbx.pflern.uni-hannover.de. Webpage: <http://www.ipnc2001.uni-hannover.de>

12th International Clay Conference, Bahía Blanca; Argentina, July 29-August 4, 2001.

Information: Dr. Fernanda Cravero, Secretary-General 12 ICC, Dpt. de Geología, Universidad Nacional del Sur, 8000 Bahía Blanca, Argentina. Tel: +54-291-459-5101-3041; Fax: +54-291-459-5148; E-mail: 12icc@criba.edu.ar.

6th International Conference on the Biogeochemistry of Trace Elements (ICOBTE), Guelph, Ontario, Canada, July 29 - August 2, 2001.

Information: Dr. Les Evans, Chair, ICOBTE, Department of Land Resource Science, University of Guelph, Guelph, Ontario, Canada N1G 2W1; Phone: (+1-519) 824-4120 ext. 2531; Fax: (+1-519) 823-1587; E-mail: icobte@lrs.uoguelph.ca; Website: <http://icobte.crle.uoguelph.ca>

12th World Fertilizer Congress on Fertilization in the Third Millennium: Fertilization, Food Security and Applied Ecology, Beijing, P.R. of China, August 3-9, 2001.

Information: 12th WFC Secretariat, Institute of Applied Ecology, Academia Sinica, 72 Wenhua Road, P.O. Box 417, Shenyang, 110015, China, Tel.: +86-24-239-16261; Fax: 86-24-238-43313; E-mail: CIEC2001@iae.syb.ac.cn.

3rd International Conference on Cryopedology, Copenhagen, Denmark, August 20-24, 2001.

Information: Dr. Bjarne Holm Jakobsen, Institute of Geography, University of Copenhagen, Oster Voldgade 10, 1350 Copenhagen K, Denmark; Tel. and Fax: +45-35322500; E-mail: bhj@geogr.ku.dk; Web: <http://www.geogr.ku.dk/cryosols>.

5th International Conference on Geomorphology, of the International Association of Geomorphologists, Tokyo, Japan, August 23-28, 2001.

Information: Prof. Kenji KASHIWAYA, Secretary, 5th ICG, Laboratory for Hydro-Geomorphology, Department of Earth Sciences, Kanazawa University, Kakuma, Kanazawa 920-1192; Japan, Tel. and Fax: +81-76-264-5735; E-mail: kashi@kenroku.kanazawa-u.ac.jp.

International Symposium "Functions of Soils in the Geosphere-Biosphere Systems", Moscow, Russia, August 26-29, 2001.

Information: Nina P. Matekina, Olga V. Andreeva, Faculty of Soil Science, Moscow State University, 119899 GSP, Moscow, Russia; Tel. 7-095-939-35-23, 7-095-939-37-74; Fax. 7-095-939-09-89 for N.Matekina; E-mail: NPM@soil.msu.ru; kust@soil.msu.ru; Website: <http://soilinst.msu.ru>

9th International Symposium on Microbial Ecology (ISME-9), Amsterdam, The Netherlands, August 26-31, 2001.

Information: The Secretary, ISME-9, NIOO-CTO, P.O. Box 40, 6666 ZG Heteren, The Netherlands; Tel: +31-26-479-1111; Fax: +31-26-472-3227; E-mail: veen@cto.nioo.knaw.nl; Website: <http://www.eurocongress.com/ism9>

International Conference "Physical Methods in Agriculture – Approach to Precision and Quality", Prague, Czech Republic, August 27-30, 2001.

Information: Prof. Jiri Blahovec, Conference PMA, Czech University of Agriculture, 16521 Prague 6 - Suchbát, Czech Republic.

3rd International Conference on Cryogenic Soils, Copenhagen, Denmark, August 27-31, 2001.

Information: Dr. Bjarne Holm Jakobsen, Institute of Geography, University of Copenhagen, Oster Voldgade 10, 1350 Copenhagen K, Denmark; Tel: +45-3532-2500; Fax: +45-3532-2501; E-mail: bhj@geogr.ku.dk.

11th Nitrogen Workshop, Reims, France, September 9-12, 2001.

Information: INRA, Unité d'Agonomie, 2, esplanade Roland Garros – BP 224, 51686 Reims cedex 2, France; Tel: +33-3-26-77-35-80; fax: +33-3-26-77-35-91; E-mail: Nworkshop@reims.inra.fr; Website: <http://www.inra.fr/Internet/Projets/11Nworkshop>.

15 International Symposium on Environmental Biogeochemistry (ISEB 15): »Biogeochemical Processes and Cycling of Elements in the Environment«, Wrocław, Poland, September 11-15, 2001.
Information: <http://www.ar.wroc.pl/~weber/iseb15.htm>; E-mail: iseb15@ozi.ar.wroc.pl;
Fax: +48-71-3284849; Tel: +48-22-3205631.

National conference with international participation »90 Year Bulgarian Soil Science«, Sofia, Bulgaria, 13-15 September 2001,
Information: Milena Kercheva, N. Poushkarov Institute of Soil Science and Agroecology, 7, Shosse Bankya str., 1080 Sofia, Bulgaria Fax: 3592 24 89 37 E-mail: bsss@infotel.bg

International Conference of the Czech Soil Science Society: »Soil Science: Past, Present and Future«, Prague, Czech Republic, September 17-20, 2001.
Information: Czech Society of Soil Science, Dpt. of Soil Science and Geology, Czech University of Agriculture, 165 21 Prague 6 – Suchbát. Czech Republic; Tel: +420-2-2438-2751; Fax: +420-2-2092-1644; E-mail: boruvka@af.czu.cz.

Pedometrics 2001, Gent, Belgium, September 19-21, 2001.
Information : Prof. Marc Van Meirvenne, Dept. Soil Management, Ghent University, Coupure 653, 9000 Gent, Belgium. E-mail : marc.vanmeirvenne@rug.ac.be. Web site: <http://soilman.rug.ac.be/pedometrics2001>

7th International Meeting of Soils with Mediterranean Type of Climate, Valenzano, Bari, Italy, September 23-28, 2001.
Information: E-mail: imsmtc@iamb.it.

3rd International Conference on Land Degradation (IUSS Sub-Comm. C and IUSS WG LD), Rio de Janeiro, Brazil, September 24-28, 2001.
Information: E-mail: webmaster@cnps.embrapa.br; Website: www.cnps.embrapa.br/ICLD

Vth International Symposium and Field Workshop on Paleopedology (ISFWP), Mexico City, Mexico, October 7-11, 2001.
Information: Dr. Elizabeth Solleiro-Rebolledo, UNAM, Instituto de Geología, Ciudad Universitaria, C.P. 04510, Mexico City, Mexico, E-mail: solleiro@geologia.unam.mx; Fax: +52-56-22-43-17.

International Symposium: Soils Classification 2001, "Developing the basis for the systems of the future", Hungary, October 9-12, 2001.
Information: Dr. Erika Micheli, Szent Istvan University, 2100 Gödöllő, Hungary, Phone: 36 28 410200/1812, Fax: 36 28 410 804, Email: sc21@spike.fa.gau.hu, Web site: <http://www.fa.gau.hu/~Soil21/>

2nd International Nitrogen Conference (N2001): Optimizing Nitrogen Management in Food and Energy Production and Environmental Protection, Potomac, Maryland, October 14-17, 2001.
Information: Rhonda Kranz, The Ecological Society of America, 1707 H Street, NW, Suite 400, Washington, DC 20006, USA; Tel.: +1-202-833-8773-212; Fax: +1-202-833-8775; E-Mail: nitrogen@esa.org; Website: <http://esa.sdsc.edu/n2001>.

2^o Congreso Iberoamericano de Química y Física Ambiental, Habana, Cuba, 5 – 9 de noviembre de 2001.
Información: Dr. Adriano Cabrera Rodríguez, Presidente del Comité Científico, Instituto Nacional de Investigaciones de la Caña de Azúcar, Ave. van Troi #17203, Boyeros, CP 19 210, C. Habana, Cuba; Tel: +537-579-076; Fax: +537-666-036; E-mail: adriano@inica.edu.cu.

6th ISRR Symposium on Roots: The Dynamic Interface between Plants and the Earth, Nagoya, Japan, November 11-15, 2001.

Information: Website: www.soc.nacis.ac.jp/jsrr/isrr/.

XV Latin American Congress of Soil Science CLACS-2001, Varadero Beach, Cuba, 11 to 16 November, 2001.

Information: Dr. Rafael Villegas Delgado, President, and Dr. Olegario Muñiz Ugarte, Chairman of the Scientific Committee, Ave Van Troi No. 17203, Boyeros, CP 19210, Ciudad Habana, Cuba. Fono: 53-7-579076; Fax: 53-7-666036; e-mail: XV@inica.edu.cu

International Symposium on »Importance of Potassium in Nutrient Management for Sustainable Crop Production in India«, New Delhi, India, December 3-5, 2001.

Information: Dr. S.K. Bansal, Organizing Secretary, Potash Research Institute of India, Sector-19, Gurgaon-122001, Haryana, India; Tel.: +91-124-634-0185; Fax: +91-124-634-1792; E-mail: prii-in@bol.net.in.

or: International Potash Institute, IPI Coordination India, Dr. Patricia Imas, c/o DSW, Potash House, P.O. Box 75, Beer Sheva, 84100, Israel, Tel.: +972-7-646-5647; fax: +972-7-628-0995; E-mail: patricia@dsw.co.il.

or: International Potash Institute, Head Office, Schneidergasse 27, P.O. Box 1609, CH-4001 Basel, Switzerland; Tel.: +41-61-261-29-22; Fax: +41-61-261-29-25; E-mail: ipi@iprolink.ch; Website: <http://www.ipipotash.org>

2002

International Symposium on »Rural Community Interaction and Workshop - Combating Desertification: Alternative Ways to Combat Desertification – Connecting Community Action with Science and Common Sense«, Cape Town, South Africa, Rural Communities and Gobabeb, Namibia.

Information: Ms. Roben Penny, Woodbine, Essex Road, Kalk Bay, 7975 Cape Town, South Africa; Tel./Fax: +27-21-788-1285; E-mail: robenpen@jaywalk.com; Web: <http://des2002.az.blm.gov>.

International Humic Substances Society 20th Anniversary Conference: »Humic Substances - Nature's Most Versatile Materials«, Boston, USA, July 21-26, 2002.

Dr. Elham A. Ghabbour, Barnett Institute, 341 Mugar Hall, Northeastern University, 360 Huntington Ave., Boston, MA 02115, Tel: +1-617-373-7988; Fax: +1-617-373-2855; e-mail: eghabbou@lynx.neu.edu; Website: www.hagroup.neu.edu.

17th World Congress of Soil Science“Soil Science: Confronting New Realities in the 21st Century”, Bangkok, Thailand, August 14-20, 2002.

Information: 17th World Congress of Soil Science, Kasetsart Golden Jubilee Administration and Information Center (1st floor), Kasetsart University, P.O. Box 1048, Bangkok 10903, Thailand; Fax: (662)940-5788; E-mail: o.sfst@nontri.ku.ac.th; Web: <http://www.17wcss.ku.ac.th>.

2003

Hydrology in the Mediterranean and Semiarid Regions, Montpellier, France, April 2003.

Information: Dr. Eric Servat, Centre IRD Hydrologie, BP 5045, F-34032 Montpellier Cedex, France; Tel.: +33-4-679-17260; Fax: +33-4-675-7106; E-mail: eric.servat@mpl.ird.fr.

**INTERNATIONAL TRAINING COURSES
COURS INTERNATIONAUX DE FORMATION
INTERNATIONALE FORTBILDUNGSKURSE**

Michigan State University, USA, offers an International Short Course: Agroecology, Integrated Pest Management (IPM) and Sustainable Agriculture, June 17-29, 2001.

Information: Dr. K.M. Maredia, Institute of International Agriculture, 416 Plant and Soil Sciences Bldg., Michigan State University, East Lansing, MI 48824, USA; Phone: +1-517-353-5262; Fax: +1-517-432-1982; E-mail: kmaredia@pilot.msu.edu.

Michigan State University, USA, offers an International Short Course in Food Safety, July 22-27, 2001.

Information: Dr. K.M. Maredia, Institute of International Agriculture, 416 Plant and Soil Sciences Bldg., Michigan State University, East Lansing, MI 48824, USA; Phone: +1-517-353-5262; Fax: +1-517-432-1982; E-mail: kmaredia@pilot.msu.edu.

The Department of Soil Science of the University of Dhaka, Bangladesh offers an International Summer Course: Soil Ecology - Environment for Sustainable Agriculture, June 1-30, 2001.

Information: Dr. Mustafizur Rahman, Professor, Dpt. of Soil Science, University of Dhaka, Dhaka-1000, Bangladesh; Tel: 880-2-966-1900 Ext. 6141 or 6120 or 6127; Fax: 880-2-861 5583; E-mail: soil@du.bangla.net; or dmrahman@dhaka.agni.com.

The Università degli Studi di Siena, Italy, organizes the International Summer School on Environment and Health: Xenobiotics – Environment – Human Health

Information: Prof. A. Renzoni, Dipartimento di Scienze Ambientali, Via delle Cerchia 3, 53100 Siena, Italy; Tel: +39-0577-232831; Fax: +39-0577-232806, E-mail: renzoni@unisi.it.

The International Fertilizer Development Center offers various training programs/study tours in the USA, Africa, Asia, South America and Europe.

The topics include »Agricultural Input Marketing«, »Technical Training on Fertilizer Production«, »Fertilizer Recommendations for Optimum Crop Production«, »Modern Techniques in Fertilizer Distribution and Handling«, and many more.

Information: Director, Human Resource Development, International Fertilizer Development Center, P.O. Box 2040, Muscle Shoals, Alabama 35662, USA.

Tel: +1-256-381-6600; Fax: +1-256-381-7408; E-mail: hrdu@ifdc.org; Website: <http://www.ifdc.org>.

The International Institute for Aerospace Survey and Earth Sciences (ITC) offers, among others, the following courses (MSc and Professional Master degrees, modular system of courses):

- Sustainable Agriculture
- Rural Land Ecology
- Forestry for Sustainable Development
- Soil Information Systems
- Planning and Co-ordination in Natural Resources Management
- Rural Development and Resource Mangement
- Environmental Systems Analysis and Management

Information: ITC Student Registration Office, P.O.Box 6, 7500 AA Enschede, The Netherlands. Fax: +31.53-487 44 00; E-mail: pr@itc.nl. Webpage: <http://www.itc.nl>.

Post-graduate Courses in Soil Science, Plant Production, and Ecology. MSc and PhD Degree, Universidad de Buenos Aires, Argentina.

Language: Spanish

Information: Ing. Agr. Marta E. Conti, Facultad de Agronomía, UBA, Escuela para Graduados, Av. San Martín 4453. (1417) Buenos.Aires, Argentina. Fax: (+541)522-1687. E-mail: conti@ifeva.edu.ar and epg@ifeva.edu.ar.

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The University of Gent and the Free University of Brussels, Belgium offer:

International Interuniversity Post-Graduate Programmes in Physical Land Resources. Diploma and Master Courses.

Information: Programme Secretariat, Physical Land Resources, Krijgslaan 281 (S8), B-9000 Gent, Belgium; Tel: +32-9-264-46-18; Fax: +32-9-264-49-91; E-mail: PLRprog.adm@rug.ac.be, Website: <http://allserv.rug.ac.be/~amtanghe/PLRprog.html>.

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The Interactive Remote Instructional System (IRIS®) is an internationally recognized distance learning program in the hydrologic and environmental sciences and engineering. This program provides continuing education and professional development for scientists, engineers and administrators working in the environmental field. 12-week courses are offered on:

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- **Site Remediation**
- **Environmental Geophysics**

Information: The Center for Ground Water Management, Wright State University, Dayton, Ohio 45435-0001; Tel: +1-937-775-3648; Fax: +1-937-775-3649; E-mail: IRIS19@wright.edu; Web: <http://geology.wright.edu/iris.html>.

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Short Postgraduate Course on Soil and Plant Analysis and Data Handling

Wageningen, the Netherlands, May 1 – 26, 2000.

Organized by the Wageningen University (WU), in co-operation with the International Agricultural Centre (IAC) and the International Soil Reference and Information Centre (ISRIC).

Information: International Agricultural Centre (IAC), Lawickse Allee 11, P.O. Box 88 6700 AB Wageningen, The Netherlands; Tel.: +31-317-490-111; Fax: +31-317-418-552; E-mail: IAC@IAC.AGRO.NL; Telegrams: INTAS; Telex: 45888-INTAS NL.

The Katholieke Universiteit Leuven and the Vrije Universiteit Brussel offer, among others a:

2-year Master of Science Programme in Water Resources Engineering for undergraduates, faculty staff, project engineers, staff of ministries etc.

The programme provides advanced training in information technology, mathematical modelling, and decision support systems with application to water resources problems. Course options are hydrology, irrigation, waste water treatment and aquatic ecology.

Information: Institute for Land and Water Management, K.U. Leuven, Vital Decosterstraat 102, 3000 Leuven, Belgium. Tel: +32-16-32-97-45; Fax: +32-16-32-97-60; E-mail: iupware@agr.kuleuven.ac.be.

or: Laboratory of Hydrology, V.U. B., Pleinlaan 2, 1050 Brussel, Belgium. Tel: +32-2-629-30-21; Fax: +32-2-629-30-22; E-mail: fdesmedt@vub.ac.be.

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International Centre for Advanced Mediterranean Agronomic Studies (CIHEAM) offers a wide range of short- and long-term studies in the field of

- **Plant Production**
- **Animal Production**

- Environment

- Agricultural Marketing

Information: Instituto Agronómico Mediterráneo de Zaragoza; Apartado 202, 50080 Zaragoza, Spain; Tel: (34-76)57-60-13; Fax: (34-76)57-63-77

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ITC Postgraduate Diploma and MSc Degree Courses, Enschede, The Netherlands,

ITC offers a wide range of courses for example

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- Geoinformation Management for Rural Development and Resource Management
- Rural Land Ecology – Agriculture, Conservation and Environment
- Soil Information Systems
- Planning and Coordination in Natural Resources Management
- Environmental Health Using GIS and Remote Sensing.

Information: ITC, Student Registration Office, P.O.Box 6, 7500 AA Enschede, The Netherlands, Tel: +31-(0)53-487-42-05; Fax: +31-(0)53-487-42-38; E-mail: education@itc.nl; Website: <http://www.itc.nl/education>.

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Silsoe College, Bedford, England, offers a wide range of post-graduate courses and studies, e.g.:

Agribusiness Management and Technology (MSc.), Agroforestry (MSc.), Land Resource Management and Planning (MSc. and Postgraduate Diploma programmes), Engineering for Rural Development (MSc.), Agricultural Engineering (Agrochemicals Application Technology - MSc., etc.), Management for Agricultural Development (MSc.), Agricultural and Food Marketing (MSc. and PD), Agricultural Water Management (MSc.), Crop Production Technology (MSc.), Information Technology (MSc.), etc.

Information: The Student Recruitment Executive, Silsoe College, Silsoe, Bedford MK45 4DT, U.K.; Tel: (0525) 860428; Fax: (0525) 861527; Telex: 826383 silcam g

External Programme, specialised courses on Managing Agricultural Development, Environmental Management in Agricultural Development, Kent, UK.

Information: The External Programme, **Wye College, University of London**, Ashford, Kent TN25 5AH UK (Tel.: 0233 812401; Fax: 0233 813320; Telex: 94017832 WYEGG).

The University of East Anglia, Norwich, UK, offers a specialist training for development. Tailor-made courses are organized in different fields, e.g.:

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Conservation Tillage in U.S. Agriculture. Environmental, Economic, and Policy Issues. N.D. Uri. Food Products Press, Binghamton, 1999, xi + 130 p. ISBN 1-56022-884-9. Hardcover.

Soil erosion from croplands in the United States of America has long been recognized as a national problem. The present book is a study of the costs and benefits of using conservation tillage to prevent soil erosion. Designed for professionals working in the areas of soil science, agronomy, economy, environment and agriculture, this book covers subjects from machinery and trends in conservation tillage to their adoption and use in regions of the U.S. In this manual different types of tillage and the many benefits this practice can assure are examined. Areas covered are improving water quality, increasing soil organic matter, sequestering carbon, and providing habitat and food for wildlife. Case studies on costs and benefits of different conservation tillage practices with various crops deal with conditions in U.S. This book is certainly also of interest for professionals in other regions of the world where conservation tillage is becoming an issue.

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Sizes and Shapes of Humic Substances. Special Issue of Soil Science, vol.164, no. 11, pp.775-870. November 1999. Lippincott Williams & Wilkins, Baltimore. ISSN 0038-075X.

This series of papers, assembled by C.E. Clapp and M.H.B. Hayes, focuses on considerations of the sizes and shapes of humic macromolecules. The initiative arose because of the divergent views held by participants at a symposium in October 1997. The various concepts arose from studies of different soils using different experimental techniques. The matter/controversy can best be resolved when data are available from applications of the same advanced techniques and procedures to a variety of humic substances from different sources.

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User Requirements Study for remote sensing based spatial information for the sustainable management of forests. Final Report. ITC, FAO, IKC Natuurbeheer, a.o., 1999, xi + 25 p.

This study originated from problems observed in relation to information availability for decision-making purposes in sustainable forest management as a result of experiences gained in international programmes and processes over the past decades worldwide. A solution to the problems observed was suggested through the FAME (Forest Assessment and Monitoring Environment) concept, comprising an end-to-end forest assessment and monitoring system. This is an integrated system, with functions for image data input, transmission, acquisition, processing, modelling and archiving, including the education and training required for these purposes. The study aimed to address the following issues: (1) Assessment of requirements for spatial information in order to support sustainable forest management; (2) Preliminary evaluation of the extent to which the requirements for spatial information can be met by existing and planned remote sensing systems; and (3) Identification of the requirements for, and components of, an improved information supply mechanism in the form of an end-to-end information system. The International Institute carried out the study for Aerospace Survey and Earth Sciences (ITC). The

Netherlands, in cooperation with many organizations and institutes. The final report is supplemented with eight technical documents. The study has revealed a substantial and urgent global need for spatial data and information on forests. This need is particularly observed at a local level and at sub-national levels. All themes that require spatial information are relevant, irrespective of level. Site information needs include topography, hydrology, soils and geomorphology. Most important are the themes of land and forest cover, and forest degradation. The information requirements in all cases refer to both state and change parameters. The results of the study have been laid down in a Final Report and in Technical Documents, which can be downloaded from the ITC URL: www.itc.nl/forestry/urs. A limited number of hard copies is available.

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Mineral Fertilizer Use and the Environment. K.F. Isherwood. International Fertilizer Industry Association (IFA), and UNEP, 2000, 51 p. ISBN 2-9506299-3-8.

This document presents a view of the benefits of using mineral fertilizers and the environmental risks involved. It is not a scientific document, but it aims to be technically correct. The review presents the evidence supporting the view that the use of mineral fertilizer is a necessary condition for achieving an increased food production on land that is already in use, and avoid encroachment on land that is only marginally suitable for cultivation. This publication stresses the importance of using mineral fertilizers efficiently. Inefficient use not only increases their negative environmental impact unnecessarily, but also represents a large waste of natural resources and a substantial economic loss. There is scope for improved products, but the greatest medium-term gain could be had from improving the way in which currently available fertilizers are used.

Requests to: see below.

Mineral Fertilizer Distribution and the Environment. K.F. Isherwood. International Fertilizer Industry Association (IFA), and UNEP, 2000, 106 p. ISBN 2-9506299-4-6.

This publication is the third in the IFA-UNEP series of Mineral Fertilizers and the Environment. The first concerned Fertilizer Production and the Environment (1988), the second is mentioned above, and this publication completes the chain from factory to farm dealing with the distribution sector. The relevance of fertilizer production and fertilizer use to the environment are clear, this is not so evident in the distribution sector. Not only is the potential environmental impact of fertilizer distribution often underestimated, but so too is its economic impact. Under favourable circumstances the cost of distributing and marketing fertilizers amounts to a third of the production costs. Under unfavorable circumstances it can amount to three times the production (or import) cost. Not only is the cost substantial, it is a cost, which can be influenced by an increased efficiency

in the distribution and marketing. The purpose of this publication is to demonstrate relevant aspects of mineral fertilizer distribution and to describe its complexities. Both publications can be downloaded from the homepage of IFA.

Requests to: IFA, 28 rue Marbeuf, F-75008, Paris, France. Fax: +33-153-930545. E-mail: ifa@fertilizer.org. Homepage: www.fertilizer.org.

Perspectives on Biodiversity. Valuing its Role in an Everchanging World. National Research Council. National Academy Press, Washington, 1999, xii + 153 p. ISBN 0-309-06581-X.

This report reviews current understanding of the value of biodiversity and the methods that are useful in assessing that value in particular circumstances. Many federal agencies and state natural resources agencies in the USA have lands held in large blocks where biodiversity can be protected and maintained. Taken together, these lands collectively identify a developing national system of potential biodiversity reserves. Their importance aesthetically, economically, and biologically should not be undervalued. Conservation of biodiversity does not enter into resource-management decisions in only one way. It is vital element in sustaining natural processes. The intent of this report is to provide perspectives on biodiversity that resource managers can consider in making decisions. The different approaches to valuing biodiversity are discussed throughout the report. Case studies are used to show that no single list of tools can be used but that a broad range of information on biodiversity, including differing views and values of biodiversity should be taken into account. Although this is a book about conditions in the United States, the ideas put forward are of interest to resource managers in other countries.

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Nature and Human Society. The Quest for a Sustainable World. Proceedings of the 1997 Forum on Biodiversity. Peter H. Raven, editor. Tania Williams, Associate Editor. National Academy Press, Washington, DC, 1999, xii + 625 p. ISBN 0-309-06555-0. Hardcover.

The extent and variability of life on Earth is referred to as "biodiversity". Scientists in many disciplines have engaged in extensive exploration of biodiversity. Many advances have been made since the National Forum on BioDiversity was held in 1986. Although our collective knowledge is growing rapidly, many scientific advances are still needed, and much current information is not widely known beyond the community of scientists who study biodiversity. The Second National Forum on BioDiversity was held in 1997. It provided a venue for the world's leading experts in the biodiversity sciences, ranging from agronomy to zoology, to discuss their understanding and future scientific directions. The forum had three goals: (1) review state-of-the-art science that helps us to understand Earth's biological diversity; (2) engage scientists and non-scientists in a discussion of what science is, how it works, and the issues that scientists should address, including

issues of practical importance to the public; and (3) make the information available accessible to the general public in an understandable way. This proceeding's volume accomplishes that goal. It is derived from the research literature and forum activities, and it explains biodiversity in lay terms.

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Reclaimed Land – Erosion Control, Soils and Ecology. M.J. Haigh, editor. A.A. Balkema, Rotterdam and Brookfield, 2000. xiv + 385 p. ISBN 90-5410-793-6. Hardbound.

This book is the first in a series that will aim to publicize work being done to restore lands that have been damaged by human actions and to manage lands in ways that minimize the damages done by human actions. Each volume will explore a particular land management problem from the perspective of the applied scientist and progressive practitioner. The level will lie between the research literature and the advanced textbooks. The present first volume in the series discusses the problems of sustaining the quality of land that has already been reclaimed through the decades that follow the reclamation process. Land degradation may not, normally, be a huge problem for lands that are returned for high investment uses, but it is commonly a major problem for lands that are reclaimed for uses that have a low economic rent, for lands that are composed of unstable, acid or toxic spoils, and for lands returned as steeper slopes. This book reviews the applied research and practical experience that is available, internationally, for those striving to increase durability and self-sustainability of reclaimed lands.
Price: EUR 85.00, USD 88.00, GBP 56.00.
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Ecological Risk Evaluation of Polluted Soils. J.L. Rivière. A.A. Balkema, Rotterdam and Brookfield, 2000. xii + 223 p. ISBN 90-5410-796-0. Hardcover.

Ecological risk evaluation arose from the need to forecast the effects of pollution and to ensure a scientific basis for decisions in matters of environmental management. This pursuit proved to be particularly complex, because of its interdisciplinary nature, as well as the relatively poor understanding we have of natural ecosystems and their functioning. This book, originally published in French (*Évaluation du risque écologique des sols pollués*, Technique & Documentation, Paris, 1998), is an introduction in which the reader will find the fundamental principles, as they are conceived at present, and a range of workable methods in the case of polluted soils. A set of definitions is proposed before the author develops different aspects of the evolution of pollutants in the soil and their toxicity. It then leads the reader to risk formulation, which is essential in establishing a procedure that includes economic, social and political considerations.

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Solos do Brasil. Gênese, Morfologia, Classificação, Levantamento. Cd-Rom com orientações práticas de campo. Hélio do Prado. Published by the author. Piracicaba, 2000. 182 p. ISBN 85-901330-1-X.

This nicely produced book with a number of colour photos with soil profiles, starts with a description of the soil forming factors in Brazil, and the resulting morphological characteristics. Use is made of the new Brazilian soil classification system (EMBRAPA-CNPS, 1999), and the main part of the book is concerned with a description of the 14 orders established in the system. An interesting chapter discusses the classification of six soil profiles, based on the soil description and analytical data. The CD-ROM, which is not available separately from the book, contains among others information about the old and new Brazilian soil classification systems, and instructive voice video clips about field activities. The CD-ROM can be used for an introduction about the landscapes and soils of Brazil.

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Guide des analyses en pédologie. Choix – expression – présentation – interprétation. 2ème édition revue et augmentée. D. Baize. Collection Techniques et pratiques. INRA, Paris, 2000. 257 p. ISBN 2-7380-0892-5. ISSN 1150-3912. Broché.

L'ambition de cet ouvrage est de vous aider à bien choisir vos analyses, à maîtriser les modes d'expression des résultats, à les interpréter et bien les présenter. Conçu comme un guide pratique, ce n'est ni un cours de pédologie générale, ni un traité d'agronomie. Il n'a pas pour objet des "analyses de terre", ni l'établissement de normes d'interprétation. Il traite des analyses de sols les plus courantes en pédologie, c'est-à-dire celles qui sont réalisées, suite au creusement de fosses ou tranchées, sur les différents horizons des sols et des couvertures pédologiques que l'on peut rencontrer en Europe occidentale. Complément naturel du "Guide pour la description des sols" (D. Baize et B. Jabiol, INRA, 1995), il s'adresse à tous ceux, pédologues, forestiers, agronomes, techniciens agricoles, ingénieurs en environnement, étudiants, enseignants... qui ont à caractériser ou qui veulent étudier ce que l'on appelle couramment "les sols". Cet ouvrage est une nouvelle édition du livre paru en 1988.

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Agricultural Research Priority Setting. Information investments for the improved use of research resources. B. Mills, editor. International Service for

National Agricultural Research (ISNAR), The Hague and Kenya Agricultural Research Institute (KARI), Nairobi, 1998, viii + 151 p. ISBN 92-9118-040-8. Soft-cover. With CD-ROM.

Managers face a number of practical issues in designing procedures for agricultural research priority setting: "Who will set priorities?", "What information will they use?", "What skills or tools do they need?" Similarly, socioeconomists and others who implement priority-setting processes need concrete advice on how to undertake each step. This publication addresses issues of process design and implementation. It leads readers through the major steps and questions involved in setting program-level priorities in agricultural research organizations. Examples from the Kenya Agricultural Research Institute (KARI) illustrate applications of the methods and issues discussed. Exercises, some using the spreadsheets included on the enclosed computer diskette, provide the reader with hands-on experience in doing some of the calculations.

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Emerging Technologies for Sustainable Land Use and Water Management.

2nd Inter-Regional Conference on Environment-Water, September 1999, Lausanne. Presses Polytechniques et Universitaires Romandes, Lausanne, 2000. Booklet with CD-ROM. The contributions to this conference provide insight into recent developments in modelling hydrological processes and planning the use of natural resources under the constraints of economic, social and environmental sustainability. Innovative management issues, practices and tools are also proposed and analyzed, mainly under the perspective of compatible economic and social aims with the environmental ones. The contributions are arranged into four sections: (1) new trends in modeling in hydrology, and water and land use planning and management; (2) new approaches in measuring and handling data, including related mathematical and computer techniques; (3) new tools for evaluation, visualization and decision making, with particular attention to spatially distributed data and decision support systems; and (4) new management policies and practices, mainly concerning agricultural water and soil use, and water quality management. Although significant advances are shown, gaps in our knowledge are revealed as well. Future research, based on long-term observations on soil and water processes, is required to effectively validate present issues, to generate new ones, and to contribute to better-resolved scale problems. Also, new issues are required to transfer innovation into practice, to promote better institutional arrangements facilitating new policies, and for monitoring the state of the environment and the practices dealing with natural resources. The booklet presents the general contents and abstracts of all contributions, the full texts are provided on the CD-ROM.

Price: In Switzerland CHF 120.00, France: FRF 536.00, elsewhere EUR 77.50.

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Ecology and Management of Forest Soils. Third edition. R.F. Fischer and D. Binkley. John Wiley & Sons, New York, Chichester, 2000, xvii + 489 p. ISBN 0-471-19426-3. Hardbound.

This is a greatly revised edition of *Properties and Management of Forest Soils*, by W.L. Pritchett and R.F. Fischer, published in 1987. Forests can be viewed from a range of perspectives, all of which are based on soils. Forest productivity is a story that centers on photosynthesis and plant growth, but plant biochemistry is supported by nutrient cycles that are essentially a soils story. The diversity of plant species in forests is largely a soils story as well; across landscapes, the patterns in vegetation are typically modified by patterns in soils. More than 99 percent of the diversity of life in forest ecosystems resides in soils, where amazingly small, numerous, and important organisms make the rest of the ecosystem (such as tree and mammals) possible. In this book the authors try to convey the key features of soil ecology that are critical to successful management. Compared to the second edition, the authors have taken a worldwide approach, instead of a North American approach. Case studies have a greater breadth and depth. The book is structured in 16 chapters. After the first chapters on forest soils and vegetation development, the soils of the major forest biomes, physics, (biogeo)chemistry and biology of forest soils are treated. Soil organic matter and root systems and growth are covered, followed by a chapter on the influence of forest fires on soils. Much attention is given to nutrient management: nutrient limitations and fertilization and biological nitrogen fixation. The book closes with chapters on forest soil management on a variety of soils, and on long-term soil productivity. The book is illustrated with many figures.

Price: GBP 63.95.

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The Podzolization Process. Special issue of *Geoderma*, vol. 94, nos. 2-4, February 2000, p. v + 91-353. U.S. Lundström, N. van Breemen and D.C. Bain, editors. Elsevier.

Podzolization is the most common soil forming process in coniferous forests in northern Europe and America. Podzols have been studied intensively since the end of the last century and several theories have been proposed to explain their often visually dramatic soil profiles. However, in spite of much prior research, the editors felt that a number of fundamental aspects of podzolization were still poorly understood, and a joint project was started by researchers from Sweden, Finland, Norway, The Netherlands and Great Britain. At three sites with podzolic soils unaffected by anthropogenic deposition in the north of Sweden and in central Finland, geochemical, mineralogical, micromorphological, microbiological, hydrochemical, and hydrological investigations were performed. In an ongoing project, the dynamics of podzolization in an area affected by acid atmospheric deposition are being studied. This

special issue of *Geoderma* contains the literature summary review of the podzolization process, an article describing the experimental design of the project, 11 papers on the results from the project, and an article summarizing the results and conclusions from the whole project. Several new findings have been made relating to the podzolization process, which may have impact on knowledge used for evaluating forest sustainability and environmental problems, and some results raise a number of questions for further research. Orders to: Elsevier Science, P.O. Box 211, 1000 AE Amsterdam, The Netherlands. Fax: +31-20-4853432. E-mail: nlinfo@elsevier.nl. Or: Elsevier Science, P.O. Box 945, New York, NY 10159-0945, USA. Fax: +1-212-633-3680. Email: usinfo@elsevier.com. Homepages: www.elsevier.nl; or: www.elsevier.com.

Sustainable Land Management for the Oxisols of the Latin American Savannas. Dynamics of soil organic matter and indicators of soil quality. R. Thomas and M.A. Ayarza, editors. Centro Internacional de Agricultura Tropical (CIAT), Cali, 1999, viii + 231 p. CIAT publication 312. ISBN 958-694-011-X. Softcover.

The Oxisols (Ferralsols) cover very large areas in the tropics. They are characterized by a good physical structure, but low fertility and high acidity. They are susceptible to erosion. In Latin America, most of these soils are found in the savannas of Brazil, the Cerrados. It is estimated that as much as 40 percent of the total area of 98 million hectares under these soils is degraded due to loss of organic matter, soil compaction and erosion, weed invasion, pest and diseases, contamination of rivers, destruction of native vegetation and loss of biodiversity. The main objective of the project reported about in this book was to study the dynamics of soil organic matter in Oxisols.

To halt or reverse land degradation, farmers, extension workers, and policymakers need early warning signals of land degradation as, by the time this is visible, the costs of remedial treatment are often too high to be implemented. In terms of soil indicators, measurements of bulk soil are often not sensitive enough to detect the initiation of the processes of degradation. This study investigated changes in the bulk soil and its fractions under different land uses to identify more sensitive parameters.

It has 18 chapters and one with general conclusions and further research needs.

Price: In Colombia USD 15, other developing countries USD 16, elsewhere USD 20.

Orders to: see below.

Systems and Farmer Participatory Research. Developments in Research on Natural Resources Management. S. Fujisaka, editor, with the collaboration of A. Jones. Centro Internacional de Agricultura Tropical (CIAT), Cali, 1999, viii + 165 p. CIAT publication 311. ISBN 958-694-009-8. Softcover.

Scientists working for CIAT in Latin America, Asia and Africa are increasingly conducting research that combines natural resources management and germplasm improvement. In so doing, scientists are working in

interdisciplinary teams, and helping to develop active research partnerships through networks and consortia, and are at the forefront of the continuing development and application of methods such as farmer participatory research (FPR) and geographic information systems (GIS). The objectives of a workshop, held in 1997 in Cali, Colombia, were to foster an exchange of CIAT's experience with different aspects of systems research; analyze its experience with FPR within a systems context; identify priority themes of common interest to CIAT projects; discuss proposals for the future direction of systems research; and consider strategies for ensuring the work's impact. This publication contains the papers presented at the workshop.

Price: In Colombia USD 20, other developing countries USD 24, elsewhere USD 30.

Orders to: CIAT, Publications Distribution Office, Apartado Aéreo 6713, Cali, Colombia. Fax: +57-2-4450073. E-mail: l.garcia-ciat@cgiar.org. Homepage: www.ciat.cgiar.org.

Solute Movement in the Rhizosphere. P.B. Tinker and P.H. Nye. Oxford University Press, New York and Oxford, 2000, xix + 444 p. ISBN 0-19-512492-8. Hardback.

In this book, the authors describe in detail how plant nutrients and other solutes move in the soil in response to leaching and plant uptake. The plants considered may grow in isolation, or as a crop, a mixture of crops, or a natural community. The way their roots interact with the soil is not so fully understood as the way their shoots respond to the atmosphere, because the root-soil system is both complex and too inaccessible to study easily.

At present, the world's developed countries have a vast experience of the effects of the nutrient elements on important crops, based on repeated field trials. But experience is confined to existing or past conditions, and new varieties, cultural practices, and environmental conditions bring with them the need to reassess former conclusions. Often, resources do not match the range of crops or vegetation, or the diversity of soil, climate, and treatment. In these circumstances, advice on practice can best be given by combining fundamental insight with the information given by field trials. These phenomena are dynamic: soil solutes move, and plants grow; yet, the intimate connection between the two has only recently been understood. Therefore, an expanded account of solute transport processes in the rhizosphere is timely. Until relatively recently, it has been difficult to link all the separate steps involved in the movement of solutes through the soil and their uptake by extending roots, because the mathematics was too difficult or tedious; and hence simplifications had to be made. Computers have removed these obstacles, and provide the essential tool in modelling the various pieces of the system that comprises growing roots in soil. Most of the mechanisms described in the book have been worked out for the major nutrient elements, but they are equally relevant, with modification, to other solutes. Most models of natural ecosystems or crop production are coarse-grained, the object being to establish a framework and fill in the details later. The approach present-

ed in this book is different in that the authors analyse the working of small-scale, often simplified, systems first, before combining them in a more complicated one.

The general outlines of the first chapters are retained in this edition, but the text has been updated and expanded. The other chapters contain much new material on processes that affect ion fluxes into and near roots, followed by chapters on the whole plant, and field vegetation. The book is well illustrated with many figures. It has a useful listing of over 1100 references.

Price: USD 95.00 or GBP 70.00.

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Soil Biogeochemistry, volume 10. Books in Soils, Plants, and the Environment. J.-M. Bollag and G. Stotzky, editors. Marcel Dekker, New York and Basel, 2000, xi + 519 p. ISBN 0-8247-8834-6. Hardbound.

A major goal of this series is to provide up-to-date reviews on the factors that influence a spectrum of biological, biogeochemical, edaphic, and ecological phenomena in soil, most of which have a biochemical basis. From a practical viewpoint, as well as from a vintage point of basic science, there is a need to characterize and explore further soil biochemical factors. An increased knowledge of soil biochemistry will also contribute to improving the quality of soil and to increasing food production. The topics discussed in this volume range from anaerobic microbiology in rice fields, to anaerobic degradation of specific pesticides, to the use of fungi in environmental remediation, to the genetic ecology of Bradyrhizobium; from new extraction techniques for humic materials and bound residues, to sorption of enzymes on surfaces and its effects on enzyme activity. There is always special interest in the question of the adequacy of the plate and other methods for characterizing microorganisms in soil, and this is discussed in several chapters. As an extension of classical soil biochemistry, a chapter relates soil biology and biochemistry to archaeology.

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Agriculture as a mimic of natural ecosystems. Special issue of Agroforestry Systems, vol. 45, ix + 446 p., 1999. Kluwer Academic Publishers, Dordrecht.

The aim of this workshop, held in Australia in September 1997, was to explore the concept that by mimicking the structure and function of natural ecosystems it might be possible to improve the sustainability of agriculture across a range of environments. Although many papers are based on conditions in Australia, also other areas of the world (Europe, India, Africa) were being discussed. The proceedings contains the edited presentations at the workshop, arranged in four sections: (1) the ecosystem mimic concept (3 papers); (2) case stud-

ies of multi-species systems (6 papers); (3) application of the ecosystem mimic concept to southern Australian agriculture (7 papers) and (4) implications of the mimic concepts (3 papers).

Orders to: see below.

Heavy Metals: A Problem Solved? Methods and Models to Evaluate Policy Strategies for Heavy Metals. Environment & Policy, volume 22. E. van der Voet, J.B. Guinée and H.A. Udo de Haes, editors. Kluwer Academic Publishers, Dordrecht, Boston, 2000, ix + 242 p. ISBN 0-7923-6192-X. Hardback.

Heavy metals and the environment is an well-investigated subject. Up to now, publications focus on the environmental pathways and risks of metals. In the book, a link has been established between the environmental risks and the societal issues of these risks. Economic models, substance flow models and environmental fate and risk assessment models have been integrated into one framework of analysis which has been applied to understand the pathways of four heavy metals (copper, zinc, lead and cadmium), from their entering the economy until their final destination in the environment. The Netherlands has been chosen as a case in point to study the long term impacts of the present metals management regime, and to assess the effectiveness of certain policy measures.

The publication is the result of an interdisciplinary research programme, the "Metals" Programme, in which ecologists, agricultural scientists, environmental scientists and economists cooperated. The last part of the book is devoted to a summary of the main results; the conclusions and the recommendations for further research as well as for policies on heavy metals are formulated.

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Soil Conservation and Watershed Management in Asia and the Pacific. Report of the APO Seminar on Soil Conservation and Water Management, Taipei, November 1998. Asian Productivity Organization, Tokyo, 2000, 261 p. ISBN 92-833-2249-5. Softcover.

In many Asia-Pacific countries, watersheds have been observed to be badly affected by soil erosion caused by, for example, indiscriminate agricultural activities and environmental harmful farming practices. Given the critical nature of the situation, it was necessary to address the institutional, technical and socio-economic aspects of these problems, and seek practical and effective solutions. A seminar was held to address these issues in the region, in all 12 countries, from Mongolia and China in the north, to Indonesia in the south, and including Fiji, India and Sri Lanka. The publication is a compilation of the report of the proceedings of the seminar and the papers presented. After four resource papers, the twelve country contributions give a clear picture of the sometimes serious conditions of the soils and encroaching degradation.

Price: USD 15.00, plus USD 5.00 for handling and air-mail postage.

Orders to: The Director, Information and Public Relations, Asian Productivity Organization, 1-2-10 Hirakawa-cho, Chiyoda-ku, Tokyo 102-0093, Japan. Fax: +81-3-52263957. E-mail: ipr@apo-tokyo.com. Homepage: www.apo-tokyo.com.

Soil Resources of Europe. European Soil Bureau Research Report No. 6. P. Bullock, R.J.A. Jones and L. Montanarella, editors. The European Soil Bureau, Joint Research Centre, Ispra, 1999, 204 p. Publication EUR 18991 EN. Softcover.

The European Soil Bureau (ESB) was created in 1996 as a network of national soil science institutions. Its main tasks are to collect, harmonise, organise and distribute soil information for Europe. Activities are currently organised through five working groups: the 1 to 1 million European soil database group; the Information Access Working Group (IAWG), the 1:250,000 working group; the soil erosion working group; and the soil analytical methods working group.

The present publication provides an up-to-date account of progress in soil mapping, soil monitoring and database development in the countries of the European Union and EFTA (Iceland, Norway and Switzerland). It is shown in the country reports, forming the bulk of this book, that the availability of soil resources information on maps and in databases is very uneven over the region. Problems in the European context are also related to the lack of harmony in the systems used, including those for soil monitoring. It is also stated that in addition to major reductions in funding by central Governments, one of the major problems in organising national soil mapping programmes, has been the transfer of responsibility from central organisations to regional groups and/or private sector organisations. The book finishes with a chapter on the uses and needs in Europe of soil information, and a listing of conclusions and recommendations.

Orders to: National sales agents of EU publications, or Office for Official Publications of the European Communities, Luxembourg.

Modelling of Transport Processes in Soils at various scales in time and space. J. Feyen and K. Wiyono, editors. Wageningen Pers, Wageningen, 1999, 794 p. ISBN 90-74134-76-9. Softcover.

The soil protects to varying degrees the underlying aquifers. The climate, land use and the soil properties determine the amount of fresh water and chemicals that seep into the underground. A good understanding of the filtering and cleaning capacity of the soil is of paramount importance for assessing the vulnerability of the underlying aquifers. This understanding is a must to better define policies for land use, the use of chemicals and the dumping of wastes.

This book forms the proceedings of the International Workshop of EurAgEng's Field of Interest on Soil and Water, held in November 1999 in Leuven, where these issues were discussed. The aims of the workshop were to present the state-of-the-art on (1) the physical and chemical aspects of water and solute transport in soils;

(2) scale dependence of soil physical and chemical processes; (3) up-scaling of information; (4) preferred pathways for water and solute flows; (5) parameter identification; (6) soil-rhizosphere interactions; and (7) assessment of uncertainty in model predictions. The proceedings address new process descriptions, methodologies and techniques for the characterisation of model parameters, applicability of simulation models through case studies on calibration and reliability assessment, and uncertainty aspects. Knowledge on transport processes in porous media were presented for problems at local, field and regional scales.

Price: NLG 275.00

Orders to: Wageningen Pers, P.O. Box 42, NL-6700 AA Wageningen, The Netherlands. Fax: +31-317-426044. E-mail: info@wageningenpers.nl. Homepage: www.wageningenpers.nl.

The Role of Information in Decision Making in Agricultural Research and Practice. Conference issue of the Quarterly Bulletin of the International Association of Agricultural Information Specialists. Vol. 44, nos. 1 and 2, 1999, 153 p. A. P. Powell and B. Schwilndwein, editors. IAALD, ISSN 1019-9926.

The conference with the above title was held in Freising, Germany, in June 1998. The present issue contains 43 full papers or summaries and abstracts of papers organized around 15 topics dealing with decision making in agriculture. The keynote addresses deal with a variety of topics from the role of national and international organisations in this process to electronic products used to help with the process. Much attention was given to issues related to developing countries.

Orders to: Miss Margot Bellamy, IAALD, CAB International, Wallingford, Oxon OX10 8DE, UK. Fax: +44-1491-833508. E-mail: m.bellamy@cabi.org.

Sistema Brasileiro de Classificação de Solos. Empresa Brasileira de Pesquisa Agropecuária (EMBRAPA), Centro Nacional de Pesquisa de Solos (CNPq), Rio de Janeiro, 1999, xxvi + 412 p. ISBN 85-7383-056-5.

This publication starts with brief introductory chapters on the use and development of the soil classification systems in Brazil, and especially on the development of the present system, which started in 1978. After a discussion on the diagnostic and other attributes used in the system, the six categoric levels are presented. Recognized are: orders, suborders, great groups, subgroups, families and series. The bulk of the book is concerned with chapters on the 14 orders, and their subdivisions up to the fourth level. The structure for the use of the fifth and sixth level is given, as well as the methods of physical and chemical analytical methods, and the criteria for the use of phases in mapping units. An interesting phase is based on the occurrence of different forms of primary vegetation. The book has 23 colour photographs of soil profiles.

A tribute is paid to Dr. Marcelo Nunes Camargo, who played an important role in the development of the Brazilian soil classification systems.

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The Tropenbos Foundation was established in 1988 with as main objectives to contribute to the conservation of tropical rain forests and promote their wise use; and to involve local research institutions in the above objectives and to increase their capacity in this regard. At present, sites are operational in Cameroon, Colombia, Côte d'Ivoire, Guyana and Indonesia. The headquarters are in Wageningen, The Netherlands. A Newsletter is published regularly. See also homepage: www.tropenbos.nl.

Monitoring and Modelling Hydrological Fluxes in Support of Nutrient Cycling Studies in Amazonian Rain Forest Ecosystems. Tropenbos Series 17. C. Tobón Marin. Thesis, University of Amsterdam. The Tropenbos Foundation, Wageningen, 1999, xi + 162 p. ISBN 90-5113-035-X. ISSN 1383-6811. Softcover.

This publication gives the results of long-term research on hydrological and nutrient cycling in four undisturbed forest ecosystems in the Colombian Amazon. Amounts

and dynamics of water fluxes in the forest compartments were followed by way of a monitoring programme and through models. The implications of the main findings are reviewed in terms of their implications for nutrient cycling and forest management. The study provided detailed climatic data and information about the hydrological functioning of natural forest ecosystems in the Colombian Amazon. This can serve as a reference for impact studies and may support the development of sustainable forms of land use. Results from the study contribute to enlarging local knowledge related to the hydrological functioning of undisturbed forests in Colombian Amazonia and to better understanding of related processes.

Price: NLG 80.00.

Orders to: see below.

Reduced Impact Logging in the Tropical Rain Forest of Guyana. Ecological, Economic and Silvicultural Consequences. Tropenbos-Guyana Series 6. Thesis, Utrecht University. The Tropenbos Foundation, Wageningen, 1999, viii + 335 p. ISBN 90-393-2185-X. Softcover.

The main objective of the study was to contribute to the formulation of a silvicultural concept under which timber can be extracted from the Greenheart forest in Guyana, and similar forests elsewhere, on a sustained yield basis. The specific objectives were: (1) to describe and understand the impact of the current logging practice on the forest and its consequences for forest recovery and future timber yields; (2) to develop a reduced impact logging system that leaves the forest in a condition that favours a rapid recovery to a state that is silviculturally, ecologically and economically desirable; (3) to analyse the effect of logging intensity on forest recovery and to determine at which intensity the benefit of using reduced impact logging techniques, if any, starts to be compromised; (4) to examine the costs and benefits associated with a change-over from habitual practice to reduced impact logging; and (5) to examine

whether or not post-harvest silviculture is an option to increase productivity of logged forest. The findings are reported and summarized in English and Dutch. Two logging systems are proposed, for which cost-benefit ratios were made. The text concludes by outlining a proposed silvicultural concept for greenheart forests including recommendations for a logging regime and monitoring, and defining which elements are missing for the formulation of a complete silvicultural system. Price: NLG 30.00.

Orders to: The Tropenbos Foundation, P.O. Box 232, 6700 AE Wageningen, The Netherlands. Fax: +31-317-423024. E-mail: tropenbos@iac.agro.nl. Homepage: www.tropenbos.nl.

Agriculture, Fertilizers and the Environment. M. Laegreid, O.C. Bockman and O. Kaarstad. CABI Publishing in association with Norsk Hydro ASA. CABI Publishing, Wallingford, xxiv + 294 p. ISBN 0-85199-358-3. Softcover.

This textbook provides factual information and a balanced scientific review of the environmental and sustainability issues relating to fertilizer use and how its environmental impact can be minimized. This attractively produced book, suitable for undergraduate and college students in soils, crops and environmental sciences, as well as for agricultural advisers and extension workers, has three parts: (1) global food production and challenges; (2) soil productivity, fertilizer use and the environment; and (3) productivity and sustainability challenges.

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Pflanzenbelastung auf kontaminierten Standorten – Plant Impact at Contaminated Sites. Internationaler Workshop am 1. und 2. Dezember 1997 am Fraunhofer-Institut für Umweltchemie und Ökotoxikologie, Schmallenberg, herausgegeben vom Deutschen Umweltbundesamt. Reihe: Berichte des Umweltbundesamtes, Band 1/99, 1999, II, 302 Seiten, 17x24 cm, kartoniert, ISBN 3 503 04810 3.

Am 1./2. Dezember 1997 wurde im Auftrag des Deutschen Bundesministeriums für Umwelt, Naturschutz und Reaktorsicherheit vom Fraunhofer Institut für Umweltchemie und Ökotoxikologie in Schmallenberg ein internationaler Workshop über »Pflanzenbelastung auf kontaminierten Standorten« (»Plant impact at contaminated sites«) organisiert und durchgeführt.

Der Workshop diente dazu, internationale Erfahrungen über die Belastung von Pflanzen auf kontaminierten Standorten, die Bewertung dieser Kontamination sowie geeignete Maßnahmen der Gefahrenabwehr, insbesondere Dekontaminations-, Sicherungs- sowie Schutz- und Beschränkungsmaßnahmen zusammenzutragen, kritisch zu vergleichen und unter dem Gesichtspunkt praktischer Anwendbarkeit auszuwerten.

Der Workshop bot darüber hinaus ein Forum, die

Fachöffentlichkeit mit den Grundzügen der deutschen Bodenschutzverordnung, insbesondere mit der Ableitung der Bodenwerte für den Pflanzenpfad bekanntzumachen, was im Hinblick auf eine optimale kostensenkende Beratung betroffener Grundstückseigentümer aber auch für die Entwicklung geeigneter Sanierungsmaßnahmen geboten erschien. Außerdem wurde der Stand des derzeitigen, praktisch umsetzbaren Wissens dargestellt und dokumentiert.

Wissenschaftlern und Behörden, die sich mit Boden- und Umweltschutz, insbesondere Pflanzenschutz auf kontaminierten Standorten befassen, sowie mit dem Ziel, die Qualität von Böden aufrechtzuerhalten oder wiederherzustellen, bietet dieser Bericht mit einer Auswertung der Ergebnisse dieses Workshops eine wichtige Arbeitsgrundlage.

Preis: DM 86/ATS 628/Sfr 78

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Essential Role of Potassium in Diverse Cropping Systems. Ed. A.E. Johnstone, Proceedings of Workshop C, organized by the International Potash Institute at the 16th World Congress of Soil Science, Montpellier, France, 20-26 August 1998. 150 pages.

Contributions by speakers from different countries discuss the following topics:

K status and crop response to K in intensive cropping systems with annual crops; The response of permanent crops to K and the need for K under adverse soil and climatic conditions; Economic considerations of K use in relation to further research needs and prospects.

The main focus of the publication is to highlight the essential need for potassium within the overall framework of integrated plant nutrient management. Current data from different countries show that there is a considerable imbalance in the ratio of nitrogen to phosphorus, with too little K being applied to crops in most farming systems. The publication will be of interest to a wide range of people involved in ensuring a sustainable supply of wholesome food, including academics, agronomists and advisers, fertilizer production and marketing staff and policy makers.

Price: 15 US\$

Orders to: International Potash Institute, P.O. Box 1609, CH-4001 Basel, Switzerland; Fax: (+41)61-261-29-25; E-mail: ipi@iprolink.ch; Website: www.ipipotash.org.

Berechnung von Prüfwerten zur Bewertung von Altlasten – Ableitung und Berechnung von Prüfwerten der Deutschen Bundes-Bodenschutz- und Altlastenverordnung für den Wirkungspfad Boden-Mensch aufgrund der Bekanntmachung der Ableitungsmethoden und –maßstäbe im Bundesanzeiger Nr. 161a vom 28. August 1999. Herausgegeben vom Deutschen Umweltbundesamt.

Autoren: G. Bachmann, R. Konietzka, K. Schneider und J. Oltmanns. 606 Seiten, DIN A5, ISBN 3 503 05825 7.

In der deutschen Bundes-Bodenschutz- und Altlastenverordnung vom 12. Juli 1999 sind Prüf- und Maßnah-

menwerte von großer Bedeutung. Daher wurden Methoden und Maßstäbe für die Ableitung der Prüf- und Maßnahmenwerte (§ 4 Abs. 5 BBodSchV) im Bundesanzeiger bekanntgemacht.

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Soil Chemistry. Processes and Constituents. G. Filep. Akadémiai Kiadó (Academy Publishing House) Budapest, 1999, 330 p. ISBN 963-05-7455-1. Hardcover.

The topic of the book is the quantitative characterization of chemical reactions taking place in the soil, as well as the properties of the main soil components.

Outlines are given on the physico-chemical and colloid-chemical regularities necessary for the evaluation of soil chemical processes; the individual reaction types and the mechanism of mass transport are discussed in detail.

Attention is focused on the properties and roles of soil colloids, the mechanism of the adsorption of ion exchange, the chemical and colloid chemical interpretation of soil acidity, the evaluation of the acid-base buffer capacity of the soils, as well as on the principles of the modelling of salt and ion transport in soils.

The book has 9 chapters: 1. Introduction (5; 21; 1; 2); 2. Chemical principles (58; 9; 16; 27); 3. The solid phase of the soil (49; 16; 31; 69); 4. Liquid and gaseous phases of soil (24; 9; 8; 53); 5. Solubility and redox equilibria (36; 4; 13; 27); 6. Soil colloids (25; 5; 13; 20); 7. Adsorption and ion exchange (55; 6; 25; 70); 8. Soil acidity and alkalinity (33; 6; 18; 65); 9. Modelling of solute transport in soil (30; 1; 9; 69). The numbers in brackets express the number of pages, tables, figures and references, respectively.

Price: USD 72.00.

Orders to: Akadémiai Kiadó, Budapest. H-1117 Budapest, Prielle Kornélia u. 4. Fax: (+36-1) 464-8221. Homepage: www.akkr.hu.

Micronutrients: Their Behaviour in Soils and Plants. D.K. Das. Kalyani Publishers, Ludhiana, India, 2000, 307 p., ISDN 81-7663-550-2. Soft cover.

The book deals with essential micronutrients for plants (Fe, Mn, Cu, Zn, B, Mo, Cl), elements indirectly associated with plant nutrition (Si, Co, Na, V), micronutrient pollution and soil and plant tissue testing for micronutrients within nine chapters. Special emphasis has been given to the discussion of the behaviour of micronutrients in soils and plants, including their chemistry of transformation, interaction with other nutrients and further parameters which play a role in plant nutrition and crop responses.

The book was basically written for graduate and post-graduate students of agriculture, as well as for researchers in the various fields of biological and environmental sciences, with some basic knowledge in soil science, plant physiology and biochemistry.

Price: 125 Indian Rupies

Orders to: Kalyani Publishers, Ludhiana, New Delhi, India.

Wege zum vorsorgenden Bodenschutz. Fachliche Grundlagen und konzeptionelle Schritte für eine erweiterte Boden-Vorsorge.

G. Bachmann und H.W. Thoenes, (Hrsg.), Reihe: Bodenschutz und Altlasten, Band 8, 213 Seiten, 14,4x21 cm, kartoniert, 2000 – ISBN 3 503 05867 2. Vorliegende Publikation basiert auf einem Gutachten des Wissenschaftlichen Beirates Bodenschutz beim deutschen Bundesministerium für Umwelt, Naturschutz und Reaktorsicherheit. Die Aufgabe dieses Beirates ist es, die Vielfalt und Komplexität wissenschaftlicher Betrachtungen des Bodenschutzes interdisziplinär zusammenzuführen. Vorliegende Broschüre behandelt die vielfältigen Aspekte des vorsorgenden Bodenschutzes in Deutschland, mit dem Ziel, diese in Zukunft zu erweitern. Hierbei werden Leitbilder, Leitideen und Grundregeln der Vorsorge unterschieden. Die hieraus resultierenden Empfehlungen und Vorschläge sprechen sowohl einzelne Handlungsfelder wie auch Instrumente und Verfahrensweisen des Bodenschutzes an, die zur Koordinierung der vielfältigen Aktionsmöglichkeiten erforderlich erscheinen.

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Sustainable Development and Integrated Appraisal in a Developing World.

N. Lee and C. Kirkpatrick, editors. Edward Elgar, Cheltenham and Northampton, 2000, xvi + 250 p. ISBN 1-84064-162-2. Hardbound. It is widely recognized that sustainable development can only be achieved if environmental, economic and social issues are combined in development plans, policies and programmes. This book examines this integrated approach to the development process, and analyses the theory and practice of integrating assessment techniques and decision making. The editors begin by presenting a comprehensive introduction to integrated appraisal in development strategies as well as outlining issues, which are important for the future understanding and practical application of integrated appraisal. A group of authors from a range of disciplinary and country backgrounds then present alternative perspectives

and methods of an integrated approach to sustainable development, and apply integrated appraisal to a variety of case studies from developing and transitional countries.

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Soil Microbiology. Second edition. R.L. Tate III. John Wiley & Sons, New York, Chichester, 2000, xxiii + 508 p. ISBN 0-471-31791-8. Hardbound.

This is an extensively revised and updated new edition of the well-known textbook published six years ago. It offers students a broad knowledge of the behavior and function of microbes in soils – all the essentials they will need in order to address the long-term stewardship of the earth's soil resources. Designed for use as the core text for microbiology courses in the soil science curriculum, it explores the tremendous diversity of life found in soil ecosystems. With its amplified focus on the reclamation of contaminated and damaged soils, greenhouse gas production, and the sustainability of soil ecosystems, this book is suitable for upper-level undergraduates and graduate students, as well as a useful reference for professionals in soil and environmental science. It features a focus on new advances as well as environmental science aspects of soil microbiology; new chapters on the biological diversity of soil ecosystems, soil remediation, and soil systems management; and has a strong emphasis on research in real-world settings as well as theoretical concerns.

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Standard Soil Methods for Long-Term Ecological Research.

G. Ph. Robertson, D.C. Coleman, C.S. Bledsoe and Ph. Sollins, editors. Oxford University Press, Oxford, New York, 1999, xvii + 462 p. ISBN 0-19-512083-3. Hardbound.

This is the second volume in a series about the results of the work of the United States Long-Term Ecological Research (LTER) Network. This Network is a collaborative ecological research effort that promotes synthesis and comparative research across disparate ecosystems and ecological research programs. From an initial six sites selected in 1980, the Network has grown to 21 sites, ranging from the arctic tundra to hot desert, from tropical rain forest to suburban watersheds, and it represents the joint efforts of more than 1000 scientists. It is well known that soils present special problems with respect to standardization. It is common to have three or more methods available for measuring a particular soil property. Agreement on a common protocol that will work in most situations – with alternative procedures identified for the odd soil – could greatly help to simplify the interpretation of both subtle and major dif-

ferences that invariably emerge in long-term or cross-site studies.

The present volume contains a set of common protocols that could be used to characterize the physical, chemical and biological properties of soil from disparate Network sites. In each of the papers presented, it is attempted to lay out a detailed specific protocol for a number of soil properties known to be ecologically useful. The selected properties are: physical (soil water and temperature status; soil structure and other physical properties); chemical (soil carbon and nitrogen; exchangeable ions, pH and cation exchange capacity; soil phosphorous); biology (soil gases; plant litter stores, decomposition, and nutrient turnover; dinitrogen fixation; soil carbon and nitrogen availability, mineralization, nitrification, and soil respiration; denitrification); soil organisms (determination of microbiomass; characterizing soil microbial communities, soil invertebrates; methods for ecological studies of Mycorrhizae; measurements of root parameters; fine root production and demography).

This book is a broadly based compendium of standardized measurement methods for a number of soil properties. As such, it should be widely used and, preferably, expanded. See also the relevant website: www.lternet.edu, for more details and errata.

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Soil Analysis Handbook of Reference Methods. Soil and Plant Analysis Council, Lincoln. CRC Press, Boca Raton, London, 1999, 300 p. ISBN 0-8493-0356-7.

This book is a standard laboratory technique manual for the most commonly used soil analysis procedures. First published in 1974, this Handbook has changed over the years to reflect evolving needs. New test methods and modifications have been added, as well as new sections on nitrate, heavy metals, and quality assurance plans for agricultural testing laboratories. The book also addresses the major methods for managing plant nutrition currently in use in the United States and other parts of the world. The Handbook provides a complete description of many different soil analysis procedures and places those selected into a standard format and documents the ramifications of each procedure.

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Ethnopedology in a Worldwide Perspective: An Annotated Bibliography, ITC Publication 77. N. Barrera-Bassols and J.A. Zinck. ITC, Enschede, 2000, 651 p. ISBN 90-6164-1772. Softcover.

This publication is a compilation of more than 900 references, published until mid-1999, on ethnopedology, focussing on the perception, knowledge and management of soil and land resources among indigenous people and other local rural populations. It is a valuable source document for anyone interested in local development issues and perspectives, and in integrative approaches to land resource management and land use planning. The book provides information on 220 ethnic groups from more than 150 countries, living in fragile ecological systems: tropical humid lowlands, arid and semi-arid lowlands, and the cold and dry highlands. The book has five practical indexes, facilitating to find the relevant references.

Orders to: ITC, attention Mrs. M. Koelen, P.O. Box 6, 7500 AA Enschede, The Netherlands. Fax: +31-53-4874399. E-mail: koelen@itc.nl.

Terminology for Integrated Resources Planning and Management. Compiled and edited by K. Choudhury and L.J.M. Jansen. Food and Agriculture Organization of the United Nations (FAO), Rome, and United Nations Environment Programme (UNEP), Nairobi, 1999, vii + 69 p. Softcover.

Since its appointment as Task Manager for the Implementation of Chapter 10 of UNCED's Agenda 21, FAO has developed an integrated approach to the planning and management of land resources. This approach emphasizes the participation of stakeholders at national, provincial and local levels in planning and decision-making as well as the integration of technical, industrial, legal and socio-economic aspects of the process. Cooperation among experts from various disciplines involved and the integration of the respective results are required in order to identify and evaluate all biophysical, socio-economic and legal attributes of land. The terminology included in this publication should contribute to the creation of a common technical language in land resources planning and management. The terms and definitions included encompass conservation and management of soil, water and vegetation; climate; farming systems; crop production, livestock and fish production; land tenure and sustainable development. As long as stocks last, this useful publication is free of charge.

Requests to: Ms. Louisa Jansen, FAO, Via delle Terme di Caracalla, I-00100 Rome, Italy. E-mail: Louisa.Jansen@FAO.Org.

Soil and Water Conservation Policies and Programs. Successes and Failures. T.L. Napier, S.M. Napier and J. Tvrdoň, editors. Soil and Water Conservation Society, Ankeny and CRC Press, Boca Raton, London, 2000, 656 p. ISBN 0-8493-0005-3. Hardbound.

Degradation of land and water resources via soil erosion is a universal problem in all geographic regions of this planet. While most land is subject to soil erosion due to forces of wind and water, the greatest proportion of environmental degradation due to displacement of soil is the result of human manipulation of land resources to produce food and fiber for human populations. In 1996, a symposium was held in Prague to examine soil and water conservation initiatives in dif-

ferent social, economic, and political environments. Chapter authors in this volume were commissioned to discuss specific conservation initiatives in their country of residence in the context of successes and/or failures of the policy approaches examined. The first chapters outline the major problems associated with soil displacement on a global scale. The next chapters are from North America; West, East and Central Europe; and Australia. The final chapter is devoted to a summary of the main conclusions derived from extensive conference discussions and chapters published in this volume. Price: USD 69.95 or GBP 43.99, plus handling and postage.

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The History of Pedology in Russia in the XX Century (Unknown and Forgotten Pages), Part I (in Russian). S.V. Zonn. Institute of Geography, Russian Academy of Sciences, Moscow, 1999. 375 pp, softcover.

Beginning with the late 19th century, scientific expeditions to remote parts of Russia, to search for land suitable for settlement, introduced Dokuchaev's ideas to many soil scientists, as depicted in the then new textbook of Sibirtzev. This book is a rambling account of the spread of Dokuchaev's ideas in Russia during the first half of the 20th century. It deals with many organizational events and their major »actors«, without elucidating the details of their contributions. It mostly cites and refers to articles published in *Pochvovedenie*, founded in 1899, and from 1930 on also relies on the author's memory of events.

At the beginning of the 20th century, Glinka was the eminent and most influential Russian pedologist. Some criticism of Dokuchaev's ideas, e.g. by Kostychev, Nabokikh and partly Kossovich, is also mentioned. After World War I, during the Soviet period, many new institutes and laboratories were founded.

Considerable space is devoted to preparations for the 1st International Congress of Soil Science (Washington, 1927) for which a large number of brochures was prepared in English. Though anticipating strong acclaim, the Russian pedologists were disappointed to find that Dokuchaev's notions did not dominate western pedology which chose its own direction in soil science. Preparations for the 2nd International Congress (Leningrad – Moscow, 1930) started soon thereafter. According to S.V. Zonn it was the 2nd ISSS Congress which showed during field trips to world soil scientists (150 participants) the theoretical and »practical« achievements and superiority of Dokuchaev's pedology. Russian pedologists demonstrated a better theoretical understanding of soil processes though lacked in analytical data to support them. The Dokuchaev Soil Institute was in a leading role while in Leningrad. Several heated controversies among the renowned Russian pedologists are mentioned. When the Dokuchaev Soil Institute, after its transfer to Moscow, became part of

the Academy of Agriculture (where Lysenko dominated) its prestige suffered.

By the mid-30ies politization of science dominated its activity and several leading pedologists (Tulaikov, Polynov, Sukachev) were repressed, whereas the Williams School was promoted. Many scientific workers had to adjust in order to survive the ideological terror. Isolation from overseas countries was almost total. This continued in the early post-World War II period. Then many Soviet pedologists started working in communist dominated foreign countries, gaining valuable experience, e.g. with subtropical ferallitization. Regionally, small scale mapping and soil classification occupied many of them.

First, the translation of Jenny's *Factors of Soil Formation*, and subsequently the gradual acquaintance with new approaches to soil materials (clay mineralogy) and soil processes (pseudogleying, clay illuviation, catenization and isotopic dating – all originating in the West) slowly penetrated to the leading pedologists in the 1950ies. The influence of and rivalry between Kovda (Moscow University) and Gerasimov (Institute of Geography, Academy of Science) in spreading these and sponsoring their own new ideas was strong.

This is an honest, most valuable account of pedological history in Russia until the late 50ies, worthy of study by those interested in the history of soil science. Only 325 copies were printed. Part II (1999) brings the story to the end of the century.

Dan H. Yaalon

The International Geosphere-Biosphere Programme Book Series.

The IGBP was established by the International Council for Science (IGBP) in 1986 with the aim to describe and understand the interactive physical, chemical and biological processes that regulate the total Earth system, the unique environment that it provides for life, the changes that are occurring in this system, and the manner in which they are influenced by human activities. The IGBP book series started in 1996. Recently were published:

The Terrestrial Biosphere and Global Change. Implications for Natural and Managed Ecosystems.

IGBP Book Series 4. B. Walker, W. Steffen, J. Canawell and J. Ingram, editors. Cambridge University Press, 1999, 452 p. ISBN 0-521-62429-0, hardcover; ISBN 0-521-62480-0, softcover.

This synthesis summarizes the international global research effort in the Global Change and Terrestrial Ecosystems (GCTE) Core Project of the IGBP. Five major thematic areas are covered: ecosystem physiology; ecosystem structure and composition; terrestrial production systems; global biogeochemistry; ecological complexity (biodiversity). A summary of the integrated and interactive effects of global change on the terrestrial biosphere for four key regions of the world is presented, as well as a projection of future trends in the terrestrial component of the global carbon cycle.

Price: GBP 65.00, hardcover; GBP 30.00, softcover. Orders to: see below.

The Changing Ocean Carbon Cycle. A Midterm Synthesis and the Joint Global Ocean Flux Study. IGBP Book Series 5. R.B. Hanson, H.W. Ducklow and J.G. Field, editors. Cambridge University Press, 1999, 520 p. ISBN 0-521-65199-9, hardcover; ISBN 0-521-65603-6, softcover.

The world's oceans act as a reservoir, with the capacity to absorb and retain carbon dioxide. Variability in the ocean carbon cycle could exert significant feedback effects during conditions of climate change. The Joint Global Ocean Flux Study (JGOFS) is a multidisciplinary programme to address the interactions between the biology, chemistry and physics of marine systems, with emphasis on the transport and transformations of carbon within the ocean and across its boundaries. This volume provides a synthesis of JGOFS science and its achievements to date.

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World Resources 2000-2001. People and Ecosystems. The Fraying Web of Life. United Nations Development Programme, United Nations Environment Programme, World Bank and World Resources Institute. World Resources Institute, Washington, DC, 2000, ix + 389 p. ISBN 1-56973-443-7. Softcover. Also available on CD-ROM.

The hardcover edition is published by Elsevier Science. The dawn of the new millennium is an appropriate time to take stock of the condition of the Earth's ecosystems and to draw lessons from our global experience with managing and protecting them. This edition of World Resources focuses on five critical ecosystems that have been shaped by the interaction of physical environment, biological conditions, and human interventions: croplands, forests, coastal zones, freshwater systems and grasslands. These ecosystems produce a wide variety of goods and services, some of which have not been recognized or valued but all of which sustain human life. The first step to good management, the report proposes, is to acknowledge the value of these goods and services and the tradeoffs that we often make among them. The second step is to base decisions on current information about the capacity of ecosystems to continue to provide goods and services. This report provides bottom-line judgments based on a survey of current evidence of each ecosystem on food and fiber production, water quantity and quality, biodiversity, carbon sequestration, and recreation. The final step to good management advocated in this report is an "ecosystem approach" that explicitly recognizes the interaction and tradeoffs among these goods and services, as well as the political and social context in which environmental decisions are made. Through five case studies and

many additional examples, the report demonstrates that people in all parts of the world have the capacity to improve the way they manage ecosystems.

The full report in English is available online at www.wri.org/wr2000. Also published in Japanese, French and Spanish.

Prices: softcover edition: USD 27.00; CD-ROM: USD 100.00, plus mailing charges.

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Global Environmental Databases - Present Situation; Future Directions. R.Tateishi and D. Hastings, editors. International Society for Photogrammetry and Remote Sensing (ISPRS), Working Group IV/6 (1996-2000). Geocarto, Hong Kong, 2000, xvi + 233 p. ISBN 962-8226-02-9. Softcover.

A global environmental database is defined as a database containing data and information of known accuracy regarding phenomena on and about the world's surface. The data and information resident in the database cover the entire surface of the earth in a consistent manner. Although national and international organizations have begun global environmental database projects and coordination efforts, the paucity of these datasets is a sober fact reflecting the various difficulties of generating and maintaining such important resource information. In 1996, the ISPRS established the Working Group IV/6: Global Databases Supporting Environmental Monitoring. Its aim was to survey existing global databases/datasets and to observe their trend; to identify obstacles in global datasets/databases and their usage; and to find solutions to remove these obstacles. As part of this plan, the working group organized a workshop in Honolulu, November 1999, to discuss the various aspects of global environmental data. It was also decided to review the global datasets. The present book consists of two parts. Part 1, Thematic Domains, deals with a reference framework for global environmental data, topographic data, oceanographic data, land cover data, soil data, biodiversity data, and hydrological data. Part 2, Cross-cutting Issues, deals with common subjects among various environmental parameters such as geometric registration and meta-data.

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Soil Erosion. Application of Physically Based Models. J. Schmidt, editor. Springer, Berlin, Heidelberg, 2000, xviii + 318 p. ISBN 3-540-66764-4. ISSN 1431-6250. Hardcover.

Accelerated degradation of soils and surface waters produce increasing problems in many parts of the world. Within this context, the book addresses the application of physically based models for soil erosion in order to present some essential tools for improving

land-use strategies and conservation measures. Over the last 20 years, the need for more accurate assessments of soil losses and sediment yields has led to the development of some highly complex, process-based soil erosion models. In 14 papers, specialists from Europe, USA and Brazil report on practical applications of these models and give insight into the latest developments. This book will help to implement state-of-the-art soil erosion prediction technologies within soil and water conservation planning and assessment. Price: DEM 198.00, GBP 68.50, USD 109.00. Orders to: Springer Verlag, Tiergartenstrasse 17, D-69121 Heidelberg, Germany. Fax: +49-6221-345229. E-mail: orders@springer.de. Homepage: www.springer.de. In North America: Springer-Verlag New York, 175 Fifth Avenue, New York, NY 10010, USA. Fax: +1-212-4736262. E-mail: orders@springer-ny.com. Homepage: www.springer-ny.com.

Mycorrhizal Biology. K.G. Mukerji, B.P. Chamola and J. Singh, editors. Kluwer Academic/Plenum Publishers, New York, Boston, 2000, xii + 336 p. ISBN 0-306-46294-X. Hardcover.

Sustainability in agriculture, forestry, and range management requires balanced microbial ecosystems. The association of plant roots with mycorrhizal fungi is a key factor in the below ground network essential to ecosystems function; these associations are known to benefit plants under conditions of nutritional and water stress and pathogen challenge. Molecular and genetic tools are, and will be used increasingly, to explore the structural and regulatory genes in both fungus and plant and permit mycorrhiza formation. The symbiosis of host and fungus creates an intimate link between plant roots and the soil, and plays a pivotal role in the acquisition of mineral nutrients. The ability of the association to enhance plant growth and development has stimulated research, and the recent application of biochemical, genetic, and molecular approaches is providing new insight into the symbiosis. Improved growth, health, and stress resistance of mycorrhizal plants are widespread, particularly for plants growing in nutrient limiting conditions. Increased resistance to plant pathogens has been noted, this may be mediated by factors other than mineral nutrition. The above subjects are being discussed in 18 papers, mostly written by specialists from India.

Price: NLG 336.50, USD 145.00, GBP 100.00.
Orders to: see below.

Upscaling and Downscaling Methods for Environmental Research. Developments in Plant and Soil Sciences vol. 88. M.F.P. Bierkens, P.A. Finke and P. de Willigen, editors. Kluwer Academic Publishers, Dordrecht, Boston, 2000, x + 190 p. ISBN 0-7923-6339-6. Hardcover. With CD-ROM.

Environmental studies typically involve the combination of dynamic models with data sources at various spatial and temporal scales. Also, the scale of the model output is rarely in tune with the scale at which decision-makers require answers or implement environmental measures. Consequently, the question has been raised how to obtain results at the appropriate scale. Models,

usually developed at the scale of a research project, have to be applied to larger areas (extrapolation), with incomplete data coverage (interpolation) and to different supports (upscaling and downscaling) to facilitate studies for decision-makers. This book gives an overview of the various problems involved, and focuses on a description of upscaling and downscaling methods that are known to exist. Furthermore, this book is the first of its kind in that it contains a decision support system that advises the practitioner on which upscaling or downscaling method to use in the specific context. Price: NLG 180.00, USD 88.00, GBP 56.00
Orders to: see below.

Environmental Stress: Indication, Mitigation and Eco-conservation. M. Yunus, N. Singh and L.J. de Kok, editors. Kluwer Academic Publishers, Dordrecht, Boston, 2000, xvii + 464 p. ISBN 0-7923-6410-4. Hardcover. This book has evolved from forty selected chapters invited for publication out of a total of 190 presentations during the International Conference on Plants and Environmental Pollution in 1996. The contributions are from authors from 14 countries. The volume elucidates the plant-pollutant relationship in a manner that defines not only the drastic effects of pollutants on plants but concomitantly highlights the hitherto less-focussed areas namely phytotoxicity, phytoremediation and stress tolerant bioaesthetic development, thus concentrating more on plant than the pollutant. The volume has been structured under three sections: (1) environmental stress (15 papers), (2) stress indication (15 papers), and (3) mitigation and eco-conservation (10 papers). The book would help understand the magnitude of environmental stress in the coming years and may play a formative role in defining future research and policy areas along with providing impetus to development of newer eco-technologies.

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Fractals in Soil Science. Developments in Soil Science 27. Ya.A. Pachepsky, J.W. Crawford and W.J. Rawls, editors. Elsevier, Amsterdam, Lausanne, 2000, vii + 295 p. ISBN 0-444-50530-X. Hardcover.

Fractal models offer the soil scientists the possibility of relating soil properties at different scales and quantifying the intrinsic heterogeneity of soils. The application of fractal geometry to these problems is a recent development in soil science, the first papers only appearing in the eighties. This book, a reprint of *Geoderma*, volume 88/3-4, is intended to provide an up-to-date, balanced account of the application of fractal models to soil science. Authors from a broad background explore topics from geochemistry to microbiology, and from scales of micrometres to the landscape. Limitations of the approach are discussed as well as the level of suc-

cess in the hope that opportunities for future work will become clear. Challenges encountered in the measurement and interpretation of fractal properties are discussed. The book includes a very useful bibliography with some 350 entries.

Price: NLG 385.00 (EUR 174.71), USD 201.50.

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Developments in Quantitative Soil Resource Assessment (Pedometrics '98). Special Issue of *Geoderma*, volume 97, nos. 3-4, September 2000, pp. 293-422. M. Collins, A. McBradley, M. Voltz and Chr. Walter, editors. Elsevier, Amsterdam, Lausanne. ISSN 0016-7061.

This special issue of *Geoderma* contains papers presented at the IUSS Congress in Montpellier. The papers arise from two meetings. The first one was a one-day meeting on Recent Advances in Soil Geostatistics (8 papers), the other one was entitled Advances in Soil Survey using Modern Tools (6 papers). New theoretical procedures and equipment for the characterization of soil landscapes, soil delineation, temporal and spatial soil variability analysis, and graphical representation of this variability were discussed. Together, these two meetings, through the papers given here, give a good representation of the state-of-the-art in quantitative soil resource assessment at the end of the 20th century.

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Fire and Sustainable Agricultural and Forestry Development in Eastern Indonesia and Northern Australia. ACIAR Proceedings no. 91. J. Russell-Smith, G. Hill, S. Djoeromana and B. Myers, editors. Proceedings of an international workshop held at Northern Territory University, Darwin, Australia, 13-15 April 1999. Australian Centre for International Agricultural Research, Canberra, 2000, 163 p. ISBN 1-86320-275-7. Softcover.

Over the past decade or so there has been growing recognition of the impacts, both environmental and political, of biomass burning in the wet forests of Sumatra, Kalimantan and Irian Jaya (Papua) in Indonesia. This has translated into considerable research effort in these regions, particularly in the last few years. In contrast, much less attention has been given to annual, mostly prescribed burning practices and associated land management issues, across the extensive savanna landscapes of the eastern Indonesian archipelago, the Transfly region of Irian Jaya and Papua New Guinea, and northern Australia. Scant documentation is available concerning the extent of burning in different regions, traditional and contemporary practices, and impacts and benefits of fire management in eastern Indonesian cultural settings. A Workshop was held in Darwin from 13-15 April 1999 to discuss these issues, and the present proceedings comprise 26 papers given at the Work-

shop and the summaries of the discussion group sessions.

Requests to: ACIAR, G.P.O. Box 1571, Canberra, ACT 2601, Australia. Fax: +61-6-2170501. E-mail: aciara@aciara.gov.au. Homepage: www.aciara.gov.au.

Soil Physics. Agricultural and Environmental Applications. H. Don Scott. Iowa State University Press, Ames, 2000, x + 421 p. ISBN 0-8138-2087-1. Hardcover.

This textbook is concerned with the physical properties of soils and how they affect other soil properties, the transport of water, heat, solutes, and oxygen in soil, and soil water and its impact on plant growth and development. This book will enable the student to understand how the soil, plant and engineering sciences utilize knowledge of soil physical behavior and to develop the mathematical and quantitative skills needed to solve applied problems in soil science. Emphasis is placed on understanding how soil physical properties have an impact on agriculture, natural resources, and the environment. To achieve this goal, considerable use is made of elementary concepts of physics, mathematics and statistics, which are needed to quantify amounts and rates of processes in soil systems. In most cases, conservation laws and rate equations are used to account for the spatial and temporal distributions of mass and energy in soil systems. These are the basic underlying threads throughout the book and should result in a greater appreciation and understanding of the physical processes that influence soil behavior. Each chapter includes definitions, essential terms and concepts, and an overview of the principles, and practical importance of the topic. Many examples and problems, mostly related to field situations are included.

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World Water Vision. Making Water Everybody's Business. W.J. Cosgrove and F.R. Rijsberman. Earthscan Publications, London, 2000, xxvii + 108 p. ISBN 1-85383-730-X. Softcover. Plus CD-ROM.

The world is experiencing a water crisis. More than one billion people do not have access to safe drinking water, and half of the world's people do not have access to adequate sanitation. Without change, many parts of the world will not have enough water to produce food for growing populations-with enormous human and political implications. Degraded ecosystems and lost biodiversity are already a reality in many places, and may threaten the way of life of future generations. The water crisis is a crisis of management. At its heart is the question of whether water can be used more efficiently. The greater our productivity with the same amount of water, the less the need for infrastructure development, the less the competition for water, the greater the local food security, the more water for agricultural, industrial, and household uses, and the better for the environment. This publication shows that the water crisis need not deepen and intensify. Alarming trends can be reversed and the use and development of water resources made sustainable. Success will require an integrated

approach to the management of highly complex systems. This publication is the product of the most comprehensive analysis of the world's water resources ever undertaken. Based on contributions from thousands of experts involved in regional, national and sector consultations, it provides an authoritative diagnosis of water resources and the pressures on them, and lays out the steps we must take. The accompanying CD-ROM contains all the background documents produced during the World Water Vision exercise: thousands of pages of regional and sector scenarios, special studies, newsletters and information sheets.

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Global Environmental Outlook 2000 (GEO-2000). United Nations Environment Programme. Earthscan Publications, London, 2000, 432 p. ISBN 1-85383-588-9 softcover; 1-85383-587-0 hardcover.

This comprehensive and authoritative review and analysis of environmental conditions around the world is based on information provided by more than 30 regional and international collaborating centres. GEO-2000 is written in clear, non-technical language, supported throughout by informative graphics and tables, and it will be the benchmark reference and guide to the state of the global environment. Chapter 1 describes the main drivers of environmental change, such as the economy, population growth, political organization and regionalization. Chapter 2 provides a global and region-by-region overview of the environment at the end of the second millennium. The chapter covers global issues such as ozone, climate change, El Niño, and nitrogen loading, and universal issues of land and food, forests, biodiversity, freshwater, marine and coastal areas, atmosphere and urban areas. In Chapter 3, a broad range of policy instruments are reviewed. Chapter 4 looks at environmental issues that will require priority attention and some alternative policy options that could be used in the regions. The last chapter makes recommendations for future action based on the environmental legacy left by the past and present policy and management systems.

Price: softcover GBP 20.00; hardcover GBP 50.00, plus packing and postage.

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Soil Fertility Initiative for Sub-Saharan Africa. World Soil Resources Report 85. FAO, Rome, 1999, 94 p. ISBN 92-5-104298-5. Softcover.

This publication contains the proceedings of a consultation on the Soil Fertility Initiative (SFI) for sub-Saharan Africa, which was held in Rome in November 1998. The aim of SFI is to act as a catalyst for the development and implementation of comprehensive soil fertility management programmes at the country level. The objective of the consultation was to bring together international and national actors working on aspects of soil fertility and to coordinate their activities in order to benefit from the ensuing synergy.

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AEZWIN. An interactive multiple-criteria analysis tool for land resources appraisal. World Soil Resources Report 87. G. Fischer, M. Makowski and J. Granat. IIASA and FAO, Rome, 1999, 90 p. ISBN 92-5-104365-5. ISSN 0532-0488. Softcover. With CD-ROM.

Since the early 1980's, the Food and Agriculture Organization of the UN (FAO) and the International Institute for Applied Systems Analysis (IIASA) have been collaborating on expanding FAO's agro-ecological zones (AEZ) methodology of land resources appraisal by incorporating decision support tools for optimizing the use of these resources. Agro-ecological zoning involves the inventory, characterization and classification of land resources for assessment of their potential for agricultural production systems. The software package documented in this report is an upgraded version for Windows 95 and NT of earlier software developed for an AEZ project in Kenya. This new program features modules for data management land suitability and land productivity assessment and multiple-criteria model analysis (MCMA) tools for land use optimization. The software makes it possible to interactively generate models corresponding to various scenarios of land use and then to analyze these models using the MCMA software tools. A user-friendly interface with on-line tutorial has been implemented in order to permit use of the software also by persons with only very basic computing experience. Good knowledge of the FAO AEZ methodology, as described in the Kenya AEZ study, is required in order to use the system. Full documentation is available from FAO.

Price: USD 25.00.

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Sistemas de Uso de la Tierra en los Trópicos Húmedos y la Emisión y Secuestro de CO₂. Informes sobre recursos mundiales de suelos 88. FAO, Roma, 2000, 98 p. ISBN 92-5-304412-8. ISSN 1020-430X. (cobertura flexible)

La FAO promueve varias acciones que llevan a la promoción de sistemas de uso y de prácticas de manejo de la tierra en distintas escalas espaciales y temporales, que proporcionan ganancias económicas para aliviar la pobreza y fortalecer la seguridad alimentaria y el mismo tiempo dan beneficios ambientales. La prevención de la degradación de la tierra, el mejoramiento de la fertilidad de los suelos, el fortalecimiento de secuestro de carbono y la conservación de la biodiversidad por medio del cambio del uso y del manejo sostenible de la tierra son temas prioritarios para la FAO en América Latina y el Caribe. Este documento intenta evaluar el potencial de los recursos de los sistemas de producción de la Cuenca Amazónica para el secuestro de carbono atmosférico. El objetivo de esta evaluación es identificar y promover sistemas que tengan un potencial considerable de secuestro de C, tales como la restauración de los bosques secundarios y de las áreas de pasturas degradadas. También se analizan otros sistemas de producción, pero su potencial y contribución al secuestro de C es tema de controversia y especulación. Es posible que los bosques primarios no intervinidos además de ser depósitos de C sean también

sumederos de C atmosférico y por eso es importante protegerlos y preservarlos. Esta evaluación y promoción de sistemas de uso y prácticas de mejoramiento de la tierra deben resultar en claros beneficios de orden social, económico y ambiental, es decir una mayor biodiversidad, mejor conservación y manejo del ambiente y mas secuestro de carbono.

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Land Resources Information Systems for Food Security in SADC Countries. Proceedings of a subregional workshop held in Harare, Zimbabwe, 3-5 November 1999. World Soil Resources Reports 89. FAO, Rome, 2000, 78 p. ISBN 92-5-104427-9. ISSN 0532-0488. Softcover.

The purpose of the workshop, the first of its kind in the SADC subregion, was to promote land resources information systems (LRIS) and their application in the assessment, mapping and monitoring of land in relation to food production and food security in the SADC countries. The meeting was attended by senior land resources specialists from the region, and from some other countries. This publication contains the proceedings, including group reviews of some discussed items, the workshop recommendations, and a plan of action.

Price: USD 12.00.

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Land Resource Potential and Constraints at Regional and Country Levels. World Soil Resources Reports 90. A.J. Bot, F.O. Nachtergaele and A. Young. FAO, Rome, 2000, viii + 114 p. ISBN 92-5-104429-5. ISSN 0532-0488. Softcover.

For many years, FAO has been building up information and has published about the world's land resources. This started with the preparation and publication of the Soil Map of the World in the 1960's, more recently made available in digitized form. At an early stage it was realized that in order to evaluate land potential, data on soils and landforms must be combined with the analysis of climate. Estimates of land degradation, and of potential arable land have been added to the range of information. The purpose of the present report is to provide an overview of the physical resource data presently available. Specific objectives are: (1) to indicate the relative extent of physical resource limitations to agriculture and other forms of land use, with a focus on the national level; (2) to highlight areas which call for the treatment or management of specific land resource constraints, so that regional or national action plans can be better focused on specific problems; and (3) to indicate the limitations of the data, and hence the priority needs for improved information. The coverage is global and in all, 160 countries are evaluated, omitting very small countries for reasons of data unreliability at a world scale. The results reported in this innovative approach at a world scale are first approximations. It is stated that there is an urgent need to improve the reliability of the data. This can only be done through more detailed studies by national resource survey organizations. An interesting study, which needs a wide circulation!

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The European Soil Information System. Proceedings of a Technical Consultation, Rome, Italy, 2-3 September 1999. World Soil Resources Reports 91. FAO, Rome, 2000, vii + 150 p. ISBN 92-5-104454-6. ISSN 0532-0488. Softcover.

This publication forms the proceedings of a technical consultation, held in Rome, 2-3 September 1999, and sponsored by FAO and the European Commission. The meeting was convened to consider the various issues related to soils information systems in Europe. The participating experts in the field of soil information gave oral statements on the status of available soil information in their respective countries and the more detailed accounts are included in these proceedings. Important items discussed also were the harmonization of the concepts underlying mapping scales, procedures and classification, and interpretation and the issues related to data ownership and availability of the data. It was agreed that the national soil survey organizations remain the owners of the data, but that the Soils and Terrain (SOTER) database at a scale of 1 to 5 million could be released in the public domain.

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Soil Salinity Assessment. Methods and interpretation of electrical conductivity measurements. FAO Irrigation and Drainage Paper 57. FAO, Rome, 1999, 166 p. ISBN 92-5-104281-0. Softcover.

This paper presents updated technology for assessing soil salinity based on the measurement of electrical conductivity. The technology has been extensively and successfully tested in the field and it is a sound, reliable, accurate method, suited to a wide variety of useful applications. The equipment required is commercially available. The instrumental methodology advocated is practical, cost-effective and well developed for all general applications. It is cheaper, faster and more informative than traditional methods, based on soil sampling and laboratory analysis.

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Irrigation in Asia in figures. Water Report 18. FAO, Rome, 1999, 240 p. ISBN 92-5-104259-4. Softcover.

This publication is the fourth in the series of reports prepared within the framework of FAO's Aquastat programme, aimed at presenting comprehensive picture of water resources development and irrigation, with emphasis on developing countries. This volume presents the results of surveys performed in 1997 and 1998, relying on country-based statistics. A general summary presents a synopsis on water resources development, irrigation and drainage in the region, and country profiles describe the specific situation of each Asian country.

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Modern water control and management practices in irrigation. Impact on performance. Water Report 19. FAO, Rome, 1999, 244 p. ISBN 92-5-104282-9. Softcover.

Water plays a critical role in food production. Irrigated agriculture will have an important role in helping to increase the production of food to meet future demand. This publication reviews irrigation schemes and modernization initiatives worldwide in order to assess and comment on the impact of modern water control and management approaches.

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Hydrogeologisches Wörterbuch. Chr. Adam, W. Glässer und B. Hötting. Enke im Georg Thieme Verlag, Stuttgart, New York, 2000, 311 S. ISBN 3-13-118271-7. Vorliegendes Wörterbuch enthält Fachbegriffe, die im Zusammenhang mit hydrogeologischen Arbeiten unter Einbeziehung wissenschaftlicher Nachbardisziplinen stehen. Dabei handelt es sich vor allem um Begriffe zum Wasserkreislauf, d.h. zur Entstehung, Verbreitung und Beschaffenheit von Gewässern sowie deren Nutzung und Schutz. Hierzu gehören auch Begriffe mit Bezügen zur Umwelt, zur Verfahrenstechnik der Wasserwirtschaft und zum Bergbau. Die Begriffe wurden nach ihrem Verständnis in der aktuellen Literatur, in Normen, Richtlinien, Regeln, Arbeits- und Merkblättern, nach ihrer wasserwirtschaftlichen und wasserrechtlichen Anwendung definiert. Das Wörterbuch mit 5000 Stichwörter ist gleichermaßen für Wissenschaftler, Praktiker und hydrogeologisch interessierte Laien in Deutschland, aber auch für das gesamte deutschsprachige Ausland bestimmt.

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The economic assessment of soil nutrient depletion. Analytical issues for framework development. Issues of Sustainable Land Management no. 7. P. Drechsel and L.A. Gyiele. International Board for Soil Research and Management (IBSRAM), Bangkok, 1999, vi + 80 p. ISBN 974-87229-3-7. Softcover.

While there is ample literature on soil nutrient depletion and the benefits of soil organic matter (SOM), there is only sparse reference to the economic assessment of the depletion of soil nutrients and carbon. Most related studies refer to soil degradation in general or soil erosion, as one important process of nutrient depletion. The two major objectives of the present publication are: (1) to provide an overview about the assessment of nutrient depletion and the major processes of nutrient depletion, and (2) to provide an overview on different economic valuation approaches for nutrient depletion, including soil carbon depletion, and thus to

add to their discussion. An economic assessment of the costs of nutrient depletion in Sub-Saharan Africa is also given. The study shows that appropriate methods exist to illustrate nutrient and SOM depletion in economic terms. On average, as much as 7 percent of the gross domestic product of many countries in Sub-Saharan Africa is due to the consumption or loss of soil nutrients. This mining process cannot continue indefinitely as the resources will become exhausted.

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Interactive North-South Research. International Conference, December 16, 1999. Royal Netherlands Academy of Arts and Sciences, Amsterdam, 2000, 104 p. ISBN 90-6984-288-2. Softcover.

Knowledge is the driver of economic and social development all over the world. In this era new information and communication technologies allow a much more rapid exchange of information than ever before in history. In the developed world, the information age appears to lead to different patterns of economic growth and to changes in the social fabric. Many questions are raised concerning the role of research in such a rapidly changing modern society. The central question of the meeting entitled North-South Research, with special attention for Natural Resource Management, is how the changing role of research in societies from the North affects the interaction with researchers from the South, and their relations with stakeholders. All over the world profound developments are taking place in research on Natural Resource Management. In this report, four case studies are presented, of which two are related to soils. The essential elements of the discussion and general conclusions are also given.

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Global Climate Change and Cold Regions Ecosystems. Advances in Soil Science. R. Lal, J.M. Kimble and B.A. Stewart, editors. Lewis Publishers, Boca Raton, London, 2000, 265 p. ISBN 1-56670-459-6. Hardcover.

Cold ecosystems comprise arctic, subarctic, alpine and antarctic regions, boreal forests, and peatlands. The total C pool in soils of these regions represent 16.4% of the global soil C pool for the tundra region and 25.6% of the global C pool for the soils of the boreal forest ecoregion. These ecosystems have been a net sink of C in the past; they may become a major source due to anthropogenic activities in the region and elsewhere in other ecosystems. The database on total C pools in soils of these ecoregions is sketchy, and little is known about the C dynamics and its impact on the global C cycle. In the event of global warming, these ecoregions are anticipated to undergo the most significant increases in the mean annual temperature. This drastic increase could substantially increase the depth of the soil's active layer. The information on soil organic carbon for these ecosystems is limited. Potential environmental change is likely to influence this large C pool, and little is

known about the net effects of two opposing scenarios on the global carbon cycle and agricultural productivity. An international workshop was organized in 1998 to discuss these issues. This volume is based on the presented papers. The 17 chapters are organized into four thematic sections. Section I (6 chapters) deals with soil C pools in different ecoregions. Section II (5 chapters) deals with the impact of natural and anthropogenic disturbances on soil C pool and other properties. Section III (5 chapters) deals with method of assessment of C and other properties of soils of the cold ecoregions. Section IV contains a synthesis chapter and discusses the fate of C in soils of cold regions, and research and development priorities.
Price: USD 69.95.
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Global Climate Change and Tropical Ecosystems. *Advances in Soil Science.* R. Lal, J.M. Kimble and B.A. Stewart, editors. Lewis Publishers, Boca Raton, London, 2000, 438 p. ISBN 1-56670-485-5. Hardcover.
This book is based on some papers presented at the workshop *Carbon Pools and Dynamics in Tropical Ecosystems*, held in Belem, Brazil, in December 1997. Some additional papers were selected to form part of this book. The objectives of the workshop were to: (1) assess C pool in soils and biomass of tropical ecosystems; (2) evaluate the magnitude of C flux from natural and managed ecosystems; (3) determine the impact of anthropogenic activities, land use and land cover, and management on C pools and fluxes; (4) evaluate carbon dynamics in tropical ecosystems in relation to soil quality and agricultural productivity; and (5) identify methodological and modeling potentials and constraints to determine C pools and fluxes at different scales. A total of 25 reviewed papers, representing data on C pools and fluxes from case studies in 12 countries in Africa, Asia, Latin America and the Pacific are arranged in seven sections. The last section is a concluding chapter that summarizes the discussion of all sections, identifies knowledge gaps and prioritizes research and development issues.
Price: USD 69.95.
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Global Climate Change and Pedogenic Carbonates. *Advances in Soil Science.* R. Lal, J.M. Kimble, H. Eswaran and B.A. Stewart, editors. Lewis Publishers, Boca Raton, London, 2000, 305 p. ISBN 1-56670-458-8. Hardcover.
The global soil carbon pool is the third largest pool after oceanic and geologic pools, and consists of two components: soil organic carbon (SOC) and soil inorganic carbon

(SIC). The role of SIC, comprising lithogenic and pedogenic inorganic carbon, is neither properly understood nor widely recognized. This book is about the magnitude, dynamics, principles and factors affecting SIC and pedogenic inorganic carbon in relation to the global C cycle. It is based on presentations at the first of three workshops, held in Tunis in October 1997. Five parts contain 18 chapters. Part I (four chapters) deals with basic concepts. Part II (three chapters) deals with

analytical methods. Part III (eight chapters) discusses the dynamics of secondary carbonates. Part IV (two chapters) deals with management impacts on pedogenic carbon, while the last part contains recommendations and draws conclusions.
The book collates and synthesizes the available information on the topic, identifies some important knowledge gaps, and prioritizes research and development needs.

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Reclaimed Land. Erosion Control, Soils and Ecology. Land Reconstruction and Management, volume 1. M.J. Haigh, editor. A.A. Balkema, Rotterdam and Brookfield, 2000, xiv + 385 p. ISBN 90-5410-793-6. Hardcover. Series ISSN 1389-2541.

This volume is the first in a series that aims to publicise work being done to restore lands that have been damaged by human actions and to manage lands in ways that minimise the damages done by human actions. Each volume explores a particular land management problem from the perspective of the applied scientist and progressive practitioner. The level will lie between the research literature and the advanced textbooks. This book covers an array of key issues within current thinking on the conservation of land that has been reclaimed after surface mining for coal. The huge tracks of degrading and low quality reclaimed land testify to the need to consider land reclamation as a continuing process. This book's authors argue that this process continues until the 'reclaimed land' attains a condition of self-sustaining self-control. Assembled by a seven-nation team, this book attempts to review the applied research and practical experience that is available to those striving to increase the durability and self-sustainability of reclaimed lands.

Price: EUR 85.00, plus VAT. (EUR 1.00 is about USD 0.90).

Orders to: A.A. Balkema, P.O. Box 1675, NL-3000 BR Rotterdam, The Netherlands. Fax: +31-10-4135947. E-mail: balkema@balkema.nl. In USA and Canada: A.A. Balkema Publishers, Old Post Road, Brookfield, VT 05036-9704, USA. Fax: +1-802-276-3837. E-mail: info@ashgate.com. Homepage: www.balkema.nl.

Soil Biochemistry Volume 10. J.-M. Bollag and G. Stotzky, editors. Marcel Dekker, New York and Basel, 2000, xi + 519 p. ISBN 0-8247-8834-5. Hardcover.

A major goal of this well-established series is to provide up-to-date reviews on the factors that influence a spectrum of biological, biogeochemical, edaphic, and ecological phenomena in soil, most of which have a biochemical basis. From a practical viewpoint, as well as from the vantagepoint of basic science, there is a need to characterize and explore further soil biochemical fac-

tors. Increased knowledge of soil biochemistry will also contribute to improving the quality of soil and to increasing food production. The variety of topics in the present tenth volume shows the multidisciplinary nature of soil biochemistry. The topics discussed range from anaerobic microbiology in rice fields, to anaerobic degradation of specific pesticides, to the use of fungi in environmental remediation, to the genetic ecology of *Bradyrhizobium*; from new extraction techniques for humic materials and bound residues, to sorption of enzymes on surfaces and its effects on enzyme activity. The adequacy of the plate and other methods for characterizing microorganisms in soil is discussed in several chapters. There is also a chapter on the relation of soil biology and biochemistry to archaeology. Price: USD 195.00.

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Soils and Geomorphology. Third edition. P.W. Birke-land. Oxford University Press, New York and Oxford, 1999, xii + 430 p. ISBN 0-19-507886-1. Softcover.

Although there are many textbooks on soils, there are few that serve the needs of geomorphologists, sedimentologists, environmental geologists, and archaeologists working in Quaternary research. This book is an attempt to fill that gap. The emphasis is on the study of soils in the field. In the first chapters soil morphology, weathering and soil forming processes are discussed, followed by the variation in soils with variation in the soil forming factors. Soil Taxonomy is used throughout. The book ends with a chapter on applications. The focus is on the United States. Appendices give information on soil data that needs to be collected to describe a soil profile adequately, and on the calculation and application of the Profile-Development Index. Price: USD 49.95, GBP 25.00.

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Agro-ecological Subregions of India for Planning and Development. NBSS Publication 35. M. Velayutham, D.K. Mandal, C. Mandal and J. Sehgal. National Bureau of Soil Survey and Land Use Planning (NBSS & LUP), Nagpur, 1999, 452 p plus 1 map. ISBN 81-85460-54-X. Softcover.

The agro-ecological methodology provides a tool for delineating homogeneous land units to implement a wide range of land resources applications. The present map, at a scale of 1 to 4 million, is prepared by superimposing the maps of bio-climate and length of growing season on the soil-scape map. It depicts 20 regions and 60 subregions. Climatic data covering 50 years of observation at 350 meteorological stations, and up-to-date soil data were used for this study. The book gives for all the (sub)regions the detailed agro-ecological set-

tings, the land use potentials and constraints, and information on major benchmark soils occurring in the sub-region. The book is well-illustrated with many colour photographs of landscapes, land uses and soil profiles. Orders to: see below.

Soil-Climatic Database for Crop Planning in India. NBSS Publication 53. C. Mandal, D.K. Mandal, C.V. Srinivas, J. Sehgal and M. Velayutham. National Bureau of Soil Survey and Land Use Planning (NBSS & LUP), Nagpur, 1999, 1014 p. ISBN 81-85460-31-0. Hardcover.

It has been estimated that with the increasing human population of India, the per capita cultivable land area has been shrinking from 0.35 ha in the 1950's, through 0.14 ha at present to an anticipated 0.08 ha by the year 2020. Despite significant growth of agricultural production, the sustainability of some of the cropping systems has been showing signs of fatigue. It was found imperative that soils and climate are inventorized and evaluated for developing soil-site suitability models for different crops. In the present compilation long-term climatic data from 1700 stations are used for the calculation of water balances and calculation of the length of growing period. Case studies for one state (Tamil Nadu) and a District (Nagpur) illustrate the application of the database for crop planning.

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Managing Soils in an Urban Environment. Agronomy number 39. J.M. Bartels, managing editor, R.B. Brown, J.H. Huddleston and J.L. Anderson, co-editors. American Society of Agronomy, Crop Science Society of America, Soil Science Society of America, Madison, 2000, xvii + 296 p. ISBN 0-89118-143-1. Hardcover.

Soils have provided and continue to provide the sustenance of humankind. Soils and their connections to the rise and fall of ancient as well as modern civilizations are well documented. However, in the last decade, the number of urban dwellers has exceeded the number of tillers of the land on a global basis. Urbanization and associated land use and soil management issues have created new domains for soil scientists and agronomists. Increasingly, understanding of the occurrence, distribution, nature, and appropriate management of soils for roads, houses, buildings and other human-engineered artificial environments is of concern to soil scientists, land managers, environmental scientists, and biologists. Challenges extend to the determination and fostering of appropriate use of urban soils for waste disposal, pest management, erosion and sediment control, construction, and minimization of radon risk. This volume in the Agronomy series is an assembly of ten writings on the application of soil science and related disciplines to a breadth of land, soil, water and biological problems occurring in the urban/suburban environment.

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Madison, WI 53711-1086, USA. Fax: +1-608-273-2021. E-mail: books@agronomy.org. Homepage: www.agronomy.org.

Ecology and Management of Forest Soils. Third edition. R.F. Fisher and D. Binkley. John Wiley & Sons, New York, Chichester, 2000, xviii + 489 p. ISBN 0-471-19426-3. Hardcover.

Forests can be viewed from a range of perspectives, all of which are based on soils. Forest productivity is a story that centers on photosynthesis and plant growth, but plant biochemistry is supported by nutrient cycles that are essentially a soil story. Within a region, patterns in soil productivity result from spatial variations in soils. *The diversity of plant species in forests is largely a soils story as well; across landscapes, the patterns in vegetation are typically modified (or even controlled) by patterns in soils.* More than 99 percent of the diversity of life in forest ecosystems resides in soils, where amazingly small, numerous, and important organisms make the rest of the ecosystem possible. In this book, the authors try to convey the key features of soil ecology that are critical to successful management.

This book is an amalgamation, update, and substantial expansion of two books (Forest Soils: properties and management by Pritchett and Fisher, and Forest Nutrition Management by Binkley). Major changes include a worldwide perspective (rather than a North American focus), more chemistry, greater breadth and depth of case studies, and more synthesis of patterns around the world.

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The Biological Management of Soil Fertility. Special issue of the Netherlands Journal of Agricultural Sciences, vol. 48, number 1, June 2000, pages 1-124. Royal Society for Agricultural Sciences, Wageningen. ISSN 0028-2928.

Upland soils in the humid tropics of Southeast Asia are among the least fertile the region. Farming communities are often poor and remote from infrastructure and development. Consequently improvement of soils with fertilizers is difficult and good prices for produce often hard to obtain. The most obvious way for farmers to improve their lot is to adapt cropping systems to make maximum use of the resources available. Crop residues can be recycled and use can be made of soil and water for as long as possible throughout the year. Leguminous crops can be grown, cover crops and hedgerow trees can be introduced. The biological management of soil fertility project (BMSF), funded by the European Union, sought to quantify both the immediate benefits of improved cropping systems and organic matter inputs to crop nutrition as well as the contribution of long term maintenance of soil organic matter and fertil-

ity. The research was carried out in Indonesia and Thailand. The articles describe the improved cropping systems: their benefit in terms of yield, the methodology developed and validated as a tool to evaluate this benefit, analyses of the longevity of additions of organic matter to soil, and detailed descriptions of the social climate and farmers' attitudes to cropping and economic benefit. The issue closes with a synthesis of the project and the main conclusions.

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Consequences of Land Use Changes. *Advances in Ecological Sciences*, vol. 5. Ü. Mander and R.H.G. Jongman, editors. WIT Press, Southampton and Boston, 2000, 314 p. ISBN 1-85312-650-0. ISSN 1369-8273. Hardcover.

The objectives of the recently established International Series on Advances in Ecological Sciences is to provide information on basic applied research and practical applications of a wide range of topics related to Ecology. The books are concerned with the state-of-the-art information on ecological problems and as such comprise several volumes every year covering the latest developments and applications. The aim is to encourage and facilitate interdisciplinary communication amongst scientists, engineers, economists and professionals working in the different areas of ecological research and applications.

The cultural landscapes of Europe are the result of thousands of years of human impact. As a product of human intervention in natural processes, landscapes have always been changing. Both intensive and extensive land uses are expressed in the structure of the land, the size of the parcels and the area of natural and semi-natural vegetation that is present. Europe's changing borders since 1989 and the vanishing boundaries within the European Union are not only political and economic, but have also resulted in intensive landscape changes.

The task for landscape ecologists, conservationists, planners, decision makers and others involved in the processes influencing landscape changes is to find optimal ways for maintaining landscape diversity. Many of the problems related to land use changes were discussed during the Ecological and Socio-economic Consequences of Land Use Changes symposium at the VII International Congress of Ecology. The reviewed and edited papers presented at the symposium are published under two sections: the first considers main concepts, methods and monitoring, and the second consequences of land use changes in different countries around the world.

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Landscape Perspectives of Land Use Changes. *Advances in Ecological Sciences*, volume 6. Ü. Mander and R.H.G. Jongman, editors. WIT Press, Southampton and Boston, 2000, 209 p. ISBN 1-85312-848-1. ISSN 1369-8273. Hardcover.

Landscapes have always reflected changing popula-

tions, fluctuating needs and evolving technologies. This volume presents a variety of scenarios for the development of landscapes. A wide spectrum of land use intensity is considered, from urbanised landscapes in Madrid and The Netherlands, to marginal and remote areas in Estonia. The research papers and case studies featured in this volume were also presented at the VII International Congress of Ecology. They are mostly concerned with Europe, but also contain papers from Japan and the USA.

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Geostatistics for Natural Resources Evaluation. Applied Geostatistics Series. P. Govaerts, Oxford University Press, New York and Oxford, 1997, xiv + 483 p. ISBN 0-19-511538-4, Hardcover.

Earth sciences data are typically distributed in space and/or in time. Knowledge of an attribute value, say, a mineral grade or a pollutant concentration, is thus of little interest unless location and/or time of measurement are known and accounted for in the data analysis. Geostatistics provides a set of statistical tools for incorporating the spatial and temporal coordinates of observations in data processing. The main text of the book is divided into seven chapters, covering the most important areas of geostatistical analysis. The presentation follows the typical steps of a geostatistical analysis, introducing tools for description, quantitative modeling of spatial continuity, spatial prediction and uncertainty assessment. To facilitate reading and as an attempt at standardization, this book uses the notation of the software library GSLIB guidebook. The various tools are illustrated using a multivariate soil data set related to heavy mineral contamination of a 14.5 km² region in the Swiss Jura. Mathematical developments underlying most interpolation algorithms are given; therefore, the reader should have some prior notions of linear algebra, in addition to an undergraduate knowledge of statistics. Price: GBP 57.50.

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Managing Soil Fertility in the Tropics. A Resource Guide for Participatory Learning and Action Research. T. Defoer and A. Budelman, editors. KIT Press, Amsterdam, 2000. ISBN 90-6832-128-5. In five parts, including CD-ROM, boxed.

The main aim of this set of publications is to give field workers practical advice on how to work with farmers to improve soil fertility management. It offers advice on efficient ways of managing all possible sources of soil fertility – in other words, integrated soil fertility management.

The very well produced set of information comes in five parts:

Part 1. Building common knowledge: Participatory learning and action research. T. Defoer, A. Budelman, C. Toulmin and S.E. Carter. 208 p. Softcover.

This first part can be used to generate and manage knowledge related to soil fertility. Different stakeholders generally have different types of knowledge and understanding; "common" knowledge for farmers is not necessarily "common" for scientists or development workers, and vice versa. When effective collaboration is essential to improve rural living conditions, including soil fertility, it is necessary to build bridges between knowledge domains. This textbook can help to achieve constructing bridges for example by using nutrient flow analysis. It begins by demystifying concepts and theories of system diversity, and creating frameworks for the analysis of farming situations. At the heart of the book is a structured process called participatory learning and action research (PLAR). PLAR takes place within farming communities. Based on an analysis of farmers' current management practices, it continues with step-wise planning, experimentation and evaluation of improvements. Parts 3 and 5 of the Resource Guide present details of eleven methodological Tools that can be used in the process. A brief outline of procedures for storing and using information gathered during PLAR is given. This can be used to calculate nutrient flows and balances with the software package in Parts 4 and 5.

Part 2. PLAR and resource flow analysis in practice. Case studies from Benin, Ethiopia, Kenya, Mali and Tanzania. A. Budelman and T. Defoer, editors. 192 p. Softcover.

This part brings together several case studies that show the wide variety of farming systems in the savanna and highland areas of Su-Saharan Africa. They may be used as a point of reference when analysing other farming systems, and are also meant to show the reader how the PLAR approach can stimulate and facilitate change. These case studies also chart the development and use of nutrient flow analysis (NFA), which was developed to help scientists analyse the farming situation in more detail.

Part 3. Field tools for participatory learning and action research. T. Defoer.

This part provides eleven tools, to be used in the field during a participatory learning and action process with farmers. These are presented on a set of laminated cards that give an overview of guidelines for setting up and implementing fieldwork with farmers. They outline procedures, topics for discussion, and an example for investigating and analysing the topics. More detailed information is given in Part 5.

Part 4. CD-ROM: ResourceKIT (software package) and Detailed Field Tools (electronic version).

The CD-ROM has two sections. The first is a user-friendly software package called the ResourceKIT, which makes it easier to manage data gathered from the maps drawn by farmers. It can be used on a laptop computer, and provides a framework for analysing and presenting data in the form of nutrient flows and balances at farm level. The second section provides electronic versions of the Detailed Field Tools that can also be found in Part 5.

Part 5. Detailed field tools for PLAR/User Guide to the ResourceKIT.

The first section of this part gives detailed versions of each Field Tool, mentioned in Part 3. For most tools this includes a set of detailed interview forms and recording forms. The user can either adapt these forms to their own circumstances or use them as a source of ideas for designing new forms. The forms are also on the CD-ROM, so that they can be copied and modified. The Royal Tropical Institute, in collaboration with IIED, IER, FAO and CTA publishes this excellent resource guide.

Price: NLG 250.00, USD 100.00, plus handling and postage.

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Agriculture, Fertilizers and the Environment. M. Lae-greid, O.C. Bockman and O. Kaarstad. CABI Publishing, Wallingford, in association with Norsk Hydro ASA, Oslo, 2000, xxiv + 294 p. ISBN 0-85199-385-3. Softcover.

The purpose of this book is to provide a balanced scientific review of the environmental and sustainability issues relating to fertilizer use and how its environmental impact can be minimized. It is divided into three parts. Part 1 introduces the challenge of producing enough food for the growing world population, discusses the role and sources of plant nutrients in crop growth, and gives a general overview of the constraints on and opportunities for sustainable food production. Part 2 deals with the principles of soil productivity and its maintenance, the individual plant nutrients, their utilization, and the direct and indirect environmental and sustainability issues consequent on their use as mineral fertilizers. Part 3 outlines and summarizes challenges and opportunities for increasing cereal production and agricultural sustainability in major food-producing regions. It is concluded that food production can be increased on a sustainable basis, provided economic policies are pursued that makes sustainable management possible and attractive to farmers. The book ends with an extensive summary and list of conclusions.

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Climate Change, Climatic Variability and Agriculture in Europe. An Integrated Assessment. T.E. Downing, P.A. Harrison, R.E. Butterfield and K.G. Lonsdale. Research Report 21 of the Environmental Change Institute, University of Oxford, 2000, xvii + 445 p. ISBN 1-874370-22-2. Softcover.

This publication provides a thorough assessment of the potential impacts of climatic change on selected crops in Europe. The study, carried out by fifteen research institutes in ten member countries of the EU and one eastern European research centre, had four main aims: (1) to improve the performance of existing mechanistic crop models, with particular emphasis on climatic extremes and yield quality, through experimentation; (2) to develop methodologies for scaling-up site-based crop models to the regional, national and continental scales; (3) to advance research on four crop types: a cereal (wheat), a legume (soya bean), a perennial fruit crop (grapevine), and a tuber (potato); and (4) to investigate the impacts of anthropogenic climate change on crop development, growth, yield and yield quality at a hierarchy of modeling scales. Previous research in the CLAIRE project (Climate Change and Agriculture in Europe: Assessment and Impacts and Adaptations), is also available as a report from the editors. This assessment of methodologies and impacts will provide informed input to the scientific, political and economic debates regarding appropriate strategies to adapt to climate changes and to mitigate the impacts on food supply and agricultural livelihoods. The report is relevant for all that are concerned with climate change, agriculture, scaling-up techniques and land use.

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PP Paleopedology/Paléopédologie/Palaépédologie

Prof. Dr. Arnt Bronger, Dpt. of Geography, University of Kiel, 24098 Kiel, Germany

PS Paddy Soils Fertility/Fertilité des Sols Rizicoles/Irrigués/Fruchtbarkeit von Reisböden

Dr. Rogelio N. Concepcion, Bureau of Soils and Water Management SRDC Building, Elliptical Road, Diliman, Quezon City, Philippines

PT Pedotechnique/Pédotechnique/Pedotechnik

Prof. Dr. J. Koolen, Dept. of Soil Tillage, Wageningen Agric. Univ. Diederweg 20, 6703 GW Wageningen, The Netherlands

RB World Reference Base for Soil Resources/Base de référence mondiale pour les ressources de sol/weltweite Referenzbasis fuer Bodenressourcen

Prof. Dr. J. Deckers, Wildenhove 13, 3020 Winksele, Belgium

RS Remote Sensing for Soil Survey/Pédologie et Télétection/Fernerkundung für Bodenkartographie

Dr. M. Mulders, Dept. of Soil Science & Geology, Wageningen Agric. Univ., P.O. Box 37, 6700 AA Wageningen, The Netherlands

RZ Rhizosphere/Rhizosphère/Rhizosphäre

Dr. Ph. Hinsinger, INRA UFR de Science du Sol, Place Viala, 34060 Montpellier Cedex 2, France

SG Soils and Geomedicine/Sols et Géomédecine/Böden und Geomedizin

Prof. E. Steinnes, Dept. of Chemistry, Norw. Univ. of Sci. & Techn., 7034 Trondheim, Norway

SM Environmental Soil Mechanics/Mécanique du Sol et l'Environnement/Bodenmechanik und Umwelt

Prof. Dr. R. Horn, Inst. f. Pflanzenernährung u. Bodenkunde, Olshausenstr. 40, 24118 Kiel, Germany

SP Soil and Groundwater Pollution/Pollution du Sol et des Eaux Souterraines/Boden- und Grundwasserverschmutzung

Dr. J.W. Hopmans, Univ. of California, Dpt. of LAWR, Davis, CA 95616, USA

SU Soils of Urban, Industrial, Traffic and Mining Areas/Sols en Milieux Urbains, Industriels, d'Infrastructures et Miniers/Böden in städtischen, industriellen, Verkehrs- und Bergbauebenen

Prof. Dr. W. Burghardt, Univ. GH Essen, Inst. of Ecology, Universitätsstr. 5, 45117 Essen, Germany

Standing Committees/Comités Permanents/Ständige Komitees - Chairpersons/Présidents/Vorsitzende:**CSS Committee on Statute and Structure/Comité sur Statuts et Structures/Komitee für Statuten und Struktur**

Prof. Dr. P.B. Tinker, Glebe House, Broadwell, Lechlade, Glos. GL7 3QS, UK

CIC Committee on Interdisciplinary Cooperation/Comité de la Coopération Interdisciplinaire/Komitee für Interdisziplinäre Zusammenarbeit

Dr. J. Kimble SCS/NSSC, Federal Bldg., Room 152, 100 Centennial Hall North, Lincoln, NE 68508-3866, USA

CST Committee on Standardization/Comité sur la Standardisation/Standardisierungskomitee

Prof. Dr. S. Norchiff, Dept. of Soil Sci., Univ. of Reading, Whiteknights, P.O. Box 233, Reading RG6 2DW, U.K.

CBF Committee on Budget and Finances/Comité sur Budget et Finances/Budget- und Finanzkomitee

Prof. Dr. W.R. Gardner, 1 Shadow Mountain Dr., Logan, Utah 84321, USA

CES Committee on Education in Soil Science/Comité pour l'Enseignement de la Pédologie/Komitee für Bodenkundausbildung

Prof. Dr. M. Dossa, CNEARC, 1101 Av. Agropolis, B.P. 5098 Montpellier, Cédex, France

CHP Committee on the History, Philosophy and Sociology of Soil Science/Comité sur l'Histoire, Philosophie et Sociologie de la Science du Sol/Komitee für Geschichte, Philosophie und Soziologie der Bodenkunde

Prof. Dr. D.H. Yaalon, Inst. of Earth Sci., Hebrew Univ., Givat Ram Campus, Jerusalem 91904, Israel

Cooperating Journals/Journaux Coopérants/Kooperierende Zeitschriften

ARID SOIL RESEARCH AND REHABILITATION; BIOLOGY & FERTILITY OF SOILS; CATENA;
GEODERMA; JOURNAL OF PLANT NUTRITION AND SOIL SCIENCE; PEDOBIOLOGIA;
SOIL BIOLOGY & BIOCHEMISTRY; SOIL TECHNOLOGY.

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