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ESSC COUNCIL MEETING, BUDAPEST, 3 MAY 2002

Present: J.L.Rubio (Spain), A.Kertész (Hungary), K.Helming (Germany), I.Pla Sentis (Spain), R.Kölli (Estonia), N.Fohrer (Germany), M.A.Coutinho (Portugal), P.Bielek (Slovakia), G.Govers (Belgium).

Apologies: R.Morgan (UK), C.Dazzi (Italy), D.Gabriëls (Belgium), J.Poesen (Belgium), V.Glazunov (Russia), E.Roose (France), N.Misopolinos (Greece), P.Schjønning (Denmark), R.Shakesby (UK), N.Skłodowski (Poland), E.Stroosnijder (The Netherlands).

1. Council Membership

- D.Nistor (Romania) proposes that Ion Ionița is replaced by Cosmin Hurju. However, Council Membership is on an elected basis. Therefore, the Secretary will enquire with Dr Ionița whether he agrees to this replacement; if not, Dr Ionița will remain as a member as he has been elected personally and not as a representative of an institution.
- M.Fullen (UK) proposes B.Jankauskas as a member from Lithuania. The Council accepts this proposal even though Lithuania has only 4 members of the ESSC which is below the minimum for representation on Council. B.Jankauskas will therefore be a co-opted member and not a country representative.

2. Treasurer's Report

- Moldova, Norway and Switzerland each have more than 5 members and are therefore entitled to representatives on Council. The President will send a letter to all the members in these countries in order to invite them to elect a country representative.
- Credit card details (for membership payment) should no longer be sent to the Secretary by e-mail because this is too dangerous. The Treasurer proposes a new system which would cost about € 150. This is approved by the Council.
- The web site is at present maintained but there is no money to make it more attractive. However, it would be nice to have a specific ESSC web address. The Council proposes to buy the address, www.essoilc.org.
- The Treasurer asks if there are any volunteers to assist in web-site maintenance.

3. Secretary's Report

- No specific correspondence with respect to the ESSC has been sent to the Secretary.
- The President asks how we collaborate with COST. As many ESSC

members are already involved in COST meetings there is already a clear information exchange. It would be useful to have systematic reports on COST activities in the ESSC Newsletter.

4. Position of the ESSC with respect to the EU 6th Framework Programme

- There are two new initiatives proposed within the 6th Framework Programme: (a) Networks of Excellence, and (b) Integrated Projects. About 70% of the total amount of research money will be diverted to these new categories. Duration of projects / networks should be at least 5-7 years. The project management will be done in the first place by the networks / projects themselves and to a much lesser extent by the EU.
- ZALF is the main coordinator of a research network entitled *Landscapes for tomorrow*. At present about 50 delegates from 13 countries participate in the network. The network focuses on the study of the different functions of landscapes and on the sustainable development of multi-functional landscapes.
- There is also a network on soil erosion / soil conservation that is set up by COST members.
- Deadline for submission of Expressions of Interest is 6 June 2002.
- It is evident that the ESSC supports the development of these networks. However, it may be useful if the ESSC itself formulates an Expression of Interest, focusing on the development and implementation of soil conservation measures in different environments of Europe. After some discussion, it is agreed that P.Bielek will prepare a first draft of such a proposal and circulate it to J.L.Rubio, K.Helming, M.A.Coutinho and G.Govers. P.Bielek will take care of the final submission of the Expression of Interest.

5. EU Soil Protection

- J.L.Rubio reports on the status of the EU Communication on Soils and related ESSC activities, including his personal contact with EU Officers of DG Environment and the possibility of having an EU Conference on *Soil erosion and loss of organic matter* in Valencia during 2003.
- On 4 February 2002, a stakeholder meeting was organised in Brussels by the EU to prepare the communication. M.Fullen and J.Poesen were present at this meeting. The communication was published on 26 April 2002. However, the document should not be considered final; it is a state-of-art document in a continuing process.
- J.L.Rubio emphasizes the importance of the EU initiative on soil protection and encourages ESSC scientific support and collaboration in the development of the communication.

6. Membership fees

- J.L.Rubio reports on a letter from V.Glazunov concerning the membership fees for Russian members. The Council maintains that the principle of an individual membership fee should remain and that this should apply to Russian members. J.L.Rubio will reply to V.Glazunov.

7. Activities of Council Members

- J.L.Rubio has written to those Council members displaying a low level of involvement in ESSC activities. The response has been somewhat low. A discussion followed on how the ESSC might stimulate Council member activity. It is evident that, as the ESSC is a voluntary organisation, the possibilities are quite limited. Nevertheless, the Council thinks that Council members should at least distribute information about ESSC activities to all members in their respective countries. Furthermore, it may be useful to contact the Council members from time to time in order to stimulate a response. R.Morgan proposes to invite the Council members to contribute to the Newsletter by sending them an e-mail some six weeks before the Newsletter is due to appear.

8. ESSC's involvement in international organisations and initiatives

- J.L.Rubio and I.Pla Sentis, members of the Board of Directors of ISCO, inform the Council of the next ISCO conference which will be held in Beijing, June 2002, with ESSC cooperation.
- The ESSC supports the initiative to create an International Panel on Soil and Land, an idea under discussion to form an independent scientific soil body similar to the IPCC.
- The ESSC continues its support to the proposed global Soil Convention, similar to the existing UN environmental conventions.
- The ESSC supports and cooperates with the International Actions for the Sustainable Use of Soils (IASUS), an initiative launched by the International Union of Soil Science (IUSS) to promote global legal initiatives for soil protection.
- P.Bielek asks whether the ESSC will be present at the Rio+10 meeting, to be held in Johannesburg in August 2002. It appears that a formal participation by the ESSC is very difficult. Participation 'on the side' is not considered to be very useful.

9. Task Forces

- J.L.Rubio gives a brief outline of the situation. From this it is clear that some task forces have done quite a lot of work, while others have been relatively ineffective. There is a proposal by V.Glazunov to set up a task force on wind erosion. A discussion follows on the necessity and effectiveness of the task force system. J.L.Rubio will send a letter to Task

Force Leaders asking them for a status. This information will be used to inform further discussion at the next Council Meeting.

10. Forthcoming meetings

- The following meetings are sponsored by the ESSC – more information is available on the ESSC web site:
 - Land use management, erosion and carbon sequestration. September 2002, Montpellier, France. Co-sponsored by ESSC.
 - International conference on soils under global change: a challenge for the 21st century. September 2002, Constanța, Romania. Organised by the Research Institute for Soil Science and Agrochemistry, Bucharest.
 - Soil erosion patterns: evolution, spatio-temporal dynamics and connectivity. October 2002, Müncheberg, Germany. COST 623 Workshop, co-sponsored by ESSC.
 - Sustainability of dehesas, montados and other agrosilvopastoral systems. 22-24 September 2003, Cáceres, Spain. Organised by the ESSC, University of Extremadura and University of Evora.
 - The next ESSC International Congress will take place in Budapest, Hungary, 25-28 May 2004.
- The President has received a letter from J.Rickson about a meeting in October 2003 to honour R.Morgan at the occasion of his retirement. The Council agrees to sponsor this meeting. More information will be put on the web site as soon as it becomes available.

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CONTENTS AND METHODS OF SOIL GEOGRAPHY IN SLOVENIA

In the last few years we are noticing in Slovenia that geographers are increasingly interested in investigating soils. Already pupils in elementary and secondary schools compete in knowledge about genesis, explanation and familiarity with soil characteristics. Students of geography, who are about to graduate, frequently decide their diploma paper to be from the area of soil geography. Everyday experiences show that graduate geographers want more to know about soils, since these are a constituent part of landscape, and an important natural resource for every country.

For every geographical research work to be successful, collecting data and information about landscape out in the field is very important. The part of geography which deals with soils gives a great deal of attention to field and laboratory work. This enables additional data to be acquired as needed for landscape explanation. Basic field and laboratory methods of soil investigation are already presented to children in elementary and secondary school. Geography students supplement their knowledge about soils in both theoretical and practical areas. There is therefore a need for some extra material to make research on soils within geography easier. All existing methods are either partly obsolete or derived from other professions, and they do not enable an understanding of soils as part of the landscape. Measured data about soils need to be connected to pedogenic processes and subsequent soil use. In order for soil investigations to be surveyable and professionally accurate, we have prepared a so-called pedo-geographic package, which consists of five soil investigation procedures. Each procedure includes work methods by which we can study individual soil characteristics. The pedo-geographic package is important for geography for it enables soil analysis to be carried out as a part of a landscape, and that is its basic goal. The pedo-geographic package combines field and laboratory procedures of soil investigation as well as spatial interpretations of those. Our desire in future is for soil research to become a constituent part of environmental investigations, and that professors of geography become skillful in it, since they transfer their knowledge to younger generations.

The methods of soil investigation:

1. *Identifying soils in the field*

Identifying soil types out in the field is, for less experienced geographers, quite often difficult. For this reason we have developed a simple key for identifying horizons in a soil profile. That key is used for identifying soils in Slovenia, where they are classified into two departments (automorphic and hydromorphic), and several classes, which combine like soil types. The key comprises three columns: in the first are stated the names of horizons with a short description; in the second column there is space for marking the horizons observed in the field; and the third column is there to write observations.

The following description of soil types in the Slovenian classification is used for recognising soils in the field (observable soil horizons are given by capital letters, *A*, *B*,

C etc; those shown in parentheses may be poorly developed):

A) AUTOMORPHIC SOILS

I. UNDEVELOPED SOILS (A)-C

1. Lithosol - stone rubble
2. Regosol - rough soil
3. Colluvial - deluvial

II. HUMUS ACCUMULATIVE SOILS A-C

1. Rendzina
2. Ranker

III. CAMBIC A-(B)-C

1. Eutric - eutric cambisol, saturated with bases (% V) above 50 %, pH >5.5
2. Dystric brown: dystric cambisol, V < 50 %, pH < 5.5
3. Brown pokarbonat - calcic cambisol
4. Red soil - terra rossa

IV. ELUVIAL ILLUVIAL A-E-B-C, WASHED - debasification, acidification

1. Lessivaged, ilimerizirane, luvisol
2. Podzol. Affected by man, E soils P-C
3. Trench plough soil - regosol
4. Garden soils - hortisol

VI. TECHNOGENE SOILS I-II-III

1. Soils in deposition

B) HYDROMORPHIC SOILS

I. UNDEVELOPED HYDROMORPHIC (A)-C, (A)-G

1. River side soil - fluvisol

II. PSEUDOGLEYS A-Eg-Bg-C, A-Bg-C

1. Pseudogley

III. GLEY SOILS (OGLEJENE) A-G

1. Swampy gleyed soils or gleys

IV. PEAT SOILS T-G

1. Peat soils of low swampland
2. Peat soils of high swampland

V. ANTHROPOGENIC HYDROMORPHIC P-G

1. Hydromeliorated

Halomorphic and subaquatic soils cannot be found in Slovenia, for which reason we do not mention them specifically in soils description.

2. *Recognising soil characteristics in the field*

The following methods can be used, for recognising soil characteristics:

- pedology profile description
- horizon delimitation according to visible characteristics
- measurement of profile depth and thickness of horizons
- mechanical composition established with a finger test
- measurement of pH value
- determination of CaCO_3
- description of structure
- assessment of moisture
- colour description
- determination of consistency
- estimation of organic substance

3. Soil characteristics observation and estimation

Soils can be examined in many ways, not just with the help of an excavated soil pit. Therefore, it is important for geographers to know the other possibilities for soil observation. These are:

- observing soils with the help of landscape relief (from relief configuration we can infer soil type and characteristics)
- studying soils with the help of pedology map: the legend of the map tells us a lot about individual soil types even before we go and look for them in landscape
- estimating soils with ground sod (we dig up the upper soil layer with a spade and use this for estimating basic soil characteristics)
- estimating and observing soils with the help of a soil profile; we sample the soil using a spade or an auger from the ground surface passing downwards to the underlying rock. This provides an insight into a soil's characteristics, its genesis and horizon structure
- soil characteristics can also be estimated with the help of vegetation, for the soil changes in response to human impact. What we need therefore, is a map of real vegetation. Quite often, advantageous soil characteristics coincide with areas used for agriculture, while less advantageous soils are covered with forests. From forest type and growth, we can conclude the prevailing soil characteristics (red pine prospers in acid soils, very permeable for water; black alder prospers in gleyic soils with more clay, black beech tree prospers only in warm positions on the developed rendzina soils). Whoever decides to estimate soil characteristics must therefore know what the vegetation requirements are for water, air, daylight, and mineral elements, since these are the most important factors of growth.

We can gather much information about soils and vegetation by field observation but we need to realise that observation alone may be subjective. For that reason, it is important to know objective methods which help us measure soil and vegetation

characteristics. By preparing instructions for various soil analyses in soil geography, we can give students more information about soil in the landscape. By knowing the geographical characteristics of a region, especially soils, we can explain the origin and development of soils in that landscape, as well as their influence on the disposition of the land use. Such interpretations are most important in ecologically sensitive areas.

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POCKETABAG ERSCIENEN

Bodenerosion wird als die weltweit wichtigste Bodenschädigung angesehen, die auch in Deutschland erhebliche Bedeutung hat. Neuere gesetzliche Vorgaben wie das Bundesbodenschutzgesetz oder die EU-Wasserrahmenrichtlinie machen geeignete Prognose- und Beratungsinstrumente erforderlich. Die „Universal Soil Loss Equation“ USLE ist das weltweit auf dem größten Datensatz aufbauende und das am weitesten häufigsten eingesetzte Modell für diesen Zweck. Aus dem deutschen Ableger, der „Allgemeinen Bodenabtragsgleichung“ ABAG (Schwertmann et al. 1987) ist inzwischen eine Modellfamilie entstanden, um die verschiedenen Anwendungsfälle mit ihren spezifischen Anforderungen optimal abzudecken: Für flächendeckende Prognosen und die Optimierung der Landschaftsstruktur steht die räumlich hochauflösend rechnende, auf ArcInfor aufsetzende „differenzierende Allgemeine Bodenabtragsgleichung“ dABAG zur Verfügung (Kagerer und Auerswald, 1997). Für die Einzelfallprognose und Bewirtschaftungsoptimierung eignet sich die auf Excel aufsetzende ^{PC}ABAG (Auerswald und von Perger, 1998) besser. Für eine Beratung unmittelbar am Feld kommt die Kombination von ^{PC}ABAG mit einem Notebook in Frage. Die zunehmende Verbreitung von PDAs (Personal Digital Assistant), die gegenüber einem Notebook noch besser transportierbar sind und länger ohne externe Stromzufuhr auskommen, legte nahe, ^{PC}ABAG auch auf diesen Rechnern lauffähig zu machen. Dies hat zur Entwicklung von PocketABAG geführt. PocketABAG läuft auf PDAs mit mindestens 64 MB Speicher und ab dem Betriebssystem Pocket PC 2000. Trotz des kleineren Bildschirms ist es gelungen, das äußere Erscheinungsbild (Abb. 1) und die Funktionalität von ^{PC}ABAG nahezu vollständig nachzubilden. Dadurch behält das Handbuch zu ^{PC}ABAG (Auerswald und von Perger, 1998) auch für PocketABAG seine Gültigkeit. In den Details wurden dennoch Verbesserungen und Aktualisierungen vorgenommen:

- PocketABAG basiert nun nicht mehr auf Excel, sondern wurde als eigenständige Anwendung programmiert, um die in der Vergangenheit aufgetretenen Inkompatibilitäten der verschiedenen Excel-Versionen zu umgehen.
- Die verschiedenen Fruchtfolgen und Bewirtschaftungsoptionen, die in der Berechnung angeboten werden, wurden dem heute in der Landbewirtschaftung Üblichen angepasst. Die Schätzung des Bewirtschaftungseinflusses bei seltenen oder komplexen Fruchtfolgen, wie man sie z.B. bei Betrieben des organischen Landbaues häufig findet, basiert auf einem verbesserten Algorithmus (Auerswald, 2002).

PocketABAG kann kostenfrei vom Erstautor bezogen werden. Das Handbuch für ^{PC}ABAG ist gegen eine geringe Gebühr beim aid, Bonn, erhältlich.

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Abb. 1: Erscheinungsbild von PocketABAG am Beispiel der Maske zur Bestimmung der Regen-Erosivität

**INTERNATIONAL CONFERENCE ON ‘SOILS UNDER GLOBAL CHANGE:
A CHALLENGE FOR THE 21ST CENTURY’, CONSTANȚA, ROMANIA,
3-6 SEPTEMBER 2002**

More than 200 scientists from 31 countries were registered for the Conference and 130 abstracts of papers were published. The oral presentations included 56 papers and there were 74 poster papers. A mid-Conference tour allowed the participants to learn about the Valu lui Traian Agricultural Research and Development Station which has been in existence for some 70 years. Long-term field experiments on mineral and organic fertilisation, the use of dried mud waste from swine feedlots and conservation tillage and soil compaction were seen and discussed.

The post-Conference tour (7-10 September 2002) visited areas where significant initiatives on nature conservation and sustainable planning had been undertaken. The National Research and Development Institute of the Danube Delta, and the delta itself, one of the largest wetlands still extant in Europe, was the first stop. A recently-reclaimed and drained polder in the Danube flood plain was visited and problems concerning salt-affected soils were presented at the Research and Development Station, Braila. Areas with various soil erosion problems were examined at the Research and Development Station for Soil Erosion Control in Perieni. The characteristics of local soils in all these areas were presented and subject to detailed discussions on possible deterioration or improvement resulting from specific management practices based on field experiments and their results.

The coincidence in timing and objectives between this meeting and the International Earth Summit in Johannesburg was mentioned during the Conference. Decisions taken in Johannesburg will have to be considered in the further development of research on land degradation. The origin of this Conference was earlier European Union Concerted Actions on subsoil compaction under the FAIR and INCO-COPERNICUS programmes, even though a much wider scope was considered here.

The Conference proved a good opportunity to emphasize the importance of soil quality and the risks of its degradation through various and often serious processes in the present state of technical, demographic, economic and social conditions. Solutions for prevention and / or mitigation of the processes were presented and discussed, as well as those for the rehabilitation of degraded soils for sustainable use – all of these being of great interest to both farmers and decision-makers. The further spread of soil degradation and lack of rehabilitation create serious risks for food security, the development of a clean environment and, finally, even for social and political stability. The European Union’s new strategy for agriculture and environment was also presented and discussed.

The discussions that took place during the Conference proved that soil degradation processes, of different kinds and with different intensities, are present all over the World – in all climatic and landscape environments in developed, developing and

undeveloped countries. Solutions need to be different, specific to each particular condition. As this Conference was organised in a country now changing from one economic system to another, and as many of the participants came from other countries in the same situation, it became obvious that there are, in such cases, specific and often difficult problems.

Papers presented at the Conference dealt with almost all the important kinds of soil degradation: water and wind erosion, landslides, waterlogging and flooding, aridisation, salinity and sodicity, compaction and structure deterioration, humus and nutrient deficiencies, acidification and alkalisation, and pollution with various contaminants. Problems related to drought, climate change, greenhouse gas emission, carbon sequestration and desertification, and their relations with soil quality and soil degradation, were also presented and discussed.

The main conclusions are summarised as follows:

(1) Land use should be reshaped in many areas where arable or unproductive utilisation is located on marginal land. This should involve mainly afforestation (reforestation) but, in some cases, returning the use to rangeland or even wetland, although without rewetting land of good quality for use in agriculture. As a general recommendation, new land use planning with emphasis on the multifunctional character of soil resources should be considered. The set-aside system in the European Union or the Conservation Reserve Programme in the USA are examples. Locally-adjusted techniques for a proper management of set-aside land are needed. The terms, set-aside and abandoned land, should be more precisely defined and the differences between the terms better taken into account. Financial difficulties and especially the high density of rural population in most developing or undeveloped countries make the application of such solutions almost impossible at present. Consequently, legislation and programmes have to be adjusted to the specific conditions of various countries.

(2) Land management practices, especially for cropland, should be selected with a view to maintaining or improving soil quality. Appropriate management practices should be universally applied, not just on marginal or other specific types of land. Adequate fertilisation, using mineral fertilisers and all available organic manures, is one such practice but should be based on soil testing to avoid excessive application with consequent soil or groundwater pollution. Tillage systems, appropriate for each type of soil, and extension of various methods of conservation tillage are other practices. Ground traffic should be restricted as much as possible to periods when soils have an optimum moisture content. Mixed weed elimination and plant protection, combining chemical and non-chemical practices, should allow traffic to be reduced without producing soil pollution or inadequate crop products.

(3) New practices of a more substantial character are needed in some specific cases. Land consolidation and land planning, making possible contour farming on sloping land and elimination of excess water and perched waterlogging on flat land are

examples. These are of interest mainly in countries where land tenancy is excessively fragmented. Of course, solving this issue is strongly related to social conditions and has to be based on acceptance by the affected landowners. Irrigation, drainage and other agricultural engineering projects are solutions to be considered in areas affected by drought or, respectively, flooding and waterlogging. A careful examination of costs, possible additional outputs, expected profit, frequency of years with different weather conditions, the relationship to environmental and ecological problems and, especially, the interest of local farmers all have to be analysed before deciding on the implementation of such practices.

(4) The participants at the Conference considered that problems of soil degradation and protection should have a more extensive place in the European Union strategy, especially in the 6th Framework Programme, enabling development of cooperation between all countries of the European Union and the Newly-Independent States. Several papers presented showed that many data sets on soils are available in these States and should be more widely used. Differences in natural and social conditions in various parts of the World are important when developing techniques for soil conservation. Examples are the emission of methane as a problem in padi soils and the emission of carbon dioxide where deforestation takes place. Further, climatic changes could lead to negative effects in many areas but to positive effects in other areas.

(5) The multidisciplinary character of research in soil degradation and soil protection was clearly a feature of the Conference. Soil, climate, vegetation and management of agricultural and forestry land all contribute to these processes and practices and cooperation between researchers in these fields of science should be developed, leading to an holistic and systematic approach. Such an approach should include consecutive steps covering early warning of possible degradation processes, a real forecast concerning the processes in various areas and the implementation of adequate preventive measures. There is a need for further development of modern computer-based techniques involving data bases, geographical information systems, decision-support systems and simulation modelling. Increasing public awareness about soil resources, their quality, risks of degradation, prevention, mitigation and rehabilitation is important. In every country, new legislation, including technical and financial support from different sources but also penalties, should be considered.

The above recommendations are the result of the experience of the participants as scientists interested mainly in the technical aspects of the problems. At the same time, the Conference stressed the need for decision-makers to consider the macro-economic, social and political context before proceeding to final actions.

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NEW PhD THESES

Modelling soil erosion in a small catchment on the Chinese Loess Plateau: applying LISEM to extreme conditions.

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The Chinese Loess Plateau suffers some of the highest soil erosion rates on earth. This is caused by the fact that it can be characterised as a semi-arid area with low vegetation cover, erodible soils, steep slopes and occasional high intensity summer storms. In this study, the process-based distributed soil erosion model LISEM¹ was applied to a small catchment on the Chinese Loess Plateau. Several characteristics specific to the Loess Plateau needed to be taken into account to allow successful simulation with such a model. The most important were the occurrence of very high sediment concentrations, the occurrence of steep slopes and the presence of large gullies. High concentrations will affect fluid properties, steep slopes have effects on flow velocity and transport capacity, while in the gullies erosion processes (like soil fall) operate that are usually not considered in soil erosion models.

A number of changes to LISEM were proposed to overcome the modelling problems posed by the steep slopes, high concentrations and permanent gullies of the Danangou catchment. These changes included a slope angle correction, the use of slope-dependent Manning's n , the introduction of a concentration-dependent settling velocity, the introduction of a loose material map and the use of sine of the slope angle instead of tangent. These changes were implemented in LISEM and evaluated on the hydrograph and sedigraph at the catchment outlet. Predicted discharge decreased by about 50% from applying a slope correction for the calculation of overland flow, but was only marginally affected by using a slope-dependent value of Manning's n . Predicted concentration increased by applying a concentration-dependent fall velocity, but was hardly changed by introducing a map showing the distribution of loose material or by using sine instead of tangent in the transport equations. However, the choice of transport equation had a large effect on the simulation results. After recalibration, the LISEM model simulated measured discharge and sediment yield only slightly better than before. LISEM was also found to be sensitive to changes in time step length and grid size.

Calibration of the LISEM model for the Danangou catchment showed that it can in principle be applied to the Chinese Loess Plateau. The results, however, also showed that a separate calibration was needed for low-magnitude and high-magnitude events and probably even for each event. Small events could not be calibrated well. A comparison of mapped and simulated erosion patterns showed that these patterns were very different in detail. The most likely causes are: process descriptions that are unsuitable for steep slopes, inaccurate data and effects caused by the raster-based approach itself.

The effect of a number of land use and land management scenarios was also simulated with LISEM. The simulations predicted that implementing conservation methods would result in decreases of runoff and erosion of 5-20%. Changing the land use itself was predicted to have a much larger effect; discharge decreased by 40-50%, while erosion decreased by 50-70%. These large effects of land use change were mainly caused by extension of the woodland area. More research is needed before we can say to what degree the simulation results of LISEM reflect reality.

¹ Limburg Soil Erosion Model, <http://www.geog.uu.nl/lisem>

FORTHCOMING MEETINGS

5-8 July 2003

GCTE Soil Erosion Network: Erosion model comparisons for global change scenarios

Budapest, Hungary

The aim of the meeting is to provide a comparative evaluation of field-scale and catchment-scale models for soil erosion by water, using global change (climate change and land use change) scenarios. The meeting is the third in a series organised by the GCTE Soil Erosion Network following meetings in Oxford, UK (September 1995) and Utrecht, The Netherlands (April 1997).

See: <http://mwnta.nmw.ac.uk/GCTEFocus3/networks/erosion.htm>

The Budapest meeting is a COST623 plenary meeting:
see <http://soilerosion.net/cost623/>

The model comparison exercise is being organised by David Favis-Mortlock (Queen's University, Belfast) and Victor Jetten (University of Utrecht) with assistance from the scientific steering committee of Gerard Govers (Katholieke Universiteit Leuven), Mike Kirkby (University of Leeds), Mark Nearing (USDA-ARS), Jean Palutikof (University of East Anglia) and Christian Valentin (IRD-IWMI-NAFRI).

Further information: Details will be placed on the project's web site:
see <http://soilerosion.net/model-eval-2003/>

A call for participation will be circulated shortly.

9-12 September 2003

Soil erosion and sediment redistribution in river catchments: measurement, modelling and management in the 21st century

Silsoe, Bedfordshire, United Kingdom

The conference aims to review and update the major achievements recently made in soil erosion and sediment redistribution research and management and to identify future requirements. Taken at a river basin or catchment scale, the conference will examine the developments made in three themes:

- measurement
- modelling, and
- management.

Each thematic session will be introduced by a keynote presentation providing an overview of the state-of-art, followed by invited contributions and accepted presentations.

The conference aims to bring together key players in river basin soil erosion and sediment redistribution from sources to sinks, field to riverbank, from academia to industry and policy. The conference will serve as a forum for workers to discuss the latest advances in all aspects of soil erosion and sediment redistribution, with special emphasis on new methodology, techniques and management approaches.

Confirmed invited speakers: Measurement (Prof Des Walling; Prof Ellen Petticrew; Prof Ian Foster)
Modelling (Prof Mark Nearing; Prof Victor Jetten; Prof. Colin Thorne; Dr John Quinton)
Management (Prof Roy Morgan, Dr Jos Brils, Dr Jane Rickson)

Deadlines: Abstract: 31 March 2003
(200 words maximum, send as an e-mail attachment)
Decisions on acceptance of papers: 30 April 2003
Final registration: 30 June 2003

Publication: It is intended to publish suitable papers presented at the conference, either in an edited book or in a journal special issue. Manuscripts should be submitted at the conference or soon after (deadline to be confirmed).

Venue: National Soil Resources Institute, Cranfield University at Silsoe, Silsoe, Bedfordshire MK45 4DT, UK.

Further details: a Conference web site will be set up:

<http://www.cranfield.ac.uk/nsri/conferences>.

Contact: Dr Alison Collins, NSRI, Cranfield University at Silsoe, Silsoe, Bedfordshire MK45 4DT, UK.

Tel: + 44 - (0) 1525 - 863243

Fax: + 44 - (0) 1525 - 863253

e-mail: a.j.collins@cranfield.ac.uk

or Dr Phil Owens, NSRI, Cranfield University, North Wyke, Okehampton, Devon EX20 2SB, UK.

Tel: + 44 (0) - 1837 - 883524

Fax: + 44 (0) - 1837 - 82139

e-mail: philip.owen@bbsrc.ac.uk

21-24 September 2003

International symposium on sustainability of dehesas, montados and other agro-silvopastoral systems

Cáceres, Spain

The symposium will provide a forum for the presentation and discussion of the following key issues regarding agro-silvopastoral systems, namely: (1) the definition of distinctive features of hydrological, degradational and soil erosion processes in pasture lands with sparse tree cover including, in some cases, rotational cultivation; (2) the relationship between different land uses and management techniques and soil erosion and degradation. Of special interest is the role of different domestic livestock species, their grazing management and stocking rates; and (3) the definition of soil quality indicators as an essential part for evaluating sustainability of agro-silvopastoral land use.

Conference themes are:

- soil degradation and soil erosion (mechanisms and magnitude) as related to the diverse spectrum of land use systems and management techniques, regarding (a) forestry, (b) domestic livestock and big game, (c) cultivation, (d) abandonment and fire
- surface hydrology of open evergreen woodlands
- conservation and sustainable management of agro-silvopastoral systems
- soil quality indicators.

The first day of the conference (21st September) will be a field visit to research sites such as the Parapuños Experimental Catchment; conference sessions will take place on the second and third days; the final day will comprise a field visit to montados and Dehesa farms in Extremadura (Spain) and Alentejo (Portugal).

Conference organised by the European Society for Soil Conservation, the Universidad de Extremadura and the Universidad de Évora.

Deadlines: Abstracts (300 words maximum) by 15 January 2003; notification of acceptance by 15 March 2003. Registration (including payment of fees) by 15 May 2003.

Publication: Abstracts will be published in a book and made available to participants at the beginning of the Conference. Papers will be reviewed and selected by a scientific committee for publication in a book.

Languages: The official language for presentation of papers and posters is English. Simultaneous translation of the paper presentations to Spanish and Portuguese will be provided.

Registration: You may register online (e-mail: snadal@unex.es) or send the registration forms by post, fax or e-mail.

Delegate rate:	before 15 May 2003	€ 250
	after 15 May 2003	€ 300

Student rate:	before 15 May 2003	€ 150
	after 15 May 2003	€ 200

Students must provide proof of their full-time student status, e.g. a supporting letter from their Head of Department.

Other provisional rates:

Excursion 1 (incl. lunch):	21 September 2003	€ 50
Excursion 2 (incl. lunch):	24 September 2003	€ 50
Closing dinner:	23 September 2003	€ 40

Further details from: Silvia Nadal, Dpto. de Geografía, Universidad de Extremadura, Avda. de la Universidad, 10071 Cáceres, Spain.

Tel: + 34 - 927 - 257000

Fax: + 34 - 927 -257401

e-mail: snadal@unex.es

Visit: <http://geot.unex.es/symposium>

17-19 November 2003

Soil erosion under climate change: rates, implications and feedbacks Tucson, Arizona, U.S.A.

The meeting is the second of two meetings on the comparison of field-scale and catchment-scale models for evaluating global change. It follows the meeting in Budapest on 5-8 July 2003 (see above). The theme of this GCTE-SEN meeting is climate change and soil erosion. This includes considerations of rates, processes, impacts and feedbacks within the context of an interdependent hydrological system. Both the impacts of climate change on erosion and its feedback to the climate will be addressed. Both wind and water erosion will be considered. All scientific issues related to the topic are encouraged.

A specific theme will be the evaluation of erosion models for global change studies. To quantify the impacts of future climate change and major land use change on erosion, we need to identify the most appropriate tools. This is being addressed in the third stage of the GCTE-SEN comparison of erosion models. The models will be run using common data sets which include a number of scenarios for future climate and land use. Participants are encouraged to contact the meeting organisers to learn more

about participating in the model comparison exercise.

The programme will include two days of meetings and a one-day tour of the Walnut Gulch Experimental Watershed.

Deadlines: One page abstracts can be submitted up to 31 July 2003. E-mail them to: mnearing@purdue.edu (this address may change to mnearing@tucson.ars.ag.gov after 1 January 2004).

Accommodation: A block of rooms has been arranged for 16-23 November 2003 at the Windmill Inn, 4250 North Campbell Avenue, Tucson, Arizona 85718, U.S.A.

Tel: + 1 - 520-577-0007. Fax + 1 - 520-577-0045.

e-mail: tucgm@windmillinns.com

<http://www.windmillinns.com/ie40/tuc/tuc.htm>

Cost is approximately US\$60.00 per night. Please identify yourself as an attendee of the GCTE meeting to obtain this special rate.

Further details from: Dr Mark Nearing, GCTE Meeting 2003, 2000 East Allen Road, Tucson, Arizona 85719, U.S.A.

e-mail: as above; or contact smoran@tucson.ars.ag.gov or jstone@tucson.ars.ag.gov

7-11 September 2005

Sixth International Conference on Geomorphology: Geomorphology in regions of environmental contrasts

Zaragoza, Spain

Scientific works on any geomorphological topic will be welcome. The Organising Committee would like to emphasize the following themes: (1) glacial and periglacial geomorphology; (2) geomorphology of arid regions; (3) tropical geomorphology; (4) geomorphology, soils and weathering; (5) fluvial geomorphology and palaeohydrology; (6) hillslope processes; (7) soil erosion and desertification; (8) karst geomorphology; (9) coastal geomorphology; (10) structural geomorphology and neotectonics; (11) volcanic landforms; (12) environmental geomorphology; (13) geomorphological hazards and extreme events; (14) theories and methods in geomorphology; (15) GIS and SDA applications in geomorphology; (16) geomorphology and natural-cultural heritage.

There will be Special Sessions on the contributions of geomorphology to understanding global change; Antarctic geomorphology; and evaporite karst. There will be Working Group Sessions on large rivers; volcanic geomorphology and hazards; geoarchaeology; geomorphological sites (research, assessment and improvement);

interaction between fluvial, aeolian and lacustrine processes; hydrology and geomorphology of bedrock rivers; and wine regions.

Field trips:

Pre-conference (3-5 days) – (1) Portugal: from the North to the South; (2) Tenerife volcanic island; (3) Galicia region: landforms and morphological evolution of granitic areas; (4) Geomorphology of the south-Atlantic Spanish coast; (5) Semi-arid environments in SE Spain; (6) Central Andalucia: karst, palaeoclimate and neoseismotectonics; (7) Mallorca Island: geomorphological evolution and neotectonics; (8) Central Spanish Pyrenees: glacial and periglacial landforms.

One-day field trips (9 September 2005) – (1) Dissolution subsidence in fluvial systems of the central Ebro Basin; (2) Lacustrine records of climate and environmental change in the Ebro Basin; (3) Badlands and talus flatirons; (4) Gallocanta karst polje; (5) Large mass movements in relation to deglaciation in the Pyrenees; (6) Evaporite karst in Calatayud Graben - effects on fluvial systems and environmental aspects; (7) Aeolian landforms and saline lakes; (8) Irrigation versus desertification in the central Ebro Basin; (9) Glacial landforms and evolution in the Pyrenees (The Gállego river valley).

Post-conference (3 days) – (1) Canary Islands volcanism - Lanzarote; (2) Glacial and preglacial geomorphology - Eastern Pyrenees and Andorra; (3) Geomorphic and hydrological processes in the south eastern Pyrenees; (4) Travertines and volcanic landforms in the Eastern Pyrenees margin; (5) Geomorphology and environmental problems – Cantabrian strip; (6) Karst and neotectonics in the Iberian Range; (7) Palaeofloods and fluvial geomorphology in central Spain; (8) Geomorphology and environmental problems in the Spanish Central System; (9) Geomorphological processes in the Duero Basin.

Registration:

Regular registration	€ 360 before 31 December 2004 € 450 after 1 January 2005
Retired person	€ 160 before 31 December 2004 € 230 after 1 January 2005
Student	€ 180 before 31 December 2004 € 230 after 1 January 2005
Accompanying person	€ 180 before 31 December 2004 € 230 after 1 January 2005
Conference dinner (11 September 2005)	€ 30 before 31 December 2004 € 40 after 1 January 2005

Regular, retired and student registration includes participation in the sessions, volume of abstracts, welcome party and four lunches.

Student registration applies to persons under 26 years of age or to MSc or PhD students. Students must attach a copy of an ID document to prove their age and a signed letter from their supervisor to confirm their status.

Accompanying persons registration includes welcome party, four lunches and an optional social programme of visits to Zaragoza, Tarazona and Veruela Monastery. No registration is required for children under 15 years.

Registration deadline: 30 May 2005. After this date, registration will only be possible at the Conference site.

Language: English and French will be the official languages of the Conference. No simultaneous translation service will be provided.

Publication: The Organising Committee will contact several international journals in order to publish special issues containing the conference contributions.

Contact: Organising Secretary, Geomorfología, Edificio C. Facultad de Ciencias, Universidad de Zaragoza, C/ Pedro Cerbuna 12, 50009 Zaragoza, Spain.

Fax: + 34 - 976 - 761106

e-mail: iag2005@posta.unizar.es

Visit: <http://wzar.unizar.es/actos/SEG>