Bulletin

of the International Society of Soil Science

Bulletin

de l´Association Internationale de la Science du Sol

Mitteilungsblatt

der Internationalen Bodenkundlichen Gesellschaft

Boletín

de la Sociedad Internacional de la Ciencia del Suelo

No. 90 **1996/2**

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ASSOCIATION INTERNATIONALE DE LA SCIENCE DU SOL
INTERNATIONALE BODENKUNDLICHE GESELLSCHAFT

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Seat/Siège/Sitz: c/o Institut für Bodenforschung, Universität für Bodenkultur, Gregor-Mendel-Strasse 33, A-1180 Vienna, Austria. Phone: +43 1 3106026; Fax.: +43 1 3106027.

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Internationale Bodenkundliche Gesellschaft (IBG)
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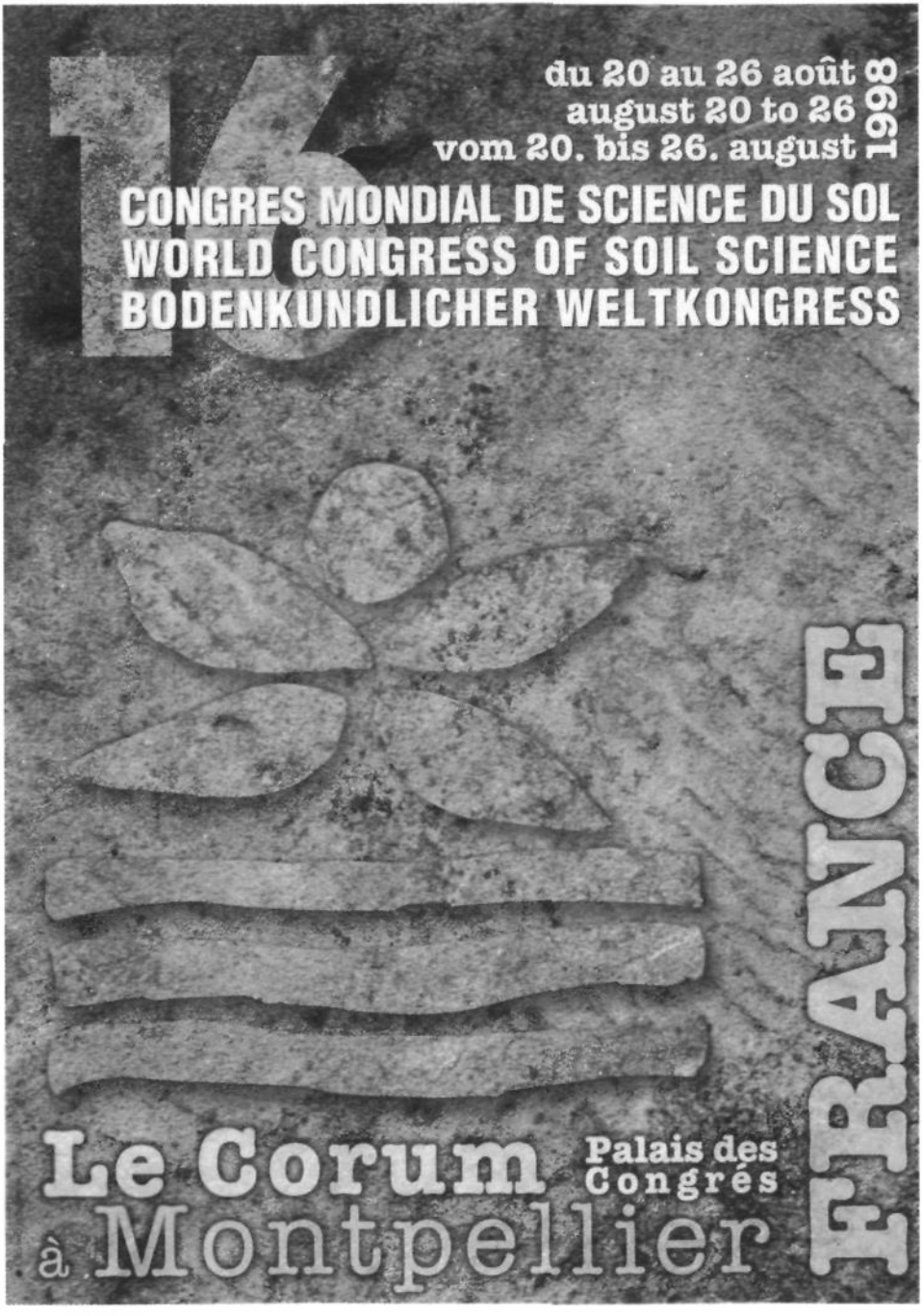
16
du 20 au 26 août 1998
august 20 to 26
vom 20. bis 26. august
CONGRES MONDIAL DE SCIENCE DU SOL
WORLD CONGRESS OF SOIL SCIENCE
BODENKUNDLICHER WELTKONGRESS
FRANCE
Le Corum
Palais des Congrès
à Montpellier

16ème CONGRES MONDIAL DE SCIENCE DU SOL
16th WORLD CONGRESS OF SOIL SCIENCE
16. BODENKUNDLICHER WELTKONGRESS
16° CONGRESO MUNDIAL DE LA CIENCIA DEL SUELO

16TH WORLD CONGRESS OF SOIL SCIENCE

MONTPELLIER (France)

August 20th to 26th 1998

FOURTH ANNOUNCEMENT

Address of the Congress Secretariat :

16ème Congrès Mondial de Science du Sol
Agropolis • Avenue Agropolis • 34394 Montpellier Cedex 5 • France
Tel. 04 67 04 75 38 • Fax 04 67 04 75 49
International tel. 33 4 67 04 75 38 • International fax 33 4 67 04 75 49
E.mail: isss@agropolis.fr
Serveur WWW: http://www.cirad.fr/isss.html

The Congress Programme and Registration Forms are now available

They will be addressed, in November 1996, to all persons
having sent a Notice of Intent
(1300 persons have already sent a notice of intent)

They will be also addressed, free of charge,
to anyone requesting them:
for this, please return the request form below

ATTENTION
All registrations may be made and summaries sent by the WWW Server:
http://www.cirad.fr/isss.html
In this case, please follow the instructions indicated on the server.
The Organizing Committee recommends the use of the server for all registration and sending of the summaries

REMINDER OF THE MAIN CLOSING DATES

(all information given below is detailed in the Congress Programme)

- The **Scientific Registration Form,** together with a **Summary of the proposed paper** (1 page, 2000 characters), must be sent to the Congress Secretariat before **30 April 1997.** All proposals for papers received after 1st May 1997, will automatically be presented in poster form; no papers will be accepted after **31 August 1997.**
- Authors whose papers have been accepted by the Congress Scientific Committee, will be informed at the beginning of November 1997. The **final summary** (1 page) and **full text of the accepted paper** (7 pages, 14000 characters) must be sent to the Congress Secretariat before **31 December 1997.**
- Authors whose papers have been accepted must imperatively send their **General Registration Form** and pay their registration fees before **31 December 1997.** No scientific paper will be accepted without payment of registration fees.
- **All prices** (other than accommodation) **will be subject to a surcharge of 20% for payment received later than 31 December 1997.**
- All congress participants are strongly advised to send their **General Registration Form** and to pay their **Registration Fees** before **31 December 1997.**
- All congress participants are strongly advised to send their **Accommodation Form**, with the **Advance Payment**, as soon as possible; they will thus be more sure of obtaining their chosen accommodation; requests for reservations received after **1st June 1998** will be limited by *availability.*
- **For pre and post-congress scientific tours:**
  - you are advised to send the **Tours registration form** and to pay an **Advance Payment** (for each tour selected) before **31 August 1997**; only those tours with sufficient numbers enrolled, and advance payment paid, will be retained;
  - the full registration fee for each tour, free of the 20% surcharge, must be paid before **31 December 1997**; only those tours with sufficient numbers enrolled and full payments, will be retained; the full payment for each tour may be made as of now;
  - for the tours which do take place, a 20% surcharge will be added to the full price for registrations and payments received after **31 December 1997.**

Alain RUELLAN
President of ISSS
and of 16th World Congress of Soil Science

16ème CONGRES MONDIAL DE SCIENCE DU SOL
16th WORLD CONGRESS OF SOIL SCIENCE
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REQUEST FOR THE CONGRESS PROGRAMME AND REGISTRATION FORMS

to be sent to

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Agropolis • Avenue Agropolis • 34394 Montpellier Cedex 5 • France
Fax: 04 67 04 75 49 - Fax international: 33 4 67 04 75 49
Email: isss@agropolis.fr

Mr ☐ **Ms** ☐ **Dr** ☐ **Prof** ☐

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would like to receive (free of charge) the Congress Programme and the Registration Forms

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English version:.....

Date: ..... **Signature:** .....

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16. BODENKUNDLICHER WELTKONGRESS
16° CONGRESO MUNDIAL DE LA CIENCIA DEL SUELO

16ÈME CONGRÈS MONDIAL DE SCIENCE DU SOL

Montpellier - France

20 au 26 août 1998

QUATRIÈME ANNONCE

Adresse du Secrétariat du Congrès :

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Tél. 04 67 04 75 38 • Fax 04 67 04 75 49
Tél. international 33 4 67 04 75 38 • Fax international 33 4 67 04 75 49
E.mail : isss@agropolis.fr
Serveur WWW : http://www.cirad.fr/isss.html

Le Programme du Congrès et les Fiches d'Inscription au Congrès sont disponibles

Ils sont adressés, courant novembre 1996, à tous ceux qui ont déjà envoyé un Bulletin d'Intention de Participation
(1300 personnes sont déjà pré-inscrites au Congrès).

Ils seront également adressés gratuitement à tous ceux qui en feront la demande : pour cela, renvoyer le Bulletin ci-après.

ATTENTION
Toutes les inscriptions, ainsi que l'envoi des résumés, sont également possibles via le Serveur WWW : http://www.cirad.fr/isss.html
Suivre, dans ce cas, les instructions indiquées sur le Serveur.
Les organisateurs du Congrès recommandent l'utilisation prioritaire du Serveur, pour les inscriptions et pour l'envoi des résumés

RAPPEL DES PRINCIPALES DATES LIMITES

(toutes les informations données ci-dessous sont détaillées dans le Programme du Congrès)

- Le **Bulletin d'Inscription Scientifique**, accompagné du **Résumé de la communication** proposée (1 page, 2 000 signes), doivent être envoyés au Secrétariat du Congrès avant le **30 avril 1997**. Toute proposition de communication reçue après le 1er mai 1997 sera automatiquement mise en poster ; aucune communication ne sera acceptée après le **31 août 1997**.
- Les auteurs, dont la communication est acceptée par le Comité Scientifique du Congrès, en seront avertis début novembre 1997. Le **résumé définitif** (1 page) et le **texte complet de la communication** acceptée (7 pages, 14 000 signes) doivent être envoyés au Secrétariat du Congrès avant le **31 décembre 1997**.
- Les auteurs des communications acceptées doivent impérativement envoyer leur **Bulletin Général d'Inscription** et payer leurs droits d'inscription avant le **31 décembre 1997**. Aucune communication scientifique ne sera prise en compte sans paiement des droits d'inscription.
- **Tous les coûts** (sauf les frais d'hébergement) **sont majorés de 20% pour les paiements postérieurs au 31 décembre 1997**.
- Nous recommandons vivement, à tous les congressistes, d'envoyer leur **Bulletin Général d'Inscription** et de payer leurs **Droits d'Inscription** avant le **31 décembre 1997**.
- Nous recommandons, à tous les congressistes, d'envoyer leur **Bulletin d'Hébergement**, accompagné des **Arrhes**, le plus tôt possible ; ils seront ainsi mieux assurés d'obtenir l'hébergement de leur choix ; les demandes de réservation reçues après le **1er juin 1998** ne pourront être satisfaites que dans la mesure des disponibilités.
- Pour les **excursions pré et post-congrès** :
  - il est recommandé d'envoyer le **Bulletin d'Inscription aux Excursions** et de payer un **Acompte** (pour chaque excursion choisie) avant le **31 août 1997** ; chaque excursion n'aura lieu que si est reçu un nombre suffisant d'inscriptions et d'acomptes ;
  - le prix total d'inscription à chaque excursion, sans majoration de 20%, devra être payé avant le **31 décembre 1997** ; chaque excursion n'aura lieu que si est reçu un nombre suffisant d'inscriptions et de paiements complets ; le prix total de chaque excursion peut être payé dès maintenant ;
  - pour les excursions qui auront lieu, le prix total sera majoré de 20% pour ceux qui s'inscriront et paieront après le **31 décembre 1997**.

Alain RUELLAN
Président de l'AISS
et du 16ème Congrès Mondial de Science du Sol

16ème CONGRES MONDIAL DE SCIENCE DU SOL
16th WORLD CONGRESS OF SOIL SCIENCE
16. BODENKUNDLICHER WELTKONGRESS
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ET DES FICHES D'INSCRIPTION AU CONGRÈS

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souhaite recevoir (gratuitement) le Programme du Congrès et les Fiches d'Inscription au Congrès

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16. BODENKUNDLICHER WELTKONGRESS
16° CONGRESO MUNDIAL DE LA CIENCIA DEL SUELO

16. BODENKUNDLICHER WELTKONGREß

Montpellier - Frankreich

20. - 26. August 1998

VIERTE ANKÜNDIGUNG

Adresse des Kongreß-Sekretariats:

16ème Congrès Mondial de Science du Sol
Agropolis • Avenue Agropolis • 34394 Montpellier Cedex 5 • Frankreich
Tel. international (33) 4 67 04 75 38 • Fax international (33) 4 67 04 75 49
E-mail: isss@agropolis.fr
WWW Server: http://www.cirad.fr/isss.html

Das Kongreßprogramm und die Anmeldeformulare sind ab sofort erhältlich

Sie werden im November 1996 an alle verschickt,
die eine vorläufige Anmeldung eingesandt haben
(bis jetzt bereits 1.300 Personen)

Die Unterlagen werden auch kostenlos an alle Interessenten gesandt:
Dazu senden Sie bitte das nachstehende Anmeldeformular ein

ACHTUNG
Die Anmeldungen und die Zusammenfassungen von Beiträgen können auch über Internet eingesandt werden:
http://www.cirad.fr/isss.html
In diesem Fall beachten Sie bitte die Anweisungen des Servers
Das Organisationskomitee empfiehlt die Verwendung des Servers für Anmeldung und Einsendung von Beiträgen

WICHTIGE DATEN ZUR ERINNERUNG

(die nachstehende Information finden Sie detailliert im Kongreßprogramm)

- Das **wissenschaftliche Anmeldeformular** muß zusammen mit der **Zusammenfassung des vorgeschlagenen Kongreßbeitrags** (1 Seite, 2000 Zeichen) bis spätestens **30 April 1997** an das Kongreß-Sekretariat gesandt werden. Alle Vorschläge für Beiträge die nach dem **1. Mai 1997** eintreffen, werden automatisch in Form von Postern präsentiert; nach dem **31. August 1997** werden keine Beiträge mehr angenommen.
- Die Verfasser jener Beiträge, die vom wissenschaftlichen Komitee des Kongresses angenommen wurden, werden Anfang November 1997 informiert. Die **endgültige Zusammenfassung** (1 Seite) und **der vollständige Text des angenommenen Beitrags** (7 Seiten, 14.000 Zeichen) müssen vor dem **31. Dezember 1997** an des Kongreß-Sekretariat gesandt werden.
- Autoren, deren Beiträge angenommen wurden, müssen unbedingt vor dem **31. Dezember 1997** ihr **allgemeines Anmeldeformular** einsenden und ihre **Anmeldegebühr** entrichten. Kein wissenschaftlicher Beitrag wird angenommen ohne die Bezahlung der Anmeldegebühr.
- Auf **alle Preise** (außer dem für die Unterkunft) wird **bei Bezahlung nach dem 31. Dezember 1997 ein Zuschlag von 20% verrechnet.**
- Wir ersuchen alle Kongreßteilnehmer, **noch vor dem 31. Dezember 1997** ihre **allgemeinen Anmeldeformulare einzusenden** und ihre **Anmeldegebühren zu bezahlen**.
- Wir raten allen Kongreßteilnehmern dringend, ihre **Anmeldeformulare für die Unterkunft** zusammen mit der **Anzahlung** so rasch wie möglich einzusenden; sie haben dadurch größere Chancen, die von ihnen gewünschte Unterkunft zu erhalten; nach dem **1. Juni 1998** erfolgt die Reservierung nach Maßgabe der freien Plätze.
- **Wissenschaftliche Exkursionen vor und nach dem Kongreß:**
  - Bitte senden Sie das **Exkursions-Anmeldeformular** und die **Anzahlung** (für jede der gewählten Exkursionen) vor dem **31. August 1997** ein; nur Exkursionen für die eine genügend große Anzahl von Interessenten angemeldet ist und angezahlt hat, werden im Programm beibehalten;
  - die volle Anmeldegebühr für jede Exkursion, ohne 20%igen Aufschlag, muß noch vor dem **31. Dezember 1997** bezahlt werden; nur Exkursionen für die eine genügend große Zahl von Interessenten angemeldet ist und den vollen Betrag bezahlt hat, werden im Programm beibehalten; der volle Betrag für die Exkursionen kann ab sofort eingezahlt werden;
  - für alle Exkursionen die durchgeführt werden, wird ein Aufschlag von 20% auf alle Anmeldungen und Zahlungen verrechnet, die nach dem **31. Dezember 1997** eintreffen.

Alain RUELLAN
Präsident der IBG
und des 16. Bodenkundlichen Weltkongresses

16ème CONGRES MONDIAL DE SCIENCE DU SOL
16th WORLD CONGRESS OF SOIL SCIENCE
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Familienname .....

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Organisation .....

Adresse .....

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möchte (kostenlos) das Kongreßprogramm und die Anmeldeformulare erhalten

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englische Version:.....

Datum: ..... **Unterschrift:** .....

ISSS PROCEEDINGS

The proceedings of the last three International Congresses of Soil Science can be ordered at a reduced rate for ISSS members.

Proceedings 13th International Congress of Soil Science, Hamburg, 1986 (set of 6 volumes)	NLG 25.—
Proceedings 14th International Congress of Soil Science, Kyoto, 1990 (set of 7 volumes)	NLG 75.—
Proceedings 15th World Congress of Soil Science, Acapulco, 1994 (set of 17 volumes)	NLG 100.—

ORDER FORM

Please send me the set(s) of the proceedings of the International Congress(es) of Soil Science mentioned below:

set(s) of the 13th ICSS, Hamburg, à NLG 25.— per set	NLG .....
set(s) of the 14th ICSS, Kyoto, à NLG 75.— per set	NLG .....
set(s) of the 15th WCSS, Acapulco, à NLG 100.— per set	NLG .....
set(s) packing and surface mailing charges à NLG 35.— per set (air mail charges on request)	NLG .....
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6700 AJ Wageningen
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Fax: +31-317-471700

ANNOUNCEMENT

4TH INTERNATIONAL CONFERENCE ON THE BIOGEOCHEMISTRY OF TRACE ELEMENTS

Clark Kerr Campus, University of California, Berkeley, California, USA, June 23-26, 1997

This is the fourth of a highly successful conference series that was started in 1990 in Orlando, Florida, USA. The second was held in Taipei, Taiwan in 1993 and the third was held in Paris, France in 1995. The 4th International Conference is dedicated to exploring and discussing emerging issues in biogeochemistry research of trace elements. Biogeochemistry has developed into an interdisciplinary science linking phenomena observed in the biosphere to physical and chemical reactions of the lithosphere. This conference provides a forum for researchers, scientists, and engineers to present their most recent findings and to discuss with colleagues from around the world the state-of-the-art in innovative methodology, analytical techniques, and process development. The conference is sponsored by the International Soil Science Society, The Soil Science Society of America, The Society of Environmental Geochemistry and Health, The U.S. Army Cold Regions Research and Engineering Laboratory, The Kearney Foundation of Soil Science and The University of Georgia, Savannah River Ecology Laboratory.

The technical program centers around the following major topics:

- Advancements in analytical methods and their applications
- Ecotoxicological risk assessment, public policy, and management decisions
- Trace element issues in agricultural production systems and other food chains
- Chemical speciation, surface chemistry, and modeling
- Science and technology of remediating trace element contaminated soils and sediments
- Trace elements in forest, aquatic, and other natural ecosystems
- Identification, quantification and characterization of sources of trace elements in natural and managed ecosystems

The following special symposia have already been identified:

- Kevin G. Tiller Memorial Symposium on Cadmium
- Fate and Transport of Metals in the Vadose Zone
- Phytoremediation of Trace Element Contaminated Soil and Water
- Risk Assessment and Soil Toxicity of Metals
- Chemistry and Bioavailability of Trace Elements in Biosolids
- Assessment and Remediation of Soil Contaminated by Past Military- Related Activities

Conference chairman:
Dr. Alex Iskandar, U.S. Army Corps of Engineers, Cold Region Laboratory.

Chairman, Organizing Committee:
Dr. Domy C. Adriano, Savannah River Ecology Laboratory,

Chairman for the Technical Committee:
Dr. Gary M. Pierzynski, Kansas State University.

Conference Information:
Dr. Domy C. ADRIANO, Savannah River Ecology Laboratory,
Savannah River Site Building 737-A, Aiken, SC, 29801, USA
Fax: (+1)-803-725-3309
Internet : <http://www.usace.army.mil/crrel/biogeochemistry-trace-elements>
Domy C. Adriano, Aiken, S.C., USA

INTERNATIONAL CONFERENCE
PROBLEMS OF ANTHROPOGENIC SOIL FORMATION

June 16-21, 1997, Moscow, Russia

The Conference will take place at the V.V. Dokuchaev Soil Science Institute of the Russian Academy of Agricultural Sciences, with the support of the Russian Society of Soil Science, the Russian Academy of Sciences, and the ISSS (Commission V). **Languages: English and Russian**

Scientific programme: The conference will consist of the plenary meeting, oral and poster sessions, a one-day field tour, and an exhibition. Commercial exhibitions are welcome.

The following topics are suggested for presentations:

1. Agrogenic and technogenic transformation of soils; - **2.** Classification of anthropogenically transformed soils; - **3.** Human-induced changes in the soil cover and the problem of their mapping; - **4.** Specific features of modern processes in anthropogenically transformed soils; - **5.** Anthropopedogenesis as a model for studying natural soil processes.

Conference proceedings. 3-page papers in English should be submitted for the proceedings to be published before the conference. Please submit your papers on diskettes or by E-mail **(sveta@agropc.msk.su)**. Winword (standard pages, 1.5 intervals, Courier 11 or 12) is preferable. Texts in ASCII format are also accepted. **The papers should be submitted before February 1, 1997.**

Post conference tour. A 3-day study tour (June 22-24) will be arranged after the conference, giving an opportunity to see anthropogenically transformed soils within the forest-steppe zone. **The cost is 300 US$.**

Registration fee: 250 US$. This includes a copy of the proceedings and other materials, a one-day field tour and social events. Registration fee for accompanying persons: **100 US$**, accommodation and meals not included.

Please send the registration forms to the Organising Committee before January 1, 1997. You will receive a second circular with the scientific programme, payment of registration fee and other details after having sent in the notice of intent.

For more details please contact:
Dr. V.D. Tonkonogov, Executive Secretary of the Organising Committee,
V.V. Dokuchaev Soil Science Institute, Pyzhevskii per. 7, Moscow 109017, Russia
Tel: +7-095-230-80-52; Fax: +7-095-231-50-37; E-mail: sveta@argropc.msk.su

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NOTICE OF INTENT
International Conference: „Problems of Anthropogenic Soil Formation"
Moscow, Russia, June 16-21, 1997

Surname ..... First name .....

Affiliation .....

Mailing address .....

Fax ..... E-mail .....

Proposed title of paper for presentation (☐ oral / ☐ poster): .....

.....

I will participate in the post-conference tour (June 22-24, 1997) yes ☐ no ☐

Accompanying person(s) .....

.....

.....

Date ..... Signature .....

Second Announcement and Call for Papers

INTERNATIONAL WORKING MEETING ON PALEOPEDOLOGY
of ISSS (Comm. V and WG Paleopedology) and INQUA (Comm. Paleopedology)

September 24-26, 1997 in Rauischholzhausen near Marburg, University of Giessen, Germany with pre- and post-conference tours

Organization: P. Felix-Henningsen and A. Bronger

„RECENT AND PALEO-PEDOGENESIS AS TOOLS FOR MODELLING PAST AND FUTURE GLOBAL CHANGE„

I. TOPICS OF THE TENTATIVE PROGRAM OF THE WORKING MEETING

a. Polygenetic concepts of Quaternary and pre-Quaternary surface paleosols.

b. Methodological recognition of soils with relic properties: definition, classification and modelling.

c. Environmental implications of paleopedogenic features for agriculture, forestry etc.

d. Buried Quaternary and pre-Quaternary paleosols as tools for reconstructing and modelling environmental changes.

e. (Paleo)pedology and Archaeology. Dating of paleosols.

A first approach to a classification of paleosols is intended as a result of topics a. and b. of the program. Topic d. should include the problem of magnetic susceptibility as a „paleoclimate proxy„.

Contributors are invited to submit their papers as an **abstract** in duplicate, typewritten in English, single spaced on one page Din A4 (ca. 21x30 cm) including line drawings, tables, references etc. within the format, 2cm free space on each margin and camera ready.

All abstracts must arrive latest by February 01, 1997

from contributors of both Americas and United Kingdom to:
Prof. J.A. Catt,
Vice-President of INQUA Comm. on Paleopedology (ISSS WG Paleopedology)
IACR-Rothamsted, Harpenden, Herts. AL5 2JQ, United Kingdom
Phone: +44 1582 763 133, Fax: +44 1582 760 981

from contributors of Europe (except U.K.) and Africa to:

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D-24098 Kiel, Germany
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Fax: +49 431 880 4658
E-mail: bronger@geographie.uni-kiel.de

or to:

Prof. P. Felix-Henningsen
Director Dept. Soil Science
and Soil Conservation,
University of Giessen,
Wiesenstr. 3-5, 35390 Giessen, Germany
Phone: +49 641 9937101
Fax: +49 641 9937109
E-mail: Peter.Felix-h@agrar.uni-giessen.de

and from contributors of Asia incl. Russia, Australia and New Zealand to:

Prof. V.O. Targulian,
Chairperson of ISSS Commission V
Soil Genesis, Class. and Geography
Institute of Geography,
Staromonetny per. 29, 109017 Moscow, Russia
Phone: +7 095 238 1867
Fax: +7 095 230 2090
E-mail: targul@geosoil.msk.ru

or to:

Dr. A.O. Makeev
FADR, Faculty of Soil Science
Secretary-Treasurer of
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Moscow State Lomonosov University
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Phone/Fax: +7 095 932 1182
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Contributors will be informed within 4 weeks about acceptance as oral or poster presentation. Submitted abstracts will be published in the abstract volume.

Each oral presentation will be 15 minutes in length. Slide (5x5 cm) and overhead projector are available.

Participation fee: DM 115,–

including Abstract Volume, program, bag with conference materials, coffee during the breaks and three lunch meals.

The participation fee must be paid **until May 31** to:

PP-Meeting, Sparkasse Giessen, Bank Code: 513 500 25, Account: 809 705

Payment after May 31 is DM 160,-

Accomodation: In the castle of Rauischholzhausen, where the conference will be held, 20 double-bed rooms and 20 single-bed rooms including meals are available for modest rates preferable for participants from foreign countries, from 23.09.97 (end of pre-conf. tour B) till 27.09.97 (start of post-conf. tour C):

4 overnight stays including breakfast and dinner for DM 210,- in total.

Participants who have paid their participation fee will be informed in due time.

For the evening of the second day (25.09) we plan to organize a „Marburg-evening„ with sight-seeing of the beautiful ancient city of Marburg with a joint dinner. Total costs will be about 30-40 DM. Please mark your interest on the registration form below.

II. PRE- AND POST-CONFERENCE TOURS

1. Pre-conf. tour A (A. Semmel), Sept. 22, 1997: Old and Young Pleistocene loess soils and Holocene soils of different age in the surroundings of Mainz and Wiesbaden.
   Cost: DM 30,- for bus transportation and excursion guide.
2. Pre-conf. tour B (M. Weidenfeller, L. Zöller, A.Semmel), Sept. 23 1997:
   Paleosols and neotectonics near Heidelberg and Bad Dürkheim.
   Cost: DM 50,- for bus transportation (including transfer to Rauischholzhausen) and excursion guide.

On both tours emphasis will be given to the problem of climatic oscillations of old Würm age, represented by three distinct humus horizons above the last interglacial soil.

Costs for overnight stays on Sept. 21/22 and 22/23 in Hofheim am Taunus (between Frankfurt and Wiesbaden), where the tours start and end, are between DM 45,- to 125,- for single rooms and DM 50,- to DM 95,- for double rooms. For reservations and further questions please contact:

Prof. Dr. Arno Semmel, Theodor-Körner-Str. 6, D-65719 Hofheim/Ts., Germany

3. *Post-conf. tour C (P. Felix-Henningsen and T. Schwarz), Sept. 27-28, 1997: Deep* weathering mantles of Upper Cretaceous and Tertiary periods in Rhenish Massiv and Vogelsberg.
   Cost: DM 200,- which includes bus transportation ending in Frankfurt (Int. airport or Central railway station), overnight stay (near famous monastery of Maria Laach), lunch packets incl. drinks and excursion guide. For reservation and further questions please contact Prof. Dr. P. Felix-Henningsen (address above).

   Maximum number of participants for all three tours: 40

Registration for tour A and/or B and/or C **together with payment** on a „first pays first" basis to the above mentioned bank account in Giessen.

NOTICE OF INTENT / REGISTRATION FORM

I intend to participate in the International Working Meeting:
„RECENT AND PALEO-PEDOGENESIS AS TOOLS FOR MODELLING PAST AND FUTURE GLOBAL CHANGE„.
in Rauischholzhausen near Marburg, Germany, September 24-26, 1997 with pre-Conf. tours (22. and 23. Sept.) and post-Conf. tour (27-28. Sept)

Name: .....

Institution: .....

Postal address: .....

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Phone: ..... Fax: .....

E-mail: .....

I intend to submit a paper entitled: .....

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.....

☐ oral ☐ poster

I would like to participate in the „Marburg-evening„ Yes/No

Pre-(Post-) Conf. tour A ☐ B ☐ C ☐

Date ..... Signature .....

Please return this form to: Prof. P. Felix-Henningsen, Dept. Soil Science and Soil Conservation, University of Giessen, Wiesenstr. 3-5, 35390 Giessen, Germany

INTERNATIONAL CENTER FOR SOIL AND SOCIETY - INAUGURAL MEETING:
„Human Perceptions of the Soil: International Perspectives from the Natural Sciences, Humanities, and the Social Sciences"

University of Maryland, College Park, USA, July 7 - 9, 1997

Multi-disciplinary workshops will engage the meeting participants in exploring human perceptions of the soil from the perspectives of soil science, aquatic chemistry, biological anthropology, environmental history, environmental ethics, and world religions. Plenary sessions led by experts in these fields will set the stage for small-group investigations and problem-solving exercises. The leaders and their topics include:

Winfried E. H. Blum, Secretary-General of the International Society of Soil Science,
Human-Soil Relationships in the North-South Perspective - Actual State and Future Trends

Peter G. Brown, Professor and Director of Environmental Programs at the School of Public Affairs, University of Maryland,
Analytical and Ethical Frameworks for Thinking About the Environment and Soils

Daniel Hillel, Professor Emeritus of Soil Physics and Hydrology, University of Massachusetts,
The Biblical Roots of Western Civilization's Perceptions of Humanity's Role on God's Earth

Fatimah Jackson, Professor of Biological Anthropology, University of Maryland, Evolutionary and Cross-Cultural Aspects of Human-Soil Interrelationships

Bruce R. James, Associate Professor of Soil Chemistry, University of Maryland; Founder of the International Center for Soil and Society,
Human-Soil Relationships in Ancient Civilizations: Challenge, Response, and Creativity

Barbara Sulzberger, Aquatic Chemist, Swiss Federal Institute for Environmental Science and Technology;
Soil Pollution: Can We Learn Lessons from the History of Water Pollution?

Background information on the International Center for Soil and Society (ICSS)
The ICSS is a new multi-disciplinary organization that has the goal of broadening the study of the soil to link the traditional specialties of soil science with their parent disciplines and with the humanities and the social sciences. In so doing, new thinking, understanding, and appreciation for the role of the soil in ecosystem function will emerge. Annual summer institutes and regional problem-solving workshops will be the early activities of the ICSS as it becomes a permanent center for the study of the soil.

For registration materials for the inaugural meeting and for a copy of the „Idea Document" describing the ICSS founding concepts, please contact:

Bruce R. James, International Center for Soil and Society
Rm. 1112, H.J. Patterson Hall, University of Maryland,
College Park, MD 20742, USA
Tel.: 301-405-1345; Fax: 301-314-9041; Internet: bj5@umail.umd.edu

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NOTICE OF INTENT
International Center for Soil and Society Inaugural Meeting: „Human Perceptions of the Soil: International Perspectives from the Natural Sciences, Humanities, and the Social Sciences"
University of Maryland, College Park, USA, July 7 - 9, 1997

Surname ..... First name .....

Affiliation .....

Mailing address .....

Fax ..... E-mail .....

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.....

Accompanying person(s) .....

.....

.....

Date ..... Signature .....

INTERNATIONAL SYMPOSIUM
SOIL SYSTEM BEHAVIOUR IN TIME AND SPACE
November 18 - 20, 1997, Vienna, Austria

The Conference will be supported by the Austrian Society of Soil Science and the ISSS (Commission V, WG RB). The Conference activities will take place at the Universitaet fuer Bodenkultur (University of Agricultural Sciences), in Vienna, Austria.

Scientific programme:

1st day: **Soil as a complex system**, describing the soil as an open, multiface and multifacet systems of bio-geospheric interactions, focusing on specific aspects of its components, the time scale of its processes and the spatial distribution of components and processes, as well as discussing synergetic phenomena in soil systems and concepts of steady-state versus non steady-state.

2nd day: **Models of soil system processes**, focussing on general aspects of modeling in soil science as well as models for specific processes and case studies, based on experimental data, rates and depths of processes and focussing on „short-term models" (e.g. gas exchange, filter- and buffer actions, „chemical time bomb", organic matter turnover etc.) and „medium to long-term models" (e.g. soil formation and evolution related to soil chronosequences etc.)

3rd day: **World Reference Base for Soil Resources and soil system behaviour in time and space,** focussing on how soil diagnostic characteristics (horizons, properties, materials) and soil groupings are adapted to reflect the temporal behaviour of soil systems.

Language: English

Registration: The registration fee will be approx. US$ 250. A notice of intent should be sent to the Organizing Committee before March 1, 1997. The second circular, including the scientific programme, details of payment of registration fees etc. will be sent after receiving the notice of intent.
Posters can be presented on all three main topics of the symposium. On the 1st and 3rd day, invited papers will be presented. Voluntary oral presentations are welcome for the 2nd day and will be selected by the Organizing Committee on the basis of a two-page summary, which should be submitted not later than June 1, 1997. All presentations (posters, voluntary and invited papers) will be published as 2 page-extended summaries, if the camera-ready text together with a floppy disc (Word for Windows, ASCII, WordPerfect) reaches the Organizing Committee before June 1, 1997.

For more detailed information please contact:
Dr. W.W. Wenzel, Universitaet fuer Bodenkultur, Institute of Soil Research
Gregor Mendel-Strasse 33 1180 Vienna, Austria
Tel. and Fax: +43-1-47654-3119; E-mail: wazi@edv1.boku.ac.at

NOTICE OF INTENT
INTERNATIONAL SYMPOSIUM: SOIL SYSTEM BEHAVIOUR IN TIME AND SPACE
November 18 - 20, 1997, Vienna, Austria

Surname ..... First name .....

Affiliation .....

Mailing address .....

Fax ..... E-mail .....

Proposed title of paper for presentation (☐ oral / ☐ poster): .....

.....

Accompanying person(s) .....

.....

Date ..... Signature .....

REORGANIZATION OF THE STRUCTURES OF ISSS
SCIENTIFIC MEETING IN MOSCOW, RUSSIA, JANUARY 10-13 1996
THE SCIENTIFIC BASIS OF SOIL SCIENCE AND ISSS STRUCTURES

This meeting was organized through the initiative of ISSS and the Soil Science Society of the Russian Academy of Science (SSSRAS), as one of a series of meetings for the preparation of an evolution of ISSS structures.

The participants were:

- Officers of ISSS: A. Ruellan, W. Blum, K. Hartge, M. Jamagne, H. van Baren;
- President of SSSRAS: G. Dobrovolsky;
- Presidents and Vice-Presidents of Commissions, Sub-Commissions and Standing Committees of ISSS: M. Dosso, R. Horn, J. Kimble, C. de Kimpe, D. Parkinson, M. Robert, N. Senesi, S. Shoba, V. Targulian, B. Tinker, D. Yaalon;
- Members of CSS: F. Muchena, I. Szabolcs, G. Varallyay, L. Wilding, Q. Zhao;
- Further participants: G. Dev, F. Miller;
- 8 officers of SSSRAS had the status of observers at the Meeting: A. Gennadiev, M. Gerasimova, S. Goryachkin, R. Gracheva, D. Konyushkov, V. Kudeyarov, S. Trofimov, E. Yakimenko.

The goal of the Meeting was the discussion of the main problems of soil science as a basic and applied science, its relationships with other earth and life sciences, and also a possible change of ISSS statutes and structures. This Meeting was the continuation of discussions that had taken place in Acapulco (Mexico) at the 15th ISSS Congress (1994) and in Oxford (UK) in 1995. After the Moscow Meeting, these problems were discussed during the Meeting of the Executive Committee in Montpellier (April, 1996); they will once again be discussed in October 1997 (Louvain-la-Neuve). The scientific proposals of all these Meetings will be discussed during the 16th World Congress of Soil Science (Montpellier, 1998), decisions will be taken later.

The Meeting program included 4 main topics:

1) Basic research in soil science for the understanding of the pedosphere.
2) Applied soil investigations oriented at the problems of human activity and soil interactions.
3) Structure and functioning of soil science in relation with basic and applied problems.
4) Possible change in the ISSS statutes and structures in connection with new challenges to soil science.

The meeting was opened by the lectures of the President of SSSRAS, G.V. Dobrovolsky, the President of ISSS, A. Ruellan, and the Secretary General of ISSS, W. Blum. The main idea of these presentations was establishing soil science as a basic science, stressing the sharp increase of recent challenges to soil science for solving many ecological problems, needs for the systematization of basic and applied problems of soil science at the beginning of the 21st century, and the consequent change of the statutes and structures of ISSS. It was emphasized that such an international meeting on the basic problems of soil science took place for the first time in ISSS' 70 years history and it was very symbolic that it was held in Russia, the native country of V.V.Dokuchaev.

The keynote speakers on the first of the a. m. main topics were A. Ruellan, V.O. Targulian and W. Blum. In these lectures and in the subsequent discussion the following items were touched:

1) basic and holistic approaches to soil as a „reactor, memory and regulator" of the processes in the biosphere;
2) necessity of basic research in soil science, a research that discovers, measures and understands the soil bod;
3) complexity of soil systems, multi- and interdisciplinary character of investigations in soil science;
4) increase of social needs and stimuli for the development of soil science, especially in connection with the problems of ecology and environment;
5) place of soil science in the interconnection of earth and life sciences;
6) necessity of scientific and popular propaganda of the problems, facilities and advances of soil science.

Prof. Dobrovolsky, President of the Russian Society of Soil Science greets the participants

Participants of the Workshop

The second topic was presented by G. Dev, D. Yaalon and G. Dobrovolsky. It concerned the following items:

1) soil investigations related to agriculture, environmental status, urbanization, energy, health, archeological studies;

2) main global ecological functions of the soil (biological, atmo-, hydro-, lithospheric etc.);
3) problems of „soil care" including conservation, anti-degradation measures, and restoration of soil cover on global, regional and local scales. It was stressed that problems to be researched in this field could be both applied and basic ones, and the scientific strategy in developed and developing countries would be different.

The keynote speakers on the third theme were R. Horn and F. Miller. In their lectures and in the following discussion the approaches from different countries to understanding the soil were discussed. The relation of narrowly oriented, specialized soil investigations and multidisciplinary ones, and related to it different schemes of soil science organization were considered. Proposals on the change of our science were also discussed - should we get back from „soil science" to the wider understanding of „pedology"?.

A change of ISSS statutes and structures was discussed after the keynote papers of P.B. Tinker and C. De Kimpe. They explained the historical aspect, showing that the ISSS structure had not been changed since its foundation, and stressed the requirement of a structural updating because ISSS has joined ICSU. Both the speakers and the participants of the following discussion made a lot of very different proposals varying from a complete saving of today's situation to its radical change. The proposal to establish a special division on soil morphology was widely discussed, as well as the suggestion to separate all divisions into basic and applied ones, etc. But no agreement was reached on these points and the participants of the Meeting decided to continue this discussion until the 1998 Montpellier Congress and possibly even afterwards.

In front of the Moscow University

This Meeting did not have the goal to make final decisions, but it was possible to come to some conclusions, which were almost unanimously supported:

1. *Soil science should be developed as a basic science on soils and on the soil cover of the earth as specific natural bodies and systems, as a science without which it is impossible to get a basic understanding of the functioning and the development of the planet earth, the biosphere, ecosystems, and interactions of society and environment.*
2. *Recently, both theoretical and applied challenges to soil science increase. It is related to globalization of scientific knowledge on Earth and to global scale of man affect on environmental systems and processes. Besides agricultural and forestry problems of soil science, new environ-*

Group in action

Listening to a presentation

mental problems arise which cover all pedosphere including polar and mountainous regions. These new problems need the knowledge on both the processes in soil systems and relationships between soils and other natural systems.

3. *But solving these problems, soil science often is not the leader. Many soil-environmental problems in national and international programs and projects are studied by other sciences - geoecology, ecological chemistry, et al.*
4. *We need an active participation of soil science inbasic and applied interdisciplinary programs, a participation of soil scientists in international congresses and conferences on biology, ecology and earth sciences.*
5. *We need a more active development of interdisciplinary connections in different branches of soil science and with other basic and applied sciences, studying natural earth systems and their interactions with human society.*
6. *We need a wider information about and more propaganda for basic and applied advances of soil science for the scientific community as well as for the general public.*

7. *We need the further development of soil science as a basic, multidisciplinary science with various applied branches and diverse ways of interaction with other sciences.*
8. *We need change in the ISSS statutes and structures, reflecting change and development of the scientific problems of soil science.*

Intensive discussions among participants

Basically, the Meeting could be considered as an important step in the development of soil science as a basic science and as a good example of international collaboration of soil scientists.

The participants expressed their thanks to the SSSRAS for the excellent organization of the Meeting.

Alain Ruellan, Victor Targulian, Sergei Goryachkin

ISSS-AISS-IBG

NEW PUBLICATION

TERMINOLOGY FOR SOIL EROSION AND CONSERVATION

Concepts, Definitions and a Multilingual List of Terms for Soil Erosion and Conservation in English, Spanish, French and German 1996

Principal Author:
E. Bergsma, Netherlands
Co-Authors:
P. Charman, Australia
F. Gibbons, Australia
H. Hurni, Switzerland
W.C. Moldenhauer, U.S.A.
S. Panichapong, Thailand

This book has been prepared for Sub-Commission C – Soil and Water Conservation – of the International Society of Soil Science (ISSS). It deals with terms used in the study, prevention and treatment of rain erosion. The terms are described, explained, put into context, and given consideration for practical use by 'descriptive aspects', which are added to the definition. Related terms and synonyms are given.

The publication has a section with 'Central Concepts': terms which form a central part in the study of the erosion processes, hazard, and conservation. These terms are described more extensively.

All terms are included in an alphabetical list, with their Spanish, French, and German equivalents. The book, of 325 pages, has many photographs and illustrative drawings.

The price is NLG 20 (about USD 12, GBP 8, FRF 60, DEM 18), plus packing and postage. Prepayment required.

ORDER FORM

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Full adress .....

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Fax ..... E-mail .....

is interested in ..... copy/copies of Terminology for Soil Erosion and Conservation,
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Please send me a pro-forma invoice.

Return to: ISSS/ISRIC, P.O. Box 353, 6700 AJ Wageningen, the Netherlands
(fax: +31 317 471700, or order by e-mail to ISSS@ISRIC.NL)

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Articles may include new results obtained experimentally, descriptions of new experimental methods of pedological importance, or new interpretations of existing results. Theoretical contributions will be considered equally. Workshop presentations or material for additional issues of certain topics are welcome as well. SoS is subdivided in different sections covering all aspects of soil science:

Soil-Physics

Soil-Chemistry

Soil-Biology and Soil-Biochemistry

Soil-Genetics

Modelling and Statistics in Soil Science

Soil and Environment

Additionally, SoS offers information such as *News and Announcements* in soil science and references to *Soil Science in the WEB*.

SoS is supposed to be in the World-Wide-Web at the beginning of June 1996.

For further information, please contact (email preferred):

Dr. Thomas Hintze
Kurfuerstenstr. 13
D-54295 Trier
Germany
<email: sos@pgsun01.uni-trier.de>
<phone/fax:+49 (0) 651 47163>

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3rd Vice-Chairperson:	E. Garnier-Zarli, Université Paris XII, Laboratoire Biologie des Sols et des Eaux, Avenue du Général de Gaulle, 94000 Creteil, France
Secretary:	Jürgen Kühle, ITEC GmbH, Grimlinghauser Str. 21, 40221 Düsseldorf, Germany
SUBCOMMISSION E:	
Chairperson:	P.K. Khanna, CSIRO, Division of Forest Research, P.O.Box 4008, Queen Victoria Terrace, Canberra, ACT 2600, Australia
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2nd Vice-Chairperson:	
3rd Vice-Chairperson:	J. Ranger, INRA, 54280 Champenoux, France
Secretary:	

SUBCOMMISSION F:

Chairperson: K.J. Beek, ITC, P.O.Box 6, 7500 AA Enschede, The Netherlands.

1st Vice-Chairperson:

2nd Vice-Chairperson:

3rd Vice-Chairperson: P. Brabant, ORSTOM, CS 2, 213, rue Lafayette, 75480 Paris Cédex 01, France

Secretary:

SUBCOMMISSION G:

Chairperson: D.C. Adriano, Savannah River Ecology Lab., Savannah River Site Bldg. 737A, Aiken, S.C., USA

1st Vice-Chairperson: St. McGrath, AFRC Institute of Arable Crops Research, Rothamsted Experim.Station, Harpenden, Herts. AL5 2JQ, UK

2nd Vice-Chairperson: R. Naidu, CSIRO Div. of Soils, Private Bag No. 2, Glen Osmond, SA, 5064, Australia

3rd Vice-Chairperson: J. Berthelin, CNRS, Centre de Pédologie Biologique, UPR 6381, 17, rue Notre Dame des Pauvres, BP 5, 54501 Vandoeuvre les Nancy.

Secretary:

WORKING GROUP AS:

Chairperson: S.Sadio, ISRA/ORSTOM, B.P. 1386, Dakar, Senegal.

WORKING GROUP CR:

Chairperson: D.A. Gilichinsky, Inst. of Soil Science & Photosynthesis, Pushchino, Moscow District 142292, Russia.

WORKING GROUP DE:

Chairperson: A. Souirji, rue de la Ville 2, 5660 Couvin, Belgium.

WORKING GROUP DM:

Chairperson: Prof.Dr.M.F.Baumgardner, Dept. of Agronomy, Purdue Univ., West-Lafayette IN 47907, USA.

WORKING GROUP FA:

Chairperson: P. Sequi, Istituto Sperimentale per la Nutrizione delle Piante, Via della Navicella 2-4, 00184 Roma, Italy

WORKING GROUP LI:

Chairperson: Dr.J.Dumanski, Land Resources Research Institute, Agric. Canada, Ottawa, Ontario, Canada K1A 0C6.

WORKING GROUP MO:

Chairperson: Prof.Dr.P.M.Huang, Univ. of Saskatchewan, Dept. of Soil Science, Saskatoon, Sask., Canada S7N OWO.

WORKING GROUP MV:

Chairperson: Prof.Dr. R.J. Wagenet, Dept. of SCAS, Bradfield Hall, Cornell University, Ithaca, NY 14853-1901, USA.

WORKING GROUP PM:

Chairperson: Prof.Dr. A.B. McBratney, Dept. of Agric. Chem.&Soil Sci., A03 Ross St., The University of Syndey, NSW 2006, Australia.

WORKING GROUP PP:

Chairperson: Prof.Dr. Arnt Bronger, Dpt. of Geography, University of Kiel, 24098 Kiel, Germany

WORKING GROUP PS:

Chairperson: Dr. Tasnee Attanandana, Dept. of Soil Sci., Faculty of Agric., Kasetsart Univ., Bangkok, 10903, Thailand

WORKING GROUP PT:

Chairperson: Dr. J. Koolen, Dept. of Soil Tillage, Wageningen Agric. University, Diedenweg 20, 6703 GW Wageningen, The Netherlands.

WORKING GROUP RB:

Chairperson: Dr. J. Deckers, Wildenhoge 13, 3020 Winksele, Belgium.

WORKING GROUP RS:
Chairperson: Dr. D. Mulders, Dept. of Soil Science & Geology, WageningenAgric. University, P.O.Box 37, 6700 AA Wageningen, The Netherlands.

WORKING GROUP RZ:
Chairperson: Dr. P.J. Gregory, Dept. of Soil Science, Univ. of Reading, Whiteknights, P.O.Box 233, Reading, RG6 2DW, U.K.

WORKING GROUP SG:
Chairperson: Prof.Dr.J.Låg Dept. of Soil Science - AUN, P.O.Box 28, 1432 As-NLH, Norway.

WORKING GROUP SP:
Chairperson: Prof.Dr.P.J.Wieringa, Univ. of Arizona, Soil & Water Science, Tucson AZ 85721, USA.

WORKING GROUP US:
Chairperson: Dr. J. Celecia, Division of Ecological Sciences, UNESCO, 75700 Paris, France.

STANDING COMMITTEE ON STATUTE AND STRUCTURE (CSS):
Chairperson: Prof.Dr.P.B.Tinker, GCTE Associate Project Office, Deptmt. of Plant Sciences, University of Oxford, South Parks Road, Oxford OX1 3RB, U.K.

STANDING COMMITTEE ON INTERNATIONAL PROGRAMMES (CIP):
Chairperson: Dr. J. Kimble, SCS/NSSC, Federal Bldg., Room 152, 100 Centennial Mall North, Lincoln, NE 68508-3866, USA.

STANDING COMMITTEE ON STANDARDIZATION (CST):
Chairperson: Dr. S. Nortcliff, Dept. of Soil Science, Univ. of Reading, Whiteknights, P.O.Box 233, Reading RG6 2DW, U.K.

STANDING COMMITTEE ON BUDGET AND FINANCES (CBF):
Chairperson: Prof.Dr.W.R. Gardner, College of Natural Resources, Univ. of California, Berkeley, CA 94720, USA.

STANDING COMMITTEE ON EDUCATION IN SOIL SCIENCE (CES):
Chairperson: Prof.Dr. M. Dosso, CNEARC, 1101 Av. Agropolis, B.P. 5098 Montpellier Cédex, France.

STANDING COMMITTEE ON THE HISTORY, PHILOSOPHY AND SOCIOLOGY OF SOIL SCIENCE (CHP):
Chairperson: Prof.Dr. D.H. Yaalon, Institute of Earth Sciences, Hebrew University, Givat Ram Campus, Jerusalem 91904, Israel.

Committee on Statute and Structure (CSS), to ensure correct application of Statutes and Bylaws of ISSS, and to propose changes in the organizational structure as required.

Chairman: Prof.Dr. P.B. Tinker, GCTE Associate Project Office, Department of Plant Sciences, University of Oxford, South Parks Road, Oxford OX1 3RB, U.K.

Members: Prof.Dr. W.E.H. Blum (Austria), Dr. S. El-Swaify (USA), Dr. N.N. Goswami (India), Prof.Dr. K.H. Hartge (Germany), Prof. Dr. K. Kyuma (Japan), Dr. F.N. Muchena (Kenya), Prof.Dr. I. Pla-Sentis (Venezuela), Dr. W.G. Sombroek (The Netherlands) and Prof.Dr. G. Varallyay (Hungary).

Committee on International Programmes (CIP), to liaise with international organizations and to promote joint programmes.

Chairman: Dr. John M. Kimble, USDA-NRCS-NSSC, Federal Bldg. Room 152, 100 Centennial Mall North, Lincoln, NE 68508-3866, USA

Members: Prof.Dr. A. Aguilar Santelises (Mexico), Dr. I.P. Abrol (India), Dr. R.W. Arnold (USA), Prof.Dr. W.E.H. Blum (Austria), Prof.Dr. A.M. Elgala (Egypt), Dr. A. Gennadiev (Russia), Dr. D.J. Greenland (UK), Prof.Dr. K. Kyuma (Japan), Dr. H.U. Neue (Philippines), Prof.Dr. P.A. Sanchez (USA), Prof.Dr. H.W. Scharpenseel (Germany), Dr. W.G. Sombroek (The Netherlands), Prof. J.W.B. Stewart (Canada), Prof.Dr. P.B. Tinker (UK), Dr. G. Vachaud (France), Prof.Dr. G. Varallyay (Hungary), Prof.Dr. D.H. Yaalon (Israel).

Committee on Standardization (CST), to liaise with the International Standardization Organization (ISO, Geneve-Switzerland) and its Technical Committee on Soil Quality (ISO/TC 190, NNI, Delft, The Netherlands).

Chairman: Dr. Stephen Nortcliff, Dptmt. of Soil Science, PO Box 233, Whiteknights, The University of Reading, Reading, RG6 6DW, UK

Members: vacancy (Comm.I), Prof. A.L. Page (USA, Comm.II), vacancy (Comm.III), Prof. K. Syers (Thailand, Comm.IV), vacancy (Comm. V), Y.P. Kalra (Canada, Comm.VI), vacancy (Comm.VII), vacancy (Comm. VIII), Prof. Somsri Arunin (Thailand, Subcomm.A), Dr. W. McDonald (Australia, Subcomm.B), Prof. R. Lal (USA, Subcomm.C), Prof. L. Brussard (Netherlands, Subcomm.D), Dr. K.-J. Meiwes (Germany, Subcomm E), Dr. A. Mtimet (Tunisia, Subcomm. F), vacancy (Subcomm. G).

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

Chairman: Dr. W.R. Gardner, College of Natural Resources, Univ. of California, Berkeley, CA 94720, USA.

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

Chairwoman: Prof.Dr. M. Dosso, CNEARC, B.P. 5089, 1101 Av. Agropolis, 34033 Montpellier, France.

Members: to be defined

ISSS 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: Prof. Dr. H.W. Scharpenseel (Germany).
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	Prof. Dr. H.W. Scharpenseel (Germany)

ACTIVITIES OF COMMISSIONS AND WORKING GROUPS
ACTIVITÉS DES COMMISSIONS ET GROUPES DE TRAVAIL
AUS DER TÄTIGKEIT VON KOMMISSIONEN UND ARBEITSGRUPPEN

Soil and Water Qualities at Different Scales

Working Groups MV (Moisture Variability), SP (Soil and Water Pollution) and PM (Pedometrics) met in a joint workshop at Wageningen, Netherlands, from Aug. 6-9, 1996. The Workshop „Soil and Water Qualities at Different Scales" was attended by over 70 scientists from 17 nations. Invited and volunteered oral papers, and 15 posters focused mostly on methodology to measure soil physical properties and transport processes at different spatial and temporal scales. Concepts of scale from both soil science and ecology illustrated the need to collect process-based research information at local geographic scales, and the opportunity for scale translation of this information to larger geographic scales. A number of presentations combined analysis of spatial variation, simulation modeling of water and chemical fluxes, and the use of GIS as a database integration and display tool. Yet, it was clear that most participants had not yet taken a research approach that began with a problem definition which was agreed upon through research negotiation between scientist and stakeholders. The „reactive" process of establishing research priorities currently adopted by scientists in this field tends to „supply" research products that are not necessarily high in the public's priority. A „proactive" process, in which the public and the scientist engage in research negotiation to identify priority research needs was recognized at the Workshop as the next logical step in the development of the research programs of the participants. A highlight of the workshop was an afternoon visit to the impressive DeMarke Experimental Farm, which has taken a systems approach in farm management, and demonstrated in the process the application of research-derived knowledge at several spatial scales.

P. Finke, Wageningen, The Netherlands

REPORTS OF MEETINGS
COMPTE-RENDUS DE RÉUNIONS
TAGUNGSBERICHTE

XIII Latin American Congress of Soil Science: SOLO - SUELO '96
August 4 - 8, 1996 in Águas de Lindóia, State of Sao Paulo, Brazil

The XII Latin American Congress of Soil Science, which takes place every three years, was a great success, for three main reasons:

- The excellent organization, for which the Department of Soil Science of the Escola Superior de Agricultura „Luiz de Queiroz" of the University of Sao Paulo was responsible. Thanks have to be expressed not only to the President of the Executive Committee, Prof. Rafael R. Aloisi, to the Secretary, Prof. Elke J.B.N. Cardoso and to the Secretary of the Executive Committee, Prof. Marta S. Campos Ferraz, but especially to the General Coordinator, Prof. Pablo Vidal Torrado and to the Treasurer, Prof. Gerd Sparovek, who did an excellent job for about 1000 participants (not including the accompanying persons) from approx. 30 countries.

Opening ceremony of the XIII Latin American Congress of Soil Science

Also the venue itself, a marvellous little town in the mountainous region, rich in mineral waters, near the border to the state of Minas Gerais was contributing considerably to the success of this international congress.

- The idea to associate to this international soil science congress events of other organizations and groups of scientists, e.g. the „1st Brazilian Meeting of Soil Biology", the „IV Brazilian Symposium on Soil Microbiology", the „VI Brazilian Meeting on Mycorrhiza" and the „XI Meeting on Management and Conservation of Soils and Water" thus enabling people who normally do not come together, to meet and to exchange ideas, which was an excellent example of how in the future other international and national congresses of soil science could be organized, reaching new momentum through new ideas coming from other areas.

- The big surprise at this Latin American Congress was the age of the participants, and it is estimated that approx. 50 % of all participants were younger than 30 years. This fact does not only underline the attraction of soil science for many young scientists from different areas, but also contributed through a powerful activity to all events, especially the poster sessions, which can be seen from the pictures. The whole Congress was very dynamic and also showed high scientific quality.

Very dynamic poster session with interesting discussions and high scientific quality

From the 755 presented voluntary contributions in the form of posters, 163 were presented in the area of conservation and management of soils and water, 148 in soil fertility and mineral plant nutrition, 123 in soil biology, 78 in genesis, morphology and classification of soils, 71 in soil physics and the rest was distributed on chemistry and mineralogy of soils, fertilizers and soil conditioners, soil pollution and quality of the environment, forest soils and teaching of soil science. About 570 of these contributions came from Brazil itself, 82 from Argentina, 32 from Venezuela, 20 from Spain, 13 from Chile, 10 from Colombia, 9 from Mexico, 5 from Portugal and the rest from other countries of the Americas, Europe and Africa.

Concluding, it can be stated that it was a very dynamic congress with high scientific standards. The number of young scientists present there gave a very positive outlook on future developments and was a further highlight of the congress, which was excellently organized from the beginning to the end.

Within this event, also 14 technical excursions (6 during the congress and 8 afterwards), reaching different regions of Brazil and treating very diverse topics in relation to soil science, were organized.

The Latin American Society of Soil Science decided during this congress to associate its Secretariat General in the future to those countries which are in charge of organizing the next Latin American Congress of Soil Science. Therefore, there will no longer be a permanent secretariat in Colombia, but a secretariat changing with the changing venues for these events in the future.

Finally, the Brazilian Society of Soil Science and the Department of Soil Science of the Escola Superior de Agricultura „Luiz de Queiroz" of the University of Sao Paulo as well as the other institutions who contributed to the success of this event should be thanked for their excellent work.

Winfried E.H. Blum,
Secretary-General, ISSS

XIII CONGRESO LATINOAMERICANO DE LA CIENCIA DEL SUELO

Este congreso se reunió del 4 al 8 de agosto de 1996 en Aguas de Lindoia, Sao Paulo, Brasil, bajo la Presidencia del Dr. Roberto Aloisi y la Secretaría del Congreso de Roberto Vidal, con la participación de numerosas delegaciones de los paises latinoamericanos, de Europa y Estados Unidos, se

presentaron unos 800 trabajos en poster y unas 30 conferencias orales en 10 comisiones, que trataron sobre las diferentes ramas de la Ciencia del Suelo. En representación de la Sociedad Internacional asistió el Presidente, Dr. A. Ruellan y el Secretario General, Dr. W.E.H. Blum.

Antes y después del Congreso se efectuaron excursiones por diferentes partes del Brasil.

En la Asamblea de la Sociedad Latinoamericana se nombró nuevo Presidente al Dr. Itilier Salazar de Chile, donde se efectuará el 14o Congreso en 1999. Se acordó también efectuar el 15o Congreso en México, en el año 2002.

Finalmente se aprobó que la Secretaría General de la SLACS debía funcionar, como la Presidencia en la sede de los futuros Congresos.

Las Memorias del Congreso se encuentran desponibles en un CD-ROM en las oficinas dela Sociedad Brasilera de la Ciencia del Suelo, Campinas (SP), Telefax (0192)328937.

Francisco Silva Mojica, Ex-Secretario, SLACS

INTERNATIONAL MEETING: „TREATMENT AND RECYCLING OF RESIDUES FROM OLIVE OIL PRODUCTION IN AGRICULTURE"

Lecce, Italy, March 8 - 9, 1996

The international meeting, held in Lecce, dealt with the recycling of olive oil residues in agriculture. It was organized within the framework of the activities of the Italian project „PANDA" (Produzione agricola nella difesa dell ambiente - Agricultural production protecting the environment), by the Istituto Sperimentale per la Nutrizione delle Piante (Experimental Institute for Plant Nutrition) and by APROL (Associazione tra Produttori Olivicoli della Provincia di Lecce - Association of oil producers of the Province of Lecce). It was also supported by the Working Group Soil Organic Fertilizers and Amendments of the International Society of Soil Science (WG-FA, ISSS) and IHSS (International Humic Substances Society).

These are the authors and titles of the presentations, reflecting the width of the items discussed:

- P. Amirante	Processes engineering
- L. Di Giovaccino	Physico-chemical characteristics of olive oil residues
- N. Senesi, G. Brunetti	Chemical quality and agriculture utility of the organic matter of olive oil residues
- U. Tomati, E. Galli	Techniques of transformation of residues
- F. Alianiello	Effects of olive oil waste water on the chemical and biochemical characteristics of soil
- M. Pagliai	Effects of olive oil waste water on the physical characteristics of soil
- L. Liberti, G. Loffredo, M. Notarnicola	Olive oil residues: law aspects
- C. De Simone and A. De Marco	Toixicity and genotoxicity of olive oil residues

The first day of the meeting ended with a debate.

The second day was devoted to an interesting visit to olive oil-mill plants of the Lecce countryside that gave practical examples of some aspects of the items discussed at the meeting.

The proceedings of the meeting, which will be published as soon as possible in a special volume, show that the main result of this meeting is probably the knowledge that it is possible to use olive oil residues in agriculture: They can be given back to the soil without damages, but probably with favourable effects, even if some limits - which are still to be exactly defined - are to be considered.

The composting of residues, together with other materials, produces composts with good fertilising properties.

A handbook of the „PANDA" series is in print, with the title: „I sottoprodotti dei frantoi oleari: vantaggi e svantaggi di un loro impiego in agricoltura" (Byproducts of olive oil-mills: advantages and drawbacks of their use in agriculture), edited by Francesco Alianiello and Claudio De Simone.

F. Alianiello, Italy

CONFERENCE ON „APPLICATION OF REMOTELY SENSED DATA AND GIS IN ENVIRONMENTAL AND NATURAL RESOURCES ASSESSMENT IN AFRICA"

March 15-22, 1996

The Conference, initiated by the African Association of Remote Sensing of the Environment (AARSE), was held in Harare, Zimbabwe from 15-22 March 1996.

The objectives of the Conference were:

(1) The application of remote sensing and GIS in environmental impact assessment in Africa - case studies;

(2) The use of RS data and GIS in monitoring desertification, erosion, land degradation, vegetation changes and land use;

(3) Monitoring and assessment of natural resources using space technology;

(4) The role of African countries in utilizing remotely sensed data for global and regional change studies; and

(5) The need for education and training in environmental geosciences and management in Africa.

Notwithstanding the main theme of the conference being on the application of geoinformation technology for environmental and natural resources assessment in Africa, the conference provided a unique opportunity to address the fundamental issues under which such applications can be made to lead to beneficial and sustainable development and management of the African resources.

The conference was extremely successful in terms of attendance (220 from 29 African countries and 145 from 18 other countries), quality of presentations and of the discussions. In all 122 contributions were presented, of which 5 were key note addresses given by prominent scientists, 12 were invited lectures, 25 selected applications and poster sessions and 80 presentations in parallel sessions.

The President of the Republic of Zimbabwe, President Robert Mugabe, in his opening address cited the effect of mining on the environment, the quick depletion of the tropical forest, degradation of the soil, the extinction of the ecologically important plant and animal species (thus reducing biodiversity), the economic impact of siltation, desertification, drought, etc. as the major environmental problems facing his country and Africa. He also stressed that the need of the South to have modern technologies to combat environmental degradation today requires both dedication and cooperation between the north and the south. For Africa to be able to make some meaningful contributions to the control of the global environmental degradation, he emphasized the need to access technologies for remote sensing such as those available in the north.

Four workshops covering various topics preceded the conference.

The members of the African Association of Remote Sensing of the Environment (AARSE) endorsed the executive and new council members of AARSE and passed several recommendations and resolutions to be carried until the next conference to be held in March 1998 in Côte d'Ivoire.

Dr. Tsehaie Woldai
Secretary General of AARSE
Enschede, The Netherlands

1ST INTERNATIONAL CONFERENCE ON LAND DEGRADATION

June 10-14, 1996, Adana, TURKEY

The conference was held in Adana, the 4th largest city in Turkey, surrounded by intensive crop production and extreme land degradation, at the University of Çukurova, located at the beautiful Seyhan lake.

The conference started with the welcome address by A. R. Mermut (Canada), Chairman of the Scientific Committee. Plenary papers were presented by H. Eswaran (USA), W. E. H. Blum (Secretary of the International Society of Soil Science, Austria), W. H. Verheye (Belgium), M. Inbar (Israel), and O. Tekinel (Turkey). They provided excellent examples of land degradation and the challenges that mankind faces today. The Turkish Foundation for Combating Soil Erosion for Reforestation and the Protection of Natural Habitats concluded the day with a cinevision show exhibiting the indicators of land degradation with special reference to soil erosion and degradation of natural habitats in Turkey.

A mid-week excursion was organized to show the typical examples of the most fertile soils which are permanently lost due to expanding urbanization. Traditional Turkish food and hospitality was enjoyed by all the participants. Weekend excursions to Cappadocia together with the Karapynar, the blooming desert region (previous sand dune area), was worthwhile observing geotectonic beauties, as well as combating desertification.

Over 200 participants from 30 countries, in addition to Turkey, presented 76 oral and 86 poster papers. The largest foreign group was from Bulgaria, the Pushkarov Institute of Soil Science.

Topics discussed in the conference were:

- The assessment & monitoring of soil and land degradation,
- Mitigation technologies & policies for reducing land degradation,
- Environmental accounting of soil use and land degradation,
- History & socio-economics of land degradation,
- Impact of land degradation on global climate change,
- Indicators of land degradation,
- Application of GIS & remote sensing technology to evaluate soil care and land degradation.

The final discussions on June 14 focused on how to deal with land degradation considering chapter 10 of AGENDA 21 of the United Nations Conference on Environment and Development.

Delegates of the Conference decided to form a task force. The Soil Science Department of the Univeristy of Çukurova, Adana, agreed to provide an interim Secretariat. An Interim Committee to coordinate the work of the Task Force was formed with the following members:

Dr. Hari Eswaran	**Chairman**	USDA Natural Resources Conservation Service Washington DC, USA
Dr. Selim Kapur	**Secretary**	University of Çukurova, Adana, Turkey
	Members	
Dr. A. R. Mermut		University of Saskatchewan, Saskatoon, Canada
Dr. Chaiyasit Anecksamphant		Department of Land Development, Bangkok, Thailand

The delegates decided to have the next meeting in Thailand, upon the request of the Thai delegates. Dr. S. A. Thaoun (Egypt) extended his sincere wish to host the third Land Degradation Conference in the year 2000 in Cairo, Egypt and this was accepted by the delegates.

Astronomical tower of the ancient University of Harran witnessing Land Degradation in Upper Mesopotamia, Southeast Turkey.

The abstracts of the conference were published by the local editorial board. Reviewed and accepted papers were decided to be published in a special issue of an International Journal.

Dr. S. Kapur (Univ. of Çukurova, Adana, TURKEY) and
Dr. A. R. Mermut (Univ. of Saskatchewan, CANADA)

Selim Kapur, Adana, Turkey

PEDOLOGICAL EXCURSION OF THE SOCIETAS PEDOLOGICA, SLOVAKIA IN AUSTRIA

As significant demonstration of a fruitful cooperation on an international level, the pedological excursion 1996 of the Societas Pedologica, Slovakia, took place in Austria this year for the second time. 38 participants from this Society had the opportunity to study soils, sites and landscapes of Austria under the leadership of Prof. Othmar NESTROY, on July 2-6, 1996. Members of the Bohemian Soil Science Society also participated in this excursion.

Starting in Hainburg/Danube, two soil profiles were shown (Dystric Planosol and Haplic Podzol). A very lively discussion took place at the site of the profiles. After this, the group went on to Salzburg, where in spite of the rain, the programme was closed with a very interesting sightseeing tour of the city.

On the next day, the excursion continued on the Grossglockner-Hochalpenstrasse to its highest point, the Franz-Josephs-Höhe. A stop there gave the participants the possibility to ascend to the

Edelweiss-Spitze, providing a panoramic view of the Alps, accompanied by a short geological lecture. Then, the programme continued at another soil profile (Dystric Cambisol) at Senftleben.

Prof. Nestroy with participants of the excursion

Participants of the excursion

The journey continued on the Panoramic Alp Path (with a very nice outlook on the Grossglockner) to Gamstgrube, with the possibility to see eolic soil forms (Cambic Arenosols) in different varieties, afterwards the group ascended to the Pasterze-Glacier, the biggest glacier in the Eastern Alps.

On the following day, glacial and periglacial soil forms in the area of the former glacier „Draugletscher", e.g. Würm - Endmorene at the River Drau near Lavamünd were studied.

The programme of the last day included the study of the soils of Austrian hilly lands (Dystric Planosol on dust loam on high terrace, and at the end Haplic Andosol on basalt in the area of Klöch.

Under the influence of good weather, not only the pedological part of the excursion, but also discussions and talks were very enthusiastic and many promising personal contacts could be made.

Othmar Nestroy, Austria
Pavel Jambor, Slovakia

SOIL SCIENCE EXCURSION TO THE MEDITERRANEAN

MARCH 4-18, 1996

This year's edition of the biennial soil science excursion to the Mediterranean area, particularly Southern France, Spain and Portugal, was organized and guided by Prof. Dr. Karl Stahr and Prof.Dr. Martin Kaupenjohann of the Institute of Soil Science, University of Hohenheim, Stuttgart, Germany, from March 4-18, 1996. 23 advanced students of agriculture, biology, geoecology, geography and geology from five German universities (Hohenheim, Hannover, Karlsruhe, Stuttgart and Tübingen) participated in this field tour which included a soil mapping activity. Its primary objective was to gain understanding about the properties, occurrence and distribution of major soils in the Mediterranean area. Likewise, it gave the participants the opportunity to observe the typical geology, geomorphology and land use in this climatic zone. They were also trained in the methods and techniques of detailed soil mapping.

The major soils examined and classified (using the FAO System, although USDA Soil Taxonomy was also tried) by the group, included Andosols, Podzols, and Alisols in France; Leptosols, Chernozems, Acrisols, Gypsisols, Calcisols, Luvisols, Lixisols and Cambisols in Spain; and Vertisols, Fluvisols, Acrisols, Calcisols, Luvisols, Lixisols and Cambisols in Portugal. These soils are also found in other regions or climatic zones, indicating that no soil is specific to the Mediterranean area although some of them, like Calcisols, Luvisols and Lixisols appear to be widespread. There is, however, one observable feature of the well-developed soils: they tend to be very red, usually 5 YR or redder, which is not generally the case in other climatic zones. Some pedologists believe that this is due to the enhancement of rubification (hematite formation) by the Mediterranean climate.

The impact of several centuries of agriculture is very evident in the landscape. Most notable is the enhanced soil erosion resulting in thin solum and the prevalence of rock out crops. In many instances, the surface soil of cultivated fields appears whitish due to fragments of marl or limestone bedrock which have been brought into the surface by land preparation. Clearly observable is the role of climatic variations in determining the land use. For instance, where the climate is favorable for olive trees, large areas of olive plantations are found. The same is true for orange. In the coastal flatlands along the Mediterranean Sea, particularly in Valencia, orange trees are widely planted, due to the absence of frost. In the Ebro Delta, in Southern Spain, there are irrigated rice fields.

The group also attended a comprehensive lecture about the prospects and problems of agriculture in Portugal given by Dr. Gottlieb Basch, a professor of the Agriculture Faculty of Evora University. Among the things he stressed were widespread soil-related constraints, such as poor internal soil drainage, nutrient imbalances, mechanical problems of cultivating vertisols, etc., which limit crop production in this country. He acquainted the participants with the agriculture research programs of Evora University, the regular host for the Portugal part of this excursion for several years now.

Prof. Karl Stahr (marked X) explains to the participants the genesis and properties of a Ferric Lixisol from fluvial sediments and shale near Evora, Portugal (Photo by V.B. Asio)

All participants found this soil science excursion very educational and interesting. It was a unique learning experience, because, aside from the fact that they learned many new things about soils, geology and land use, they also witnessed and experienced the beautiful Mediterranean landscape and culture. Thus, they all thank Prof. Stahr and Prof. Kaupenjohann for the excellent guidance and organization.

The next excursion will be in the spring of 1998.

Victor B. Asio, Leyte, Philippines

MEETING OF THE WORLD REFERENCE BASE FOR SOIL RESOURCES

MOSCOW, RUSSIA, 03/07/96 - 17/08/96

1. Organisation

The meeting was synchronized with the 10th International Working Meeting on Soil Micromorphology, so as to take advantage of the congress tours. Organising members were Prof. A. Shoba, Moscow State University and Prof. A. Makeev, Docuchaev Soil Institute, Russia

2. Objective

The main objective of the meeting was to address a number of problems related to the Glossisols, Stagnic soil units, Chernozems, Phaeozems, Kastanozems and Greyic Phaeozems. Furthermore the pre- and post-congress tours were attended by a number of WRB members in order to test WRB in the field.

3. Findings

The meeting started with a pre-conference field tour which led from St. Petersburg to Moscow illustrating examples of various Podzols, Stagnic Luvisols, Alisols and Podzoluvisols. During the post-conference tour (Moscow-Kursk) the following soil units were investigated in the field: Cambic Arenosols, Greyic Phaeozems and Chernozems. From a technical point of view the examination of the various soil profiles allowed:

Refinements to the WRB and FAO Revised Legend:

* In the FAO definition of the Podzols a colour requirements should be introduced
* Planosols expressed tonguing of the E-horizon should be excluded from the definition
* Inclusion of a Mollic Luvisol to accomodate for the majority of the Greyzems which usually have an argic B horizon
* More realistic depthcriteria for the definition of Chernozems

A better correlation between the different soil classification systems, Soil Taxonomy (USA), the Russia systems, WRB and the FAO system.

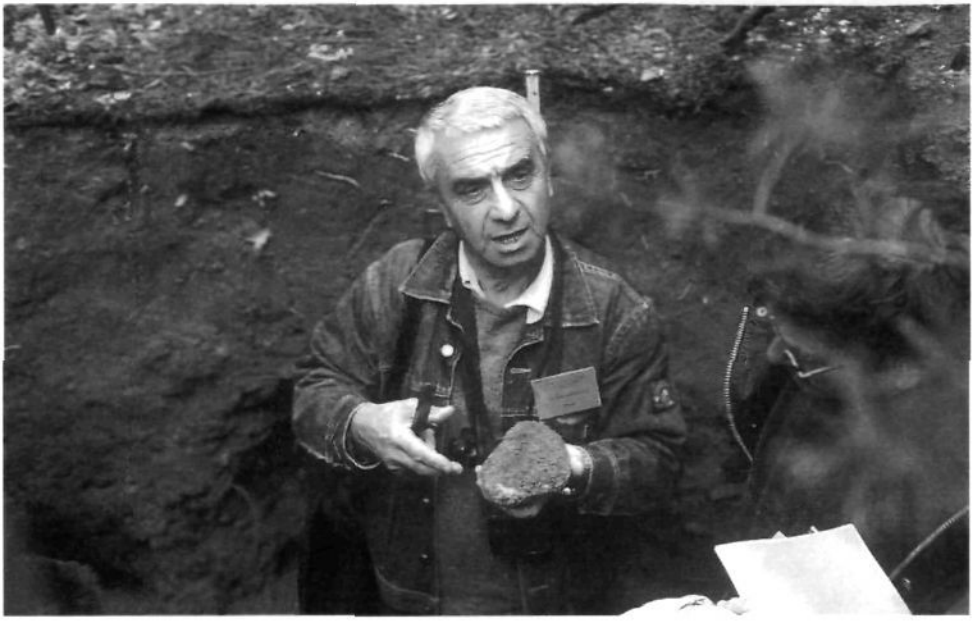
The need to develop the third level classification of all groups in the WRB/FAO system.

The need for the Russian system to be brought in line with international methods of soil laboratory analysis, in order to allow improved exchange of scientific information..

The usefulness of simple methods for the field identification of the spodic-B horizon by NaF test. The full description of these methods will be taken up in the final publication.

The WRB meeting proper took place at Moscow University, gathering soil survey and classification experts from Russia, USA, South Africa and Europe, with as Chairman, Professor Deckers (Belgium), as Vice-Chairman, D. Spaargaren (ISRIC), and as secretary the reporter (FAO).

Participants looking at a profile at Sokolovo keysite



Victor Targulian explaining characteristics of glacial till of the Karelian Isthmus

4. Acknowledgement

Special thanks are due to the Russion colleagues for the superb organization of this fruitful WRB meeting and excursions.

J. Deckers, KULeuven, Belgium,
F. Nachtergaele, FAO, Rome, Italy

MEETING OF THE WORLD REFERENCE BASE FOR SOIL RESOURCES

Republic of South Africa, 7 - 19 September 1996

I. Organisation

The Meeting of the ISSS Working Group on The World Reference Base was organized by the Soil Science Society of South Africa, with as focal organization the Institute for Soil, Climate and Water in Pretoria. Our host was Prof. M. Laker, University of Pretoria, Faculty of Agricultural Sciences, 0002 Pretoria, South Africa.

II. Objective

The aim of the meeting was to come to an agreement on a number of soil classification issues, particularly those related to the southern hemisphere. Good progress was made on substance and on the forthcoming publication of two volumes related to the work of WRB.

III. Findings

The meeting and field tour were attended by about 30 scientists from all over the world. AGLS sponsored upon its regular programme funds the attendance of delegates from Swaziland, Mozambique and Botswana.

Plenary session at Farm Inn, Pretoria

Mike Laker stressing a point on a Luvic Phaeozem developed in a dolerite intrusion

The meeting was historical in the sense that it was the first official ISSS meeting taking place in the country, breaking the circle of isolation in which South African soil science has developed.

The meeting also aimed to air specific concerns of countries of the southern hemisphere on soil classification approaches that pay too little attention to the different conditions (particularly in time and climatic factors) prevailing in southern Africa and Australasia.

The first day of the meeting was devoted to formal presentations by, among others, the WRB Executive Committee on the Role and Objectives of the World Reference Base and South African scientists on particular aspects of soil development in the country. Neighbouring countries (Botswana, Swaziland and Zimbabwe) also presented papers on specific classification and correlation issues.

An extensive field tour allowed to illustrate the enormous diversity of South African soils and to show particular classification problems in the country.

Evenings were devoted to small committee meetings between the WRB Secretariat and specific interest groups: South African classification (two meetings), the place of steppe soils in WRB (one meeting), Alisols (one meeting) and the WRB key and lower level subdivisions (several meetings).

The last day of the meeting was spent on an organized round-table discussion leading to a number of recommendations and conclusions.

Meetings were held with several South African scientists to discuss their contribution towards a Soil and Terrain Database (SOTER) for Eastern and Southern Africa now being prepared by AGLS in cooperation with national and international institutes. Dr. T. Dohse confirmed that South Africa is willing to prepare a 1:1 M map of the country to fit the standards being worked out in neighbouring countries and in line with the SOTER guidelines.

IV. Future WRB meetings

1. The thematic group on steppe soils will meet in Argentina from March 6 - 15, 1997.
   This WRB meeting will be organized by the AACS (Asociacion Nacional del Suelo) and is sponsored by the Soils Programme -INTA (Instituto Nacional de Tecnologia Agropecuaria) and the Faculty of Agronomy - UNCBPA (Universidad Nacional del Centro de la Provincia de Buenos Aires).
2. Prof. Gong Zitong invites WRB participants to the International Symposium on „Soil, human and environment interactions" at the Institute of Soil Science, Academia Sinica, P.O. Box 821, Nanjing, China
3. Prof. W. Blum, Secretary-General of the ISSS organizes an International Symposium on the theme „Soil Systems Behaviour in Space and Time" in Vienna at the Universitaet fuer Bodenkultur, Gregor Mendel-Strasse 33, A-1180 Wien, Austria.
   The symposium is organized to mark the 125th anniversary of the university and will devote a special symposium to WRB.

V. Acknowledgement

On behalf of the International Soil Science Society, the Executive Committee of WRB conveys its highest appreciation to the Soil Society of South Africa and particularly to the team of Prof. M. Laker, who went through great efforts of organize this meeting so efficiently. Special thanks are due to the many South African sponsors. Their generous support has ensured a good representation of soil classification experts from all over the world.

J. Deckers, KULeuven, Belgium,
F. Nachtergaele, FAO, Rome

4TH INTERNATIONAL SYMPOSIUM ON PADDY SOILS „MAXIMIZING SUSTAINABLE RICE YIELDS THROUGH IMPROVED SOIL AND ENVIRONMENTAL MANAGEMENT"

Khon Kain, Thailand, November 11-17, 1996

The Fourth International Symposium on Paddy Soils was held in Khon Kaen, Thailand from 11-17 November, 1996. The theme of the Symposium is „Maximizing Sustainable Rice Yields through Improved Soil and Environmental Management". There were 294 participants from 24 countries. The overseas registered participants were 84 and Thai registered participants were 210. There were 73 papers in oral presentation and 16 papers in poster session. The content of the papers presented can be summarized as follows:

Key-Note lecture and overview session

The Key-Note lecture pointed out the problems on eutrophication of water and soil contamination due to inappropriate management of paddy soils and the suspicions of people on the effect of intensive agriculture to produce poisonous foods and accelerate exhaustion of natural resources. With this suspicions, the people would like to move towards a low input sustainable agriculture (LISA). In the discussion, however, it was indicated that mineral fertilizers (or chemical fertilizers) are as useful or even more useful than bulky organic manures for increasing rice yields. A proper use of mineral fertilizers does not cause degradation of soil fertility, or eutrophication of water, or producing foods harmful to people. In rice-based cultivation, sufficient rice straw recycling was suggested.

The second part discussed the importance of paddy soils as natural media for food production; nitrogen fixation by algae, high phosphorus availability under reducing condition in paddy soils, potassium and silica dissolution, nutrient enrichment from irrigation water, weed control management in paddy cultivation practices and sustainability of long-term (1000 years) continuous cropping of paddy rice. The negative effects of paddy cultivation by the increase in nitrous oxide due to the heavy use of nitrogen fertilizer relating to the destruction of ozone layer and the increase of methane induced by the expanding rice paddies relating to the global warming phenomenon were also discussed.

Opening ceremony of the Symposium

The third part of the discussion emphasized tropical Asia where the largest rice area situated. It was pointed out that Thailand and other countries in this region have environmental settings suited for paddy rice cultivation. However, the average rice yield of Thailand, in particular, is still low compared to that of the other tropical Asian countries. This may be due to the large area of problem soils, particularly acid sulfate soils and saline soils in rice cultivation environment. Shortcomings on good management or proper input and the invasion of non-agricultural land use on to good paddy lands are some of the additional problems.

Management of soil resources for sustainable rice production

The session included topics emphasizing the application of green manures and straw incorporation in rice cultivation practices as a part of soil management for sustainable rice production. Mineral fertilizers should be applied appropriately. Rice-based cropping system, no tillage transplanting system and utilization of proper soil amendments to ameliorate problem soils were among other topics suggested for further research to attain sustainable higher yields in rice cultivation.

Recent progress of soil and fertilizer managements in rice cultivation

The recent progress of soil and fertilizer management in rice cultivation session included (1) management of water for direct seeded rice for minimizing water use in rice cultivation (2) utilization of urease inhibitors to reduce ammonia loss(3)preparation of healthy seedlings for higher growth rate (4) use of short duration varieties (5) selection of varieties tolerant to soil acidity or nutrient deficientcy (6) characterization of deep water rice (7) elucidation of the effect of puddling intensities on rice growth (8) Azolla incorporation for substitution of nitrogen fertilizer and (9) utilization of industrial waste as silicate fertilizer.

Participants at the Symposium

Management of rice production in problem soils

Management of an acid sulfate soil in Bangladesh using flush-leaching with basic slag improved growth and yield of rice. Lime and phosphate fertilizer were used to improve the rice yield in the acid sulfate soils of Thailand. A low dose of lime was shown to have a positive yield response. Application of Cassia (leguminous leaves) as green manure produced significantly higher grain yield than the recommended N rate from Department of Agriculture. In the case of sandy soils in the Northeast

Thailand, organic material management through mulching could readily provide potassium, some part of calcium and magnesium. Decomposition of the leaf litter will release nitrogen and phosphorus. The management should be done appropriately to avoid the loss of these nutrients

Rice-based integrated management

As for the rice-based integrated management, discussions touched upon rice-wheat cropping system, effect of legume residues and rice stubbles, effect of moisture regime and managing rice nutrition mainly through complete fertilizer. Concepts were pushed forward both on the attempts to sustain good rice yield in the rice-based cropping systems and to improve the already attained sustainable rice yields in the system. Importance of organic matter management in rice-based cropping system in the tropics was generally emphasized

Rice and climate changes

Studies on rice and climate changes at this stage emphasize methane emission from rice fields as the major theme. Discussions under this topic encompassed both the effect of climate change on rice and the effect of methane emission trough lowland rice cultivation on the climate change. Past studies promoted understandings on the process of methane emission and the effect of water regime and organic manure on methane release process. Mitigation strategies were also proposed.

Rice cultivation beyond Asia

The discussions on paddy rice cultivation beyond Asia placed emphasis on Sub-Saharan African situations. The need for regional research approach, the role of inland valley swamps in rice production in the savanna zone and paddy soil fertility status in rice farming systems appeared to be the main issues of interest in Africa to cope with the rising demand for rice as a major food crop. Research on rice improvement and prospects for sustainable cultivation of rice along with adaptive sawah based rice farming in lowland patches are continuing. It was reported that, in the process of development of sawah based rice farming, a restoration of a vast forest area can be envisioned.

Tasnee Attanandana, Chair, WG-PS
Bangkok, Thailand

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

XV Congreso Argentino de la Ciencia del Suelo
Santa Rosa, La Pampa, Mayo de 1995

Se ha celebrado en Santa Rosa (La Pampa, R. Argentina) el XV Congreso Argentino de la Ciencia del Suelo entre los días 19 a 24 de Mayo de 1996. Asistieron cerca de 300 participantes que presentaron más de 150 comunicaciones, gran parte de ellas en forma de cartel. El Congreso tuvo una neta orientación hacia los suelos áridos y semiáridos.

El lunes 20 se celebró la ceremonia inaugural con la conferencia el Dr. B. Stewart (West Texas A.&M. University, USA) „?Son sostenibles los agrosistemas de regiones semiáridas?". Por la tarde se desarrollaron varias Comisiones (en sesiones paralelas), y se inició una mesa redonda sobre „microbiología del suelo", coordinada por el Ing. H. Echevarria. El martes 21 continuaron las comisiones (sesiones paralelas) y la conferencia del Dr. K. Smith (Universidad de Edimburgo, Escocia) „Ciclo del Nitrógeno en sistemas semiáridos y otros sistemas: preguntas básicas para su investigación y forma de contestarlas", y una mesa redonda sobre „Cambio global", coordinada pro el Prof. R.S. Lavado. El miércoles 22 concluyeron las Comisiones (en sesiones paralelas) y se celebraron otras mesas redondas sobre „Erosión hídrica" y „Riego complementario", coordinada por el Ing. G. Moscatelli. Durante este mismo día se impartieron las siguientes conferencias: el Dr. D. Yaalon (The Hebrew University, Israel) con „Estudio catenario de suelos en ambientes semiáridos"; el Dr. J.F. Gallardo (C.S.I.C., España) con „Ciclo de la materia orgánica edáfica en ambientes semiáridos"; Dr. C. Monger (New Mexico State Unviersity, USA) con „Dataciones de costras calcáreas de EE.UU. y Argentina"; y T. Zobeck (U.S.D.A. Texas, USA) „Ultimos adelantos en el ajuste de la Ecuación Universal de Pérdida de Suelos para la predicción de la erosión eólica". Durante la noche se celebró la cena de clausura del Congreso, patrocinada por la Asociación Argentina de la Ciencia del Suelo.

La organización del Congreso corrió a cargo del Prof Daniel E. Buschiazzo, a quien hay que felicitar por el éxito del evento.

El jueves 21 se realizó una excursión al sector Sur de la Provincia de La Pampa, donde predomina la formación boscosa de caldén (Prosopis caldenia); la roturación de los suelos de origen eólico (loess finoarenoso) para la siembra de cereales ocasiona problemas de erosión eólica, piso de labor y carencia de nutrientes. Durante la tarde se almorzó y visitó la Reserva Natural „Parque Luro".

Juan F. Gallardo Lancho, Salamanca, España

THE 87TH ANNUAL MEETING OF THE AMERICAN SOCIETY OF AGRONOMY

Over 4000 delegates from a wide range of organizations across North America and around the world attended the information-packed 87th annual meeting of the American Society of Agronomy (ASA), 40th annual meeting of the Crop Science Society of America (CSSA), and the 59th annual meeting of the Soil Science Society of America (SSSA) in St. Louis, Missouri, USA, October 29 - November 2, 1995. St. Louis' success in holding conventions has brought it international acclaim. The magnificent America's Centre in the heart of downtown St. Louis was the site for the majority of the meeting activities (registration, poster and oral sessions, committee meetings, book displays, exhibits, software scene, career development and placement service, etc.). This venue offered state-of-the-art meeting facilities and 502,000 sq.ft. of contiguous exhibition space. A limited number of meetings were held in hotels nearby.

The theme of the meeting was „Gateway to the future", emphasizing future programs in education, research, service, and agribusiness. A total of 2,500 papers by 4,600 authors were presented in more than 200 oral and 99 poster sessions.

More than 55% of the papers were presented as posters. In addition, there were five workshops, nine professional tours, one undergraduate student tour, several food functions, receptions, companion activities, board and committee meetings, and other special programs. The conference provided

The Gateway Arch, the nation's tallest manmade monument, commemorates St. Louis' vital role as the gateway to the West. The 630' Arch, designed by Architect Eero Saarinen is a classic weighted inverted catenary curve of stainless steel (total weight 43,000 tons), built 1963-65.

an opportunity to listen to presentations of experts in current issues of agronomy. There were several highly focused sessions. Dr. Peter H. Raven, the keynote speaker at the plenary session on October 29, discussed biodiversity and the future of agriculture. A diverse array of internationally renowned scientists gave stimulating presentations on many issues related to agronomy. Six distinguished scientists, including Nobel Laureate Norman Borlaugh, spoke to a standing room crowd of about 500 during the CSSA Symposium on Crop Science Revolution, 1950-2000. Dr. Borlaugh's topic was „Bringing science-based technology to the third world". Highly interactive concurrent sessions provided a great opportunity to share knowledge. Each facet of the program incorporated venues designed to increase interaction among participants. The five pre-meeting workshops on October 28 and 29 included (1) Soil chemistry and ecosystem health workshop, (2) Hydric soil field workshop, (3) Systems engineering workshop: Techniques for interpretation of research knowledge and product development, (4) Team building and human systems training workshop, and (5) Bioremediation workshop. The nine professional field tours included (1) Southeast Missouri forest soils/soil geomorphology tour, (2) Wetland and flood plain land use field tour, (3) Missouri Botanical Garden tour, (4) Monsanto plant biotechnology tour, (5) Aspects of the history of soil science and agriculture in Missouri tour, (6) Environmental and land use issues near a metropolitan area tour, (7) Land manager's tour, (8) Agronomy tour, and (9) Turfgrass tour.

The highlight of the SSSA luncheon on October 31 was the presentation of the following awards: Emil Truog Soil Science Award, Marion L. and Chrystie M. Jackson Soil Science Award, Soil Science Distinguished Service Award, Soil Science Research Award, Soil Science Education Award, Soil Science Applied Research Award, International Soil Science Award, Honorary Member, and Fellows. ASA and CSSA also held similar luncheons. The ASA banquet on November 1 was a gala evening where distinguished scientists received awards, e.g. Fellows, Environmental Quality Research, Agronomic Research, International Agronomy. In addition, there were several other social functions not sponsored by ASA-CSSA-SSSA, e.g., those of the Association of Women Soil Scientists, the Association of Agricultural Scientists of Indian Origin, the Association of Chinese Soil and Plant Scientists in North America, the University of Florida Gator Gathering, the University of Nebraska Cornhusker Reception, and the North Dakota Blizzard Party.

The Societies' officers, program chairs, and headquarters staff are to be complimented for top-notch arrangements and successful meetings.

Yash P. Kalra, Canada

AUSTRALIAN AND NEW ZEALAND NATIONAL SOILS CONFERENCE

Melbourne 1-4 July 1996

The first joint conference of the Australian Society of Soil Science Incorporated (ASSSI) and the New Zealand Society of Soil Science (NZSSS) was held at Melbourne University. The well-organised conference was attended by about 400 soil scientists of which 315 from Australia (total members 900), 55 from New Zealand and 30 from other countries. The theme of the conference was: „Soil Science - Raising the Profile".

In his opening address the chairman of the ASSSI Prof. Bob White, mentioned that the public profile of soil science and soil scientists is on a level with that of a real soil profile - below ground and largely invisible. However, he continued, soil science is at the core of sustainable land management which is an important issue in Australia. For example, soil acidification alone, affects about 25

Poorly drained soils on the basalt plateau north of Melbourne receive attention

million ha of agricultural land in Australia. Recent estimates have shown that the total costs of land degradation - including treatment of degraded land, nutrient loss, research etc, - is about A$2 billion a year. If then is considered that more than two-thirds of Australia's gross export earnings are linked, either directly or indirectly to the soil, there is a good opportunity for Australian soil scientists to show their expertise and raise the profile. But it will not be easy because of the proposed, and already partly executed, budget cuts for Australian research centres and universities (see Nature 380:276 & 381:5, 1996).

The rhetorical question frequently asked during the conference „Is pedology dead and buried?" proved to be of little meaning as it encouraged a defensive and less fruitful approach to raise the profile and tackle the contemporary problems. In the 160 oral presentations and 140 posters presented, there were, however, ample examples of better approaches which showed that cooperation was firmly established between soil scientists and land-users (e.g. Land-Care) or industry (e.g. CRCs).

There were a variety of interesting mid conference tours to choose from highlighting different themes discussed during the conference. Also The Australian Soil Classification, the major work of Ray Isbell, was launched during this conference. Ironically enough it was launched at a conference were the merits and use of soil classification were debated during several sessions.

The well-produced proceedings include the plenary papers and abstracts of oral and poster papers and can be ordered from Dr Nick Uren, LaTrobe University, Victoria 3083 (A$95). Those only interested in the text of the plenary speakers (RE White, LR Basher, DJ Blackmore, KC Cameron et al., JM Lynch, J Bouma) have to wait till mid 1997 when it will be published in a special issue of the Australian Journal of Soil Research. The next joint meeting of the two societies will be held in New Zealand in December 2000.

A.E. Hartemink, Lae, Papua New Guinea.

SOCIEDAD COLOMBIANA DE LA CIENCIA DEL SUELO

En el VIII Congreso de SCCS en Santa Marta del 2 al 5 de octubre de 1996, se eligió una nueva Junta Directiva para el periodo 1997-98:

Presidente:	Dr. Raúl Zapata
Vicepresidente:	Dr. Ricardo Guerrero
Vocales:	Dr. E. Amézquita
	Dr. F.H. Orozco
	Dr. L.F. Sánchez
	Dr. A. García
	Dr. H. Castro
	Dr. L. Mejía
	Dr. I.D. Bustamante
	Dr. H. Burbano
Secretario Ejecutivo:	Dr. Francisco Silva
Secretaria de Actas:	Dra. Amparo Rojas

Dirección:
Sociedad Colombiana de la Ciencia del Suelo
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Santafé de Bogotá, D.C.
COLOMBIA
Tel.: (571)312-61-80 Fax: (571)211-33-83

HELLENIC SOIL SCIENCE SOCIETY

At the 6th National Conference of the Hellenic Soil Science Society (HSSS), held in Nafplion, Peloponissos, Greece, the following board was elected for 1996-98:

Presient:	Dr. Asterios Simonis
Vice-President:	*Dr. Efthimios Papanikolaou*
Secretary General:	Dr. Christos Tsadilas
Treasurer:	Ass. Prof. Nikolaos Barbayiannis
Board members:	Prof. Nikolaos Sidiras
	Prof. Kiryiakos Panayiotopoulos
	Prodromos Koukoulakis

Address:
Dr. C.D. Tsadilas
Secretary General, HSSS
National Agricultural Research Foundation
Institute of Soil Classification and Mapping
Theofrastos 1. street
413 35 Larissa, GREECE
Tel: 30 41 660 570; Fax: 30 41 660 571

JAPANESE SOCIETY OF SOIL SCIENCE AND PLANT NUTRITION

These are the officers of the Japanese Society of Soil Science and Plant Nutrition:

President:	Prof. Tadano Toshiaki
Secretary-General:	Dr. Shimada Noritsugu
Treasurer:	Dr. Yukio Watanabe

Address:
Japanese Society of Soil Science and Plant Nutrition
202,26-10-Hongo 6-chome, Bunkyo-ku
Tokyo 113, JAPAN
Tel: 03-3815-2085; Fax: 03-3815-6018

Dr. Toru Fujiwara,
Committee Member

MALAYSIAN SOCIETY OF SOIL SCIENCE
(Persatuan Sains Tanah Malaysia)

The Executive Committee of the Malaysian Society of Soil Science for 1996/97 consists of the following officers:

President:	Dr. Ghulam Mohd. Hashim
Immediate Past President:	Prof. Shamshuddin Jusop

Vice-Presidents:	
Peninsular	Mr. Goh Kah Joo
Sarawak	Mr. Teng Chin Siong
Sabah	Mr. Teo Chor Boo
Hon. Secretary:	Dr. Aziz Bidin
Hon. Treasurer:	Dr. Anuar Abdul Rahim
Hon. Asst. Secretary:	Dr. Jamal Talib
Hon. Asst. Treasurer:	Mr. Hanifuddin Abdul Raham
Members:	Dr. Wan Nordin Wan Daud
	Dr. Peter Lim Kim Huan
	Dr. Alias Husin
	Dr. Zin Zawawi Zakaria
Auditors:	Dr. Aminuddin Husin
	Dr. Yahya Mohd. Nor

Address of the Society:
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50784 Kuala Lumpur
Malaysia

Dr. Aziz Bidin

ASSOCIATION MAROCAINE DES SCIENCES DU SOL (A.M.S. SOL)

Membres du bureau 1994-1996:

Président:	Prof. M. Badraoui
Vice Président:	Mr. M. Wakrim
Secrétaire Général:	Mr. M. Daniane
Secrétaire Général Adjoint:	Mr. L. Ljouad
Trésorier:	Mr. A. Mohammi
Assesseur:	Mr. Z. Charafi
Assesseur:	Mr. E. Hmamou

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INTERNATIONAL RELATIONS
RELATIONS INTERNATIONALES
INTERNATIONALE BEZIEHUNGEN

Taskforce on Land Degradation of the International Society of Soil Science

AGENDA 21 of the United Nations Conference on Environment and Development emphasizes the need to and proposes a wide range of activities to address land degradation in general and desertification in particular. Although much has been said and written about land degradation, there is still much conjecture about the information due to the fact that few countries have really developed the techniques to measure degradation and subsequently develop spatial or other databases which enables the quantification of the process. Thus, there was an urgent need to evaluate the science of land degradation and so a conference on the subject was organized at Adana, Turkey. The conference in Adana (June 10-14, 1996), Turkey is one of the first international conferences devoted to the subject of land degradation and in this sense it is also a first step in obtaining international collaboration in addressing this problem.

The International Task Force on Land Degradation proposed for the International Society of Soil Science is now charged with the leadership of contributing to the better understanding and assisting in the development of policies and programs to address this negative human induced process. The Soil Science Department of the University of Çucurova, Adana, has agreed to provide an interim Secretariat. An Interim Committee to coordinate the work of the Task Force was formed with the following members:

Dr. Hari Eswaran	**Chairman**	USDA Natural Resources Conservation Service, Washington DC, USA
Dr. Selim Kapur	**Secretary**	Çukurova University, Adana, Turkey

Members:

Dr. Ahmet Mermut	Univ. of Saskatchewan, Saskatoon, Canada
Dr. Chaiyasit Anecksamphant	Dpt. of Land Development, Bangkok, Thailand

Charges of the Task Force

1. Develop a science-based procedure for the identification and documentation of land degradation;
2. Develop manuals and/or guidelines for standardizing approaches, methods of assessment and monitoring, and interpretation of data;
3. Initiate efforts to develop appropriate Decision Support Systems to evaluate degree and extent of land degradation, assess potential impacts of land management practices, and research leading to mitigating technologies;
4. Initiate efforts to develop global, regional, and national databases and GIS maps depicting land degradation; and
5. Catalyze efforts to enhance the science of land degradation and the utilization of resource information for the assessment, monitoring, and prediction of land degradation at regional and local levels.

Desired output of the Task Force

1. Basic concepts and definitions of land degradation; methods, threshold values etc.,
2. Scientific concept papers — approaches to problem solving, reliability and accuracy of assessments, aspects of time and space dimensions;
3. Internationally accepted language for describing processes, states, and tension zones; standards for databases and database management systems; minimum datasets;
4. Manual on assessment and monitoring of land degradation;
5. Decision Support systems for evaluation, estimation, and impact of land degradation; and
6. Global, regional, and national maps depicting types of stresses, tension zones, potential for degradation etc.

Those interested to contribute to the work of the Task Force or receive the Newsletter, please send your name and address to the Secretary. The Task Force will soon have a web site on WWW.

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THE EFFECTS OF GLOBAL CHANGE ON SOILS
The GCTE Implementation Plan for International Collaborative Research

The world's soils have always been subject to the formative forces of climate and vegetation; pedogenesis is in part governed by these, and responds to natural changes in the magnitude of such „drivers". We are now, however, witnessing an unprecedented rate of change in not only the magnitude but also in the nature of three key drivers: change in climate, in atmospheric composition, and in land-use. The term „Global Change" is used to describe their interactive effects, the inevitable consequence of which is an alteration in soil properties, and hence in the soils' capacity to fulfil their many essential ecosystem functions.

Soil properties vary from the transitory and rapidly variable, such as nitrate content, to the virtually permanent, such as texture. Whereas the number of visible properties that will be altered directly by changes in temperature, rainfall or CO2 concentration is fairly small (though a few soils are morphologically unstable, and may alter rapidly), the indirect effects of global change are numerous, usually occurring via impacts on vegetation:

- Climate change will affect soils in a terrain, because their erosion potential will alter with changes in plant cover, rainfall and wind. The associated changes in primary production will also result in changes of organic material inputs to the soil.
- Changes in atmospheric CO2 concentration may lead to changed soil organic matter quantity and type. In particular it may lead to changes in the amounts of photosynthate allocated below-ground.
- Changes in land-use can have far reaching, and often rapid, effects on soil physical structure (eg. erosivity) and fertility. This area is already being researched by many groups and organisations worldwide, but the interaction of land-use change with the other global change drivers of climate and atmospheric composition is being far less well covered.

The most immediate manifestation of global change is major change in land-use, currently most prevalent in the tropics, where social, economic and population pressures drive the process. Climatic and atmospheric changes - the other aspects of global change - will further affect these stressed and rapidly changing systems in ways we cannot yet predict with any accuracy. The ability to capitalise on the beneficial effects of global change, while avoiding or reducing adverse effects, will require a strong predictive capability.

While the lack of knowledge over the precise climate or land use in the future makes exact predictions of impact impossible, it is however important to be able to predict the consequences of defined scenarios and to identify the most sensitive aspects of soils. To this end, Focus 3 (Global Change Impact on Agriculture, Forestry and Soils) of the Global Change and Terrestrial Ecosystems (a Core Project of IGBP) is initiating strategic, interdisciplinary research to improve our general predictive ability of global change impact on soils (and possible feedback issues) to help national programmes plan site-related management strategies and adaptive research for both today's rapidly changing environment.

The topics listed as established Tasks and proposed Core Research Projects are those where global change is likely to have a direct or indirect impact on soils, and where this impact has important practical consequences. Each Core Research Project will consist of (i) a set of contributing projects that will form a research network, (ii) a coordination committee (consisting of 3 or 4 members) that will guide each network, and (iii) a schedule of activities (eg. sensitivity studies, model intercomparisons, synthesis workshops, data collection, etc.) that will form the specific workplan for each. The Core Research Projects will be tackled though collaborative research on an international basis, and scientists from around the world are invited to contribute.

The GCTE Soil Erosion Network (Task 3.3.2 CRP1) is already well underway, and is formally recognised as GCTE Core Research; further contributions are still however very welcome. Tasks 3.3.1 and 3.3.3 are set to launch their component CRPs and the Task Leaders are now keen to establish inaugural sets of projects. Progress in all the Activity's Tasks will be reported at the GCTE Special Session at the 16th World Congress of Soil Science in Montpellier, in 1998.

GCTE Report 12 (GCTE Activity 3.3: Effects of Global Change on Soils) outlines guidelines for the implementation of the GCTE Soils Tasks and proposed Core Research Projects, and gives details on how to become involved.

GCTE Activity 3.3 Global Change Impact on Soils: Task Objectives and Proposed Core Research Projects

Task 3.3.1 Global Change Impact on Soil Organic Matter

- To increase understanding of the relationship between global change drivers and the processes responsible for the formation and loss of SOM across the range of soils and climates of the world.
- To apply this understanding to assess global change impacts on soil organic matter levels, soil productivity and environmental degradation.
- To make regional and global projections of the potential influence of global change on soil organic matter levels.

CRP 1: Soil Organic Matter Experiments
CRP 2: Soil Organic Matter Models
CRP 3: Soil Organic Matter Site Networks
CRP 4: Soil Organic Matter Regional Databases
CRP 5: Soil Organic Matter Projections

Task 3.3.2 Soil Degradation Under Global Change

- To refine and adapt current soil erosion models for use in global change studies in a wide range variety of conditions.
- To design and undertake experiments to provide improved mechanistic understanding of the relationships between global change and soil erosion, to aid model development.

CRP 1: The GCTE Soil Erosion Network
CRP 2: Linking erosion processes across temporal and spatial scales
CRP 3: Key thresholds for soil erosion
CRP 4: Soil erosion feedbacks to Global Change

Task 3.3.3 Global Change and Soil Biology

- To quantify the role of soil organism populations and communities in organic matter decomposition, nutrient availability and trace gas generation.
- To define the extent to which soil populations and communities are affected by global change; and to estimate how such changes will effect their function with respect to decomposition, nutrient release and trace gas consumption and emission.

CRP 1: Nitrogen Dynamics Model
CRP 2: Functional Role of Soil Biodiversity
CRP 3: Management of Soil Biology in Tropical Agriculture under Global Change
CRP 4: Biology of Arctic Soil Processes

Copies of GCTE Report 12, and further information about GCTE, may be obtained from:

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I R R I S O F T - A WORLD WIDE WEB DATABASE ON IRRIGATION AND HYDROLOGY SOFTWARE

IRRISOFT is an Irrigation and Hydrology Software Database which provides information on irrigation and hydrology software. In addition, metalinks to servers containing the software packages and further information are included. As a World Wide Web Database, it extends the traditional sources of information and incorporates other Internet services, which together form a broad base for efficient information exchange and discussions.

The URL of IRRISOFT is:

http://www.wiz.uni-kassel.de/kww/irrisoft_i.html

The objectives of IRRISOFT are to give an overview of irrigation and hydrology programs available and to facilitate the retrieval and distribution of the software by establishing download or e-mail order facilities via the World Wide Web. Numerous irrigation and hydrology programs have been written by individuals, groups or companies and are available as public domain, shareware or commercial software. However, there is still a lack of easy and efficient information exchange facilities about new developments and products. This situation will be improved by the IRRISOFT - System. Beside information and software retrieval, IRRISOFT extends the traditional forms of information exchange and aims at the incorporation of discussion and feedback mechanisms. Besides this maintenance and support service, IRRISOFT allows the inclusion of knowledge and experiences of a broad group of practitioners and scientists working in the area of irrigation and hydrology. This may be achieved by discussions through e-mail postings on World Wide Web bulletin boards and discussion lists like IRRIGATION-L.

IRRISOFT was launched on the web in summer 1995. It was announced in the major technical Internet discussion lists like IRRIGATION-L, TRICKLE-L and AGRIC-L. Since then, links have been included in several technically-related servers like AGRIGATOR, DAINet, the Virtual Library IRRIGATION, and other government and commercial servers. Also the information on IRRISOFT is included in several general world Internet catalogues like YAHOO or LYCOS.

The IRRISOFT System is located at the University of Kassel and is maintained by the Department of Rural Engineering and Natural Resource Protection. It started with a few software description pages (SDP). Since then it has been steadily growing. The service has been extended to include download facilities by the addition of the IRRISOFT aFTP-server (aFTP). A news section, an irrigation and hydrology software bibliography and a section on other related servers have been created and opened to the public.

Further information may be obtained through:

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Thomas-M. Stein, Witzenhausen

NATIONAL COVERAGE OF THE SOIL MAP OF THE NETHERLANDS, SCALE 1 : 50 000.

The DLO Winand Staring Centre has recently published the last memoir and map sheets of the series `SOIL MAP OF THE NETHERLANDS, SCALE 1 : 50,000'. With these last map sheets, a complete coverage of the Netherlands now exists at this scale. The soil information is available as traditional printed maps and also in digital form. The different soil units are briefly described in the legend of each sheet. The memoir of each sheet or combination of sheets gives besides a detailed description of the distinguished soil units also information about the geology, the history of the reclamation and the relation between the soil properties and the landscape. Each memoir also contains tables with a summary of the area of the different mapping units, the most important soil properties and the suitability of the soils for arable land, grassland and forestry.

The digital information of the `Soil map of The Netherlands' is stored in the `Bodemkundig Informatie Systeem' (BIS) of the DLO Winand Staring Centre. This information system contains the polygon and raster versions of the soil map as well as soil profile descriptions and analytical data. Most of the profile data were collected to document the soil map units on the soil map.

In the beginning of the soil survey the information was mostly used for agricultural applications. During the last years a shift has occurred towards use of soil information to support a.o. physical planning, environmental policy, water management and nature conservation. Soil data provide part of the input for model studies on national or regional scales to analyze water management or nutrient leaching scenarios. These applications often require translation of basic soil data into soil-physical or soil-chemical characteristics. For this purpose, a variety of pedotransfer functions have been developed. For other applications the soil data are integrated with other data, such as landuse or ecological data. An example of such an integration is the Landscape-ecological Survey of the Netherlands.

The finalisation of the Soil Map of The Netherlands does not mean that all collection of soil data stops. The intensive use of the Dutch land induces changes in soil conditions (e.g., oxidation of peat) and water table depths. For the reassessment of groundwater table depths, efficient and statistically based sampling methods have been designed and applied. Also do new applications of the soil information demand new and statistically reliable data. For this purpose, a national scale statistical sampling program is underway to upgrade the mapping units of the 1 : 50,000 Soil Map of The Netherlands. Eventually, these data will enable more reliable assessments of average soil behaviour and will also allow the estimation of probabilities of exceeding threshold values within map polygons.

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PRECONS: REFORESTATION AND SOIL CONSERVATION IN THE SAHEL

PRECONS (Programme régional de reboisement et de conservation des sols au Sahel - The Regional Programme for Reforestation and Soil Conservation in the Sahel) is responsible for strengthening regional cooperation within the Sahel for soil and water conservation. The work, which is carried out under the auspices of the Permanent International Committee for Drought Control in the Sahel (CILSS) has been continuing for five years and is based on experience gained in Cape Verde.

The first phase of the programme was launched when it was felt that there was a suitable level of technical competence available within the services responsible. At the same time public awaren-

ess and regional cooperation were such that the programme had a good chance of success. A tree-planting scheme was carried out on 4,700 hectares on three islands of Cape Verde. The first phase, which used anti-soil erosion techniques already proven to be effective in the islands, provided the practical experience for a second phase. This was aimed at transferring soil and water conservation techniques to other countries in the Sahel region. The second phase included the training of 350 officers at a number of courses organized in Cape Verde and in all other CILSS member countries (except Niger), and the reduction of training and information publications as well as a manual and thirty technical leaflets.

Research shows that a poor level of commitment and participation by rural people can be explained only in part by cultural attitudes and a low level of literacy. The way in which intervention policies are handled, the nature of the relationship between people and institutions, and the appropriateness or otherwise of teaching methods, also have a bearing. It was with this in mind that PRECONS designed its information materials (posters, booklets etc.) and its manual on rural development. The manual, which was published in 1994, is designed for development workers and provides a practical look at all the situations that they may have to cover, including:

- planning a programme of intervention
- preparations for carrying out the programme
- organizing work sessions
- promoting complementary activities
- preparing an evaluation at the end of the programme, and
- establishing follow-up procedures once the programme is complete.

The manual does not pretend to be a definitive work on the subject. It attempts to make a contribution to education within the context of the Sahel and any suggestions for making it more appropriate to Sahelian conditions would be welcomed.

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(From: SPORE no. 62 / April 96)

THE GLOBAL ALTERNATIVES TO SLASH-AND-BURN PROGRAMME – AN INTERDISCIPLINARY APPROACH TO REDUCING TROPICAL DEFORESTATION

The Alternatives to Slash-and-Burn Global Programme was initiated as a result of the 1992 Earth Summit in Rio de Janeiro, specifically two items on Agenda 21 referring to tropical deforestation. The Summit recognized the enormous human and environmental consequences of tropical deforestation. It contributes significantly to reduction of plant and animal diversity–5,800 higher plant species are lost annually. It causes watershed instability–erosion rates as high as 200 t ha-1 yr-1 of soil have been measured in recently deforested lands. In addition deforestation and burning of tropical forest cause 23% of the total carbon emissions to the atmosphere. The Summit also recognized the link between deforestation and slash-and-burn farming systems. These systems provide food for about 500 million of the world's poorest people and they have been adversely affected by population pressure, migration and shortage of fertile land that force farmers into a vicious cycle of burning more forest and bush–approximately 10 million hectares of tropical forest are currently being destroyed every year.

Also in 1992, the United Nations Development Fund (UNDP) sponsored the First Global Workshop on Alternatives to Slash-and-Burn in Rondonia, Brazil in 1992 out of which the Alternatives to Slash-and-Burn (ASB) Initiative emerged. The International Centre for Research in Agroforestry (ICRAF) was chosen as the coordinating institution. ASB aims to limit tropical deforestation through the selection and testing of sustainable alternatives to slash-and-burn that conserve biodiversity and improve human welfare. This starts with the identification of policies that provide incentives for such alternatives and disincentives to further deforestation, and by building the capacity of national agricultural research systems (NARS), non-governmental organizations (NGOs) decision makers and other relevant parties and institutions to support these alternatives.

ASB was designed to focus on benchmark or country sites that represent a range of environmental and socioeconomic conditions to enable regional and global comparisons. The programme is divided into three phases. The first phase (March 1994—May 1995) covered three initial benchmark sites: Brazil, Indonesia and Cameroon, and was funded by the Global Environment Facility (GEF) with UNDP sponsorship. Two new sites, Peru and Thailand, were added in Phase II (1 June 1995—31 May 1996) and Phase III (June 1996—September 2000) is planned to include Mexico. To ensure collaboration and country commitment, multidisciplinary and multi-institutional teams are set up at these benchmark sites, including representatives of NARS, NGOs and international institutions.

The first two years have focused primarily on characterization of slash-and-burn systems, developing common study methodologies and setting priorities for strategic research.. Capacity-building and consultation is an important component of all three phases and helps ensure quality of results, and sustainability of activities after Phase III. The work is now moving into policy options and selection of the alternatives.

Agroforesty has an important role to play in alternative land-use systems as agroforestry practices provide a variety of ways to intensify agriculture, conserve biodiversity and also to reclaim the secondary forest fallows and derived grasslands that often follow in the wake of slash-and-burn activities. Trees can be planted with food crops and left standing after the food crops have been harvested to form a managed fallow. Farmers can plant improved indigenous trees for fruit, timber, fodder etc. Indeed, instead of cutting trees for fences they can use live fences of fast-growing leguminous trees which provide browse for cattle. Other possible alternatives are multistrata systems such as the damar and the rubber agroforest systems in Sumatra.

With particular reference to ASB's soil science research, an experimental protocol Shifting Cultivation Effects on Tropical Soil Organic Matter (SCETSOM) has been prepared to provide a common framework and methodologies for measuring carbon stocks. The first experiment aims to provide fairly quick estimates of pools of above- and below-ground vegetation biomass and soil carbon in representative land-use systems at each of the benchmark sites. The second experiment focuses on changes in soil organic matter following traditional clearing and burning and alternative land-use practices.

An instructional manual entitled Application of Simulation Models to Shifting Cultivation Systems has also been developed to help ASB teams use the CENTURY soil carbon model. CENTURY version 3.0 was used to simulate forest growth, felling and burning, field monocropping, fallow intervals and pasture systems. The model also appears to provide realistic simulations of shortened or improved fallows, soil conservation and more intensive forest disturbance. However, there are still serious drawbacks to its application in slash-and-burn systems–it was unable to stimulate more than one crop a year, mixed cropping, the addition of mixtures of organic resources or the application of different rates or types during a single growing season. ASB hopes to install CENTURY version 4 at benchmark sites as this model has routines that can overcome these limitations.

The ASB Consortium provides the necessary range of sites and land uses and the logistical framework to allow comparative measurements of greenhouse gas emissions across a spectrum of land use in the tropics. The emphasis during Phase I was to develop a sampling protocol that is simple yet robust enough for use in remote sites. In Phase II the emphasis is on measuring gas emissions in the land-use transects used for carbon pool measurements.

Characterization of organic resources available to slash-and-burn farmers will help in the design of experiments in the use of organic and inorganic inputs for maintaining soil fertility. Collaboration

in these trials will include Tropical Soil Biology and Fertility Programme (TSBF) and IFDC (International Fertilizer Development Center), USA. Preliminary work will determine the limiting nutrient to crop production in the major soil group/land-use categories at the benchmark sites. Where this information is not readily available N, P, K test strips will be established on farmers' fields as part of the diagnosis work. Based on these results and those from the organic inputs characterization survey, network experiments will be designed for using organic inputs, combined with small levels of fertilizer to maintain crop production on sites where N and P are limited.

A key focus for ASB is the monitoring of biodiversity loss and looking at how biodiversity can increase agroecosystem productivity–an international planning conference sponsored by TSBF and UNEP took place in India in January 1995, to launch this new initiative. The Centre for International Forestry Research (CIFOR), Indonesia and TSBF are working together with NARS and NGOS at the benchmark sites to study above- and-below ground soil biodiversity as they relate to land-use.

Clearing Swidden Fields, Vientiane Plains, Lao P.D.R. (credit: G. Boklin)

GEF-funding has enabled this initiative to look beyond alternative agricultural practices which can limit deforestation and improve the lives of families living on the forest margins. It is enabling detailed targeted research to clarify the environmental effects of various land-use systems. The fact that this programme combines socioeconomic, biophysical and technical approaches to the problem of tropical deforestation, and is active at a number of significant sites across the world, means that with continued support it will have an important impact on reducing tropical deforestation.

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

Dr. A. Ivan Johnson, long-time member of the ASA, SSSA, and ISSS, was presented in September 1995 with an Honorary Doctorate in Geohydrology from Hacettepe University of Ankara, Turkey.

During the 2nd Congress of the Russian Soil Science Society, celebrating the 150 anniversary of V.V. Dokuchaev, in June 1996 in St. Petersburg, **Dr. Richard Arnold,** Director of the NRCS-USDA, USA, **Prof. W.E.H. Blum,** Secretary-General, ISSS, **Prof. A. Ruellan,** President of ISSS, France, and **Prof. D. Yaalon,** Israel, were elected Honorary Members of the Russian Society of Soil Science.

Dr. José L. Rubio has been awarded the Rey Jaime I Prize in Environment Protection, in Valencia, Spain, in 1996, for his contribution to the understanding of the desertification processes in Mediterranean environments, for his role as scientific advisor to the Spanish Government and for his dedication to increase the public awareness for land degradation problems.

Dr. Uzi Kafkafi, professor at the Faculty of Agriculture of the Hebrew University of Jerusalem, has received the 1996 International Fertilizer Award. Dr. Kafkafi is a leader in fertilizer application and plant nutrition research in Israel.

Dr. Yash Pal Kalra, President of the Canadian Society of Soil Science has been elected Fellow of the Indian Society of Soil Science.

Prof. Winfried E.H. Blum, Secretary-General of ISSS, was elected member of the Executive Board of the International Council of Scientific Unions (ICSU) for a period of 3 years, and chairman of the newly formed ICSU Standing Committee on Sciences for Food Security (CSFS)

IN MEMORIAM

LASZLO HARGITAI

Dr. Laszlo Hargitai was born in Hungary, in 1930. He obtained his Diploma of Chemistry from the Eotvos Lorand University of Sciences. From 1952 - 1958 he worked as an assistant, later as a post-graduate student, doing research work at the Soil Science Department of the University of Agricultural Sciences, Gödöllö. Then he became assistant professor and lecturer of soil science at the Agricultural Academy in Keszthely. He earned a PhD. (cand.) degree for his outstanding research work in the field of humus substances of Hungarian main soil types in 1960 and was appointed assistant professor at the Soil Science Department of the Horticultural University. In 1967 he became university lecturer and from 1977 on, he worked as a professor and Head of the Soil Science Department. For his research work in organic management of different natural, agricultural and anthropogenic soils, he received an academic degree in the year 1984.

Prof. Hargitai's research work mainly centred on soil organic compounds, he published 15 scientific books and book chapters and 258 scientific articles and other publications. In addition, he devoted his life to high level agricultural education. He was leader and president of the national scientific student movement between 1953 and 1978, his students winning 6 first prizes in competitions among Agricultural Universities and Colleges. He was a brilliant speaker and lecturer and had a huge scientific, cultural and historical knowledge and introduced subjects such as soil biochemistry, environmental protection and world soils into the curriculum. He was the leader of the postgraduate scientific training programme at the university.

Prof. Hargitai was also very active in national and international scientific organizations. In 1968, he became President of the Soil Chemistry Section of the Hungarian Agricultural Association's Soil Science Society, and in 1990 he was elected Vice-President of the Hungarian Soil Science Society. Since 1972, he was the President of the Chemistry Section of the International Peat Society's Hungarian National Committee and he was a member of the Agricultural Water Management Committee of the Hungarian Academy of Sciences, as well as a founding member of the Hungarian Environmental Association, and the President of its Soil and Biosphere Interdisciplinary Environmental Section. He Joined the ISSS in 1963, working as a member of the Humus Working Group between 1964 and 1982 and since then in the Colloid Working Group. He was a member of the International Peat Society since 1963 and the Vice-President of the Peat Chemistry Section. In 1973 he joined the International Fertilization Centre (CIEC) and in 1988 he became a member of the International Humus Science Society (IHSS).

As a result of his presentations and lectures he received the Jubilee Commemorative Medal of the University of Virginia, Blacksburg, in 1975, in the same year, he was awarded prizes by the FAO, and the UNDP, in 1976 he received the Price of CIEC and in 1995 the membership of the Scientific Academy, in New York.

Professor Hargitai died at the height of his scientific career, after a short illness, on July 12, 1996. We hold his memory in our hearts forever.

Laszlo Vermes
IPS Hungarian National Committee

EUGENE P. WHITESIDE

Eugene P. Whiteside, 83, Professor Emeritus of Crop and Soil Sciences at Michigan State University, died 13 March 1996, in East Lansing, MI. Dr. Whiteside was born on 18 October 1912 in Champaign, IL, and grew up on a small farm in central Illinois. He graduated from the University of Illinois in 1934 and served there as an assistant in soil physics and soil survey until 1938. He transferred to the University of Missouri, where he worked as a research assistant in soils and earned his Ph.D. in 1944.

Dr. Whiteside was an expert in soil genesis and classification, soil survey, and interpretation of soil survey information for various land uses. He was the Michigan Agricultural Experiment Station representative to the National Cooperative Soil Survey. During World War II, Dr. Whiteside served as a soil surveyor on the Emergency Rubber Project located in Los Angeles, and later served as associate soil surveyor at the University of Tennessee before returning to Illinois as assistant chief of soil physics and soil survey. In 1949, he accepted an appointment as associate professor of soil science at Michigan State University, where he remained until his retirement in 1978.

Dr. Whiteside is survived by his wife Geneva, three children, and their respective families.

(from: Agronomy News, May 1996)

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

Important Notice

ISSS, as a Scientific Union Member of the International Council of Scientific Unions (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 ISSS member who wishes to participate in the meeting concerned.

1997

R'97 - Recovery, Recycling, Re-integration: 3rd International Congress with Exhibition, Geneva, Switzerland, February 4-7, 1997.
Information: LPM Ltd., Ms. Maria Bühler, R'97 Project Manager, P.O.Box, CH-8008 Zurich; Tel: +41-1-385-29-29; Fax: +41-1-385-26-53.

Regional Workshop „Soil fertility management in West African land use systems", Niamey, Niger, March 4 - 8, 1997.
Information: Tropical Centre for Agriculture (SFB 308), Andreas Neef (Workshop Coordinator), University of Hohenheim (793), 70593 Stuttgart, Germany; Tel: +49-711-459-2548; +49-711-459-3315; E-mail: nigsymp@uni-hohenheim.de.

Conference On Recent Advances in Soft Soil Engineering, Kuching,, Sarawak, Malaysia, March 5 - 7, 1997.
Information: Harwant Singh, Assistant Secretary, Organising Committee, Universiti Malaysia Sarawak, 94300 Kota Samarahan, Sarawak, Malaysia. Tel: 60-082-671-000, ext. 229; Fax: 60-082-672-275; E-mail: terratee@frst.unimas.my

International Workshop on Pampean Soils, Argentina, March 6 - 15, 1997.
Information: Prof. Mabel Susana Pazos, Facultad de Agronomía, UNCPBA, C.C.178, 7300 Azul, Argentina; Fax: +54-281-28698; E-mail: edafo@uncagr.edu.ar.

International Conference on Regionalization in Hydrology, Braunschweig, Germany, March 10-14, 1997.
Information: Prof.Dr. Otto Richter, Regionalization in Hydrology 1997, Technische Universität Braunschweig, Institut für Geographie und Geoökologie, Langer Kamp 19c, 38106 Braunschweig, Germany; Tel: +49-531-391-5627; Fax: +49-531-391-8170; Telex: tu bswg 952526.

International Symposium: „The science and practice of short-term improved fallows in humid and sub-humid tropics", Lilongwe, Malawi, March 11-15, 1997.
Information: Dr. Peter Cooper, Chairman, Organizing Committee, United Nations Avenue, Gigiri, P.O. Box 30677, Nairobi, Kanya.
Tel: (254-2)521-450; Fax: (254-2)521-001; Telex: 22048 ICRAF; E-mail: P.Cooper@cgnet.com.

Cover Crops, Soil Quality and Ecosystems, Sacramento, California, March 12-14, 1997.
Information: Soil and Water Conservation Society, 7515 NE Ankeny Rd., Ankeny, IA 50021, USA; Tel: +1-515-289-2331; Fax: +1-515-289-1227; E-mail: swcs@netins.net; http://www.netins.net/showcase/swcs/

6th Conference on Sinkholes, Eng. & Env. Impact Karst, Springfield, MO, USA, April 6-9, 1997.
Information: B.F. Beck, P.E. LaMoreaux & Assoc., Inc., PO Box 4578, Oak Ridge, TN 37831-4578, USA; Tel: +1-423-483-7483; E-Mail: pelaor@use.usit.net.

Conference „Soil - Culture - Temporalities: „Soil Degradation and Sustainable Use of Soil, Tutzing, Germany, April 6-9, 1997.
Information: Dr. M. Held, Evengelische Akademie Tutzing, Postfach, 82324 Tutzing, Germany. Fax: +49-8158-251133.

International Conference: „Analytic based modeling of groundwater flow", Nunspeet, The Netherlands, April 7-11, 1997.
Information: Conference secretariat: Analytic Based Modeling of Groundwater Flow, Buerweg 51, 1861 CH Bergen, The Netherlands; Tel: +31(0)72-58-990-62; Fax: +31(0)72-58-990-40.

5th Scientific Assembly of the Internatioanl Association of Hydrological Sciences, Rabat, Morocco, April 23 - May 3, 1997.
Information: IAHS'97 Organizing Committee, Direction Générale de l'Hydraulique, Casier: Rabat - Challah - Maroc; Tel: +212-7-769008/777842; Fax: +212-7-778696

Second International Symposium on Environmental Software Systems - ISESS 1997, Delta Whistler Resort, British Columbia, Canada, April 28 - May 2, 1997
Information: Prof. Dr. Ralf Denzer, Hochschule f. Technik u. Wirtschaft des Saarlandes, Goebenstr. 40, 66117 Saarbrücken, Germany, E-mail: denzer@htw.uni-sb.de; Fax: +49-681-5867-122;
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Dipl.Ing. Gerald Simak, Austrian Research Center Seibersdorf, 2444 Seibersdorf, Austria; E-mail: schimak@zdfzs.arcs.ac.at

International Symposium on Soil, Human and Environment Interactions, Nanjing, PR China, May 4-11, 1997.
Information: Prof. Z.H. Cao, Institute of Soil Science, Academia Sinica, P.O.Box 821, Nanjing 21008, P.R. China Fax: +86-25-3353590 or E-mail: zhaoqg@njnet.ihep.ac.cn.

International Symposium and Workshop: „Combating Desertification: Connecting Science With Community Action", Tucson, Arizona, May 12-16, 1997; Optional Training Package: May 17-23, 1997.
Information: United States Department of the Interior, Bureau of Land Management, Arizona State Office, 3707 N. 7th Street, P.O. Box 16563, Phoenix, Arizona 85011-6563, U.S.A.

International Conference on Soil and the Environment: pollution, degradation and restoration. China, May 4-11, 1997.
Information: Prof. Zhao Quiguo, Inst. of Soil Science, Academia Sinica, P.O.Box 821, Nanjing 21008, P.R. China. Fax: +86-25-712-668.

4th International Meeting on Red Mediterranean Soils, Plovdiv, Bulgaria, May 27 - June 2, 1997.
Information: Prof. I. Atanassov, Chairman, Organizing Committee, Department of Soil Science, Agricultural University, 12 Mendeleev str., 4000 Plovdiv, Bulgaria; Tel: +35-932-223-800 or -224-100; Fax: +35-932-233-157 or -265-920; Telex: 44405 or 44252.

Wind Erosion: An International Symposium/Workshop Commemorating the 50th Anniversary of the USDA's Wind Erosion Research at Kansas State University, Manhattan, Kansas, USA, 3-5 June 1997.
Information: USDA-ARS, NPA, Wind Erosion Research Unit, Throckmorton Hall, Kansas State University, Manhattan, KS 66506, USA; Tel: +1-913-532-6495; Fax: +1-913-532-6528; E-mail: sym@weru.ksu.edu.

XVIII International Grassland Congress, Grasslands 2000, Winnipeg, Manitoba & Saskatoon, Saskatchewan, Canada, June 8 - 19, 1997.
Information: P.O.Box 4520, Station C, Calgary, Alberta, Canada T2T 5N3; Tel: (403)244-4487, Fax: (403)244-2340, E-mail: amc@supernet.ab.ca.

11th International Clay Conference and **34th Annual Meeting of the Clay Minerals Society,** Ottawa, Ontario, Canada, June 15-21, 1997.
Information: Dr. Jeanne B. Percival, Secretary-General, 11th ICC, Geological Survey of Canada, 601 Booth Street, Ottawa, Ontario, Canada K1A 0E8. Fax: 613-943-1286; Internet: icc97@gsc.emr.ca; use gopher.emr.ca (GSC menu) for future updates on the 11th ICC.

3rd International Symposium on Ecosystem Behavior „Biogeomon", Villanova, Pennsylvania, USA, June 21-25, 1997.
Information: R. Kelman Wieder, Dpt. of Biology, Villanova University, Villanova, PA 19085 USA. Tel: +1-610-519-4856; Fax: +1-610-519-7863; E-mail: biogeomo@ucis.vill.edu; or: Martin Novák,Czech Geological Survey, Klárov 3, 118 21 Prague 1, Czech Republic, Tel: +422-581-7120; E-mail: novak@cgu.cz.

4th International Conference on the Biogeochemistry of Trace Elements, Berkeley, CA, USA, June 23 - 26, 1997.
Information:Dr. Domy C. ADRIANO, Savannah River Ecology Laboratory, Savannah River Site Building 737-A, Aiken, SC, 29801, USA. Fax: (+1)-803-725-3309,
Internet: <http://www.usace.army.mil/crrel/biogeochemistry-trace-elements>

International Symposium on Iron Nutrition and Interactions in Plants, Stuttgart, Germany, July 20-25, 1997.
Information: Dr. Volker Römheld, Institut fuer Pflanzenernaehrung (330), Universität Hohenheim, 70593 Stuttgart, Germany; Fax: +49-711-459-3295; Tel: +49-711-459-3714 or -2344.

International Symposium: Tillage Translocation and Tillage Erosion, Toronto, Canada, July 25, 1997.
held in conjunction with:
52nd Annual Conference of the Soil and Water Conservation Society, Toronto, Canada, July 23-26, 1997.
Information: Dr. Gerard Govers, Catholic University Leuven, Redingerstraat 16 bis, B-3000 Leuven, Belgium; Fax: +32-16-293307; E-mail: gerard.govers@geo.kuleuven.ac.be;
or:
Nancy Herselius, SWCS, 7515 NE Ankeny Road, Ankeny, IA 50021, USA. Fax: +1-515-289-1227; E-mail: SWCS@netins.net

16th International Congress of Nutrition, Montreal, Canada, July 27-August 1, 1997.
Information: 16th International Congress of Nutrition, c/o Conference Services Office, National Research Council Canada, Ottawa, ON, Canada K1A OR6; Tel: (+1-613)993-7271;
Fax: (+1-613)993-7250; E-mail: confmail@aspm.lan.nrc.ca.

14th ISTRO Conference: Agroecological and Economical Aspects of Soil Tillage,
Lublin, Poland, July 27 - August 4, 1997.
Information: ISTRO Conference 1997, Dr. Jerzy Rejman, Institute of Agrophysics, Polish Academy of Sciences, ul. Doswiadezalna 4, 20-236 Lublin, Poland; Tel: +48-81-45061; Fax: +48-81-45067.

VII Congreso Nacional Chileno de la Ciencia del Suelo, La Serena, Chile, Agosto de 1997.
Información: Fax:+56-51-211473. Suelos y Nutrición de Plantas, Universidad de La Serena, Chile.

5th International Symposium on Soil and Plant Analysis: The Promise of Precision - Past, Present and Future, Bloomington, Minnesota, USA, August 2-7, 1997.
Information: Dr. Robert Beck, Cenex/Land O'Lakes, PO Box 64089, St. Paul,
MN 55164-0089,USA; Tel: +1-612-451-5383: Fax: +1-612-451-4561; E-mail: bbeck@cnxlol.com.

II International Conference „Cryogenic Soils: Ecology, Genesis and Classification", Syktyvkar, Komi Republic, Russia, August 5-8, 1997.
Information: Prof. I.V. Zaboeva, Institute of Biology, Komi Center, Russian Academy of Sciences, 167610 Syktyvkar, Komi Republic, Russia. Tel: +7-821-22-25213; +7-821-22-25240;
Fax: +7-821-22-25213.

Conference on Geo-Information for Planning of Sustainable Land Management, Enschede, The Netherlands, August 17-22, 1997.
Information: Prof.Dr. K.J. Beek, ITC, P.O. Box 6, 7500 AA Enschede, The Netherlands.
Fax: +31-534-874-200; E-mail: beek@itc.nl.

XV National Conference of the Romanian Soil Science Society: „Problems concerning the genesis, evolution, use and protection of soils of the southern region of Romania".
Bucharest, August 26-30, 1997.
Information: Dr. I. Munteanu, RISSA, Bd. Marasti 61, 77331 Bucharest 32, Romania.

PEDOMETRICS'97, Madison, Wisconsin, USA, August 27-31, 1997.
Information: Dr. Kevin McSweeney, Dpt. of Soil Science, University of Wisconsin-Madison, USA. Tel: +1-608-262-0331/0380; Fax: +1-608-265-2595; E-mail: kmcsween@facstaff.wisc. edu.

24th Annual Meeting of the European Society of New Methods in Agriculture (ESNA), Ghent, Belgium, August 29-September 2, 1997.
Information: Oswald van Cleemput, University of Ghent, Tel: +32-9-264-6002;
Fax: +32-9-264-6242; E-mail: Oswald.Vancleemput@rug.ac.be.

IX World Water Congress, Montréal, Canada, September 1-6, 1997.
Information: Aly M. Shady, Canadian International Development Agency, 200 Promenade du Portage, Hull, Quebec, K1A 0G4, Canada. Tel: +1-819-994-4098; Fax: +1-819-953-3348;
E-mail: aly-shady@ACDI-CIDA.GC.CA.

International Conference „Biological Waste Treatment: Into the Next Millennium", Harrogate, UK, September 3 - 5, 1997.
Information: Stuart Brown, Biotreatment Conference, PO Box 4, Grassington, North Yorkshire, BD23 5UR, UK. Tel: +44-1756-753-450; +44-1756-753-420.; E-mail: Biocon@leeds.ac.uk.

BORON97: International Symposium on Boron in Soils and Plants, Chiang Mai, Thailand, September 7-11, 1997
Information: Dr. B. Rerkasem, Multiple Cropping Center, Chiang Mai University, Chiang Mai, Thailand 50200; Fax: +66-53-210000.

11th World Fertilizer Congress „Fertilization for sustainable plant production and soil fertility", Gent, Belgium, September 7-13, 1997.
Information: University of Gent, Faculty of Agricultural and Applied Biological Sciences, Coupure 653, B-9000 Gent, Belgium; Tel: +32-9-264-6002; Fax: +32-9-264-6242; Telex: 12754 rugent b;
E-mail: annick.vermoesen@rug.ac.be.

XIII International Plant Nutrition Colloquium, Tokyo, Japan, September 13-17, 1997.
Information: Dr. Hiroaki Hayashi, IPNC Secretariat, Division of Agriculture and Agricultural Life Sciences, The University of Tokyo, 1-1-1, Yayoi, Bunkyo-ku, Tokyo 113, Japan.
Fax: +81-3-5689-7226; Tel: +81-3-3812-2111 ext. 5105; E-mail: hiroh@tansei.cc.u-tokyo.ac.jp.

6th Internatinal Conference on Agrophysics, Lublin, Poland, September 15-18, 1997.
Information: R. Debicki, Institute of Agrophysics, Polish Academy of Sciences, Doswiadczalna 4, P.O.Box 121, 20-236 Lublin, Poland; Tel: +48-81-450-61, Fax: +48-81-450-67;
E-mail: debicki@demeter.ipan.lublin.pl.

International Symposium on Soil Erosion and Dryland Farming, Xian, P.R. China, September 16-19, 1997.
Information: SEDF97 Secretariat, Institute of Soil and Water Conservation, 26 Xinong Road, Yangling, Shaanxi 712100, People's Republic China; Fax: +86-910-701-2210; Tel: +86-910-701-2411; E-mail: office@ms.iswc.ac.cn

XIII International Symposium on Environmental Biogeochemistry: „Matter and Energy Fluxes in the Anthropocentric Environment", Monopoli, Bari, Italy, September 21-27, 1997.
Information: Prof. Nicola Senesi, XIII ISEB, Istituto di Chimica Agraria, Università di Bari,
Via Amendola 165/A, 70126 Bari, Italy. Tel: +39-80-544-2853; Fax: +39-80-544-2813;
E-mail: nsenesi@mail2.clio.it

International Symposium: Sustainable management of salt affected soils of the arid ecosystem, Cairo, Egypt, September 22-27, 1997.
Information: Prof. A.M. Elgala, Chairman, Organizing Committee, Department of Soil Science, Faculty of Agriculture, Ain Shams University, Hadayek Shobra, 11241, Cairo, Egypt; Fax: 202-2214461.

International Working Meeting on Paleopedology, Rauischholzhausen near Marburg, Germany, September 24-26, 1997.
Information: Prof. A. Bronger, Department of Geography, University of Kiel, 24098 Kiel, Germany; Phone: +49-431-880-2952; Fax: +49-431-880-4658. E-mail: bronger@geographie.uni-kiel.de

First International Conference and Industrial Exhibition „Field Screening Europe", Karlsruhe, Germany, September 29 - October 1, 1997.
Information: Forschungszentrum Umwelt, Dr. J. Gottlieb, Dr. K. Iluck, Universität Karlsruhe, Field Screening Europe, Kaiserstr. 12, 76128 Karlsruhe, Germany; Tel: +49-721-608-2053; Fax: +49-721-608-6109; E-mail: Conferences@fzu.uni-karlsruhe.de.

Comm. IV Conference „Soil Resilience and Sustainable Land Use for Small Holdings", Dhaka, Bangladesh, October/November 1997
Information: Dr. Z. Karim, D.G., BRRI, G.P.O. Box 64, Ramna, Dhaka, Bangladesh; E-mail: IRRI.Dhaka@DRIKTAP.TOOL. NL; Fax: 880-2-883416.

9th International Symposium on Environmental Pollution and its Impact on Life in the Mediterranean Region, S. Agnello di Sorrento, Italy, October 4-9, 1997.
Information: Prof. Alessandro Piccolo, MESAEP 1997, Dipartimento di Scienze Chimico-Agrarie, Università di Napoli „Federico II", Via Università 100, 80055 Portici, Italy; Tel: +39-81-7755672; Fax: +39-81-7755130; E-mail:alpiccol@ds.unina.it.

XI World Forestry Congress, Antalya, Turkey, October 13-22, 1997.
Information: Mesut Y. Kamiloglu, Scretary-General, XI World Forestry Congress, Department of Foreign Relations, Ministry of Forestry, Ataturk Bulvari 153, Ankara, Turkey; Tel: 90-312-4177724; Fax: 90-312-4179160; E-mail: obdi-f@servis.net.tr.

International Symposium *„Soil Systems Behaviour in Space and Time"* (ISSS Commission V and ISSS WG-RB), Vienna, Austria, November 19-22, 1997.
Information: Dr. W.W. Wenzel, Institute of Soil Research, University of Agriculture, Gregor Mendel-Str. 33, 1180 Vienna, Austria; Tel + Fax: +43-1-47654-3119.

1998

XVIth World Congress of Soil Science, Montpellier, France, August 20-26, 1998
Information: XVI World Congress of Soil Science, Congress Secretariat, 1101, Avenue Agropolis, 34394 Montpellier Cedex 5; France; tel: (+33)67 04 75 38; fax: (+33)67 04 75 49

6th International Symposium on Earthworm Ecology - ISEE6, Vigo, Spain, July 1998.
Information: Dr. D.J. Díaz Cosín, Dpt. Biología Animal I - Universidad Complutense, 28040 Madrid, Spain; Tel: +34-13944953; Fax: +34-13944947; E-mail: dadico@eucmax.sim.ucm.es;
or:
Dr. S. Mato, Dpt. Recursos Naturales y Medio Ambiente, Facultad de Biología, Lagoas-Marcosende; 36200 Vigo (Pontevedra), Spain; Tel: +34-86812583; Fax: +34-86812556; E-mail: smato@uvigo.es

1999

2nd International Conference on Land Degradation, Khon Kaen, Thailand, January 22-31, 1999.
Information: The President, Soil and Water Conservation Society of Thailand, c/o Department of Land Development, Chatuchak, Bangkok 10900, Thailand; Tel: +66-2-5791939 and -5790111; Fax: +66-2-5613029 and -5611959; E-mail: ibsram@cgnet.com

INTERNATIONAL TRAINING COURSES
COURS INTERNATIONAUX DE FORMATION
INTERNATIONALE FORTBILDUNGSKURSE

International Course on Soil and Plant Analysis, February 22-May 16, 1997.
Information: Prof.Dr. Mohammed Kishk, Course Director, Service Laboratory for Soil, Water & Plant Analysis, Minia University, Minia, Egypt. Fax: +20-86-345394.

International Institute for Land Reclamation and Improvement (ILRI) offers a number of courses, e.g.:
-4th International Course on Computer Applications in Irrigation (ICCAI), Southampton - Wageningen, March 17 - April 11, 1997
Information: Institute of Irrigation Studies, Southampton SO17 1BJ, United Kingdom; Fax: (+44)-1703-677519
or:
ILRI, P.O.Box 45, Lawickse Allee 11, 6700 AA Wageningen, The Netherlands;
Tel: (+31)-317-490-144; Fax: (+31)-317-417-187; E-mail: ILRI@ILRI.NL; http://www.ilri.nl.

- **International Course on Drainage Execution and Maintenance (ICDEM)**, Wageningen - Lelystad, The Netherlands, April 7 - May 9, 1997
  Information: ILRI, P.O.Box 45, Lawickse Allee 11, 6700 AA Wageningen, The Netherlands;
  Tel: (+31)-317-490-144; Fax: (+31)-317-417-187; E-mail: ILRI@ILRI.NL; http://www.ilri.nl.
- **36th International Post-Graduate Course on Land Drainage**, Wageningen, The Netherlands, August 18 - November 28, 1997
  Information: ILRI, P.O.Box 45, Lawickse Allee 11, 6700 AA Wageningen, The Netherlands;
  Tel: (+31)-317-490-144; Fax: (+31)-317-417-187; E-mail: ILRI@ILRI.NL; http://www.ilri.nl.
- **4th International Course on Microcomputer Applications in Land Drainage (ICMALD)**, Wageningen, The Netherlands, December 1 - December 19, 1997.
  Information: ILRI, P.O.Box 45, Lawickse Allee 11, 6700 AA Wageningen, The Netherlands;
  Tel: (+31)-317-490-144; Fax: (+31)-317-417-187; E-mail: ILRI@ILRI.NL; http://www.ilri.nl.

International Course on Nutrient Management for Sustainable Agriculture, International Agricultural Centre (IAC), Wageningen, The Netherlands, August 24 - September 20, 1997.
Information: International Agricultural Centre (IAC), P.O.Box 88, Lawickse Allee 11, 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

Short Course in Plant and Soil Analysis (6 week course for laboratory managers, supervisors and senior technicians), The University of Reading, U.K., 11 August to 19 September 1997;
Information: Dr. I. Mueller-Harvey, Faculty Analytical Laborarory, Dpt. of Agriculture,
The University of Reading, Earley Gate, P.O.Box 236, Reading, RG6 6AT, U.K.;
Tel: +44-118-9316619; Fax: +44-118-9352-421; Telex: 847813; E-mail: I.Mueller-Harvey@reading.ac.uk.

International Centre for Advanced Mediterranean Agronomic Studies (CIHEAM) offers a wide range of short- and long-term studies in the field of

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Information: Instituto Agronómico Mediterráneo de Zaragoza; Apartado 202, 50080 Zaragoza, Spain.
Tel: (34-76)57-60-13; Fax: (34-76)57-63-77

The University of Cape Town, Department of Geological Sciences, offers a **MSc Course in Environmental Geochemistry**.
Time schedule: 11 course modules of 1-3 weeks' duration between January and June, exam in July.
Information:Dr. M.V. Fey, Department of Geological Sciences, University of Cape Town,

Rondebosch, 7700, South Africa. Tel: 021 650 2903/2931; Fax 021 650 3783; E-mail: fey@geology.uct.ac.za.
5

ITC Postgraduate Diploma and MSc Degree Courses, Enschede, The Netherlands,
ITC offers a wide range of courses on

- Msc. Degree Course: Environmental Systems Analysis and Monitoring
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- Postgraduate Diploma Course: Rural and Land Ecology Survey
- Msc Degree Course: Rural and Land Ecology Survey
- Postgraduate Diploma and Msc. Degree Courses: Socio-
- Economic Information for Natural Resource Management.

Information: ITC, Student Registration Office, Attn. Mrs. A Scheggetman, P.O.Box 6, 7500 AA Enschede, The Netherlands, Tel: +31-(0)53-4874-205; Fax: +31-(0)53-4874-238; Telex: 44525 itc nl; E-mail: scheggetman@itc.nl.
4

Post-Graduate Course: Remote Sensing and Natural Resources Evaluation, Istituto Agronomico per l'Oltremare, Florence, Italy.
Information: Istituto Agronomico per l'Oltremare, Via A. Cocchi, 4, 50131 Florence, Italy; Tel: 39-55-573-201; Fax: 39-55-580-314.
5

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).

International Post-graduate Training Course in Eremology, (Desert Science), Ghent, Belgium.
Information: **The International Center for Eremology, University of Ghent**, Coupure Links 653, B-9000 Gent, Belgium (Tel.: ++32-91-646036; Fax: ++32-91-646247).
4

Master's and Advanced Course in Soil Science, International Training Centre for Post-Graduate Soil Scientists, Ghent, Belgium.
Information: Prof.Dr. G. Stoops, Director ITC, Geological Institute, University of Ghent, Krijgslaan 281/S8, B-9000 Gent, Belgium;
Tel: +32-91-644561, Telex: 12754 RUGENT, Fax: +32-91-644991;
E-mail: ADM@ITC.RUG.AC.BE
4

Post-graduate Courses in Soil Science, Plant Production, and Ecology. MSc and PhD Degree, Universidad de Buenos Aires, Argentina.
Language: Spanish
Information: Facultad de Agronomía. UBA, Escuela para Graduados, Av. San Martín 4453. (1417) Buenos.Aires, Argentina. Fax: (+541)522-1687. E-mail: MEC@EDACON.AGRO.UBA.AR
6

International Agriculture Courses at MSc. Level, Larenstein International Agricultural College, The Netherlands.
Information: Larenstein International Agricultural College, P.O.Box 7, 7400 AA Deventer, The Netherlands.
4

ICRA, Centre International pour la Recherche Agricole orientée vers le Développement -

International Centre for Development Oriented Research in Agriculture
Formation post-académique pour de jeunes chercheurs agricoles des pays en voie de développement et leurs collègues des pays développés qui ont une expérience de travail dans des pays en voie de développement.
Post-academic training for young agricultural scientists from developing countries and their colleagues from developed countries who have some working experience in developing countries.
Information: The Director of ICRA, P.O.Box 88, 6700 AB Wageningen, The Netherlands.
Fax: -31-8370-27046.

4

The University of Reading, Department of Soil Science, offers various Msc Programmes in the following areas:

- **MSc Spatial Analysis of Soils and Land Evaluation**
- **MSc Management of Soil Fertility**
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Information: The Postgraduate Admissions Tutor, Department of Soil Science, The University of Reading, PO Box 233, Reading, RG6 6DW, UK; Tel: +44-1734-316-557; Fax: +44-1734-316660; E-mail: s.nortcliff@reading.ac.uk.

5

The International Institute for Infrastructural, Hydraulic and Environmental Engineering, IHE, in Delft, the Netherlands, offers Diploma Courses, Msc Programmes, PhD Programmes and Short Courses in different fields of science, e.g. Hydraulic Engineering, Hydrology, Environmental Technology and Management, Transportation and Road Engineering for Development etc.
Information: IHE, P.O. Box 3015, 2601 DA Delft, the Netherlands; Tel: +31-15-215-1715; Fax: +31-15-212-2921; E-mail: ihe@ihe.nl

6

Masters Programme in Human Ecology, Vrije Universiteit Brussel (endorsed by UNESCO-MAB Programme)
Information on admission requirements: Mr. Eddy Nierynck, International Relations Officer, Human Ecology Department, Faculty of Medicine and Pharmacy, VUB (MEKO GF), Laarbeeklaan 103, B-1090 Brussels, Belgium.
Tel: +32-2-477-4282 or -4961; Fax: +32-2-477-4964; E-mail: gronsse@meko.vub.ac.be.
Other information: Dr. Christine Horton (Programme Co-ordinator) and Ms. Karin de Bruyn (Assistant Programme Co-ordinator).
Tel: +32-2-477-4925 or -4964; E-mail: chorton@meko.vub.ac.be; kdebruyn@meko.vub.ac.be

Curso de Pós-Graduaçao em „Solos e Nutriçao de Plantas"
Informaçao: CPG - Solos e Nutriçao de Plantas, Escola Superior de Agricultura „Luiz de Queiroz", Av. Pádua Dias, 11 - Caixa Postal 9, CEP 13418-900 - Piracicaba - SP - Brasil
Tel: (019)429-4287; Fax: (019)434-3242, Telex: (19)1141 EALQ BR
E-mail: cpgsnp@carpa.ciagri.usp.br. http://www.esalq.usp.br

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Size: Four issues per year in one volume of ca. 400 pages.
Publisher: Taylor & Francis New York
Editor-in-chief: Prof.Dr. J. Skujins, Utah State University, USA.
Personal subscription rate for ISSS members (1997): US$ 99.00.

2. BIOLOGY & FERTILITY OF SOILS
Size: Eight issues per year, in two volumes of about 750 pages.
Publisher: Springer Verlag, Berlin-Heidelberg-New-York-Tokyo.
Editor-in-Chief: Prof.Dr. J.C.G. Ottow, Giessen, Germany.
Full subscription rate for the two volumes, excluding surface mailing: DM 956.00.
Personal subscription price for ISSS members for the two volumes, excluding postage and handling DM 597.60.

3. CATENA, an interdisciplinary journal of Soil Science-Hydrology-Geomorphology, focusing on Geoecology and Landscape Evolution.
Publisher: Elsevier Science Publishers, Amsterdam, the Netherlands
Joint editors: R.B. Bryan, Toronto, Canada, R. Herrmann, Bayreuth, Germany, P. Jungerius, Amsterdam, the Netherlands, J. Poesen, Leuven, Belgium, R. Webster, Zürich, Switzerland and D. Yaalon, Jerusalem, Israel
Personal subscription rate for ISSS members, including postage and handling: Dfl. 375.00

4. GEODERMA, an International Journal of Soil Science.
Publisher: Elsevier Science Publishers, Amsterdam, the Netherlands.
Editor-in-Chief: Prof.Dr. J. Bouma, Wageningen, The Netherlands, Prof.Dr. J.A. McKeague, Ottawa, Ont., Canada and Prof. D.L. Sparks, Newark, DE, USA
Personal subscription price for ISSS members: Dfl 420.00

5. SOIL BIOLOGY & BIOCHEMISTRY
Size: 12 issues per year, in one volume of about 1800 pages.
Publisher: Elsevier Science Publishers, Amsterdam, the Netherlands
Editor-in-Chief: Prof.Dr. J.S. Waid, Mooloolaba, Australia.
Full subscription rate, including surface mailing: £ 590.00 (US$ 910.00). Personal subscription price of ISSS members: £ 74.00

6. SOIL TECHNOLOGY, journal concerned with applied research and field applications on soil physics, soil mechanics, soil erosion and conservation, soil pollution, soil restoration, drainage, irrigation and land evaluation.
Size: 2 volumes (6 issues) per year, about 600 pages.
Publisher: Elsevier Science Publishers, Amsterdam, The Netherlands
Editor-in-Chief: Prof.Dr. M. Kutilek (Czech Republic); Assoc. Editors: Dr. D. Nielsen (USA) and Dr. Roy Morgan (UK).
Personal subscription rate for ISSS members (available from the publisher only): Dfl 150,– per year (including postage/handling)

7. PEDOBIOLOGIA, international journal, focusing on soil biology, especially on soil zoology and microbiology.
Size: 6 issues per year, in 1 volume with 450 pages.
Publisher: G. Fischer, Jena, Stuttgart, New York.
Editors-in-chief: Prof.Dr. M. Schaefer and Dr. J. Schauermann, Göttingen, Prof.Dr. G. Weigmann, Berlin.
Subscription rate 1993: DM 330.00, plus postage
Reduced subscription-price for personal subscribers of ISSS: DM 94.00, plus postage.

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GeoJournal. Loess-Paleosol and Paleoclimatic Investigations. Principles, Methods and Criteria. 1995 June/July, Vol36 no. 2/3, pp. 115-315. Kluwer Academic Publishers, Dordrecht, Boston. ISSN 0343-2521.
Loess-paleosol sequences are among the principal sources for scientific investigation concerned with the evolution of the biosphere on Earth during the Upper Cainozoic. They inform about the continuous changes in climate and landscape factors over the last 2 to 2.5 Ma. The laws of cyclic and unidirectional climatic and landscape changes, the alternation of cold-dry glaciation epochs and warm-humid interglacial epochs should be identified or at least checked from data acquired through the analysis of loess-paleosol sequences. They show a unique characteristic that their structure and the chronological sequence of their horizons indicate similarities between the various regions of continents: China, Central Asia, western and eastern Europe and America. Consequently, loess-paleosol complexes allow a circumpolar and global correlation of events, and interregional comparison of the natural processes.

The advancement of research into the global evolution of loess-paleosol complexes is particularly topical today when the state of the biota is controlled by the intricate interactions between natural and human factors.

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International Symposium On Alternatives To Slash-and-Burn Agriculture. Abstracts. Part I in English and Part II in Chinese. Kunming, China, 1995, xi + 119 p.

Slash-and-burn, an ancient farming and land use pattern, once prevailed all over the world and contri-

buted significantly to human survival and development of society. Also to-day, slash-and-burn remains an important means of livelihood in tropical and subtropical regions. Its long existence is closely associated with the local geographic environment, national culture, and economic basis. However, with increasing pressure on the resources and environment, its adverse effects have aroused more and more attention and concern from governments and scientists. People are beginning to seek alternatives to slash-and-burn, in order to protect the tropical forest resources and global ecological environment and improve people's lives.

China has had a long historical period of practising slash-and-burn during the early stage of man's agricultural activities and land exploitation. Archaeological discoveries demonstrate that it prevailed on the Loess Plateau and in the mid- and lower-reaches of the Huanghe River (Yellow River) about 8.000-10,000 years ago. Later on, with the development of the population and productivity, this ancient farming pattern moved steadily southward. Currently, this type of farming can still be found in some mountain and border regions of south China.

For many years, Chinese scientists have done fundamental work on the effects of slash-and-burn, but so far without systematic, multidisciplinary and multispecialty investigation or study. ICRAF re-ignited this discussion and the decision was made to have an international symposium on alternatives to slash-and-burn. The present publication contains 58 abstracts of the papers presented at the meeting, mostly concerning China.

Price: USD 10 (surface mail); USD 20 (airmail)

Orders to: Editor Office, Agroforestry Today, The Institute of Soil Science, Academia Sinica, P.O. Box 821, Nanjing 21008, People's Republic of China.

Sorption, Bioavailability and Mineralization of Hydrocarbons in Contaminated Soils. H. de Jonge. Thesis, University of Amsterdam, 1996, 150 p. ISBN 90-6787-041-2. Paperback.

The presence and transport of organic contaminants in the terrestrial environment poses a threat to the long term quality of soils and groundwater. Over the past 2-3 decades, an increased awareness of this threat has directed research towards the fate of petroleum products, solvents, pesticides, dyes and other organic compounds in the environment.

Most organic compounds, for example petroleum products, can be mineralized by microbiota, although more complex chemical molecules require „specialized" organism. This is of paramount importance because it reflects the self regulating mechanism of our global ecosystem, earth.

The main objectives of this thesis are to identify and quantify mechanisms that are responsible for sorption of non-ionic contaminants in soils. Second, to study how sorption affects mineralization rates in artificially and historically contaminated soils. The research is conducted from the perspective of soil science; hence the relation between soil properties and sorption processes is emphasized. After an introduction, chapters 2-5 deal with the relation between soil organic matter properties and the sorption of naphthalene. Chapters 6 to 8 have bioavailability as a common subject, emphasizing the relation between sorption and bioavailability. The thesis concludes by a discussion of the scientific and practical implications of this work.

Requests to: Laboratory of Physical Geography and Soil Science, University of Amsterdam, Nieuwe Prinsengracht 130, 1018 VZ Amsterdam, The Netherlands.

Land Degradation in the Developing World: Implications for Food, Agriculture, and the Environment to 2020. Food, Agriculture, and the Environment Discussion Paper 14. S.J. Scherr and S. Yadav. IFPRI, Washington, 1996, v + 36 p. Paperback.

In 1994, the International Food Policy Research Institute (IFPRI) began an initiative for „A 2020 Vision for Food, Agriculture, and the Environment" to evaluate current conditions and trends in food production, consumption, and distribution to facilitate an international consensus on the directions that policy should take over the next 25 years. IFPRI's 2020 Project sought to place land degradation issues within the broader context of rural development policy, and to emphasize the dynamics of land management.

This publication represents a synthesis of the findings of research, several literature reviews, and the expert judgement of the group of researchers and development leaders who participated in the workshop on Land Degradation in the Developing World, held in Annapolis, 1995, to assess the current situation and look forward to the challenges of 2020.

Orders to: see below.

Population and Food in the Early Twenty-First Century: Meeting future food demands of an increasing population. N. Islam, editor. International Food Policy Research Institute (IFPRI), Washington, 1995, xii +239 p. ISBN 0-89629-331-9. Paperback.

This input to the IFPRI conference, 2020 Vision for Food, Agriculture, and the Environment, contains the papers presented at the roundtable and comments provided by the various discussants, with an overview. Part I: Global and Regional Population Projections (2 papers); Part II: Global and Regional Food Demand and Supply Prospects (3 papers + Appendix and Comments on Part II); Part III: 5 Papers + comments. This publication serves as an interesting introduction to the issue, and is certainly of value for concerned soil scientists!

Orders to: International Food Policy Research Institute, 1200 Seventeenth Street, N.W. Washington, D.C. 20036-3006 USA; Fax: +1 202 4674439; E-mail: ifpri@cgnet.com

Agricultural Land Evaluation in Australia. A Review. P.G. Shields, C.D. Smith and W.S. McDonald. ACLEP, 1996, 152 p. Paperback.

Land evaluation is used to assist government, industry and individuals to make more rational decisions about agricultural land use. The most commonly used systems of land evaluation in Australia and elsewhere, rely on land capability and land suitability classifications. These schemes subdivide land into a few predetermined classes and can be described as segmented in its approach.

This review considers the purpose and significance of land evaluation. It describes the methodology employ-

ed, the organisations and staff that conduct such evaluations, and the clients for whom they are carried our. The product of the evaluation process is information which may be presented in the form of reports, maps, data sets or advice. The importance and value of such information will depend on the purpose of the evaluation and the client requirements. The review also describes evaluation systems used internationally and compares these with the classifications presently used in Australia, discussing the likely future developments in land evaluation and highlighting those aspects where improvement is desirable.
Although geared towards use within the Australian context, this review will be helpful for other countries wishing to embark on a integrated land evaluation process.
Orders to: CSIRO, ACLEP, G.P.O Box 639, Canberra, ACT 2601, Australia.

The Australian Soil Classification. R.F. Isbell. CSIRO, Collingwood, 1996, viii + 143 p. ISBN 0-643-05813 3. Softcover.

This book represents a significant contribution to Australian pedology in the last 25 years. This new classification scheme for Australian soils is a general-purpose, hierarchical one based on Australian soil data. The classes are defined on the basis of diagnostic horizons or material and their arrangement in vertical sequence as seen in an exposed soil profile, that is, on soil rather than geographic attributes. These classes are mutually exclusive and the allocation to them of new or unknown soils is by means of a key. In this new system 14 soil orders are recognized, divided into sub-orders, great groups and subgroups. Criteria for families are also provided.
Price: AUD or USD 29.95 (plus 6.00 for postage and handling).
Orders to: CSIRO Publishing, PO Box 1139, Collingwood, Victoria 3066, Australia. E-mail: sales@publish.csiro.au

Evaluating the Carbon Sequestration Benefits of Forestry Projects in Developing Countries. P. Faeth, C. Cort and R. Livernash. World Resources Institute, Washington, 1994, vii + 96 p. ISBN 0 915825. Paperback.

The authors developed a 'Carbon Sequestration' model with which the carbon storage potential of forests can be estimated. In the publication it is described how they used this new model to evaluate proposed forestry projects in Thailand, Panama, Mexico and Nepal. It appeared that risks and uncertainties abound in any attempt at long-term forecasting and that their findings should be considered as first approximations.
However, the carbon sequestration model promises to be a useful tool in an era when nations everywhere are trying to meet the obligations they accepted in signing the climate treaty.
Price: GBP 14.95.
Orders to: Earthscan Publications Kogan Page (World Resources Institute), 120 Pentonville Road, London N1 9BR, UK.

History of Soil Science at Rutgers University. 1870-1990. J.C.F. Tedrow. Department of Natural Resources, Cook College, Rutgers University, New Brunswick, 1995.

This publication is the history of soil science at Rutgers University. The beginning of formal soil studies at Rutgers can be placed at 1870, but before that date G.H.Cook and others were already making preliminary observations on soil characteristics throughout New Jersey. At 1901 the Department of Soil Chemistry and Microbiology was formed. In 1940 the Department was split into the Soils Department and a Department of Microbiology. The latest was designated an Institute some 10 years later. The Department of Environmental Science and the Department of Natural Resources were outgrowths of the Soils Department. At Rutgers many well-known soil scientists worked, including Dr. Waksman, Nobel laureate.
Price: USD 7.50.
Orders to: Department of Natural Resources, Cook College/Rutgers University, College Farm Road, New Brunswick, NJ 08903, USA.

Climate of the Cultivated Field. Zeszyty Problemowe Post_pów Nauk Rolniczych, Volume 419. Institute of Agrophysics, Polish Academy of Sciences, Lublin, 1995, 123 p. ISBN 83-901426-3-5.

The volume contains 17 papers reporting results of original research, presented at the 4th National Symposium on „Climate of the Cultivated Field", held in Lublin, December 1994. The papers are published in English, with summaries in Polish.
Price: USD 15 (plus postage).
Orders to: see below

New Trends in Obtaining Rapeseed of High Technological Value. Zeszyty Problemowe Post_pów Nauk Rolniczych, Volume 427. Institute of Agrophysics, Polish Academy of Sciences, Lublin, Poland, 1995, 150 p. ISBN 83-901426-4-3.

The volume contains 22 papers, reporting results of original research in the subject mentioned, which were presented at the National Conference held in Kazimierz Dolny, May 1995. The papers are published in English, with summaries in Polish.
Price: USD 15 (plus postage)
Orders to: Foundation for Development of Agrophysical Research, Do_wiadczalna 4, P.O.Box 121, 20-236 Lublin, Poland.

Proceedings of December Conference of the Fertilizer Society, December 1995. The Fertilizer Society, Peterborough, 1996.

The Conference was held under the title 'Beyond 2000 - Issues for the Nutrient Input to World Agriculture', during which 10 papers were read and discussed. The proceedings are published as separate booklets with the papers, and the discussions held, as follows:
Proceedings No. 367: World Food Demand and Supply Prospects, 36 p.; No. 368: Fertilisers and Welfare Development, 16 p; No. 369: Integrated Fertiliser Management: The Way Forward for the Third World? 24 p; No.370: Constraints on the World's Small Farmers, 16 p.; No. 371: The Role of Fertilisers in Environmental Management, 20 p.; No. 372: Opportunities and Constraints in the Recycling of Nutrients, 36 p.; No. 373: Changing Patterns of

Trade and Commercial Activity, 16 p.; No. 374: Fertilisers for the Future, 36 p; No. 375: Life Cycle Assessment for Food Production Systems, 36 p.; No 376: Probing the Future - Technology Foresight, 24 p.; No. 377, Discussions, 44 p.
Price: GBP 12.50 each booklet; GBP 100 for set of 11 booklets.
Orders to: The Fertiliser Society, Greenhill House, Thorpe Road, Peterborough, PE3 6GF, UK. Fax: +44 1733 333617

Mineral Nutrient Disorders of Root crops in the South Pacific. E.T. Craswell, C.J. Asher and J.N. O'Sullivan, editors. Australian Centre for International Agricultural Research (ACIAR), Canberra, 1996, 142 p. ISBN 1-86320-170. Paperback.

The area under sweet potato in Oceania has increased in the past three decades from 170 to 1200 km^2, whereas average yields decreased from 10 to 4.8 ha^{-1}. Current sweet potato yields in Oceania are about one-third of the world average. Also the area of taro grown has increased but taro yields are above the world average. Both sweet potato and taro are staple crops in many countries of the Pacific and the decline in yields is therefore a large problem. Soil fertility may be an important factor to explain the decline in yields but relatively little is known on the nutrient requirements and management of sweet potato and taro in the Pacific. The current book partly fills this gap and resulted from a conference held in Tonga in April 1995. It contains over 20 research and review articles and starts wit a conference summary and an excellent overview chapter on root crops in the Pacific. Most of the research work was conducted within the framework of a ACIAR project which focuses on the nutrition of root crops in the South Pacific. Numerous results from pot trials and nutrient solution experiments are given. Exciting data on the critical leaf nutrient concentration of sweet potato and taro are presented but correlation between glass-house experiments and field conditions has yet to be made. Although the research presented contributes to the understanding of the nutrition of sweet potato and taro, the pressing question as to how farmers in the Pacific are going to solve their soil fertility problems is barely addressed. The book is nevertheless highly recommended for anyone working in the South Pacific and others interested in the nutrition of root crops.
Orders to: ACIAR, G.P.O.Box 1571, Canberra, ACT 2601, Australia.

A.E. Hartemink, Lae, Papua New Guinea.

Factores y Variaciones Espacio-Temporales de la Infiltración en los Ecosistemas Mediterráneos. A. Cerdà. 1995. Editorial Geoforma, Monografías científicas n° 5, Logroño, 151 p. ISBN 84-87779-18-2.

The main objective of this research was to investigate spatial and temporal variations in infiltration rates under Mediterranean conditions. Measurements of soil infiltrability were made, by means of rainfall simulation and infiltrometer ring experiments, for a very large range of conditions and soil types in Southern Spain.
The data collected confirmed the very high spatial variability of infiltration rates expected in Mediterranean ecosystems at different scales: *regional scale* distinguishing among different parent materials, at a *slope scale* due to the patchy distribution of the vegetation and at *plot scale* due to the macropore flow.
The results are of interest to several scientific questions, e.g. land degradation processes. An interesting implication of the research is related to runoff production models. It is often assumed that in semiarid Mediterranean areas Hortonian overland flow is the main runoff producing mechanism. This research casts doubt on this assumption. It is concluded that overland flow is very low and non-continuous because of the locally high infiltration rates under vegetated surfaces where water reinfiltrates. The badland areas are an exception due to the low infiltration rate. Two important environmental problems receive special attention in this publication: forest fires and the abandonment of agricultural land.
The research was carried out from a geomorphological perspective but draws attention to the ecological implications of the results. It is important to emphasise the contribution of this publication to the slope and soil processes under semiarid conditions.
Price: 2500 ESB (USD 20).
Orders to: Geoforma Ed., P.O. Box 1293. 26080-Logroño, Spain.

ASTM Standards on Ground Water and Vadoze Zone Investigations, 2nd Edition. ASTM, Philadelphia, 1994, 396 p. ISBN 0-8031-1786-8. Soft cover.

These standards produce uniform, high-quality data that will help the user make decisions on developing, conserving, and regulating water resources, especially ground water. 46 ASTM test methods and guides (27 additional standards just since the last edition) cover field and analytical procedures for ground water monitoring and vadoze zone investigation. Also included is a practice for design and installation of ground water monitoring wells in aquifers.
Price: USD 69.
Orders to: ASTM Customer Service, 1916 Race Street, Philadelphia, PA 19103, USA; or fax: +1 215 9779679.

The Geography of the Soils of Bangladesh. H. Brammer. University Press, Dhaka, 1996, ix + 287 p. ISBN 984-05-1328-1. Hardcover.

This book is based on the author's more than thirty years' experience with soils and agricultural development in Bangladesh. It provides a systematic description of the country's soils, how they have formed and where they occur. It is intended for use as a university textbook and as a guide for agricultural, forestry and environmental officials and consultants on the characteristics and distribution of the soils which support the country's varied land use and ecological habitats.
The country's soils proved to be very different from the raw geological alluvium which the author expected to find in 1961. Surveys revealed a wide diversity of landscapes and soils, that soil formation on the country's floodplains could be extraordinarily rapid and that several soils had features which were new to

soil science (recognition of the ferrolysis process and of so-called flood coatings or gleyans). In this book, the author shares with the readers the exciting experience of deciphering the various processes of soil formation in Bangladesh. Part I provides an overview of the main soil-forming processes. Part II describes the physical factors of the environment which have influenced soil formation. The stages of soil formation on seasonally-flooded and non-flooded land are described in part III, while the country's main soil types, their classification in international systems and their soil moisture relations are described in part IV. Twenty one representative soil profile descriptions and laboratory data are given in an Appendix as well as the methods of survey, a glossary of terms used.
Price: about USD 35; about GBP 25. In Bangladesh Tk. 450.00.
Orders to: The University Press, Red Crescent Building, 114 Motijheel Commercial Area, P.O.Box 2611, Dhaka 1000, Bangladesh; Fax: +880 2867547 *or:* Drake International Services, Market House, Market Place, Deddington, Oxford, UK; *or:* Importers of Specialized Books, P.O. Box 680815, San Antonio, Texas 78238, USA.

Soil Conservation. Fully Revised and Updated Third Edition. N. Hudson. Batsford, London, 1995, 391 p. ISBN 0-7134-7353-3. Paperback.

Norman Hudson deserves to be congratulated on the third edition of his authoritative textbook. First published in 1971 as a text for teaching, the book has become a classic, earning ten reprintings, three editions, and three translations.
The need for this textbook has grown with the years since the first publication. The massive increase in the agriculturally-based sector of the world's population, much of it at subsistence level under erosive tropical climates, has intensified the problems of soil conservation addressed by the first edition. Fortunately Professor Hudson has been able to keep the work up to date, both with advances in technology and with accumulated world experience in the management of soil.
The first chapter gives a useful overview of the current world trends in population and land resources. The chapters on „Mechanisms of erosion", „Physics of rainfall" and „Erosivity of rainfall" are clear, well illustrated and up to date. The basis for the increased use of modelling is discussed without computer jargon. The advantages and limitations of the Universal Soil Loss Equation and the progress in replacing it by the Revised USLE and, eventually by the Water Erosion Prediction Project (WEPP) are well explained.
The changes from the Second Edition reflect the trend away from mechanical methods towards improvements in land husbandry. While the use of physical control measures is better illustrated than in previous editions the emphasis is on erosion control by better farming. The general coincidence of successful soil conservation with profitable farming is presented as having more appeal than the long-term virtues of soil stability. There is less detail on terrace design formulae and hydraulic calculations, since these are now more readily available in design manuals. The international change of criteria for the assessment of soil erosion damage from the measurement of soil losses to the estimation of decline in productivity is described, but the chapter on research methods is concerned with soil loss studies. The use of extensive methods such as erosion pins is well described, together with the dangers and limitations of small-plot estimates of soil loss. The problems of erosion through overgrazing are discussed, but this is essentially a textbook of soil conservation on arable land, and does not attempt the broader concepts of watershed management and the use of steep lands, some of which Professor Hudson has addressed in the book „Land Husbandry" (1992).
This new edition of „Soil Conservation" is a reading priority for those engaged in the practice, teaching or studying of the subject.
Price: GBP 19.99.
Orders to: B.T. Batsford, 4 Fitzhardinge Street, London W1H 0AH. Fax: +44 171 4874296.

H. Charles Pereira, Maidstone, UK.

„Sustaining Environmental Quality: The Erosion Control Challenge" Proceedings of Conference XXV, Reno, 1994. International Erosion Control Association, Steamboat Springs, viii + 565 p.

These proceedings contain a large variety of papers, mostly on American issues. The book has the following parts: Research and Development (9 papers); Policies and Management Practices (6 papers); Methods and Techniques (24 papers); Special Topics (5 papers) and Poster Presentations (11 texts).
Price: USD 25 (plus postage)
Orders to: International Erosion Control Association, P.O. Box 4904, Steamboat Springs, CO 80477-4904, USA; Fax: +1 303 8798563.

Qualité du sol - Détermination de la teneur en eau de la zone non saturée - Méthode à la sonde à neutrons de profondeur. (Soil quality - Determination of water content in the unsaturated zone - Neutron depth probe method) Norme Internationale ISO 10573:1995(F). ISO, Genève, 1995, 15 p.

L'ISO (Organisation internationale de normalisation) est une fédération mondiale d'organismes nationaux de normalisation. L'élaboration des Normes internationales est en général confiée aux comités techniques de l'ISO. Chaque comité membre intéressé par une étude a le droit de faire partie du comité technique créé à cette effet. Les organisations internationales, gouvernementales et non gouvernementales, en liaison avec l'ISO participent également aux travaux (l'AISS est inclus). La Norme internationale ISO 10573 a été élaborée par le comité technique ISO/TC 190, *Qualité du sol*, sous-comité SC 5, *Méthodes physiques*. La présente norme prescrit une méthode in situ pour la détermination de la teneur en eau de la zone non saturée des sols à l'aide d'une sonde à neutrons de profondeur. Cette méthode est non destructive et applicable lorsqu'on poursuit des investigations sur la réserve en eau, sur l'équilibre de l'eau et sur la distribution de l'eau dans la zone non saturée du sol. Elle est particulièrement adaptée à des mesurages rapides et répétés au même emplacement
Commandes à: Organisation Internationale de Normalisation, Case postale 56, CH-1211 Genève 20, Suisse.

Bodemkunde. Bodemvorming, Bodemeigenschappen,

De Bodems van België, Bodembehoud en -degradatie, Bodembeleid en Bodempolitiek. J.B. Ameryckx, W. Verheye and R. Vermeire. Published by the authors. 346 p. Paperback.

After useful introductory chapters on soil forming factors and processes and soil components, this book has some interesting parts on the various aspects of the soils of Belgium. Much attention is given to the evaluation of soils. Compared to the former edition of 1989, the chapter on soil conservation and degradation, soil pollution and soil policies has increased in scope and length. The book contains many figures and some colour plates.

This book, written in Dutch, is the only comprehensive text on the soils of Belgium. It is mainly written as a textbook for students at university and highschool level, but it is also accessible for informed layman. This new edition is a tribute to Prof. Ameryckx, who passed away in 1994.

Price: BEF 800; USD 28 (postage included).

Orders to: Dr. R. Vermeire, Poolse Winglaan 23, B-9051 Gent, Belgium.

Soils, Land Use and Sustainable Development. Proceedings Paper No 2 of the East Anglian SARD Working Group. T. Oram, editor. Farmers' Link, Norwich, 1995, 56 p.

This document is a report on the „Save Our Soils" Conference, which was organized by Farmers' Link with the National Farmers' Union and the British Society of Soil Science at Norfolk in February 1995. The main aims were to inform farmers about many aspects of the different landscapes and soils of East Anglia, England and especially about their specific agricultural possibilities and problems in management.

Attention was also given to the Chemical Time Bomb concept and the assessment of its relevance to soils in East Anglia. The results of discussions in four Working Groups are also included.

Price: GBP 10 (plus postage).

Orders to: Farmers' Link, 38-40 Exchange Street, Norwich NR2 1AX, England; Fax: + 44 1603 761645; E-mail: nead@gn.apc.org

Soil Erosion, Conservation, and Rehabilitation. Books in Soils, Plants, and the Environment. M. Agassi, editor. Marcel Dekker, New York, Basel, 1996, xi + 401 p. ISBN 0-8247-8984-9. Hardcover.

This publication deals with the processes and mechanisms responsible for runoff and erosion by water in arable lands, detailing state-of-the-art water and soil conservation methods. It has three parts. In the first two parts factors affecting processes of runoff and erosion by water in the agricultural field are discussed. Part I: Soil Erosion by Water has 10 papers. Part II: Soil Conservation, has 2 papers. Part III: Soil Rehabilitation has 4 papers. This publication is well-illustrated with figures and diagrams, but does not contain photographs. The authors are mainly from the USA and Israel.

Price: USD 150.

Orders to: Marcel Dekker, 270 Madison Avenue, New York, NU 10016-0602, USA *or* Marcel Dekker, Hutgasse 4, Postfach 812, CH-4001 Basel, Switzerland.

Proceedings of the International Workshop on Integrated Soil Management for Sustainable Use of Salt Affected Soils. Bureau of Soils and Water Management, Manila, November 1995. A.T. Ayoub, A.M. Mashali, M. Rédly, I. Szabolcs, editors. Research Institute for Soil Science and Agricultural Chemistry (RISSAC), Budapest. 1996, 235 p.

The greatest challenge for the coming decades lies in the fact that the production environments are unstable and degrading. Land degradation is proceeding so fast that many countries will not be able to achieve sustainable agriculture in the foreseeable future. Soil salinization has been identified as a major process of land degradation. Because of the increasing awareness of continuing soil salinization and sodication, FAO's Regular Programme has been supporting national institutes in countries having problems with salt affected soils to strengthen their experimental programmes on adopted soil management practices for sustainable use of salt affected soils: experiments and demonstrations on pilot farms are ongoing through collaborative projects in twelve countries in different regions of the world. In 1994, a cooperative project was initiated between UNEP and FAO, in association with Subcommission A (Salt Affected Soils) of the International Society of Soil Science, to establish an International Network on Integrated Soil Management for Sustainable Use of Salt Affected Soils. The Network organized an International Workshop. The primary objectives were to discuss results of the ongoing collaborative projects, information from technical sources on the subject, future newsletter (SPUSH), publications, and future network activities including research and cooperation.

The participants suggested dividing future field work activities into four groups: i) Management of Coastal Salt Affected Soils; ii) Management of Irrigated Salt Affected Soils in Drylands; iii) Management of Soils Irrigated with Saline Water and iv) Management of Rainfed Salt Affected Soils in Drylands. Each country may participate in more than one group.

The second Network meeting will take place in September 1997 in Tunisia.

Limited numbers of copies are available.

Requests to: Dr. M. Rédly, Research Institute for Soil Science and Agricultural Chemistry of the Hungarian Academy of Sciences, Herman Otto ut 15, H-1022 Budapest, Hungary; *or:* Fax: +36 155 8839; E-mail: h4933red@ella.hu. Dr. Rédly, who is chairing Subcommission A of the ISSS, can also be contacted for activities of the Network and about SPUSH.

Terminology for Soil Erosion and Conservation. Concepts, Definitions and a Multilingual List of Terms for Soil erosion and Conservation in English, Spanish, French and German. E. Bergsma (Principal author), P. Charman, F. Gibbons (†), H. Hurni, W.C. Moldenhauer and S. Panichapong(Co-authors). ISSS, Wageningen, 1996, xiv + 313 p. ISBN 90-71556-15-8. Paperback.

This book has been prepared for Sub-Commission C, Soil and Water Conservation of the International Society of Soil Science (ISSS). It deals with terms used in the study, prevention and treatment of rain erosion. The terms are described, explained, put into context, and given consideration for practical use by

'descriptive aspects', which are added to the definition. Related terms and synonyms are given.
The publication has a section with 'Central Concepts": terms which form a central part in the study of the erosion processes, hazard and conservation. These terms are described more extensively.

All terms are included in an alphabetical list, with their Spanish, French, and German equivalents. The book has many photographs and illustrative drawings and a very extensive bibliography. The price is very low and within the reach of individual soil scientists.
Price: NLG 20 (plus packing and postage) or about USD 20 (plus packing and postage).
Orders to: ISSS/ISRIC, P.O. Box 353, 6700 AJ Wageningen, The Netherlands. Fax: +31 317 471700; E-mail: ISSS@ISRIC.NL

The CORINE Land Cover Database of the Netherlands. Final report of the CORINE Land Cover project in the Netherlands. H.A.M. Thunissen and H.J. van Middelaar. Report 78. SC-DLO Winand Staring Centre for Integrated Land, Soil and Water Research, Wageningen, 1995, 101 p. ISSN 0927-4537. Paperback.

The existence of good quality information on the state of the environment and natural resources is essential in order to ensure an efficient implementation and orientation of the European Community environment policy and integration of the environment with the other Community policies. It was against this background that the CORINE (Co-ORdinated INformation on the Environment) Land Cover Project is aimed at gathering coherent information on land cover for the European Union and at integrating this in a geographical information system (GIS). The methodology is a computer-assisted visual interpretation of earth observation satellite images, with simultaneous consultation of additional data, into the 44 categories of the CORINE Land Cover Nomenclature. The scale of the databases is 1:100.000. To improve the interpretation result, some adapted class definitions are proposed. A mixed qualitative/quantitative interpretation accuracy assessment procedure was applied to validate the interpretation result. The results were digitized using ARC/INFO software, which is compatible with the overall database structure. This report describes the methodology, the results and the evaluation of the production of the Land Cover Database of the Netherlands and also the main results of a workshop organized to discuss the problems concerning the interpretation of a number of land cover types typically for the situation in the north-western part of Europe.
Price: NLG 45.
Orders to: SC-DLO, P.O. Box 125, NL-6700 AC Wageningen, The Netherlands. Fax: +31 317 424812.

Options Méditerranéennes. Bioclimatologie et biogéographie des steppes arides du Nord de l'Afrique. Diversité biologique, développement durable et désertisation. Série B. no. 10. H.-N. Le Houérou. Centre International de Hautes Etudes Agronomiques Méditerranéennes, Montpellier, 1995, 396 p. ISBN 2-85352-146-X. Livre de poche.

Cet ouvrage fait la synthèse des connaissances actuelles sur la bioclimatologie et la biogéographie des steppes arides des cinq pays nu nord de l'Afrique: Egypte, Libye, Tunisie, Algérie et Maroc. Cette synthèse est largement étayée par les travaux de l'auteur (150 articles et 15 ouvrages, publiés de 1951 à 1995).

Le mémoire comprend trois parties principales et six annexes: problématique générale, synthèse des connaissances, analyse biogéographique et tableau de répartition des animaux et des plantes. La problématique traite essentiellement des critères de classification des zones arides et des steppes; ces critères sont multiples: climatiques, phytogéographiques, zoogéographiques, pédologiques, agronomiques et agraires. Parmi les principaux critères climatiques sont le stress hydrique ou degré d'aridité et le stress thermique dû au froid de l'hiver ou à sont absence. la liste bibliographie comprend quelque 650 références, dont une part non négligeable de littérature occulte.

Cet ouvrage constitue la partie principale de la thèse de doctorat d'Etat es-lettres présentée par l'auteur en 1992 à l'Université de Montpellier 3 (Paul Valéry).
Prix: FRF 400 (+ frais d'expédition & d'emballage FRF 25).
commandes à: Librairie Lavoisier - Technique et Documentation, 11, rue Lavoisier, F-75384 Paris Cédex 08, France. Fax: +33 1 42650246.

Electronic Newsletter.
The Land and Water Development Division (AGL) of FAO, Rome, has set up an electronic newsletter entitled 'Land-and-Water-L' to keep readers informed about ongoing activities and publications of the Division.
If you would like to receive this Newsletter, send an E-mail to MailServ@mailserv.fao.org, leave the subject blank and then put the following text „subscribe Land-and-Water-L" in the first line of the message.
For more information contact: Ms. M. Marinucci, Documentation Centre, AGL,
E-mail: Maurizia. Marinucci@fao.org

Grants for Scientific Meetings to be organized in Developing Countries.

The main objective of the Office of External Activities (O.E.A.) International Centre for Theoretical Physics (ICTP), Trieste, Italy, is to support activities initiated by scientists in the Third World and carried out within their regions.

Under this programme, individuals, research groups and institutions may receive support to organize international and regional scientific meetings in Third World countries in the fields of pure & applied physics (including soil physics) and/or mathematics.

The application should include a scientific programme and list of speakers with the topics indicated in detail together with title of lectures. Only those speakers who have been contacted should be indicated. Importance will be given to proposals with some of the key speakers already confirmed.

Applications received by the ICTP will be sent to three or four referees for evaluation and comments/recommendations. Advice and recommendations are also obtained from the Regional Representatives. All applications will be reviewed and the relevant final decisions will then be taken by the Committee on External Activities.

Funds made available by the ICTP should be used

only to cover travel fares for invited speakers an/or foreign participants. Normally, the ICTP grant will not exceed USD 5,000. Backing of local/national authorities is essential and each application must show a matching contribution from local sources.

The deadlines for receiving applications for support are: 1 May for meetings to take place during January-June of the following year and 1 November for meetings during July-December of the following year.

A final report must be submitted within one month of the conclusion of the sponsored activity. The report should include:

the list of participants and lecturers, according to nationality;
the final programme;
a financial report;
comments and suggestions from the organizers.

A booklet explaining in detail the guidelines for requesting support may be obtained from:
Office of External Activities
International Centre for Theoretical Physics
P.O.Box 586
I-34100 Trieste, Italy
Fax: + 39 40 2240443; E-mail: crotta@ictp.trieste.it

Second European Symposium. AFSRE.

The second European Symposium for Farming Systems Research-Extension was held in Granada, Spain from March 27 to 29, 1996. In this Symposium 5 papers were presented in Plenary Sessions, 40 papers were given in 5 Workshops. A publication where all the contributions will be included in edited form is in preparation.

The symposium was a very successful event. It was organized by Dr.Javier Calatrava.
For information about the proceedings and the Association for Farming Systems Research-Extension European Group, please contact Prof.Dr.Werner Doppler, Institute of Agricultural Economics and Social Sciences in the Tropics and Subtopics, Universität Hohenheim (490), D-70593 Stuttgart, Germany. Telefax: + 49 711 459-3812; E-mail: doppler@uni-hohenheim.de

RIOD E-MAIL CONFERENCES

In order to share information and experiences on desertification, 5 organizations from RIOD, the international NGO Network on Desertification, have embarked on a joint electronic networking project. This project aims to improve the network's communication capacity.

The Environment Liason Centre International (ELCI) has established three language based APC conferences to serve NGOs in the South that do not have an on-line access to the Internet.

The conferences are: <RIOD.ENG> targeting English speakers, in particular from Asia and Anglophone Africa; <RIOD.FR> for French speakers but more targeted to Francophone Africa; and <RIOD.ESP> for Spanish speaking, targeting Latin America. These conferences will be „animated" by ELCI, SCOPE, ENDA-TM and CODEFF.

The RIOD Web site.

As part of this project, ELCI launched a site on the World Wide Web on 2 June 1996. You can access the RIOD Web site through:

- http://nn.apc.org/riod/ for the Web site
- ftp://apc.org/riod/ for the File Transfer Protocol (FTP) archive.
- e-mail: pmarcilly@elci.sasa.unon.org

The main sections of the Web site include: Latest News; RIOD - An Introduction; Circular on Desertification; Eco, INCD-8, Feb. 1996; RIOD Contact Addresses; Download Files (including PDF files); and links.

About the initiating organizations

CODEFF is based in Santiago, Chile, and is RIOD's Regional Focal point for Latin America and the Caribbean. EcoNews Africa, based in Nairobi, Kenya, has a well-established outreach capacity to Eastern and Southern Africa and uses various means of communication. ENDA-TM is based in Dakar, Senegal, and is RIOD's Regional Focal Point for Africa. SCOPE is based in Karachi, Pakistan, and is RIOD's Regional Focal Point for Asia. ELCI, based in Nairobi, is RIOD's Global Focal Point.

For further information on the conferences, workshop for animators or on the Web site, please contact Bénédicte Penda Marcilly at ELCI.
E-mail: pmarcilly@elci.sasa.unon.org

Versatility of Wetlands in the Agricultural Landscape. Proceedings of the International Symposium, Tampa, 1995. K.L. Campbell, editor. American Society of Agricultural Engineers, St. Joseph, 1995. xii + 756 p. ISBN 0-929355-69-5. Paperback.

These proceedings provide a resource regarding the versatility of wetlands in the agricultural landscape, mainly in the U.S.A. It is a result of a joint conference by ASAE and the American Water Resources Association (AWRA). The goal was to provide a forum and to discuss issues and developments related to the role of wetlands in the agricultural landscape. Functions considered include water resources, wildlife and habitat protection and alternative uses and management of wetlands. Wetland identification and restoration are addressed, as are various aspects of constructed wetlands.

These proceedings are published both in printed form and in an electronic form on CD-ROM media. The CD-ROM includes all necessary reader software for DOS, Windows, Mac and Sun UNIX environments. It also contains colour figures in several papers and some additional material related to the conference subject matter.
Prices: Book or CD-ROM: USD 45, both USD 65, plus handling charges.
Orders to: see below

Microirrigation for a Changing World: Conserving Resources/Preserving the Environment. Proceedings of the Fifth International Microirrigation Congress. April 2-6, 1995, Orlando. F.R. Lamm, editor. American Society of Agricultural Engineers, 1995, xviii + 978 p. ISBN 0-929355-62-8. Softbound.

Microirrigation is a beneficial tool for improving world food production while conserving water and energy resources and preserving the quality of our

environment.
In this book 155 technical presentations are representing the work of 313 authors from 28 countries. It contains information about the latest developments in research, equipment, adoption, and usage of microirrigation systems worldwide. Special emphasis is on identifying and prioritizing challenges and opportunities.
Price: USD 57, plus handling charges.
Orders to: see below.

Clean Water - Clean Environment - 21st Century. Team Agriculture-Working to Protect Water Resources. American Society of Agricultural Engineers, 3 Volumes, 780 p. ISBN 0-929355-60-1. Softbound.

These proceeding discusses the mutual implications of agricultural and water quality issues. This three volume set provides the newest adoptable technologies to reduce agricultural impacts on water quality. Accomplishments in water quality programs during the last five years are featured in Volume I: Pesticides; Volume II: Nutrients and Volume III: Practices, Systems and Adoption.
Price: USD 45, plus handling charges.
Orders to: ASAE, Dept. 1653, 2950 Niles Road, St. Joseph, MI 49085-9659, USA. Fax: +1 616 4293852.

Publications on CD-ROM

Atlas de Suelos de la República Argentina. CD-ROM. Sistema de Informacion Geografica. ArcView Incorporado. INTA-CIRN Instituto de Suelos/Aeroterra, 1995. ISBN 987-95542-0-5

At the end of last year the Instituto de Suelos of the Instituto Nacional de Tecnología Agropecuaria (INTA) announced the issue of a CD-ROM with soil maps and associated information of Argentina. Apart from the soil data - location and attributes - the CD contains version 1.0 of ArcView running under Windows which makes it possible to access the disk. Hard and software requirements are modest: PC 386 or higher, 4 MB RAM, CD unit and Windows 3.x.

A wealth of maps can be produced: ranging from administrative units, roads, railways, population centres, etc., via climatic parameters like precipitation, temperature, evaporation, wind and humidity, hydrology and phytogeography, to soils. The following themes can be displayed: drainage, wind and water erosion status, slopes, stoniness and rockiness, salinity and sodicity, (sub)surface texture and of course soil classification until the great group level of Soil Taxonomy. All map information can also be displayed as tabular data.

The only interpretative information is the map with a productivity index, of which the methodology is explained in a separate textfile. Texts on other items, soil orders, great groups, etc. are also included and can be approached directly from Windows.

Apart from this map information several photographs of soil profiles and associated landscapes are included on the CD-ROM. Unfortunately, no direct link between the pictures and the maps can be made and the quality of the photos is not optimal.

The inclusion of ArcView 1.0 allows the user to manipulate the maps to his liking, although the speed and the possibilities of ArcView have been strongly improved in later versions. A disadvantage of the arrangement of the data in separate views requires leaving ArcView after a map theme is displayed. Combination of various themes is therefore cumbersome. Nevertheless, this first CD-ROM really presents a easily accessible digital atlas of soil information, an excellent initiative.
Price: USD 200 (plus handling and postage).
Orders to: WBA Trading Limited, P.O.Box 2501, Kensington, MD 20981-2501, USA;
Fax +1 301 9849327;
E-mail: aeroterr@pinos.com or isuelos@intact.edu.ar
Vincent van Engelen, Wageningen, The Netherlands.

Digital Soil Map of the World and Derived Soil Properties. CD-ROM. FAO, Rome 1995.

The ten map sheets of the FAO-UNESCO Soil Map of the World, published in the 70th, are now also available in three computerized formats: one vector format (ARC/INFO Export) and two raster formats called ERDAS and IDRISI (or flat raster) formats.
The ARC/INFO Export vector files can be read by ARC/INFO software on PC or other platforms that support ARC/INFO such ar VAX/VMS and UNIX.
The ERDAS raster files are in ERDAS version 7.5 GIS format and can be read by ERDAS software version 7.5 or later (E.g. version 8.1, called ERDAS/IMAGINE) on PC or UNIX and by other software that can import ERDAS 7.5 GIS files.
The IDRISI raster files are in IDRISI IMG format and can be read by IDRISI software on PC and by most GIS and image-processing software that can read flat raster files.
All the maps are in geographic projection, with spherical datum. The coordinates are expressed in degree decimals. The scale of the original map (and the vector-formatted data) is 1:5,000.000. The cell size of the raster data is 5 x 5 arc-minute.

The Derived Soil Properties files consist of interpretation programs and related data files. The programs are written in QuickBASIC version 4.5 and can be read using a DOS or OS/2 operating systems. Included are programs that interpret the maps in terms of agronomic and environmental parameters such as pH, organic carbon content, C/N ratio, clay mineralogy, soil depth, soil and terrain suitability for specific crop production, soil moisture storage capacity and soil drainage class. The output is given in the form of maps and data files which can be stored for retrieval.

Special country analyses can be made for specific soil inventories, problem soils and fertility capability classification for every country in the world. The output is in tabular form. Also included are maps of classification units of the World Soil Reference Base units and topsoil distribution, which can facilitate the teaching of soil science. In addition there is a soil database developed specifically for environmental studies on a global scale, which includes soil moisture storage capacity, soil drainage class and effective soil depth.
Price: USD 350 (developing countries USD 228)
Orders to: FAO - Publications Division, Distribution and Sales Section, Viale delle Terme di Caracalla, 00100 Rome, Italy; E-mail: Publications-Sales@FAO.org

Environmental Sampling and Analysis for Technicians. M. Csuros. Lewis Publishers, Boca Raton, 1994, 320 p. ISBN 0-87371-835-6. Paperback, spiral binding.

In this book all the practical techniques and methods used by environmental technicians are described. Topics such as sample collection, sample custody, and field and laboratory quality assurance are covered in detail. It is also explained how to validate and interpret analytical data and reports and how to provide an overview of the occurrence, source and fate of toxic pollutants. The methods are described in a logical step-by-step manner.
Price: GBP 45.
Orders to: see below.

Handbook of Vadose zone Characterization & Monitoring. L. G. Wilson, L.G. Everett and S.J. Cullen, editors. Lewis Publishers, Boca Raton, 1995. xii + 730 p. ISBN 0-87371-610-8. Hardcover.

This publication is a volume in Geraghty & Miller Environmental Science and Engineering Series and complements the „Practical Handbook of Ground-Water Monitoring", edited by D.M. Nielsen. Vadose zone monitoring is recognized as a necessary component of a comprehensive subsurface monitoring system. The purpose of this book is to expand upon and consolidate the useful but succinct information included in various documents of the American Society for Testing and Materials (ASTM) and EPA manuals. Case studies present actual case and field experiences - both good and bad - for the benefit of the reader. It discusses the principles, advantages, and limitations of prevalent monitoring techniques. It covers the basic principles of vadose zone hydrology, and contains: Part I. Philosophical and regulatory considerations; Part II. Vadose zone hydrogeology in the United States; Part II. Basic vadose zone hydrological processes: transport and storage of water and solutes; Part IV. Basic contaminant fate and transport processes in the vadose zone; Part V. Preliminary monitoring-related activities; Part VI. Modeling; Part VII. Indirect methods for detecting contaminant movement; Part VIII. Direct methods for sampling chemical and microbial pollutants in unsaturated regions of the vadose zone; Part IX. Direct methods for sampling chemical and microbial pollutants in saturated regions of the vadose zone; Part X. Emerging technologies.
Price: GBP 59.
Orders to: see below.

Environmental Impacts of Soil Component Interactions. Volume I and II. P.M. Huang, G.-M. Bollag, J. Berthelin, W.B. Mcgill and A.L. Page, editors. Lewis Publishers, Boca Raton, 1995.
Volume I. Land Quality, Natural and Anthropogenic Organic. Lewis Publishers, Boca Raton, 1995, 464 p. ISBN 0-87371-914-X.

Contents (Section Heads): General Soil Quality as Influenced by Interactions of Soil Minerals with Organic and Microorganisms. Transformations of Natural and Anthropogenic Organic Compounds as Affected by Soil Mineral and Microorganisms. Index.
Price: GBP 58.
Volume II. Metals, Other Inorganics, and Microbial Activities. Lewis Publishers, Boca Raton, 1995, 304 p. ISBN 0-87371-915-8.

Contents (Section Heads): Transformations of Toxic Metals and Other Inorganics as Influenced by Soil Colloids and Microorganism. Microbial Activity, Pathogenesis, and Environmental Biotechnology in Relation to Interactions of Soil Minerals with Organic and Microorganisms. Index.
Price: GBP 58.
Orders to: see below

Soil Structure. Its Development and Function. Advances in Soil Science. K.H. Hartge and B.A. Stewart, editors. Lewis Publishers, Boca Raton, New York, 1995, 424 p. ISBN 1-56670-173-2. Hardcover.

The German Reserach Foundation (DGF) sponsored investigations on soil structure, in view of the fact that knowledge in this field was not equivalent to that of chemical properties in theoretical background and therefore frequently in sophistication of technologies as well. The support enabled working groups to concentrate on their specific fields for 6 years.

This volume represents the outcome of the research of all participating working groups in 21 papers. The highlights of each project are positioned by the individual authors. A reviewing procedure was established to ascertain general understandability beyond the most narrow circle of specialists. Knowledge in soil structure is behind when compared with that in soil chemistry if one considers the great number of empirical methods which were and still are developed to assess different aspects of soil structure. If today problems with soil structure conditions - i.e., physical properties - come up, it is necessary to remember historical developments and thus to avoid starting physical investigation at a too low level of understanding. The first step toward this is the recognition that it is not worthwhile to look for a single parameter to assess soil structure. It is rather necessary to split up the problem and approach it with more detailed questions. In a concluding chapter, the senior author, who was Vice President of Commission I of the ISSS and its President, presents a very interesting synopsis, in which the individual contributions get their place in a more general background picture.
Price: USD 110
Orders to: CRC Press, 2000 Corporate Blvd. N.W., Boca Raton, FL 33431, USA *or* Lewis Publishers Inc. PO Box 519, Chelsea, MI 48118, USA *or* Times Mirror International Publishers, Unit 1, Sheldon Way, Larkfield, Aylesford, Kent ME20 6SF, UK.

New FAO Publications

Prospects for the drainage of clay soils. FAO Irrigation and Drainage Paper 51. D.W. Rycroft and M.H. Amer. FAO, Rome, 1995, xii + 135 p. ISBN 95-5-103624-1. Paperback.

This publication is an update of FAO Irrigation and Drainage Paper 6. Much research and practical work have been done since the publication in 1971, making a rewriting necessary.

The bulletin reviews the characteristics of clay soils in the first three chapters and subsequently provides criteria and guidance for their drainage. It describes some of the current techniques for reclai-

ming and draining heavy soils and includes information on water and salt movements in clay soils. Strategies for reclaiming salty clay soils are also included. In addition, the paper includes also some other strategies for reclaiming salty clay soils, such as rice cultivation of salt-tolerant crops and water harvesting. Knowledge gaps in reclaiming heavy clay soils are indicated, including some issues which should be considered in the future work of scientists and engineers working in this field.
Orders to: see below

Environmental impact assessment of irrigation and drainage projects. FAO Irrigation and Drainage Paper 53. T.C. Dougherty and A.W. Hall. FAO, Rome, x + 75 p. ISBN 92-5-103731-0. Paperback.

This publication was presented at the Eights International Water Research Association World Congress, Egypt, 1994. It provides a guidance enabling personnel working in irrigation and drainage to take environmental impacts into account. The main focus is on the process of undertaking environmental impact assessment. Major environmental impacts of irrigation and drainage projects are discussed in detail. Guidance is also provided for preparing terms of reference for an environmental impact assessment study. A list of recommended texts and bibliography is available to obtain addition information on the subject.
Orders to: see below

Land and water integration and river basin management. FAO Land and Water Bulletin 1. Proceedings of an FAO informal workshop, Rome, 1993. FAO, Rome, 1995, ix + 86 p. ISBN 95-5-103655-1. Paperback.
This is the first volume in a new series of FAO's Land and Water Development Division. This publication contains the report and recommendations and eight papers that were presented and discussed at the workshop held in Rome, 1993. The workshop addressed the broader issues of water management in the context of land use and the environment and within the framework of river basin management. The workshop discussed: definition of land and water linkages; development of a conceptual framework to predict land, water and plant nutrient interaction, establishment of a landscape and river basin approach to integrated management of natural resources; and the drafting of a programme of action including applied research and modelling, education, extension, manuals and field projects aimed at promoting integrated management of natural resources.
Orders to: see below

Planning for sustainable use of land resources. Towards a new approach. FAO Land and Water Bulletin 2. Background paper to FAO's Task Managership for Chapter 10 of Agenda 21 of the United Nations Conference on Environment and Development (UNCED). FAO, Rome, 1995, vi + 60 p. ISBN 92-5-103724-8. Paperback.

This publication clarifies issues and emerging concepts relating to a new integrated and holistic approach to land use planning. Definitions of land, natural resources and the various types of planning are presented and discussed. The paper introduces elements to be considered, such as land tenure issues, stakeholders, land qualities and sustainability indicators, together with the relationship between rural and urban planning. A planning sequence is briefly outlined. The institutional aspects of planning and implementation are briefly discussed.
Orders to: see below

Water sector policy review and strategy formulation. A general framework. FAO Land and Water Bulletin 3. FAO, Rome, 1995, xiii + 118 p. ISBN 92-5-103714-0. Paperback.

This publication provides a holistic approach to water sector policy review and strategy formulation, delineating and elaborating on the elements to be included in the process. Component of the policy review include water resources assessment, identification of problems and issues and evaluation of available policy options. In formulating strategies for the definition of an action programme and an implementation schedule, participation of the interested parties (stakeholders) is important. Key issues such as economic tools, information systems, environmental and health considerations and international issues are considered. A section presents recent experiences and outcomes of water resources reform in developing and industrialized countries.
Orders to: Selling agents around the world, or, in case of unavailability: FAO Publications Sales, Via delle Terme di Caracalla, 00100 Rome, Italy.

New IBSRAM Publications

International Workshop on Conservation Farming for Sloping Uplands in Southeast Asia: Challenges, Opportunities, and Prospects. IBSRAM Proceedings no. 14. A. Maglinao and A. Sajjapongse, editors. International Board for Soil Research and Management (IBSRAM), Bangkok, 1995, xiii + 357 p. ISBN 974-89375-3-4. Paperback.

Soil erosion is a very serious problem in Asia. Inappropriate technologies such as planting crops up-and-down slope, cultivation of sloping lands without soil-conservation measures, lack of information on techniques of conservation farming, and poverty of farmers are some of the factors that contribute to the problem. In order to assist the countries in the Asian region in alleviating this problem, IBSRAM organized the network „The Management of Sloping Lands for Sustainable Agriculture in Asia" (now known as the ASIALAND Management of Sloping Lands), with the aims of conserving soil resources and achieving sustainable agriculture on sloping lands. After more than five years of experiments, information and results on the validation of soil/crop management practices in various network-participating countries have been accumulated. To share this information and the results with others who are concerned with conservation farming, a workshop was held in November 1994. The general purpose of the workshop was to provide a forum for exchange of information and for interaction among policy-makers, researchers, extension specialists and farmers concerned with conservation farming. More specifically, the objectives were to review and evaluate conservation farming technolo-

gies for Southeast Asia, to determine and assess the socioeconomic considerations and constraints involved in conservation farming, to review related policies and recommend strategies for accelerated adoption of conservation farming technologies, and to formulate action plans and guidelines for future directions. Twenty-three technical and non-technical papers were presented during the workshop of the network, held in Manilla, 1994.

The papers were presented in five sessions: (i) Policy issues and support for conservation farming; (II) On-site and off-site effects of conservation farming; (III) Evaluation of improved technologies for conservation farming; (iv) Economic considerations in conservation farming; and (v) Evaluation of conservation farming systems; Session (vi) Group presentations, conclusions and recommendations.

ASIALAND: The Management of Sloping Lands for Sustainable Agriculture in Asia (Phase 2, 1992-1994). Network Document no. 12. A. Sajjapongse, editor. International Board for Soil Research and Management (IBSRAM), Bangkok, 1995, i + 238 p. ISBN 974-89284-8-9. Paperback.

Concern about the erosion hazard on sloping lands, which are widespread and occupy large areas in Asia, prompted IBSRAM to organize an international network on the management of sloping lands for sustainable agriculture in Asia.
Phase 1 of the network started in late 1988 and ended in 1991. Different improved technologies were validated and the results compared to the farmers' practice during this phase of the network. After three years of testing, many improved technologies were identified as appropriate soil-erosion control measures. These were validated during Phase 2. Phase 2 commenced at the beginning of 1992 and finished at the end of 1994. Two main activities were included, i.e. a continuation of the research activities of Phase 1 and the revalidation of some promising technologies identified in Phase 1 on a larger scale in farmers' field.
Seven countries - China, Indonesia, Lao PDR, Malaysia, the Philippines, Thailand and Vietnam - participated in Phase 2 of the network.

The Management of Sloping Lands in the South Pacific (IBSRAM/PACIFICLAND). Network Document no. 15. D. Howlett, editor. International Board for Soil Research and Management (IBSRAM), 1995, 205 p. ISBN 974-89284-9-7. Paperback.

Pacificland network's objectives are: to develop and organize a collaborative research network on the management of soil and land on sloping lands; to strengthen the capability of national research agencies in undertaking research on soil management on sloping lands, with special regard to promoting sustainable management which is both economic and acceptable to farmers; to test and validate existing knowledge on the management of sloping lands; to facilitate a system for the exchange of information on soil and land management; to assist in the development of appropriate technologies on the management of sloping lands. There are three groups of activities: national research projects in Fiji, Papua New Guinea, Vanuatu, and Western Samoa; training and capacity building through technical specialist support and training workshops and information exchange through a network newsletter and annual meetings.
This volume contains the proceedings of a workshop held in 1994, dealing with socioeconomics, farming systems and soil erosion research.

Progress in network research on the management of acid soils (IBSRAM/ASIALAND).
Network Document no. 16. R.J.K. Myers, editor. International Board for Soil Research and Management (IBSRAM), Bangkok, 1995, 243 p. ISBN 974-89318-4-6. Paperback.

The present report contains the proceedings of the fourth annual meeting of the network in Thailand, 1994. The main business of the meeting was to receive and discuss reports from the various network sites. Country reports from Indonesia, Malaysia, Philippines, Vietnam, Thailand are included.

The Management of Upland Soils (IBSRAM/AFRICALAND). Network Document no. 17. M. Zöbisch, editor. International Board for Soil Research and Management (IBSRAM), Bangkok, 1996, 115 p. ISBN 974-89402-9-2.
Paperback.

The first annual meeting of IBSRAM's AFRICALAND network took place in Cameroon. The meeting had two main objectives: bringing together the participating scientists and to plan future activities.
These proceedings contain the annual reports of the network projects, a summary of new projects in Côte d'Ivoire, Ghana and Cameroon, and materials related to the planning proposals for the future activities of the network.
Orders to: IBSRAM, P.O.Box 9-109, Bangkhen, Bangkok 10900, Thailand.

The availability of IBSRAM Network Documents is limited.

Impact of Pesticides on Farmer Health and the Rice Environment. Natural Resource Management and Policy 7. L. Pingali and A. Roger, editors. Kluwer Academic Publishers, Dordrecht, Boston, 1995, 688 p. ISBN 0-7923-9521-2. Hardbound.

The book covers the various aspects of the use of pesticides, their behaviour, degradation, and impacts in wetlands ricefields, and presents the results of surveys conducted in the Philippines and Thailand. It includes both bibliographic reviews and selected aspects of the experimental results of a research project on pesticide impacts in wetland ricefields. The first phase of the „Pesticide Impact" project was developed in the Philippines from 1989 to 1991. It was a multidisciplinary/collaborative approach involving scientists from IRRI, NRI (England), ORSTOM (France), UPLB (Philippines), who studied the effects of pesticides on the environment and on farmers' health, and the economical aspects of their use.
Price: NLG 285; GBP 115.75.
Orders to: see below.

Plant Analysis Manual. J. Walinga, J.J. van der Lee, V.J.C. Houba, W. van Vark and I. Novozamsky. Kluwer Academic Publishers, Dordrecht, Boston, 1995. ISBN 0-7923-3182-6.

In the field of plant analysis there is a confusing variety of methods and procedures, both for digestion and determinations. In many cases the digestion and the subsequent determination are interrelated. For example, a separate digestion is needed for trace elements in order to obtain determinable concentrations. The authors have chosen a design in which the digestion/extraction procedure is described in one chapter together with all determination procedures that may be carried out on that particular digest/extract. All the necessary information (such as standardizations) appears in appendices. As a consequence, several determination procedures are described two or three times, however, each based on a particular digestion or extraction method.
Two types of determination procedure are described: *manual* and *automated*. Manual procedures are mainly used in research laboratories, whereas automated procedures are more frequently applied in routine laboratories. The determination procedures are only for inorganic components, usually elements. Besides, most procedures are designed to give a total content value of the element under consideration, regardless of the chemical structure in which it occurs in the plant.
The manual is intended for the practising (agricultural) chemist.
Price: NLG 200; GBP 63.
Orders to: see below.

Eco-Regional Approaches for Sustainable Land use and Food Production. Proceedings of a Symposium on Eco-Regional Approaches in Agricultural Research, 12-16 December 1994, ISNAR, the Hague. Systems Approaches for Sustainable Agricultural Development. Volume 4. J. Bouma, A. Kuyvenhoven, B.A.M. Bouman, J.C. Luyten and H.G. Zandstra, editors. Kluwer Academic Publishers, Dordrecht, Boston, 1995, vii + 505 p. ISBN 0-7923-3608-9. Hardback.

This co-publication with the International Potato Center (CIP), contains the papers, response papers and discussion report of a seminar on eco-regional approaches. It assesses the state of the art of systems approaches applied to eco-regional problems, presenting and discussing a number of case studies. Future research needs are discussed as well as ways to improve collaboration between research institutes.
The book is divided in the following sections: Section A. Eco-Regional Approaches (3 papers); Section B. Resources Availability and Demand Studies at a Global Scale (3 papers and 2 responses); Section C. Linking Different Scale Levels in Ecological and Economic Studies (2 papers); Section D. Case Studies of Eco-Regional Approaches at National and Regional Scale (3 papers and 3 responses); Section E. Institutional Aspects (3 papers); Section F. Case Studies of Eco-Regional Approaches at the Farm/Enterprise Level (3 papers and 4 responses); Section G. Case Studies of Eco-Regional Approaches at the Crop Level (3 papers and 2 responses).
Price: NLG 315; USD 211; GBP 135.50.
Orders to: see below

Management of Biological Nitrogen Fixation for the Development of More Productive and Sustainable Agricultural Systems. Development in Plant and Soil Sciences. Volume 65. Partly reprinted from Plant and Soil, Volume 174, Nos. 1-2(1995). J.K. Ladha and M.B. Peoples, editors. Kluwer Academic Publishers, Dordrecht, Boston, 1995, 287 p. ISBN 0-7923-3413-2. Hardbound.

This volume contains the extended versions of papers presented at the Symposium on Biological Nitrogen Fixation for Sustainable Agriculture at the 15th World Congress of Soil Science, Acapulco, Mexico, 1994. It is devoted to discussions on the role of BNF (soil and biological nitrogen fixation) in agricultural sustainability. BNF in crop forage and tree legumes are augmented with discussions on integrated farming systems involving BNF, soil and N management, and recycling of legume residues. BNF by non-legumes are discussed and attempts to transform cereals into nodulating plants are reviewed. Advances on the development of novel methodologies to understand symbiotic interactions and to assess N_2 fixation in the field are described and means of enhancing BNF through plant and soil management, or breeding and selection are presented. The problem encountered in exploiting BNF under farmers' field conditions and promising approaches to improve BNF exploitation are also examined.
Price: NLG 220; USD 160.50; GBP 99.
Orders to: Kluwer Academic Publishing Group, Order Dept., P.O.Box 322, 3300 AH Dordrecht, The Netherlands. E-mail: services@wkap.nl; or Kluwer Academic Publishers Group, Order Dept., P.O. Box 358, Accord Station, Hingham, MA 02018-0358, USA. E-mail: kluwer@wkap.com.

Les sols ferrallitiques et leur répartition géographique. ORSTOM, Collection Etudes & Thèses. ORSTOM Éditions, Paris, 1994, 567 p. Tome 1: Introduction générale les sols ferrallitiques: leur identification et environnement immédiat; Tome 2: Les sols ferrallitiques: Les facteurs de formation et les sols ferrallitiques en Amérique; Tome 3: Les sols ferrallitiques en Afrique et en Extrême-Orient, Australie et Océanie, conclusions générales. P. Ségalen. ISBN 2-7099-1220-1 (Édition Complète). Livres de poche.

Ferrallitic soils occur mainly in the humid tropics and result from intensive weathering of rock minerals with elimination of alkaline and alkaline-earth minerals and some silica, followed by recombination of the remaining minerals with aluminium to form minerals of the kandite family, associated with oxides and hydroxides of Fe, and hydroxides of Al.
Volume 1 consists of 4 parts. Part I outlines the evolution of the concepts of 'ferrallitic soils' from 1807 to the present day. Parts II and III describe the characteristics of identification of ferrallitic and associated soils. Part IV examines soil sequences and their contribution to the study and mapping of ferrallitic soils.
Volume 2 consists of 2 parts. Part I considers the main factors affecting the formation of ferrallitic soils, including parent material, relief, climate and vegetation. Part II examines ferrallitic soils in the American environment, particularly the Caribbean, the Amazon basin and the Northeast and Southeast regions of Brazil.
Volume 3 consists of 3 parts. Part I describes the ferrallitic soils of West, East, Central and Southern

Africa, Madagascar and some volcanic islands, with information on the rocks, topography, climate and vegetation of each region. Part II considers ferrallitic soils in India, Bangladesh, Sri Lanka, Australia, South East Asia and the Pacific Islands. Part III provides some general conclusions from the examination of the world's ferrallitic soils, particularly regarding their dominant parent materials (granito-gneissic rocks), the most common relief (peneplains), the prevailing climate (warm, abundant rain), and the most favourable vegetation (dense forest cover). The combination of these factors lead to the formation of soils with kandite minerals, Fe and Al sesquioxides, and a generally thin A horizon overlying a thick, coloured B horizon. Exchangeable bases and phosphorus content are low, fertility is generally poor, pH values are acidic, with risks of Al toxicity.

Each Volume has an introduction in English, Spanish, and Portuguese. All three volumes include a list of abbreviations used in the text, an index of the tables and figures and a geographical and subject index. The author, who is well known from his many publications on weathering in the tropical environment, has written an interesting compilation with worldwide coverage. The volumes are well illustrated with colour photographs and maps. The price is kept remarkably low.

Price: FRF 150 per volume; FRF 400 for complete edition.

Orders to: see below.

Grands bassins fluviaux périatlantiques. Congo, Niger, Amazone. Collogues et Séminaires. Actes du colloque PEGI INSU-CNRS-ORSTOM, Paris, du 22 au 24 novembre 1993. J.-C. Olivry et J. Boulègue, éditeurs. ORSTOM Éditions, Paris, 1995, xii + 505 p. ISBN 2-7099-1245-7. Livre de poche.

Au sein du Programme sur l'environnement de la géosphère intertropicale (Pegi), l'opération Grands bassins fluviaux constitue le volet „phénomène actuels" qui permet d'approcher les cycles paléo-climatiques et les bilans érosion-sédimentation inscrits dans les archives du passé. On peut établir le bilan global et les fluctuations interannuelles des éléments et matériaux et organiques exportés des continents vers l'océan Atlantique, mais aussi connaître la dynamique des grands écosystèmes intertropicaux. Cette publication contient les articles suivants: Première Partie: Le Bassin du Congo (19 articles); Deuxième Partie: Le Bassin du Niger (6 articles); Troisième Partie: Le Bassin de l'Amazone (8 articles); Quatrième Partie: Approches couplées.

Prix: FRF 160.

Commandes à: voir ci-dessous.

La matière organique dans les sols tropicaux à argile 1:1. Recherche de compartiments organiques fonctionnels. Une approche granulométrique. Thèse et Document Microfichés 144. Chr. Feller. Thèse L'Université Louis Pasteur, Strasbourg. Résumés en anglais, portugais, et en espagnol. ORSTOM Éditions, Paris, 1995, deux volumes de 393 et 236 p. ISBN 2-7099-1286-4. Livre de poche.

Cette étude concerne essentiellement les sols ferrugineux et ferrallitiques, profond et bien drainés, des régions intertropicales chaudes. Ces sols occupent des superficies importantes et représentent environ 70% des terres cultivés. Pour ces sols, l'importance du rôle joué par la matière organique (MO) dans les propriétés physiques, chimiques et biologiques des horizons de surface a été maintes fois signalée dans la littérature. Elle est confirmé ici pour diverses situations très représentatives de ces sols à l'argile 1:1; sols d'Afrique de l'ouest, à kaolinite et aux horizons de surface à texture grossière, sols argileux à halloysite des Petites Antilles, d'origine volcanique et encore riches en minéraux primaires, sols argileux du Brésil, à oxyhydroxydes de fer et d'aluminium et très pauvres en minéraux primaires. Au-delà de ces approches globales et statistiques relativement classiques, on ne disposait, il y a encore une dizaine d'années, que de peu de données sur la nature et la dynamique des différentes formes de MO du sol exerçant une fonction particulière vis-à-vis des grands cycles biogéochimiques. Ce problème est pourtant d'une importance majeurs dans les recherches actuelles sur la „durabilité" des agricultures tropicales.

Différents raisons d'ordre historique et scientifique nous ont amené à privilégier une approche granulométrique en vue d'identifier des „compartiments organiques fonctionnels" dans ces sols.

Les différentes fractions sont regroupés en trois compartiments organiques et organo-minéraux principaux dont le caractère fonctionnel s'avère être fortement dépendant de la texture, celle-ci jouant un rôle considérable dans le niveau des stocks organiques de ces sols. Cette approche apparaît prometteuse pour aborder de nombreuses thématiques de recherche dans les domaines de l'agronomie et de l'environnement.

Prix: FRF 160.

Commandes à: ORSTOM Éditions-Diffusion, 32, avenue Henri-Varagnat, F-93143 Bondy Cedex, France.

Introductory Soil Science Laboratory Manual. Third edition. R.G. Palmer and F.R. Troeh. Oxford University Press, New York, Oxford, 1995. 120 p. ISBN 0-19-509436-0. Paperback, spiral binding.

Understanding soils and their ecological relationships is increasing in importance as we learn more about the environment in which we live. This laboratory manual deals with such topics as soil chemistry, soil physics, nitrate testing, soil biology, soil survey, and soil conservation. This manual is a revision of an earlier edition that reflects current environmental concerns, especially with regard to groundwater pollution, and is designed to supplement regular class work in an introductory soils course. A new exercise on soil nitrates and nitrogen was developed and is included. Flexibility in the exercises allows the instructor and students to local resources and conditions. The materials included give substantial meaning to otherwise abstract topics such as soil profiles and horizons, soil texture, cation exchange capacity, nitrate leaching, and nonpoint source pollution.

Price: GBP 17.50.

Orders to: Oxford University Press, 200 Madison Avenue, New York, New York 10016, USA; *or:* Oxford University Press, Saxon Way West, Corby NN18 9ES, UK.

Climate Change and Rice. S. Peng, K.T. Ingram, H.-U. Neue and L.H. Ziska. Springer-Verlag, Berlin,

1995, xvi + 370 p. ISBN 3-540-58906-6. Hardcover.

Any change in the world's climate is a potential threat to global food security. Climate change such as increase in CO_2, temperature and ultraviolet-B radiation will influence the production of rice, the world's most important food crop. As a source of atmospheric methane and nitrous oxide, rice cultivation may also contribute to climate change. This volume covers aspects of global climate change, its effect rice ecosystems, and on agriculture.
Price: DEM 148, GBP 64.50.
Orders to: see below.

Ecosystem Geography. R.G. Bailey. Springer-Verlag, New York, Berlin, 1996, xii + 204 p. ISBN 0-387-94586-5. Softcover. Also available in hardcover ISBN 3-387-94354-4.

Land management is presently undergoing enormous change: away from managing single resources to managing ecosystems. To manage them effectively we need to understand better their geographic distribution. The analysis and management of ecosystems rely increasingly on sound geographical knowledge. This book brings the geographer's tools - maps, scales, boundaries, and units - to the study of ecosystems. It shows how existing information and maps could be used to map ecosystems. The scheme that serves as the framework of this book was first devised as a training program for a course in multiscale ecosystem analysis for the U.S Forest Service. The author has distilled more than two decades of research on ecosystem mapping and classification. His work has a growing influence on how government and academic scientists are using ecological data to monitor biodiversity, manage land holdings, and interpret the results of climatic change. This book includes many diagrams, photographs, and maps. It presents a synthesis of the knowledge in this field and provides a guide to its use. It is useful for ecologist, geographers, land and resource specialists, and anyone involved in the study or ecosystems.
Price: DEM 59; ATS 430.70; CHF 52 (softcover).
Orders to: see below.

Karst in China. Its Geomorphology and Environment. Springer Series in Physical Environment, Vol. 15. M.M. Sweeting. Springer-Verlag, Berlin, New York, 1995, 265 p. ISBN 3-540-5846-9. Hardcover.

This is the first study of the karst areas of China to be carried out by a Western geomorphologist, and almost all the sources are from Chines works, as yet unpublished in the West. Karst areas are sensitive to environmental influences and Chinese attempts to deal with these are discussed here, as are Chinese methods of studying karst since they differ somewhat from those in the West. Finally, the author compares karst areas in Europe and elsewhere with those in China. The book is illustrated by numerous diagrams from Chinese sources as well as the author's own photographs.
Price: DEM 198; GBP 92.50; FF 746.
Orders to: see below.

Climate Change and World Food Security. NATO ASI Series I: Global Environmental Change, vol. 37. T.E. Dowing, editor. Springer-Verlag, Berlin, New York, 1995, x + 660 p. ISBN 3-540-60562-2. Hardcover.

The book addresses the threat of climate change to world food security, by providing an authoritative review of climate change and trends in world food security, case studies of food and the environment, and chapters on adaptive responses. It reviews: trends in agriculture and food security - projections of the incidence and distribution of hunger over the next few decades; the risk and global impacts of climate change on agricultural systems, relying on alternative models of world agricultural potential that have simulated the impacts of climate change; vulnerability and multiple threats to sustainable agriculture; studies of local impacts and responses; and strategies to limit climate change and improve food security.
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Climatic Variations and Forcing Mechanisms of the Last 2000 Years. NATO ASI Series I. Global Environmental Change. Volume 41. P.D. Jones, R.S. Bradley and J. Jouzel, editors. Springer-Verlag, Berlin, New York, 1996, x + 649 p. ISBN 3-540-60695-5. Hardcover.

A profound knowledge of the past climate is vital for our understanding of global warming. The past 2000 years are both the period which is of most relevance to the next century and that for which there is the most evidence. High-resolution proxy records for this period are available from a variety of sources. Five sections of this volume consider such indicators as dendro-climatology, ice cores, corals, historical records, and lake varves. The final two sections cover the histories of various forcing factors, bringing together records from a variety of sources and provide explanations.
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Regions at Risk. Comparisons of Threatened Environments. J.X. Kasperson, R.E. Kasperson and B.L. Turner II, editors. United Nations University Press, Tokyo, New York, 1995, ix + 588 p. ISBN 92-808-0848-6. Softbound.

This book launches a series from the United Nations University research project, Critical zones in Global Environmental Change, itself part of the UNU programme on the Human and Policy Dimensions of Global Change. Both endeavours explore the complex linkages between human activities and the environment.
This book draws upon nine regional case-studies - Amazonia, the Aral Sea basin, The Nepal middle mountains, The Ukambani region of Kenya, the Llano Estacado of the North American Southern High Plains, The Basin of Mexico, the North Sea, the Ordos Plateau of China, and the eastern Sundaland region of South-East Asia - to explore the concept of environmental criticality. A classification of environmental threat, replete with definitions, includes four categories: criticality, endangerment, impoverishment, and sustainability.

This classification guides the case-studies, each conducted according to a research protocol, and informs the development of a theoretical framework for analyzing the human dimensions of global environmental change.
Price: HDC: USD 38 (airmail USD 43). LDC: USD 19.
Orders to: see below.

Amazonia. Resiliency and Dynamism of the Land and its People. N.J.H. Smith, E.A. S. Serrão, P.T.Alvim and I.C. Falesi. United Nations University Press, Tokyo, New York, 1995, xiv + 253 p. ISBN 92-808-0906-7. Softcover.

This book is the third in a series from the United Nations University research project, Critical zones in Global Environmental Change (UNU Studies on Critical Environmental Regions). It examines the driving forces behind the rapid ecological and socio-economic changes, and considers current threats to the forests and their biodiversity. Various strategies for conserving forests and other resources are outlined, with an emphasis on critical mining and agriculture, and assesses their environmental impacts. Particular attention is paid to the development of measures that help to alleviate pressure on the remaining wilderness. Perennial cropping systems are discussed in detail, especially agroforestry, and the potential for increased agricultural production on the Amazonia floodplain is explored.
Price: HDC: USD 30 (airmail USD 35); LDC: USD 15.
Orders to: United Nations University Press, 53-70, Jingumae 5-chome, Shibuya-ku, Tokyo 150, Japan.

Automation in the Laboratory. W.J. Hurst, editor. VCH Publishers, Weinheim, 1995, xi + 248 p. ISBN 1-56081-025-4. Hardcover.

This publication provides an introduction/overview of the various facets of laboratory automation. This automation is an active area gaining intense exposure with the increased emphasis on productivity. It comes in many forms ranging from robotics, which can allow for automated sample preparation and subsequent analysis, to flow injection analysis and other forms of automated systems (LIMS).
The book serves as a reference, a general introductory volume on laboratory automation for industrial and academic scientists, including those active in soil and water analyses, and also as a text for an introductory or advanced course on laboratory automation.
Price: DEM 148.
Orders to: VCH Publishers, P.O.Box 101161, D-69541 Weinheim, Germany, or VCH Publishers, 220 East 23rd Street, New York, NY 10010, USA.

New World Bank Publications

Vetiver Grass for Soil and Water Conservation, Land Rehabilitation, and Embankment Stabilization. A Collection of Papers and Newsletters Compiled by the Vetiver Network. World Bank Technical Paper Number 273. R.G. Grimshaw and L. Helfer, editors. The World Bank, Washington, 1995, 281 p. ISBN 0-8213-3144-2. Paperback.

This technical paper is the result of seven years of research and development on the use of Vetiver grass as a promising - and proven - agricultural technology to prevent soil erosion and conserve precious rainfall moisture. The information is intended for both present and potential users of vetiver, so that they might assess its usefulness and applicability. This technical paper includes the ten newsletters of the Vetiver Information Network; Vetiver Grass: The Hedge Against Erosion, the technically-oriented handbook providing step-by-step instructions as to the use of the technology; „Vetiver Grass: The Ideal Plant for Vegetative Soil and Moisture Conservation", a monograph detailing the history and potential of vetiver grass; „The Role of Vetiver Grass in Sustaining Agricultural Productivity", a summary paper „debunking" some of the myths, and confirming others, commonly believed about vetiver; a detailed index; and a selected reading list. For information about the activities of the Vetiver Network: please contact: Vetiver Network, 15 Wirt Street, Leesburg, Virginia 22075, USA; Fax: +1 703 7718260; E-mail: Grimshaw_R@vetiver.com.
Orders to: see below.

Environmental and Economic Issues in Forestry. Selected Case Studies in Asia. World Bank Technical Paper Number 281. Asia Technical Department series. S. Shen and A. Contreras-Hermosilla, editors. The World Bank, Washington, 1995, 128 p. + Maps. ISBN 0-8213-3233-3. Paperback.

Recognizing that many of the immediate pressures on Asian forests were caused by the needs of growing populations and economies, in 1991 the World Bank commissioned a series of studies to incorporate environmental considerations into economic analyses of forestry operations.
Each of the chapters presented in this volume represent one of the identified research topics - from analysis of the logging ban in Thailand to technical advice on tree improvement programs to analysis of the effect on forests of economic policy in India. Because the topics represent the interests of the Worldbank Country Departments in Asia, the volume provides an overview of the environmentally related priority issues in Asian forestry and contributes to the critical work of understanding their complex dynamics.
Price: USD 9.95.
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World and Regional Supply and Demand Balances for Nitrogen, Phosphate, and Potash, 1993/94-1999-2000. World Bank Technical Paper Number 309. The World Bank/FAO/UNIDO/Industry Fertilizer Working Group. The World Bank, Washington, 1995, vii + 43 p. ISBN 0-8213-3495-6. Paperback.

Since 1991 The World Bank has been issuing this paper on an annual basis. The current publication again provides statistical data in tabular format on the most recent historical fertilizer nutrient supply and demand balances as well as a five-year forecast and is based on the August 1995 assessments by the combined organizations.
Global and regional data are presented for the three main fertilizer nutrients: nitrogen, phosphate, and

potash. A brief introduction supplies some background on the activities and composition of the Group and explains its methodologies used for the projections.
Orders to: see below.

Rethinking Research on Land Degradation in Developing Countries. World Bank Discussion Papers Number 289. Y. Biot, P.M. Blaikie, C. Jackson and R. Palmer-Jones. The World Bank, Washington, 1995, x + 139 p. ISBN 0-8213-3329-1. Paperback.

This paper reviews the three main approaches to land degradation and conservation - the classic, populist and neo-liberal. The implications of these paradigm shifts are examined in terms of research needs. Next, the paper discusses the role of science and technology, and the origins and substance of differences in the perception, evaluation and diagnosis of degradation. Focus is then shifted to analyzing how farmers and pastoralists make decisions about resource use and management, and a research approach is suggested for analyzing decision-making. Case studies in Nepal and Zimbabwe illustrate the approach.
Price: USD 9.95.
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Agriculture in Liberalizing Economies: Changing Roles for Governments. Proceedings of the Fourteenth Agricultural Sector Symposium. D. Umali-Deininger and C. Maguire, editors. The World Bank, 1995, viii + 455 p. ISBN 0-8213-3354-2. Paperback.

This volume is an assembly of the papers presented during the 14th World Bank Agricultural Symposium, held in 1994. The theme pursues further the on-going debate of the appropriate role of the state in promoting agricultural growth and development, while at the same time seeking to capitalize on important lessons emerging from experiences around the world. The papers highlight that changing the role of government from market domination towards the provision of a regulatory framework and public goods, that provide maximum scope for private sector activity is a continuing process that requires continuous fine-tuning and evaluation, rather than a one-time event.
Price: USD 25.95.
Orders to: see below.

Defining and Measuring Sustainability. The Biogeophysical Foundations. M. Munasinghe and W. Shearer, editors. The World Bank, 1995, xvi + 440 p. ISBN 0-8213-3134-5. Paperback.

This volume is based on papers for the International Conference in Washington in 1992 and is published by the United Nations University and the World Bank. The motivation for the conference derives from the age-old concern about humanity's impact on the environment and the ultimate carrying capacity of the earth. The contributions are arranged along the lines of the conference.
Part A covers the major issues that affect all ecosystems in relation to biogeophysical sustainability. The issues include key concepts and terminology, spatial and temporal scales, limits to the sustainable use of resources, cumulative effects, source/sink modeling of landscapes, and atmosphere and climate.
Part B contains reports of locations on the planet where the environment and society's reactions have been studied. These locations include a rocky intertidal marine coast in Chile, the Chesapeake Bay in North America, arid zones in Australia, high-altitude forest in Asian and large marine ecosystems and fisheries.

Part C offers reports on the current status of biogeophysical indicators of sustainability of some managed ecosystems. These reports cover agriculture, rangelands, fisheries, forests, wildlife, and natural areas and water resources in the tropical and temperate zones. Reviews of several of these reports follow the principal contributions.
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A Conservation Assessment of the Terrestrial Ecoregions of Latin America and the Caribbean. E. Dinerstein, D.M. Olson, D.J. Graham, et al. The World Bank, 1995, xv + 129 p + 11 maps. ISBN 0-8213-3295-3. Paperback. Published is association with the World Wildlife Fund.

This book proposes a hierarchy of habitat types and defines and maps 191 ecoregions, which form the base for a priority-setting approach that emphasizes representation of all distinct ecosystems. The conservation status of each ecoregion is determined using such landscape features as the amount of habitat loss and the number and size of remaining blocks of intact habitat. The biological distinctiveness is also defined and used, together with the conservation status, to suggest geographic priorities for conservation in the region.
Eleven maps accompany the text, and a poster-size colour map at 1:15 million is included. The book should enhance the conservation strategies of donors, multilateral organizations, and national policymakers and lend critical guidance to operations involving the protection or management of natural habitats.
Orders to: Selling agents around the world; *or:* Distribution Unit, Office of the Publisher, The World Bank, 1818 H Street, N.W., Washington, D.C. 20433, USA.; *or* Publications, The World Bank, 66 avenue d'Iéna, 75116 Paris, France.

SCIENCES OF SOILS - Journal on World Wide Web

The World Wide Web is an excellent platform for scientific publishing, which offers a lot of advantages, for example: Nonlimited worldwide access; Fast publication of articles; Graphical features (i.e. coloured figures and photos); Direct and easy communication among author(s) and reader(s); and Fast and topic related document search.
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Structure and Function of Soil Communities. C.A. Edwards, T. Abe and B.R. Striganova, editors. Kyoto University Press, Kyoto, 1995,iv + 152 p. ISBN 4-87698-023-3. Hardbound.

This publication is an outcome of the International Symposium of Ecology held in Yokohama, 1990. The first part addresses the organization of microarthropod (Collembola and Acarina) communities (4 articles); Part two on the interaction between soil organisms and their soil environment (3 articles); the last part concentrates on trophic and antagonistic and mutualistic interactions in soil communities with particular emphasis on interactions between soil-inhabiting invertebrates and microorganisms (4 articles).

Price: JPY 3500.

Orders to: Kyoto University Press, Kyoto, Japan. Fax: +81 75 761 6182.

The world seed market. Development and strategies. Second revised edition. A.M.A. Heijbroek, E.M.L. de Schutter and A.F. van Gaasbeek. Rabobank, 1996, 78 p.

Demand for agricultural seed is intimately bound up with developments in primary agriculture. World acreage trends for any given crop directly affects demand for seed, and is heavily influenced by a range of factors which include agricultural policy, productivity, human and animal consumption and industrial applications. The total world area of cultivated land stands at 1.3 billion hectares (over 10% of total land area), and increased by around 4% between 1970 and 1995. In Africa the increase has measured almost 5%, and in South America a little over 10%. Asia has recorded an increase of only 0.5%, and since 1993 there appears to have been no growth. In the industrialized nations as a whole there has been a small but steady decline since 1985.

The agricultural seed sector comprises the breeding, propagating and trade of seed and seed products in commercial agriculture. Good seed is basic to agricultural production and the quality of the seed is one of the factors determining both the success of the harvest and the quality of the product. The present publication is based on a thorough study of the available literature, and consultation with experts. It analyzes the seed market of the following crops together with the most significant countries for their production. Grains (wheat, barley, maize (corn, rice); oilseeds (soy & other oilseeds); sugar-beet seed; pulses (peas, beans); potatoes (seed potatoes); fodder crops (grasses, other fodder crops); horticultural seeds (vegetables, flowers).

Price: NLG 75; USD 45.

Orders to: Rabobank Nederland, Marketing Services, P.O. Box 17100, 3500 HG Utrecht, The Netherlands. Fax: +31 30 2161976.

Blueprint 4. Capturing global environmental value. D. Pearce. Earthscan, London, 1995, xiii + 212 p. ISBN 1-85383-184-0. Pocketbook.

This publication is the fourth volume in the 'Blueprint' series. Blueprint 1 - Blueprint for a Green Economy (1989), addressed the issue of environmental conservation and improvement from the perspective of the environmental economist. Blueprint 2 - Greening the World Economy (1991) applied the same techniques and approach to world environmental issues - global warming, ozone layer depletion, the tropical forests; Blueprint 3 - Measuring Sustainable Development (1993) returned to the theme of Blueprint 1 and focused again on the UK economy. Blueprint 4, returns to the theme of Blueprint 2. It argues that saving the world's environment will involve an extensive, imaginative search for 'global bargains' - deals between the rich and poor and, for that matter, between the rich and rich and the poor and poor, that give everyone a self-interested incentive to improve the environment.

Price: GBP 10.95.

Orders to: Earthscan Publications, 120 Pentonville Road, London N1 9JN, UK. Fax: +44 171 2781142.

Soil Salinity and Water Quality. R. Chhabra. Balkema, Rotterdam, Brookfield, 1996, xv + 284 p. ISBN 90-5410-727-8. Hardbound.

This book has been published under the patronage of the Institute for Land and Water Management of the Katholieke Universiteit Leuven, Belgium.

With recent advances in knowledge and the development of new concepts, a strong need was being felt for a comprehensive book giving details about the extent, nature and properties of saline soils and scientific and practical information about the various technologies available for preventing the formation and reclamation of such wastelands.

This book detail with the various factors leading to the genesis of salt-affected soils and their geographical distribution. Various systems of classifications have been dealt with. Emphasis has been given to anthropogenic factors in de development of soil salinity, particularly in the developing countries. Due emphasis has been given for maintaining salt balance, removing of salts by leaching through flooding, drainage or adopting judicious means of irrigation and applying suitable amendments.

In recent years attention is being given to develop non-conventional crops for salt-affected and waterlogged situations. These aspects have been reviewed and data related to salt tolerant crops are provided. Choice of suitable crops and crop sequence, along with judicious fertilizer management based on alkalinity, salinity, nutrient interactions, antagonism among cations and anions has been explained, together with the role of organic manures in increasing and sustaining the productivity of reclaimed salt-affected soils.

Price: NLG 115

Orders to: A.A. Balkema Publishers, P.O. Box 1675, NL-3000 BR Rotterdam, The Netherlands; Fax: +31 10 4135947; Email: sales@balkema.nl *or* A.A.

Balkema Publishers, Old Post Road, Brookfield, VT 05036, USA; Fax: +1 802 276 3837.

Life Cycle Assessment. Business and the Environment - Practitioner Series. Vlaamse Instelling voor Technologisch Onderzoek (VITO). R. Hillary, editor. Stanley Thornes, Cheltenham, 1996, 62 p. ISBN 0-7487-2131-2. Softcover.

Concern about the ecological consequences in our industrialised society is spreading fast. Governments acknowledge the importance of a well-structured environmental policy, consumers favour those products that at least look „green" and, last but not least, companies are moving towards a cleaner way of manufacturing.

Each of these actors needs information on the environmental consequences of their decisions. What at a first glance seems to be a good solution, might not be, because the environment is a complicated network with many unexpected interrelationships. Therefore, there is an urgent need for a tool that can guide decision makers. Life Cycle Assessment (LCA) is such a tool. It is a holistic approach for determining the environmental impacts of products, processes or services. It deals with many hot items like global warming, resource depletion, energy use, etc. It follows a product from 'the cradle to the grave', making sure that potential improvements in one stage are not wiped out by unforeseen side effects somewhere else in its life cycle. This characteristic distinguishes LCA from other instruments such as environmental impact assessment. This report is an introduction to the different aspects of LCA and shows possible applications of the method, but does not forget to warn about the obstacles still remaining today.

Price: GBP 29.50.

Orders to: Customer Services Department, Stanley Thornes, Ellenborough House, Wellington Street, Cheltenham, Glos. GL50 1YD. UK.

Review of the Potential Effects of Climate Change in the United Kingdom. United Kingdom Climate Change Impacts Review Group. Second Report. HMSO, London, 1996, xx + 247 p. ISBN 0-11-7532908. Paperback.

The Climate Change Impacts Review Group was formed by the Department of the Environment in 1990 to review the potential effects of climate change in the UK, to identify research that is needed and the implications for policy. It also enables the UK to meet, in part, its obligations under Article III of the UN Framework Convention on Climate Change (UNFCCC) to take action to reduce climate change impacts. The first Report was published in 1991. Since that time the quantity of published research on the effects of climate change has approximately doubled.

This report does not consider strategies for reducing greenhouse-gas emissions, nor the impacts that may stem from their implementation. It is concerned with the potential effects of climate change likely to occur over the geographic area of the UK, but it has also considered some climate changes that might occur elsewhere in the world where the effects of these might have an impact on activities in the UK. The review is a synthesis of current knowledge. The areas covered include: the changing climate and sea level: soils; flora, fauna and landscape; agriculture, horticulture and aquaculture; forestry; water; energy; minerals extraction; construction; transport; manufacturing industry; insurance; finance; human health; recreation and tourism.

The report estimates impacts of and evaluates adaptive responses to a scenario of increasing greenhouse-gas emissions which is compatible with that adopted by the IPPC.

Price: GBP 28.

Orders to: HMSO Publication Centre, P.O. Box 276, London SW8 5DT, UK. Fax: +44 171 873 8200.

Transformation of Plants and Soil Microorganism. K. Wang, A. Herrera-Estrella and M. Van Montagu, editors. Plant and Microbial Biotechnology Research Series: 3. Series Editor: J. Lynch. Cambridge University Press, Cambridge, 1995, xx + 176 p. ISBN 0-521-45089-6. Hardback.

Over the last fifty years plant breeders have achieved improvements in yield, quality and disease resistance. These gains suggest that many more modifications might be introduced if appropriate genes can be identified. Current DNA techniques allow the construction of transgenic plants and this book reviews the current state of knowledge.

A team of researchers provide in-depth reviews at the cutting edge of technology for laboratory techniques for transformation of soil microorganisms and recalcitrant plants of economic value. The book is divided into three sections: Transformation of Soil microorganisms (4 papers); Transformation of Cereal Crops (3 papers); Transformation of Industrially Important Crops (4 papers). The most effective methods used to date are compared and their merits and limitations are discussed. In cases where obstacles remain to be overcome, an overview of progress to date is given. The book will serve as a guide and reference tool for those working on transformation in microbiology and plant science. And, as series editor, Prof. Jim Lynch states, „It should provide a good stimulus to accelerate the pace of development of agricultural and environmental biotechnolgy."

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or Cambridge University Press, 40 West 20th Street, New York, NY 10011-4211, USA. Fax: +44 1223 315052 (UK); E-mail: trade@cup.cam.ac.uk.

Styles of farming and forestry. The case of the Mexican community of Cuzalapa. Wageningen Studies on Heterogeneity and Relocalization 1. Circle for Rural European Studies. Agricultural University, Wageningen, 1995, xii + 99 p. ISBN 90-6754-369-1. Softbound.

Diversity (or heterogeneity) in agriculture, and the role of trees and forests in farming practice, are the central issues of the report. The research was carried out in the indigenous community of Cuzalapa in the biosphere reserve Sierra de Manantlán in west Mexico.

This report focuses on the role of farmers in 'their' development processes with special attention to fore-

stry issues. It tries to contribute to a better understanding of the diverse real-life situations. The research deals with the concept of farming style as a way to grasp the diversity agriculture, cattle-raising and forestry in Third World countries.

After presenting the theoretical background of the farming style concepts, and the role of this methodology, with respect to forestry, the research process and the research area are described. A general outline of the political-economic context of agriculture and forestry in Mexico is given as a background for understanding the processes which take place in the research area. The results of the fieldwork in the community of Cuzalapa are followed by a discussion and conclusions. The last chapter explores the theoretical implications of the research findings for social forestry programmes.

Orders to: Mrs. A. van der Lande, Jan Kopshuis, Generaal Foulkesweg 19, 6703 BT Wageningen, The Netherlands.

Fertiliser Aid. Evaluation of Netherlands fertiliser Aid 1975-1993 with special reference to Bangladesh, Mali and Zambia. Evaluation Report 1995. Operations Review Unit (IOV), The Hague, 1995, xv + 326 p. ISBN 90-5146-052-X. Softcover.

In the period 1975-93 the Netherlands spent some 3,600 million guilders on fertiliser aid. Some 71 per cent of the fertiliser originated in the Netherlands. Since the mid-1980s there has been a shift towards purchase in the Eligible Source Countries (ESC). Fertiliser aid peaked in 1981 to over 350 million guilders, and declined subsequently to around 200 million guilders in 1985. It then remained stable until 1989, decreasing to around 150 million guilders annually in the following three years, and in 1993 it fell to approximately 20 million guilders.

In this report the results are presented of an evaluation of this fertiliser aid, with special emphasis on the post-1985 period. The report consist of four parts. Firstly, background information is provided in matters of soil fertility: the role and trends in fertiliser use of the years; secondly the fertiliser-aid policy and its implementation are analyzed. The effectiveness of fertiliser aid is discussed at macro- and micro-levels based on field studies in three countries: Bangladesh, Mali and Zambia. Attention is given to the effects of fertiliser aid on the economic self-reliance of the recipient country as well as to poverty alleviation and sustainable development. The final chapter presents the findings and conclusions.

Orders to: Ministry of Foreign Affairs, Directorate General International Cooperation, Operations Review Unit, P.O. Box 20061, 2500 EB The Hague, The Netherlands.

Organic Matter Dynamics and N Mineralization in Grassland Soils. J. Hassink. Thesis, Wageningen Agricultural University, 1995. 250 p.

The aims of this study are i) to improve our understanding of the interactions between soil texture/soil structure, soil organic matter, soil biota and mineralization in grassland soils, ii) to develop a procedure that yields soil organic matter fractions that can be determined directly and can be used in soil organic matter models, iii) to develop a model that predicts the long-term dynamics of soil organic matter, iv) to develop a simple model that can be used by farmers and advisers to predict the non-fertilizer N supply of grassland soils, and v) to quantify the effect of the non-fertilizer N supply of grassland soils on the optimum N fertilizer application rate.

A simple procedure is developed that separates soil organic matter into size and density fractions, using silica suspensions as heavy liquids. The fractions differ in decomposition rate and can be used in organic matter dynamics models. Two models are presented. The first predicts the long-term changes in soil organic matter. It includes the observation that the degree of saturation of the protective capacity determines the degree of physical protection of residue C. The second model is an empirical relationship that can be used to estimate the Non Fertilizer Nitrogen Supply (NFNS) of grassland soils.

Requests to: AB-DLO, Oosterweg 92, 9751 PK Haren (Gr.), The Netherlands.

Global Change and Terrestrial Ecosystems in Monsoon Asia. Tasks for vegetation science. T:VS 33. T. Hirose and B.H. Walker, editors.Kluwer Academic Publishers, Dordrecht, 1996, 191 p. ISBN 0-7923-3686-0. Hardcover.

The world's terrestrial ecosystems are being subjected to global environmental change of an unprecedented scale, both in their rate and in their geographical extent. An international workshop was held in Tokyo, September 1993, to launch the research project TEMA (Global Change Impacts on Terrestrial Ecosystems in Monsoon Asia). Twenty papers were presented at the workshop and 16 papers are included in this volume (the other 4 papers are in abstract form). The objectives of TEMA are (1) to predict the effects of elevated CO_2 and climatic change on the distribution and structure of forests in monsoon Asia and (2) to determine the associated feedback effects to the global carbon cycle.

The TEMA project is based on the environmental gradient along a transect in monsoon Asia from boreal forests, through cool and warm temperate forests, to tropical rain forests. This transect includes two high priority areas: one of the boreal forest region, which it is suggested will change most significantly in response to global warming, and the other is tropical rain forests, which are endangered by rapid changes in land use under high population pressure. The pattern of vegetation arrangement along the environmental gradient established under current climate conditions forms a basis for the present study. TEMA has four research components: (1) screening of key species with respect of the response to global change. (2) modelling of forest structure as an integration of functional types. (3) biogeographical analysis of the distribution and structure of forest ecosystems in monsoon Asia. (4) modelling of the carbon cycle of forest ecosystem in monsoon Asia. These research components correspond more or less to the four sections of this volume.

The text is reprinted from Vegetatio, Vol.121: 1-2, 1995.

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Netherlands; *or:* Kluwer Academic Publishers Group, 101 Philip Drive, Assini Park, Norwell, MA 02061, USA. E-mail: Robert.Kennedy@wkap.nl.

Alley Farming Research and Development. Proceedings of an International Conference on Alley Farming. B.T. Kang, A.O. Osiname and A. Larbi, editors. African Book Builders, Ibadan, 1995, xii + 576 p. ISBN 978-131-092-8. Softcover.

From the beginning of its mandate in Africa, the International Institute of Tropical Agriculture (IITA) realized the need for sustainable natural resource management to complement improved germplasm and related technology components if the goal of satisfying the food needs of tropical Africa was to be achieved. Rapidly growing populations and declines in per capita food production have put pressure on scientists to develop an alternative system to the traditional slash and burn agriculture which has caused large-scale deforestation and land degradation without a fairly long fallow period to restore soil fertility. Lack of adequate fertile land has caused large-scale deforestation and land degradation in many countries in the tropics, especially in sub Saharan Africa.

Alley farming, a composite technology developed by IITA, offers an opportunity for increasing land-use intensity while maintaining the productivity of the natural resource base at a reasonable level. Since the formation of the Alley Farming Network for Tropical Africa (AFNETA) in 1989 research on alley farming has attracted growing worldwide interest.

Since the last alley farming conference in August 1986, a large amount of information has been gathered on alley farming in different parts of the tropics. The conference in September 1992 has brought together researchers working on alley farming in national agricultural research systems, international agricultural research centers and other institutions, to discuss their research achievements, problems and future work orientation. Besides presentations on basic research achievements, emphasis is also given to various approaches used in developmental work and the results obtained in different parts of the African, Asian and Latin American continents.

The proceedings contain the official addresses and keynote speech, and the 58 papers presented.

Appendix 1 is a summary of the recommendations agreed upon by the delegates for futures work on alley in the areas of: agronomic and process research, MPT selection and evaluation, extension and adoption; and network research orientation.

Orders to: African Book Builders, 17 Arigidi Street, P.O. Box 20222, U.I., Ibadan, Nigeria; *or:* Alley Farming Network for Tropical Africa, International Institute of Tropical Agriculture, PMB 5320, Ibadan, Nigeria.

Soil Water and Ground Water Sampling. N. Wilson. CRC Press, Boca Raton, 1995, 188 p. ISBN 1-56670-073-6. Hardcover.

The primary goal for ground water sampling is to obtain representative ground water samples and field parameters. Currently there are no accepted educational or vocational standards for those who take ground water samples. To ensure that a minimum level of proficiency is met, individuals who sample ground water need have periodic, formalized, up-to-date training in ground water sampling.

This publication presents the interrelated components necessary to produce representative ground water samples from initial site characterization through laboratory analysis. It provides a broad context to evaluate ground water sampling programs and to enable individuals to put together, critique, or follow ground water sampling plans.

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Pyrite Oxidation Chemistry. Solution Chemistry, Surface Chemistry, Acid Mine Drainage (AMD), Molecular Oxidation Mechanisms, Microbial Role, Kinetics, Control, Ameliorates and Limitations, Microencapsulation. V.P. Evangelou. CRC Press, Boca Raton, London, 1995, 293 p. ISBN 0-8493-4732-7. Hardcover.

Little of the basic knowledge on pyrite and its oxidation mechanisms is used for the purpose of improving and/or generating the new knowledge on controlling pyrite oxidation. This book is a source on the basic knowledge of pyrite and the use of this knowledge for generating new ideas, concepts and technologies on oxidation and control. It focuses on theory, experimental finding on oxidations mechanism, and applications and limitations of amelioration technologies. It also includes discussions on the theory and potential application of novel pyrite microencapsulation technologies for controlling pyrite oxidation currently under investigation in the author's laboratory.

The book is an attempt to gather the scientific knowledge on pyrite and acid mine drainage, evaluate it and use it to new and improved control technologies. It is designed to serve research faculty and graduate students in mining/environmental engineering, geology, soil science and environmental professionals dealing with amelioration of acid drainage produced by pyritic waste.

Price: GBP 115.

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Evaluation of Soil Organic Matter Models. Using Existing Long-Term Datasets. NATO ASI Series; Series I: Global Environmental Change, Vol. 38. D.S. Powlson, P. Smith and J.U. Smith, editors. Springer-Verlag, Berlin, New York, 1996, 429 p. ISBN 3-540-60602-5. Hardcover.

Soil Organic Matter (SOM) represents a major pool of carbon within the biosphere, estimated at about 1400 x 10^{15}g globally, roughly twice that in atmospheric CO_2. SOM models embody our best understanding of soil carbon dynamics and are needed to predict how global environmental change will influence soil carbon stocks. These models are also required for evaluating the likely effectiveness of different mitigation options. This volume is a product of the NATO Advanced Research Workshop on this subject, held at IACR-Rothamsted, UK., in 1995. The

workshop has initiated a large body of work comprising SOM model evaluation and comparison. The workshop also marked the launch of the GCTE Soil Organic Matter Network (SOMNET), a network of soil organic matter model developers and experimentalists working on long-term experiments that include measurements of soil carbon. It brings together leading SOM model developers and experimentalists to test SOM models using long-term datasets from diverse ecosystems, land uses and climatic zones within the temperate region.
Price: DEM 248; ATS 1810.40; CHF 234.
Orders to: Springer-Verlag, Tiergartenstrasse 17, D-69121 Heidelberg, Germany; *or:* Springer-Verlag, 175 Fifth Avenue, New York, NY 10010, USA.

Wetlands. Characteristics and Boundaries. National Research Council. W.M. Lewis, Chairman. National Academy Press, Washington, 1995, xvii + 307 p. ISBN 0-309-05134-7. Hardcover.

Principles for federal regulation of wetlands in the United States have been fundamentally challenged several times over the past 20 years. One legacy of these challenges has been a reduction in the credibility of all regulatory practice related to wetlands. A Committee was set up that would study the scientific basis for characterization of wetlands and was asked to review and evaluate the consequences of alternative methods for wetland delineation and to summarize the scientific understanding of wetland functions. Specifically mentioned in the Committee's charge are the issues of wetland definition, the structure and functioning of wetlands, and regional differences among wetlands. In this report, the Committee presents a reference definition of wetlands that sets the stage for a fresh look at existing regularity definitions and for reconsideration of the confusion surrounding parameters, criteria, and indicators. It offers an overview of wetland functions as they relate to the protection of wetlands and provides many recommendations and conclusions related to criteria and indicators. Although related to conditions in the United States, this text would be of interest to scientists elsewhere, who are dealing in the many aspects of wetlands.
Price: USD 45.75; GBP 30.95.
Orders to: National Academy Press, 2101, Constitution Avenue, N.W., Washington, DC 20418, USA *or* National Academy Press, 12 Hid's Copse Road, Cumnor Hill, Oxford OX2 9JJ, UK.

Soil-Water Interactions. Mechanisms and Applications. Second Edition, Revised and Expanded. S. Iwata, T. Tabuchi and B.P. Warkentin. Marcel Dekker, New York, Basel, 1995, xvii + 440 p. ISBN 0-8247-9293-9. Hardcover.

This second edition, six years after the first edition, draws on the Japanese and Russian literature as well as English language research papers. It also treat some topics now being developed in the soil physics literature, and delete some topics available in other textbooks. About a third of the book has been rewritten and a quarter of the figures are new. Each topic is developed from fundamental concepts and discussed in an interdisciplinary way, of interest to many scientists involved in water in the vadoze zone. No prior knowledge of soil science is assumed, although the reader will need some background in mathematics, physics, chemistry and thermodynamics.
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Agriculture-Fertilizer Interface in Asia: Issues of Growth and Sustainability. S. Ahmed. Science Publishers, Lebanon, 1995, viii + 158 p. ISBN 1-886106-26-6. Hardcover.

Although long-term fertilizer demand projections were available, the U.S. Geological Survey requested that a new approach be developed - both to provide an independent check on existing projections, and also to serve as a basis for assessing the desirability of a major investment by a foreign nation in building a fertilizer plant, meant primarily for exports. Some new ideas and concepts emerged for such a study and the results are presented in this book. These should be considered as working hypotheses only and the new methodology be tried out with detailed agricultural statistics for any country.
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Problems of stable isotopes in tree-rings, lake sediments and peat-bogs as climatic evidence for the Holocene. Paläoklimaforschung/Palaeoclimate Research Volume 15. Special Issue: ESF Project „European Palaeoclimate and Man" 10. B. Frenzel, B. Stauffer, and M.M. Weiß, editors. Gustav Fischer Verlag, Stuttgart, Jena, 1995, xi + 189 p. ISBN 3-437-30817-3. Paperback.

The Scientific Programme „European palaeoclimate and man since the last glaciation" (EPC) was launched by the European Science Foundation in 1989 to investigate and document possible anthropogenic influences on the regional climate in Europe since the onset of Neolithic times. For the earlier part of this time period the investigations depend entirely on results obtained from natural archives like peat-bogs, sediments and tree-rings. It was decided to support and stimulate the development of new analytical techniques and the improvement of existing ones within the framework of the programme. One important tool is the isotopic analysis on samples from natural archives.

This publication contains fourteen of the nineteen presentations of a workshop held in April 1993 in Bern, Switzerland. The workshop showed that isotope analysis is an important tool to support classical analytical methods in palaeoclimatology, and it helped to stimulate further investigations and a closer collaboration between different groups.
Price: DEM 78; ATS 577; CHF 75.
Orders to: Gustav Fischer Verlag, Postfach 720143, D-70577 Stuttgart, Germany.

Trace Elements in Crop Production. P.C. Srivastava and U.C. Gupta. Science Publishers, Lebanon, 1996, vii + 356 p. ISBN 1-886106-62-2. Hardcover.

Intensive cropping has been practised in an effort to feed the world's growing population. This has tended to deplete soils of trace elements, e.g., micronu-

trients. Micronutrient deficiency as well as toxicity can adversely affect crop yields and the quality of the produce. This book tries to compile the information on the subject matter of trace elements as they relate to crop production. Chapter 1 to 7 introduce the aspects of trace elements in soil and plant systems. Chapter 8 covers eight major trace elements. In chapter 9 some other trace elements having beneficial of toxic effect of crops, human and cattle health are dealt with. In the Appendix information on trace element content of common fertilizers, manures and amendments and the average removal of micronutrients by some crops is given. It also contains the general methods for correcting the deficiency of individual micronutrients in agricultural crops, including fruits and vegetables.

Price: USD 82.

Orders to: Science Publishers, 10 Water Street, #310, Lebanon, NH 03766, USA.

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Journal of Agricultural Safety and Health. D.J. Murphy, editor. 1996, Quarterly issued by American Society of Agricultural Engineers, St. Joseph. ISSN 1074-7583

The Journal of Agricultural Safety and Health (JASH) is focusing on the world wide needs and concerns of safety and health as they relate to agriculture. Articles and commentaries address such issues as: *Identification, reporting, treatment, prevention of* trauma and illness; Engineering design and application; Safety and health intervention strategies and program effectiveness; The role, impact, and development of agricultural safety; Health standards, legislation, and regulation; Professional development issues.

Subscription price 1996: ASAE Members: USD 36 per year; Nonmembers: USD 68 per year (USD 7 postage outside the U.S.)

Orders to: ASAE, 2950 Niles Road, St. Joseph, MI 49085-9659, USA. Fax: +1 616 4293852.

Ecological Economy. Xu Zhihui, Editor-in-Chief. YSEE, Kunming, China, 1996. ISSN 1007-0095.

This English quarterly, with support from WWF, is based on the 10-year experience of its Chinese equivalent. It aims to disseminate Chinese practices and theories of developing an ecological economy in the context of China's rapid move towards industrialization. It also provides information and analysis of integrated conservation and development in China and other countries. To integrate the need for economic development with the need to conserve nature, therefore, is a practical challenge to the achievement of sustainable development. It targets at an international audience, including practitioners and theoreticians of ecological economics and sustainable development, natural scientists in various resource sectors, and those concerned with China in government departments and international organizations. It also provides a forum for disseminating both practical and theoretical experience of other countries, particularly developing ones, in the application and development of ecological economics.

Subscription price: USD 216 for institutions; USD 108 for individuals.

Orders to: Ecological Economy, 971-B Russell Ave., Gaithersburg, MD 20879, USA. Fax: +1 301 6704721; E-Mail: EcoloEcono@aol.com.

Grundwasser. K.P. Röttgen, Redaktionsleitung. Fachsektion Hydrogeologie in der Deutschen Geologischen Gesellschaft (FH-DGG). Springer, 1996. ISSN 1430-483-X.

Dieser Publikation ist eine internationale, deutschspachige Zeitschrift für Themen, die das unterirdische Wasser betreffen. Grundwasser bietet ein Forum zur Veröffentlichung aktueller Entwicklungen aus Wissenschaft und Praxis. Vier mal im Jahr gibt er aktuelle Beiträge zu den Themenbereichen: *Hydrogeologie, Grundwasserhydraulik*, Grundwasserbeschaffenheid und -güte, Grundwassererschließung und -bewirtschaftung, Heil- und Mineralwässer, Grundwassermodellierung, Grundwassermarkierung, Stofftransport mit dem Grundwasser, Isotopenhydrogeologie, Grundwasserschutz, Grundwasserüberwachung bei Deponien und Altlasten, Sanierung grundwasserkontaminierter Standorte, Hydrologie, Hydrogeothermie und Brunnenbau.

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Bestellungen an: Springer for Science, P.O.Box 505, 1970 AM IJmuiden, Die Niederlande.

Environmental and Ecological Statistics. G.P. Patil, editor. Chapman & Hall, Philadelphia. ISSN 1352-8505.

This journal defines the issues and approaches to achieve resource conservation and environmental management involving data. It covers the practical applications of statistics and related quantitative methods to environmental science addressing contemporary issues. Emphasis is on applied mathematical statistics, statistical methodology, data interpretation and improvement for future use to advance environmental theory and practice.

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Land Husbandry. International Journal of Soil and Water Conservation. K.G. Tejwani, editor-in-chief. Oxford & IBH Publishing Co. Pvt., New Delhi, 1996.

This half-yearly journal (April and October) reflects the evolving trends of thought and action deri-

ving from a growing number of success-stories about production and conservation. Its scope is to report any aspect in the categories of research, development issues, case studies, critical review, conceptual articulations, and analytical descriptions. It intends to provide an international forum for exchanging ideas and experiences, and research and fieldwork in matters of land husbandry and soil and water conservation among people who as yet have little scope for such networking.
Subscription: USD 69.
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Discrete Dynamics in Nature and Society. V. Gontar and M. Sonis, Editors-in-Chief. Gordon and Breach/Harwood Academic Publishers, 1997. 4 issues per volume. ISSN: 1026-0226

The main objective of this journal is to foster links between basic and applied research relating to discrete dynamics of complex systems encountered in the natural, social and socio-spatial sciences. Discrete dynamics reflects an emerging tendency towards utilization of iterative mathematical models to describe the behaviour of complex systems.
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Probe Microscopy. M.E. Welland, M.J. Miles and J.K. Gimzewski, editors. Gordon and Breach/Harwoord Academic Publishers, 1997. 4 issues per volume. ISSN: 1355-185X.

This journal is devoted to publishing papers relating to science and technology using local probe methods. It covers applications form physics, chemistry, material science, biology and engineering. It also aims to include other types of measurement and fabrication methods where applied on the atomic and molecular scale.
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International Journal of Land Management. Dr. R.K. Bullard, Editor-in-Chief. Quarterly Journal by John Wiley & Sons, New York. Volume 1, 1997. ISSN 1088-4254.

This journal aims to satisfy the needs of the multidisciplinary community of professionals and academics involved in land management in both the developed and developing world.
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- ○ IV Soil Fertility and Plant Nutrition/Fertilité du Sol et Nutrition des Plantes/Bodenfruchtbarkeit und Pflanzenernährung
- ○ V Soil Genesis, Classification and Cartography/Genèse du Sol, Classification et Cartographie/Bodengenetik, Klassifikation und Kartographie
- ○ VI Soil Technology/Technologie du Sol/Bodentechnologie
- ○ VII Soil Mineralogy/Minéralogie du Sol/Bodenmineralogie
- ○ VIII Soils and the Environment/Sols et l'Environnement/Boden und Umwelt

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- ○ A Salt affected soils/Sols salins/Salzböden
- ○ B Soil Micromorphology/Micromorphologie du Sol/Bodenmikromorphologie
- ○ C Soil Conservation and Environment/Conservation du Sol et Environnement/Bodenerhaltung und Umwelt
- ○ D Soil Zoology/Zoologie du Sol/Bodenzoologie (with/avec/mit UBS)
- ○ E Forest Soils/Sols forestiers/Waldböden
- ○ F Land Evaluation/Evaluation du Terrain/Landbewertung
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Subcommissions/Sous-Commissions/Subkommissionen - Chairpersons/Présidents/Vorsitzende:

A. Salt Affected Soils/Sols Salins/Salzböden
Dr. M. Rédly, Research Inst. for Soil Science & Agric. Chem., Hungarian Academy of Sciences, Herman O. ut. 15, 1022 Budapest, Hungary

B. Soil Micromorphology/Micromorphologie du Sol/Bodenmikromorphologie
Dr C.J. Chartres, CSIRO Div. of Soils, P.O. Box 639, Canberra City, ACT 2601, Australia

C. Soil and Water Conservation/Conservation des Sols et des Eaux/Boden- und Wasserschutz
Dr. Ch. Valentin, ORSTOM, B.P. 11416, Niamey, Niger

D. Soil Zoology/Zoologie du Sol/Bodenzoologie (with/avec/mit IUBS)
Prof.Dr. D. Parkinson, Dept. Of Biological Sciences, University of Calgary, 2500 University Drive N.W., Calgary, Alberta T2N 1N4, Canada;

E. Forest Soils/Sols forestiers/Waldböden
Dr P.K. Khanna, CSIRO, Div. of Forest Research, P.O Box 4008, Queen Victoria Terrace, Canberra, ACT 2600, Australia

F. Land Evaluation/Evaluation du Terrain/Landbewertung
Prof.Dr. K.J. Beek, ITC, P.O.Box 6, 7500 AA Enschede, The Netherlands

G. Soil Remediation/Restitution des sols/Bodensanierung
Prof.Dr. D.C. Adriano, Savannah River Ecology Lab., Savannah River Site Bldg. 737A, Aiken, S.C., USA

Working Groups/Groupes de Travail/Arbeitsgruppen - Chairpersons/ Présidents/Vorsitzende:

AS Acid Sulphate Soils/Sols Sulphatés Acides/Saure Sulfatböden
Dr. S. Sadio, ISRA/ORSTOM, B.P. 1386, Dakar, Senegal

CR Cryosols/Cryosols/Frostböden
Dr. D.A. Gilichinsky, Inst. of Soil Science & Photosynthesis, Pushchino, Moscow District 142292, Russia

DE Soil Resources of Desert Ecosystems/Ressources de sol dans des ecosystèmes de désert/Böden in Wüstenökosystemen
Dr. A. Sourirı, Rue de la ville 2, 5660 Couvin, Belgium

DM World Soils and Terrain Digital Data Base/Carte Internationale Numérique des Sols et des Terrains/Digitalisierte Internationale Boden- und Landkarte (SOTER)
Prof.Dr. M.F. Baumgardner, Dept. of Agronomy, Purdue University, West Lafayette IN 47907, USA

FA Soil Organic Fertilizers and Amendments/Produits organiques d'engrais et d'amendement du sol/ Organische Dünger und Bodenverbesserungsmittel
Prof.Dr. P. Sequi, Istituto Sperimentale per la Nutrizione delle Piante Via della Navicella 2-4, 00184 Roma, Italy

LI Land Evaluation Information Systems/Informatique de l'Evaluation des Terres/Informationssysteme zur Landbewertung
Dr. J. Dumanski, Land Resources Research Institute, Agric. Canada, Ottawa, Ontario, Canada K1A 0C6

MO Interactions of Soil Minerals with Organic Components and Microorganisms/Interactions entre les Minéraux du Sol, les Composées Organiques et les Microbes/Wechselwirkungen zwischen Bodenmineralen, organischen Substanzen und Mikroorganismen
Prof. Dr. P.M. Huang, Univ. of Saskatchewan, Dept. of Soil Science, Saskatoon, Sask., Canada S7N 0W0

MV Soil and Moisture Variability in Time and Space/Variabilité du Sol et de l'Humidité dans le Temps et l'Espace/ Boden- und Feuchtigkeitsvariabilität in Raum und Zeit
Prof.Dr. R.J. Wagenet, Dept. of SCAS, Bradfield Hall, Cornell University Ithaca, NY 14853-1901, USA

PM Pedometrics/Pedométrique/Pedometrik
Prof.Dr. A.B. McBratney, Dept. of Agric. Chem.&Soil Science, A03 Ross St. University of Sidney, NSW 2006, Australia

PP Paleopedology/Paléopédologie/Paläopedologie
Prof.Dr. J.A. Catt, Rothamsted Exp. Station, Soil Science Department, Harpenden, Herts, AL5 2JQ, United Kingdom

PS Paddy Soils Fertility/Fertilité des Sols Rizicoles Irrigués/Fruchtbarkeit von Reisböden
Prof Dr. Tasnee Attanandana, Dept. of Soil Science, Faculty of Agric., Kasetsart University, Bangkok, 10903, Thailand

PT Pedotechnique/Pédotechnique/Pedotechnik
Dr. J. Koolen, Dept. of Soil Tillage, Wageningen Agric. Univ. Diedenweg 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, Wildenhoge 13, 3020 Winksele, Belgium

RS Remote Sensing for Soil Survey/Pédologie et Télédétection/Fernerkundung für Bodenkartographie
Dr. M. Mulders, Dept. of Soil Science & Geology, Wageningen Agric. University, P.O. Box 37, 6700 AA Wageningen, The Netherlands

RZ Rhizosphere/Rhizosphère/Rhizosphäre
Prof Dr. P.J. Gregory, Dept. of Soil Science, Univ. of Reading, Whiteknights P.O.Box 233, Reading, RG6 2DW, U.K.

SG Soils and Geomedicine/Sols et Géomédecine/Böden und Geomedizin
Prof. Dr. J. Låg, Dept. of Soil Science - AUN, P.O Box 28, 1432 Ås-NLH, Norway

SP Soil and Groundwater Pollution/Pollution du Sol et des Eaux
Souterraines/Boden- und Grundwasserverschmutzung Prof. Dr. P.J. Wieringa, Univ. of Arizona, Soil & Water Science, Tucson AZ 85721, USA

US Urban and Periurban Soils/Sols urbains et périurbains/Städtische Böden
Dr J. Celecia, Division of Ecological Sciences, UNESCO, 75700 Paris, France

Standing Committees/Comités Permanents/Ständige Komitees - Chairmen/Présidents/Vorsitzende:

CSS Committee on Statute and Structure/Comité sur Statuts et Structures/Komitee für Statuten und Struktur
Prof.Dr. P.B. Tinker, GCTE Associate Project Office, Department of Plant Sciences, University of Oxford, South Parks Road, Oxford OX1 3RB, UK

CIP Committee on International Programmes/Comité sur les Programmes Internationaux/ Komitee für Internationale Programme
Dr. J. Kimble SCS/NSSC, Federal Bldg. Room 152, 100 Centennial Mall North Lincoln, NE 68508-3866, USA

CST Committee on Standardization/Comité sur la Standardisation/Standardisierungskomitee
Dr. S. Nortcliff, Dept. of Soil Science, 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, USA, College of Natural Resources, Univ.of California, Berkeley, Calif. 94720, USA.

CES Committee on Education in Soil Science/Comité pour l'Enseignement de la Pédologie/ Komitee für Bodenkundeausbildung
Prof. Dr. M. Dosso, 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, Institute of Earth Sciences, Hebrew University, Givat Ram Campus, Jerusalem 91904, Israel

Cooperating Journals/Journaux Coopérants/Kooperierende Zeitschriften
ARID SOIL RESEARCH AND REHABILITATION; BIOLOGY & FERTILITY OF SOILS; CATENA; GEODERMA; SOIL BIOLOGY & BIOCHEMISTRY; SOIL TECHNOLOGY;

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