NEWSLETTER

3/2006

EUROPEAN SOCIETY for SOIL CONSERVATION

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Cover photo: Rainfall simulation studies, in the rain, during the ESSC field trip tour of the Priorat region, Catalonia, Spain (14 September 2006).
Photo taken by Dr José A. Martínez-Casasnovas (Lleida, Spain).

E.S.S.C. NEWSLETTER 3/2006

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Contents

Letter from the President on the EU Strategy on Soil Protection

On 22 September 2006, the EU Commission proposed a soil strategy for Europe. The historical dimension of this initiative cannot pass unnoticed. After 35 years of legislation in water, emissions, residues and other environmental aspects but very few on soils, a common framework was launched by the Commission on soils. The antecedents of the initiative came from the Communication of the Commission of 16 April 2002 entitled 'Towards a Thematic Strategy for Soil Protection'. This Communication is a comprehensive analysis of the general situation of soil in Europe, highlighting the importance and dimension of soils as a threatened and non-renewable resource. The document identified eight main threats to soil: Erosion (Desertification), Decline in Organic Matter, Soil Contamination, Salinization, Biodiversity Loss, Compaction, Soil Sealing and Floods and Landslides. The Communication also emphasizes that soil is a multifunctional medium, taking special consideration of ecological soil functions. This is an innovative approach well ahead of previous historical world soil approaches, based mainly on soil as a basic resource for biomass production.

At the moment of the presentation of this Communication, the consensus appears that the document is an ambitious initiative, covering many of the important aspects of the problematic soils waiting to be addressed within the context of a pan-European dimension. Some of the issues demanding consideration include the great diversity of European soils, the heterogeneity of soil classifications, the existing wide range of monitoring, analytical and measurement schemes and the different methodological standards. The major issues of climatic and socio-economic aspects were also considered, together with the intention of planning soil contamination approaches and working schemes. Centuries of European soil science history, with trends of heterogeneity and dispersion, have created the unavoidable need for convergence, standardization and common vision. The effort needed is viewed as an important initiative, deserving considerable resources and financial support.

After the presentation of the 2002 Communication a major effort in participation, discussion and writing was made under the co-ordination of DG Environment. Stakeholder inputs were considered and also one Advisory Forum and five Technical Working groups were established. The ESSC actively participated in the entire process. As a result of several intense months of work, a series of book-reports were published, available in a useful web site, providing an interesting compilation of many aspects of European soils:

http://www.ec.europa.eu/environment/soil

Later, we had a long impasse, including a change in the Commission government and different procedural delays. Long discussions and confrontations of different interests of state members and societal sectors resulted from the verification and evaluation of the very complicated, costly and heterogeneous nature of European soil problems. Sometimes, it was even felt that the whole soil strategy initiative was in peril.

However, the Commission finally adopted the proposal presented on 22 September 2006. The document includes:

a) A Communication on a thematic strategy for soil protection.

b) A proposal for a Directive for the Protection of Soil.

c) An Impact Assessment of the thematic strategy (you can download the documents from the above web-page).

The general objectives of the strategy are:

1) Preventing further soil degradation and conserving soil functions.

2) Restoring degraded soil to a level of functionality consistent at least with current and intended use, thus also considering the cost implications of soil degradation.

In this strategy four pillars are considered crucial: the development of framework legislation, integration and horizontal implications, identification of knowledge gaps in soil science and the need to enhance public awareness of soil. One important aspect of the strategy and the proposed directive is the identification of 'Specific Risk Areas' related to erosion, organic matter decline, salinization, compaction and landslides.

There are many references to the concept of 'flexibility' among the different documents. Basically the Commission is proposing just a framework of common principles, objectives and actions, but the level of ambition and involvement is transferred to the decision of the individual State Members. In this sense, European countries would be in charge of the identification of Risk Areas and the development of programmes for prevention, mitigation and restoration. In relation to soil contamination, affected State Members are obliged to prepare an inventory of contaminated sites, together with remediation schemes.

There are many aspects to be considered and discussed in the proposed strategy, all of which have important consequences. The Directive is currently a proposal that will go to the European Parliament, European Council and State Members for discussion and suggestions. The general belief, however, is that the proposed Directive is a document of minimum consensus; a kind of 'timid' directive. Besides the enormous efforts made in recent years, it is the scheme we have! It could be considered a valid and historical starting point, but with intrinsic considerations for further developments that could take many years and much effort. I suggest and recommend you as an ESSC member to read and evaluate the document and actively participate in the ensuing discussions for its improvement.

The importance of the proposed Directive is very clear and evident. Without doubt it will be the reference document on soil for the next 15 – 20 years in Europe. It is now the moment to participate in the final version of a Directive that it is so closely intertwined with the aims and goals of our Society.

José Luis Rubio
Valencia, Spain.

Minutes of the Council Meeting of the ESSC held in Lleida, Spain, 12 and 15 September 2006

Present: J.L. Rubio, E. Constantini, W.M. Cornelis, C. Dazzi, M.A. Fullen, A. Rodriguez, I. Plá Sentis, T. Scholten.

Apologies: P. Bielek, A. Canarache, M. Azevedo Coutinho, N. Fohrer, D. Gabriels, K. Helming, A. Kertecz, R. Kõlli, L. Oygarden, J. Poesen, S. Rousseva, L. Stroosnijder.

Agenda:

1. Welcome and Introductory Remarks.
2. Report by the Treasurer.
3. Report by the Secretary.
4. Report by the Editor-in-Chief.
5. 5th ESSC Congress.
6. EU Soil Framework Directive.
7. Institutional Framework for Sustainable Soils (IUCN).
8. Various information.
9. Future sponsored and co-sponsored activities.
10. Any other items.

1. Welcome and Introductory Remarks

J.L. Rubio, President of the ESSC, welcomed to all participants and thanked I. Plá Sentis, his team and The University of Lleida for the excellent organization and arrangements of the ESSC Conference on 'Soil and Water Conservation under Changing Land Use' (12 – 15 September 2006, Lleida, Spain). J. Rubio expressed concern at the low attendance by ESSC Council Members.

2. Report by the Treasurer

Participants received the written report of Treasurer W.M. Cornelis and this was accepted. The Treasurer reported the full and legal establishment and registration of the ESSC in Belgium, under Belgian Law. According to the Financial Report (2002 – 2006), we are increasing our budget and this now represents a surplus of income over expenditure of €14,740 (as of 5 September 2006). This is being managed via the new ESSC bank account in Ghent (Belgium).

The President of the ESSC asked the Treasurer to send invoices to all members of the ESSC who owe their membership fees. It is decided for the non-paid memberships

not be included in reduced fees for conferences and other activities organized by the ESSC. The poor rate of payment of membership fees is proving a major impediment in the development of ESSC activities. The ESSC will become more proactive in its pursuit of payments and will establish a membership desk at future ESSC events. The Treasurer presented a report on the current membership profile and this is presented below*.

3. Report by the Secretary

P. Bielek had given his apologies. A full updated report will be presented by the Secretary at the next ESSC Council Meeting.

4. Report by the Editor-in-Chief

M.A. Fullen was pleased and optimistic regarding the progress of the ESSC Newsletter and thanked Dr Colin Booth (Assistant Editor) and the colleagues in Bratislava for their highly professional support. The Newsletter was moving to four issues per year. The call for members to send the citation details of recent papers had been successful and is ongoing. The complete and regularly updated listing is available on the ESSC web site. This is developing into a valuable resource for promoting collaboration and disseminating information for research and teaching. The ESSC web site is increasingly used and the Council resolved to develop a web-based bulletin board for rapid dissemination of information to members. It was agreed that the Newsletter could host commercially sponsored advertisements, as long as their status as advertisements, rather than as independent reviews, was made clear. On behalf of the Council, President J.L. Rubio congratulated the Editor-in-Chief, the Assistant Editor and the team from Bratislava for the important progress made in the development of the Newsletter.

5. 5th ESSC Congress

C. Dazzi presented a very informative 'Powerpoint' presentation of the 2nd Announcement of the 5th International Congress of the ESSC under the title 'Changing Soils in a Changing World: the Soils of Tomorrow'. The Congress will be held in Palermo (Italy) from 25 – 30 June 2007. Moreover, he informed the Council about all local conditions, excursions and other technical information related to the Congress. The Council thanked and congratulated C. Dazzi and his team for their splendid efforts and for the excellent overview of the 5th ESSC Congress. A very informative web site is in place (for further information, please refer to the Announcement at the end of this Newsletter*). The Council resolved to provide five bursaries of €1000 each to enable Ph.D. researchers to attend the Congress*. The bursaries would be won in fair and open competition. The Council wishes to promote increased involvement, participation and interest in ESSC activities among young scientists and the new ESSC bursaries are at the forefront of the agreed strategy.

6. EU Soil Framework Directive

President J.L. Rubio informed the Council about the preparation of the EU Soil Framework Directive and the expected developments until its completion during 2007. The development of the strategy was proving a long and complicated process, which had delayed it by about one-year. These complex issues included the problems of soil contamination, legal instruments and frameworks, the Common Agricultural Policy (CAP) and issues relating to subsidiarity (i.e. the relative importance of national versus EU strategies and policies). J.L. Rubio proposed the formulation of a two-page declaration of the ESSC, supporting the more robust formulation of the Thematic Strategy.

7. Institutional Framework for Sustainable Soils (IUCN)

An environmental law group was drafting the IUCN (The International Union For Nature Conservation) Framework Document, which promotes the global sustainable use of soil. These drafts were based on resolutions from the Selfoss Conference in Iceland (September 2005), which were subsequently modified at the International Soil Conservation Organization (ISCO) Conference in Marrakesh in May 2006. The Council resolved to promote interaction and symbiosis between the IUCN and EU Soil Thematic Strategy.

8. Various information

a) President Rubio reported that the European Research Council (ERC) is becoming a reality and will probably be a major driver in the formulation of European research strategies. The ERC is currently endorsed by 60 European scientific societies. M. Azevedo Coutinho represents the ESSC on the ERC.

b) DesertNet is a European group promoting research on desertification in Europe, which has its headquarters in Hamburg, Germany. The Council was very supportive of this initiative*.

c) The European Soils Bureau (ESB) wishes to have stronger links with the ESSC in the development of soil survey and evaluation protocols.

d) The United Nations has designated 2006 as the 'International Year of Deserts and Desertification' and the ESSC is involved in this development, including being a co-sponsor of a meeting on 'Desertification and Migration' in Almeria, Spain, 25-27 October 2006.

e) The President proposed discussion on the possible launch of a journal sponsored by the ESSC as a further development of the Newsletter. A possibility is that such a journal embraces many of the positive attributes of the 'Journal of Soil and Water Conservation'. A preliminary journal title for discussion was the 'European Journal of Soil Protection (Official Journal of the ESSC)'. It was agreed that J.L. Rubio would draft a concept note on this proposal, for circulation and discussion.

9. Future sponsored and co-sponsored activities.

Information was presented by J.L. Rubio. It was agreed the ESSC would promote and co-operate with the following activities:

a) A. Rodriguez is preparing the '3rd National Symposium for Control of Soil Degradation', to be convened in Tenerife (Canary Islands, Spain) from 16 – 21 September 2007. A first announcement will be made soon.

b) The 'International Meeting on Fire Effects on Soil Properties' will be held in Barcelona, Spain, 31 January – 3 February 2007*.

c) From 13 – 16 November 2006, a first World conference of representatives of International Soil Organizations on 'New Soil Science Paradigms' was due to be held in Valencia, Spain, organized by the ESSC and other international associations and national institutions. The Conference aims were to focus on global understanding of the soil and new conceptual reflections on soil functions and roles and to strengthen the links between international soil associations. Regrettably, due to lack of political support, it was necessary to postpone this initiative.

10. Any other items.

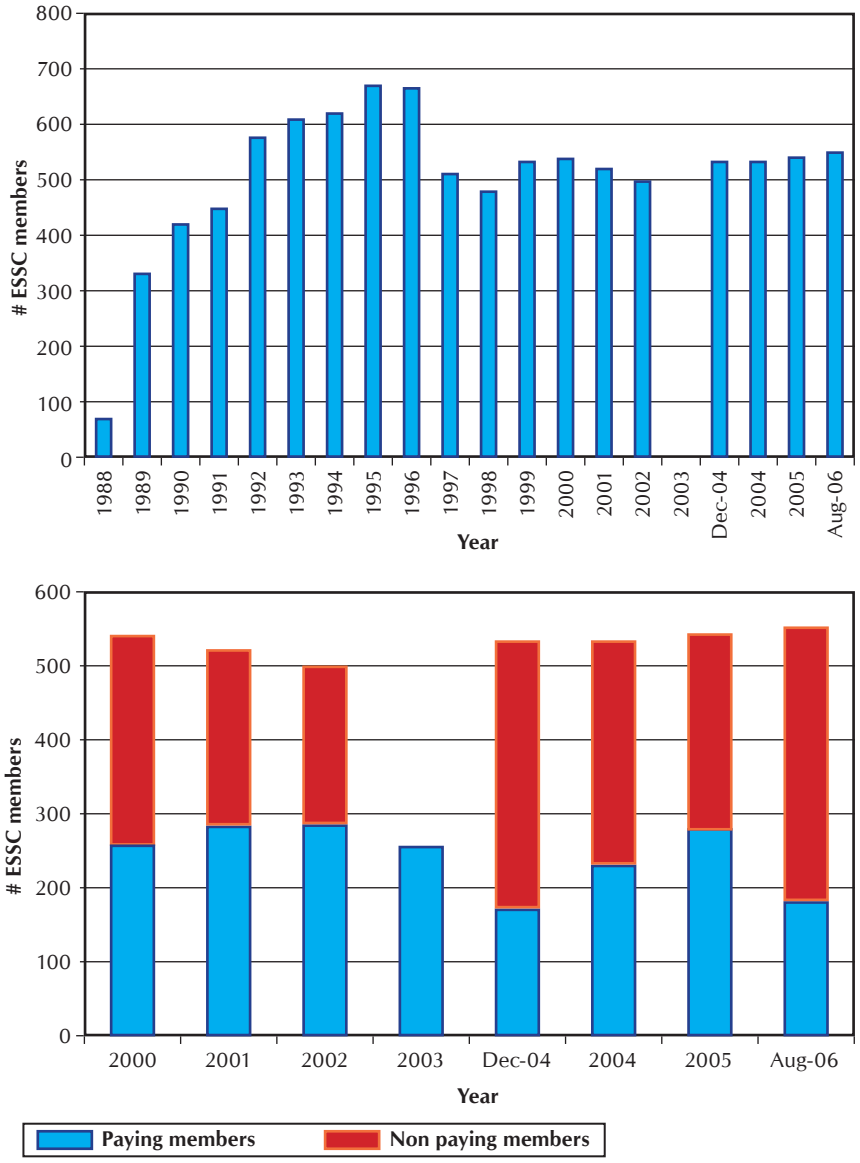
The next ESSC Council meeting will be held during the ESSC Congress in Palermo (25-30 June 2007).

In conclusion, J.L. Rubio thanked all participants. Again, he congratulated Professor I. Plá Sentis for the excellent arrangements.

In Lleida, 15 September 2006, Mike Fullen, Acting Secretary.

Editor's note: Items denoted by * are reported in more detail in this issue of the ESSC Newsletter.

Evolution of ESSC Membership 1988 – 2006



Note: Several members still have to pay their membership fee for 2006. They are invited to do so as soon as possible.

ESSC Membership per Country

Country	Paying members 2005	Paying members August 2006	All members August 2006
Albania	0	0	2
Argentina	0	0	1
Australia	1	1	1
Austria	4	2	5
Belarus	0	0	4
Belgium	11	7	19
Bosnia	0	0	1
Bulgaria	9	0	19
Canada	1	0	2
Colombia	0	0	1
Croatia	4	4	4
Cuba	0	0	1
Czech Republic	8	8	12
Denmark	4	2	7
Estonia	16	16	16
France	3	0	12
Georgia	1	0	2
Germany	29	24	45
Great Britain	8	7	21
Greece	5	4	13
Hungary	15	8	17
India	0	0	1
Israel	1	0	1
Italy	12	12	30
Japan	1	1	1

Country	Paying members 2005	Paying members August 2006	All members August 2006
Latvia	1	1	1
Lithuania	4	4	6
Luxembourg	0	0	1
Malta	0	0	1
Moldavia	0	0	5
Norway	8	3	11
Poland	9	6	17
Portugal	9	6	17
P.R. China	0	0	2
Romania	29	13	55
Russia	14	3	58
Serbia	2	2	2
Slovakia	9	9	10
Slovenia	5	3	6
Spain	28	20	51
Sweden	2	1	2
Switzerland	6	2	8
Taiwan	0	0	1
Thailand	1	1	1
The Netherlands	13	7	18
Turkey	1	0	2
Ukraine	4	2	36
USA	2	1	3
TOTAL	280	180	552

Changing course: Soil conservation in a changing World

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(Keynote paper presented at the ESSC Conference on 'Soil and Water Conservation under Changing Land Use', Lleida (Spain) on 12 September 2006).

The driving forces of rural land use change are shifting from food security to provision of environmental goods and services and global life support systems. The soil conservation community must move from traditional prescriptive and engineered approaches for soil conservation to more holistic and participatory systems. These must integrate rural landscape management and technological innovation, with profit generating activities and market opportunities, including opportunities from the international environmental conventions. Partnerships with others will be necessary, particularly international institutions and environmental NGOs.

Global environmental degradation is widespread, and much has resulted from human over-exploitation of natural resources (natural capital), attributed primarily to rising population pressures. The impacts of this are assessed in the 'Millennium Ecosystem Assessment Report' (UNEP, 2005), which identifies the following:

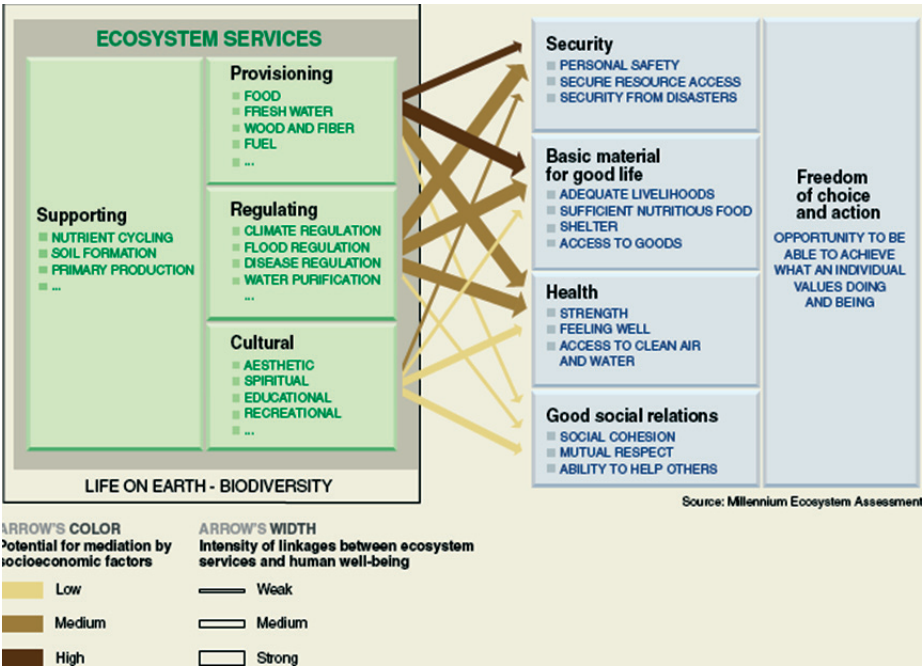
- Approximately 15 out of 24 major ecosystem services are being degraded or are used unsustainably. These include life support services, such as fresh water, air and water purification, regulation of climate, natural hazards and pests, and capture fisheries. Many such services are being degraded to increase supply of other services, such as food production.
- Evidence is increasing that the ecosystem changes are increasing the likelihood and frequency of potentially irreversible changes, such as the creation of dead zones in coastal environments, shifts in regional climates, abrupt alterations in water quality and collapse of fisheries.
- The harmful effects of ecosystem degradation are disproportionately borne by the poor, thereby contributing to growing inequalities and, sometimes, social conflict.

The consumption of ecosystem services is expected to grow as a consequence of an expected three to six-fold increase in global GDP by 2050, regardless of an expected levelling-off of global population growth (UNEP 2005).

The environmental impacts of global populations and ecosystem degradation are now of such magnitude that for the first time in history how we manage the land directly impacts global life support systems. Already, about 25% of the terrestrial earth's surface is intensively managed, either in agriculture, managed natural and plantation forests, or managed nature preserves (UNEP, 2005), and over 70% of the total land surface is

under some form of human intervention (Vitousek, 1994). Estimates are that by early in the next century, all land will be under some degree of management.

There are direct and indirect linkages between ecosystem services and components of human well-being. Land degradation affects these linkages in different ways, and knowledge of these impacts provide evidence of the extent to which these can be mitigated with socio-economic interventions. For example, if it is possible to purchase a substitute for a degraded ecosystem service, then there is a high potential for mediation. However, if there is no substitute, or if the substitute is very expensive, or if degradation of the ecosystem service is beyond rehabilitation, then that service may be lost forever. The strength of the linkages and the potential for mediation are shown in the accompanying figure (UNEP, 2005).



The international environmental conventions, particularly the UNFCCC and the UNCCD, provide opportunities for the promotion of soil conservation. These conventions do not guide activities in soil conservation, but they serve to focus discussions on objectives to be achieved and procedures to be followed, including development of new market based opportunities. Negotiations under Kyoto are illustrative of how new financial instruments (carbon credits) and market mechanisms (carbon trading) under the international conventions can be used to promote soil conservation. The popularity of these approaches indicate that market based opportunities will become available for the other international conventions, thus cementing good business practices with provision of environmental goods and services.

New Initiatives to Mitigate Land Degradation

Past efforts on land degradation have been inadequate compared to the scale of the threat and land degradation continues to accelerate. The evolving principles of Sustainable Land Management (SLM) have distinct advantages for pursuit of joint agriculture-environment-soil conservation objectives. The pillars of SLM are the application of agro-ecological principles to farming; an emphasis on human resource development and knowledge based management techniques; a participatory, decentralized and farmer centred approach; the value placed of natural and social capital enhancements in addition to economic efficiency gains, and the role of strong and self reliant rural institutions (Smyth and Dumanski, 1993).

A new World Bank Programme, 'TerrAfrica', works to develop a new business model to ensure that SLM is mainstreamed more at the centre of governments' and other stakeholders' priorities, attracts new investment, scales-up successful programmes, and improves national and international knowledge on policies, advocacy and investment packages for SLM. The Programme will focus on removing bottlenecks for dealing with land degradation and improving co-operation and harmonization among stakeholders, including donor agencies, researchers, civil society and farming communities.

Conservation Agriculture (CA), a new initiative driven by farmers rather than by governments or research, is gaining acceptance as a set of technologies with potential for mitigating land degradation. Conservation agriculture employs all modern technologies that enhance the quality and ecological integrity of the soil, but the application of these is tempered with traditional knowledge of soil husbandry gained from generations of successful farmers. This holistic embrace of knowledge, as well as the capacity of farmers to apply this knowledge, and innovate and adjust to evolving conditions, ensures the sustainability of those who practice CA. CA is best achieved through community driven development processes, whereby local, regional and national farmer associations, working through community workshops, farmer-to-farmer training, and on-farm experimentation, but with technical backstopping from conservation professionals, decide on the technical innovations for adoption and the best procedures for implementation. Conservation agriculture provides direct benefits to environmental issues of global importance, including control and mitigation of land degradation, mitigation of climate change, improved air quality, enhanced biodiversity including agrobiodiversity and improved water quality.

The principles of CA and the activities supported are:

- Maintaining permanent soil cover and promoting minimal mechanical disturbance of soil through zero tillage systems, to ensure sufficient living and/or residual biomass to enhance soil and water conservation and control soil erosion.
- Promoting a healthy, living soil through crop rotations, cover crops and the use of integrated pest management technologies.
- Promoting the application of fertilizers, pesticides, herbicides and fungicides in balance with crop requirements.

- Promoting precision placement of crop inputs to reduce input costs, optimize efficiency of operations and prevent environmental damage.
- Promoting legume fallows (including herbaceous and tree fallows where suitable), as well as promoting composting and the use of manures and other organic soil amendments.
- Promoting agroforestry for fibre, fruit and medicinal purposes.

Mobilizing Market Based Initiatives for Land Degradation and Soil Conservation

The Value of Natural Capital: Natural capital consists of natural resources, environmental and ecosystem resources, and land. It is capital in the sense that these resources are assets that yield goods and services over time that are essential to the sustained health of our environment and the economy. Protection and enhancement of natural capital will improve water quality and decrease water treatment costs, increase recreational opportunities, mitigate flooding, decrease net greenhouse gas emissions, lower dredging costs of waterways, improve air quality, provide habitat, sustain food production and produce many more tangible and intangible benefits to society.

The value of protecting or rehabilitating natural capital often exceeds its use in production by several fold. For example, in Canada, the estimated net value of conserving or restoring natural areas is about $195/ha/yr in the Grand River Watershed of Ontario, about $65/ha/yr in the Upper Assiniboine River Basin in eastern Saskatchewan and western Manitoba, and about $126/ha/yr in the Mill River Watershed in Prince Edward Island (PEI) (Oliweler, 2004). In the Catskill Mountains, New York, an investment of $1 – 1.5 billion to restore ecosystem functions in watersheds for New York City, resulted in a saving of $6 – 8 billion in water treatment plants (Chichilniski and Heald, 1998). The annual environmental value of C-sequestration in the US Great Plains is estimated at US$200 million, four times as great as the net private returns to farmers for meat, wool and milk, and about half the market value of the land (Pretty *et al*., 2001). In New Zealand, the value of extra organic matter gained through C-sequestration is estimated at $16.50 – 91.50 ha/yr, and the hypothetical value of the organic matter as a sequestering agent for C and N varied between $US14,007 – 55,418 depending on the soil, region, discount rates and values used for carbon and nitrogen credits. The environmental services of sequestering C and N to mitigate air and water pollution is 42 – 73 times higher than the lost production value due to land degradation (Sparling *et al*., 2006).

The Kyoto Protocol and Soil Conservation: The Kyoto Protocol recognizes the overwhelming importance of controlling and reducing GHG emissions (sources), primarily from industrial and transportation sources, but it also recognizes the corresponding opportunities to be gained through better management of carbon reservoirs and enhancement of carbon sinks (sequestration) in forestry and agriculture. The latter are achieved through soil conservation, improved local land management practices, such as crop rotations and zero tillage and management of land use change (conversions).

Global, national, and regional C markets are evolving in the US, Europe and Asia. However, the prices being offered for a certified C credit (one t CO_2 equivalent) are highly variable, indicating that the market is still very immature. Although governments have major roles in developing the market by regulating policy and directly and indirectly setting the price through incentive payments and other interventions, the current action of governments in the evolution of these markets is unclear. Thus, it is uncertain whether current market prices will be sufficient to entice many farmers to make the necessary changes in land management to ensure sufficient sequestration to meet Kyoto requirements. Monitoring of the rudimentary C market in the US and Europe indicates trades often coming in as low as US$0.85 – 3.00 per t CO_2 equivalent in North America (about $0.80 per t C), whereas industrial carbon credits traded on the European exchange are normally about €25 ($30) or higher. The BioCarbon Fund, sponsored by the World Bank, pays $4.00 per t CO_2 equivalent. The higher value of the European market is due to the legislated cap and trade system.

Payment for Environmental Services (PES): In Latin America, water-related PES schemes are gaining popularity as instruments to finance activities of natural resources management for improving water availability and/or quality (Kiersch *et al*., 2005). Schemes range from local initiatives with or without external financing to national programmes financed through cross-sectoral subsidies. Most PES schemes are negotiated directly between participants, with payments to providers based mostly on available funds and opportunity costs. Water-related PES schemes can be promising mechanisms to improve natural resource management in rural watersheds upstream of water users with a sufficiently large willingness to pay, but another useful strategy would be to expand the schemes to include other environmental services such as carbon-sequestration or biodiversity conservation. These initiatives would justify long-term international support for the schemes. Such expansion, however, would require new institutional mechanisms to combine local markets for watershed services and global markets for carbon and biodiversity services. They would also require careful analysis of which land uses simultaneously provide these services.

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Urban and peri-urban environments: emerging frontiers in soil and water conservation

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Summary

Threats to soil caused by urbanization and peri-urban development are discussed under the aspect of soil and water conservation, concluding that urbanization causes not only sealing, but also other forms of soil deterioration, which can be understood and controlled on the basis of new research concepts developed within the 'European Thematic Strategy for Soil Protection'. Based on this, it becomes evident that besides soil and water conservation in agricultural and forest land use, urban and peri-urban environments are new frontiers for soil and water conservation, which should be targeted by inter-disciplinary and multi-disciplinary scientific co-operation.

Keywords: European Thematic Strategy for Soil Protection, new research concepts in soil and water conservation, threats to soil, urban and peri-urban environments.

Introduction

A comparison between Europe's natural resources (Figure 1) and Europe's built environment (Figure 2) clearly shows that urban and peri-urban development fundamentally means sealing, that is a total or partial loss of important functions and

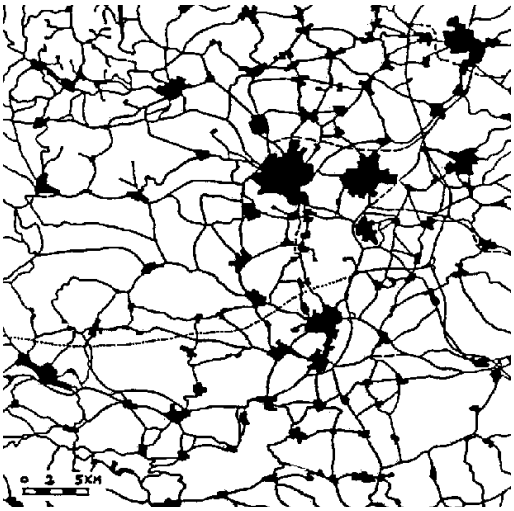
uses of soil, resulting in a loss of soil multi-functionality (Blum, 1988, 2002). This process is developing exponentially in many parts of the world, especially in Asia and South and Central America. Through sealing, Europe loses thousands of km² of fertile land each year (e.g. in Germany 400 – 420 km² per year and in Austria around 70 – 80 km² per year).

Fig. 1 Europe's natural resources

Sealing is impeding biomass production, filtering, buffering and transformation processes, as well as the function of soil as a biological habitat and gene reserve. Moreover, the function of soil to protect and to conceal palaeontological and archaeological remnants as a geogenic and cultural heritage cannot be maintained. Furthermore, for the process of soil sealing, raw materials (including gravel, sand and clay) are extracted from soils.

Looking in more detail into the sealing process reveals that landscapes and soils are not only covered by settlements and roads (Figure 3), but they are also receiving heavy loads from these sealed surfaces on the adjacent agricultural and forest soils. For instance, Figure 4 indicates that for urban and peri-urban development and related human activities, mining products from inert positions of the inner part of the earth are used and distributed at the earth surface by traffic, industry, settlements and other

Fig. 2 Europe's built environment



activities. In turn, this contaminates terrestrial and aquatic ecosystems on the atmospheric pathway, the waterway and through terrestrial transport. Through these processes, soils are receiving increasing loads of organic and inorganic compounds, which never previously existed in these environments.

These processes are still proceeding unabated and many examples have been published (e.g. Blum, 1998; Pfeiffer *et al.*, 1988). Thus, urban agglomerations are accumulating many different kinds of material, because many people

Fig. 3 Sealing of landscape and soils by settlements and roads (observe the scale) (Example: South-western part of Baden-Würtenberg, Germany)

live together on a very limited space, using large amounts of products and creating exhausts and refuse, which can be quite dangerous for urban and peri-urban soils and those in adjacent environments.

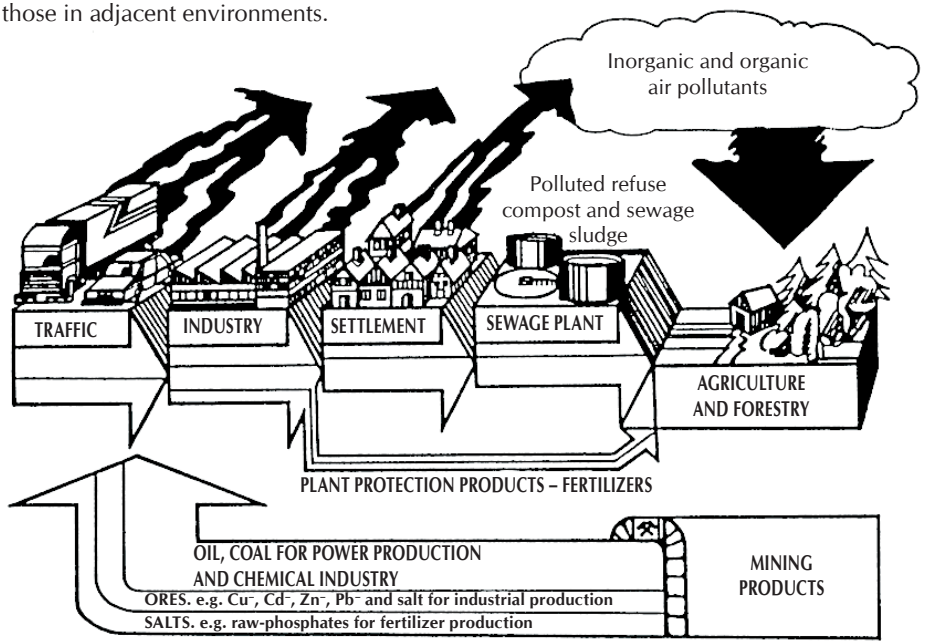


Fig. 4 Soil contamination through urbanisation and industrial activities

Threats to soil by urbanization

Therefore, urbanization causes not only loss of soil multifunctionality, but also:

1. Contamination (local and diffuse),
2. Compaction,
3. Decline in soil biodiversity,
4. Decline in soil organic matter,
5. Salinization,
6. Erosion, and under certain conditions, also
7. Floods and landslides.

Due to these threats, urban and peri-urban development is one of the main threats to the soil environment and is therefore explicitly mentioned in the 'European Thematic Strategy for Soil Protection', where all the threats are listed (COM(2002)179). Thus, it can be stated that urbanization and its related threats to soil, form new frontiers in soil and water conservation research, which unfortunately were not considered in the past, where soil and water conservation activities were mainly concentrated on agricultural and forest land.

New research concepts in soil and water conservation

In order to bridge between theoretical knowledge and the implementation of operational tools in soil and water conservation, the use of the DPSIR approach (Figure 5) is proposed. This distinguishes between Driving forces (D), which develop Pressures (P), resulting in a State (S), which by itself creates Impacts (I) and for which Responses (R) are needed. A Driving force (D) can be a demand for more space for industrial production, accommodation, transport facilities, sports and recreation facilities, dumping of refuse and others. The Pressure (P), deriving from this demand, is urbanization in a broad sense, which means the construction of new industrial premises, houses and transport infrastructure (e.g. roads, streets and parking lots). The state (S) created through this pressure, is sealed soils, which means considerable losses of agricultural and forest land. The direct Impact (I) causes less agricultural and forest biomass production, less rainwater infiltration, less biodiversity and problems of contamination (local and diffuse), compaction, decline in soil biodiversity, decline in soil organic matter, salinization, erosion, and in specific cases, floods and landslides. An indirect impact might be that farmers have to stop farming, because there is no longer land available for agricultural and forest production. Moreover, these farmers might move into other areas, causing social and economic problems there.

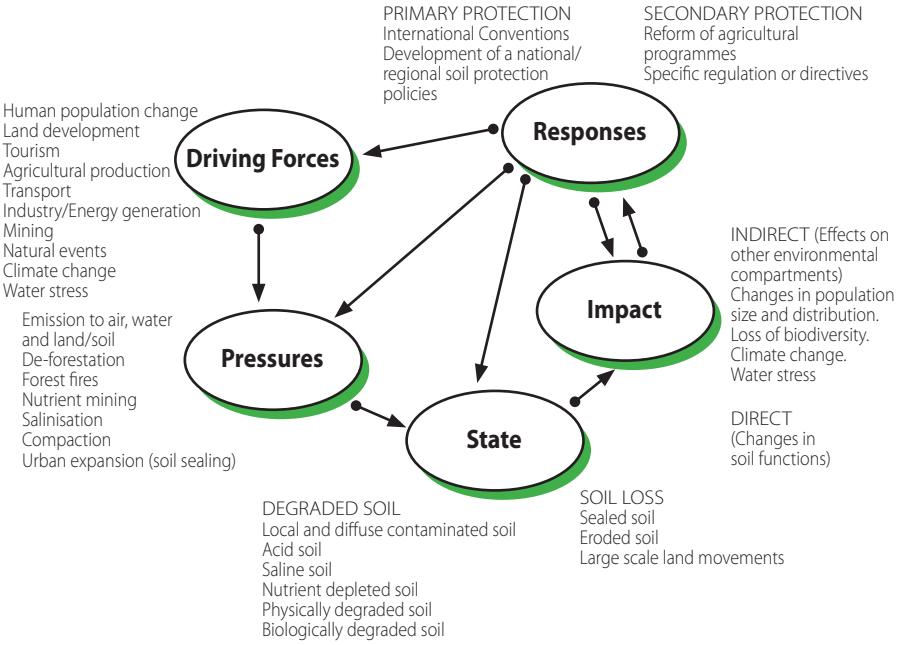


Fig. 5 The DPSIR approach applied to soil

The Responses (R) should, whenever possible, be directed at the driving forces (D), e.g. through satisfying the demand for new urban structures by means other than sealing new land (e.g. by recycling 'brownfields', i.e. former industrial sites). Responses (R) can include social and economic measures, incentives or legal regulations, in order to reduce urban sprawl. Based on this approach, new concepts for research were developed (Blum *et al.*, 2004, van Camp *et al.*, 2004).

Table 1 identifies the main research goals, the research clusters needed to reach these goals and the scientific disciplines that must be involved (Blum *et al.*, 2004). The five research clusters are shown in more detail in Figure 6, from which it becomes clear that it is first necessary: (1) to analyse the processes related to the eight threats to soil and their inter-dependency, and, subsequently (2) to develop harmonized and standardized methods for the analyses of the state of the eight threats to soil and their changes over time (e.g. soil monitoring). Based on this (3), the eight threats can be related to the driving forces and pressures, cross-linking them with cultural, social and economic drivers, such as EU, national and other policies (e.g. in agriculture, transport, energy, environment and others), as well as technical and ecological drivers (e.g. global and climate change). Based on this, (4) an analysis of the impacts of the eight threats can be achieved, relating them to the soil eco-services for other environmental compartments, such as air, water (surface and ground water) biomass production, human health, biodiversity and culture. After completing all these research clusters, it is possible (5) to develop strategies and operational procedures to mitigate the threats; this means that responses can be given to alleviate the problems.

Table 1 Concept for integrated research in ecology: example soil

	MAIN RESEARCH GOALS	RESEARCH CLUSTERS (see Fig. enclosed)	SCIENCES INVOLVED
1	To understand the main processes in the eco-subsystem soil; induced by threats	Analysis of processes related to the 8 threats to soil and their interdependency: erosion, loss of organic matter, contamination, sealing, compaction, decline in biodiversity, salinisation, floods and landslides	Inter-disciplinary research through co-operation of soil physics, soil chemistry, soil mineralogy and soil biology
2	To know where these processes occur and how they develop with time	Development and harmonisation of methods for the analysis of the **State (S)** of the 8 threats to soil and their changes with time = **soil monitoring** in Europe	Multi-disciplinary research through co-operation of soil sciences with - geographical sciences, - geo-statistics, - geo-information sciences (e.g. GIS)
3	To know the driving forces and pressures behind these processes, as related to cultural, social, economic, ecological or technical, local, regional or global developments	Relating the 8 threats to **Driving forces (D)** and **Pressures (P)** = cross linking with EU and other policies (agriculture, transport, energy, environment etc.)	Multi-disciplinary research through co-operation of soil sciences with political sciences, social sciences, economic sciences, legistic sciences, historical sciences, philosophical sciences and others
4	To know the impacts on the eco-services provided by the sub-system soil to other environmental compartments (eco-subsystems)	Analysis of the **Impacts (I)** of the 8 threats, relating them to soil eco-services for other environmental compartments: air, water (open and ground water), biomass production, human health, biodiversity	Multi-disciplinary research through co-operation of soil sciences with geological sciences, biological sciences, toxicological sciences, hydrological sciences, physio-geographical sciences, sedimentological sciences and others
5	To have operational tools (technologies) at one's disposal for the mitigation of threats and impacts	Development of operational procedures for the mitigation of the threats = **Responses (R)**	Multi-disciplinary research through co-operation of natural sciences with engineering sciences, technical sciences, physical sciences, mathematical sciences and others

W.E.H. Blum and J. Büsing, 2004

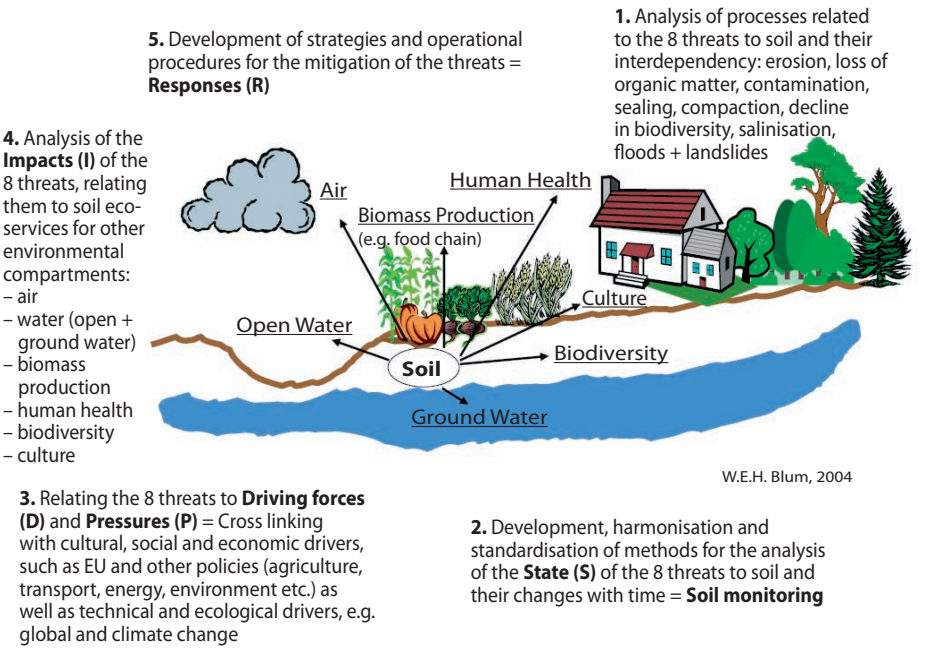


Fig. 6 The five main soil research clusters

Conclusions

Urbanization means sealing, and concomitantly contamination, loss of biodiversity, compaction, loss of soil organic matter, erosion, salinization, flooding and landslides. Therefore, urbanization is a valid and important target for soil and water conservation activities. The new research concept provides a framework to analyse the soil processes induced by threats and changes with time, the drivers and the processes behind them and the impacts caused by losses of soil eco-services. These advances facilitate the development of strategic and operational procedures to control or counterbalance urbanization. This can only be achieved by inter-disciplinary co-operation within soil sciences and multi-disciplinary co-operation with other natural, technical, economic, social, legalistic and cultural sciences.

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The European Scientific Network on Research to Combat Desertification (European DesertNet)

Dr Mariam Akhtar-Schuster (Chair of Desert*Net Germany), Hamburg, Germany

At the Third Session of the Committee for the Review of the Implementation of the Convention (CRIC 3, 2 – 11 May 2005 in Bonn, Germany) the 'German Scientific Network to Combat Desertification' (Desert*Net, www.desertnet.de) together with representatives of the French 'Comité Scientifique Francais de la Désertification' (CSFD) and the Belgian Expert Group on Desertification to support the Ministry for Development Co-operation, held informal talks. The aim is to develop a pan-European network on Desertification to support the implementation process of the aims of the UNCCD, by creating a European-based information network on best practice and best policy mechanisms for sustainable development in drylands. We believe that the creation of a European network will strengthen communication between all relevant stakeholders. The creation of this scientific network will also back science as a major partner for formulating best development options for drylands.

In order to proceed with the development of a 'European Network on Combating and Preventing Desertification', members of the above-mentioned national networks met once again on 24 June 2005 in Bonn, Germany, and compiled a European Declaration (see below). This initiative is firmly based on the idea of creating a network that is open to scientists and research institutions from Europe who are interested in the topic, and who share the vision delineated in the European Declaration. At this meeting representatives of Belgium and France suggested that the interim Secretariat of the European DesertNet should be established in Hamburg, at the Co-ordination Office of Desert*Net Germany.

On 6 September 2005, the Declaration of the European Desert*Net was sent to all European focal points and was thus opened for signature. So far, scientists from over 75 European research institutes from 17 European countries (Austria, Belgium, Denmark, Finland, France, Germany, Greece, Hungary, Italy, Malta, Portugal, Romania, Slovakia, Spain, Sweden, Switzerland and The Netherlands) have signed the Declaration (see also www.desertnet.de).

The UNCCD and UNESCO have been informed of this initiative, and representatives of these institutions also attended the first informal meetings as observers. Since April 2006, FAO is an official partner of the European DesertNet. All three international institutions have signalled interest and support for a European DesertNet. They are being kept informed about all relevant steps achieved. The European Desert*Net was presented by members of the network from France and Germany at a side event at

COP7 in Nairobi (October 2005). It is our major aim to scientifically support the work of the Committee on Science and Technology (CST).

The EU has reacted very positively to the development of the European DesertNet. Mr. Pierre Mathy, Head of EC Directorate I (Environment: Natural Resources Management and Services) believes that this European scientific network could play an important role in stimulating and promoting European research on desertification.

In order to further consolidate the structure and aims of the European DesertNet, members of the European DesertNet delineated a working programme for the first two-day European DesertNet workshop held in Bonn on 16 – 17 October 2006. This workshop is included into the major national and European scientific inputs to the 'International Year of Droughts and Desertification' (IYDD 2006).

Footnote by Professor J.L. Rubio: The ESSC has been actively participating and supporting the development of DesertNet through the contributions of Donald Gabriels and José L. Rubio. It is envisaged a close collaboration will develop between networks, looking for and promoting synergies and reinforcement of common objectives. At the Bonn Conference, J.L. Rubio made a presentation on 'The EU Thematic Strategy on Soil Protection and its implications for European Desertification'. Information on this Conference will be included in next ESSC Newsletter (2007/1).

European DESERTNET

DECLARATION FOR A EUROPEAN NETWORK FOR RESEARCH ON DESERTIFICATION

Mitigating the effects of drought, combating desertification and alleviating poverty in drylands are challenges whose importance should be sufficiently recognized within the context of global environmental changes and sustainable development.

We, members of European interdisciplinary groups of scientists, active in basic and applied research on land degradation/desertification, directly related to poverty alleviation, intend to co-ordinate our activities in view of possible collaboration at national and international levels.

Our major objectives are:

- To **identify and analyse the pressing problems** with regard to drought, land degradation/desertification and poverty;
- To review **the state of the art** of European scientific knowledge and know-how concerning this global problem;
- To identify, through networking, **success stories and best practices** resulting from scientific research, and to create multipliers and accelerators for their implementation;

- To identify gaps and develop **innovative basic research** in these areas;
- To develop **applied research** in view of its use in arid, semi-arid and dry sub-humid areas, thereby focusing on users' needs, interdisciplinarity and integration;
- To strengthen and support **European research capacities** in order to promote scientific co-operation;
- To structure and facilitate the **communication and transfer** of know-how and technologies within the European DESERTNET and towards affected countries;
- To establish and intensify **linkages with research partners** inside and outside Europe;
- To stimulate **application of appropriate research findings** in drylands through participatory processes, involving civil society, NGOs and CBOs;
- To establish a **mechanism for effective and successful policy advice** and to raise **public awareness.**

For this purpose, the European DESERTNET is open to all European scientists wishing to join our association and collaborate with us. We support the UN environmental conventions, in particular the UN Convention to Combat Desertification (UNCCD). We intend to strengthen the co-operation with its scientific body, the Committee on Science and Technology (CST) and are open to collaborate with all other UNCCD panels or groups, in need of scientific input. We are also looking forward to collaboration with international organizations, programmes and agencies in need of scientific information or advice. We are prepared to put our knowledge and understanding to the service of combating desertification and creating sustainable livelihoods in drylands through sound scientific work.

Open for signature:

Mariam Akhtar-Schuster, University of Hamburg, Germany, Speaker of DesertNet Germany. Dr Jean Albergel, Directeur de Recherche à l'IRD, UMR LISAH, Montpellier, France. Ramón Bienes Allas, Instituto Madrileño de Investigación Agraria, Madrid, Spain. Raimundo Jimenez Ballesta, Universidad Autonoma de Madrid, Spain. Gérard Begni, Médias-France, Toulouse, France. Ronald Bellefontaine, Département forestier du Centre de cooperation, Internationale en Recherche Agronomique pour le Développement (Cirad-Forêt), Montpellier, France, Membre du CSFD. Marc Bied-Charreton, President of French Scientific Committee for Desertification (CSFD), France. Charles Bielders, Université Catholique de Louvain, Belgium. **Pavol Bielek,** Soil Science and Conservation Research Institute, Bratislava, Slovak Republic. Winfried E. H. Blum, President of ECSSS, University of Natural Resources and Applied Life Sciences (BOKU), Vienna, Austria. Jürgen Böhner, Geography Department, University of Hamburg, Germany. Siegmar Breckle, Member of Advisory Board of DesertNet Germany. Annalisa Canu, National Research Council of Italy. Mark Causon, Genista Foundation, Malta. Britta Chafik, University of Bonn, Co-Speaker of DesertNet Germany. **Wim M. Cornelis,** University of Ghent, Belgium. Antoine Cornet, Member of French Scientific Committee for Desertification (CSFD), Directeur de recherche IRD.

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Hamburg, 28 September 2006.

ENVironmental ASsessment of Soil for mOnitoring

ENVASSO is a two-year EU Framework 6 Project providing scientific support for policy to the European Commission by a consortium of 38 partners from all Member States, as well as candidate countries and Norway. The Project Co-ordinator is Professor Mark Kibblewhite of Cranfield University (UK).

The objectives of ENVASSO are to design and test a single, integrated, EU-wide operational set of measurable criteria and indicators as a basis for a harmonized and comprehensive European soil and land information system. In order to achieve these objectives, the Project is conducting a programme of structured research with the aim of producing scientifically based protocols and procedures for the establishment of common criteria and indicators for the characterization of soils by all member states. The approach adopted by ENVASSO will enable users (Member States) to design and implement common monitoring strategies using standardized methods of validation and obtain comparable data to inform soil protection policy within Europe. This will be an important first step in achieving the Commission's objective of according soil the same level of protection as water and air in Europe.

A successful 'kick-off' meeting was hosted by CIDE in Valencia in February 2006 and has been followed up with the 2nd Consortium Meeting hosted by The Czech University of Agriculture in Prague in September 2006.

2nd Consortium Meeting of ENVASSO hosted by The Czech University of Agriculture in Prague in September 2006. Photograph ©Endre Dobos.

ENVASSO is managed in five logical Work-packages (WP), each with its own subset of objectives:

- WP1 is developing and defining robust relevant and scientifically sound Key Issues and Indicators. Following a literature review covering eight identified threats to soil, Key Issues and Indicators have been defined and selected for each threat. The work package has defined methodologies for deriving Baselines and Thresholds for the minimum set of indicators identified for each Key Issue.
- WP2 focuses on the definition of a valid, efficient and effective measurement system for the key issues and indicators identified in WP1. The WP is identifying gaps in existing soil inventory and monitoring networks coverage at an EU scale, as well as identifying gaps in current sampling and testing performance. An assessment of options for harmonizing existing EU wide inventory and monitoring systems will be undertaken, which should allow the definition of a recommended optimum approach to be made.
- WP3 is designing and developing a prototype soil information data platform and web-based soil service for selected WP5 pilot areas within the EU. The service aims to be INSPIRE compliant, as far as possible.
- WP4 will prepare a manual of fully documented set of definitions, procedures and protocols describing the ENVASSO System for harmonized characterization and assessment of European soils.
- WP5 will test the approaches to monitoring of Indicators (selected in WP1) developed by WP2 in selected pilot areas using the manual of procedures and protocols produced by WP4. In the light of the testing phase, revisions to the approaches, procedures and protocols will be included in the final version of the manual.

List of Partners:

Participant organization	Abbreviation
Cranfield University, UK (Project Co-ordinator and Work-package 4 Leader)	CU
Federal Institute for Geosciences and Natural Resources, Germany (Work-package 3 Leader)	BGR
Umweltbundesamt GmbH, Austria (Work-package 1 Leader)	UBA-A
Institut National de la Recherche Agronomique, France (Work-package 2 Leader)	INRA Info
Szent Istvan University, Hungary (Work-package 5 Leader)	SIU
Austrian Agency for Health and Food Safety, Austria	AGES
Federal Research and Training Centre for Forests, Natural Hazards and Landscape, Austria	BFW
Federal Agency for Water Management, Austria	BAW
Ghent University, Belgium	UGent

Participant organization	Abbreviation
Institute of Soil Science 'Nikola Poushkarov', Sofia, Bulgaria	ISSNP
Czech University of Agriculture Prague, Czech Republic	CUA
Institute of Geography, University of Copenhagen, Denmark	IGUC
National Environmental Research Institute, Denmark	NERI
Agricultural Research Centre, Estonia	ARC
MTT Agrifood Research Finland	MTT
Agence de l'environnement et de la maîtrise de l'énergie, France	ADEME
Agricultural University of Athens, Greece	AUA
Research Institute for Soil Science and Agricultural Chemistry of the Hungarian Academy of Sciences, Hungary	RISSAC
Central Service for Plant Protection and Soil Conservation, Hungary	CSPPSC
University of Miskolc, Hungary	UNIMIS
Lithuanian University of Agriculture, Kaunas	LZUU
Latvia University of Agriculture	LLU
Ministry for Rural Affairs and the Environment, Malta	MRAE
Alterra b.v., The Netherlands	Alterra
National Institute for Public Health and the Environment, The Netherlands	RIVM
Norwegian Forest and Landscape Institute (formerly Norwegian Institute of Land Inventory)	NIJOS
Warsaw University of Technology, Poland	WUT
Instituto Nacional de Investigação Agrária e das Pescas, Portugal	INIAP
National Research and Development Institute for Soil Science, Agrochemistry and Environment, Romania	ICPA
Soil Science and Conservation Research Institute, Slovakia	SSCRI
University of Ljubljana, Biotechnical Faculty, Slovenia	UL-BF
Generalitat De Catalunya – Departamento de Agricultura, Ganadería y Pesca, Spain	SARA
Sveriges Lantbruksuniversitet, Sweden	SLU
Consejo Superior de Investigaciones Científicas, Spain	CSIC
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One new Ph.D. thesis is reported in this issue.

Tom ROMMENS
K.U.Leuven

HOLOCENE SEDIMENT DYNAMICS IN A SMALL RIVER CATCHMENT IN CENTRAL BELGIUM (2006), 236 PP. (ISBN: 90-8649-051-4).

Abstract

Since a few decades, soil erosion, sediment transport and deposition have been studied in detail in many places. Most studies, however, focused on contemporary erosion or deposition rates, which were measured on test plots or in small catchments (a few hectares). Sediment dynamics on a landscape scale (e.g. in a river basin), over a period of several millennia, were rarely quantified.

This thesis contributes to the filling of this knowledge gap. Total Holocene soil erosion and sediment deposition in the small (55 km²) river catchment of the Nethen were quantified, and a sediment budget was established. The Nethen is a tributary of the Dijle River, in the loess belt of central Belgium. Archaeological research and historical sources show that the Nethen area was already occupied by humans and partially deforested since a very long time. Archaeological finds date from the Neolithic (from c. 5300 BC onwards), Bronze and Iron Age. Also remnants of several Roman villas (57 BC-AD 475) were discovered. Present-day villages originate from the 10th, 11th and 12th centuries AD.

Soil and sediment surveys were conducted by augering in three zero-order catchments (Nodebais, Beauvechain and Hamme-Mille) and in the alluvial plain of the Nethen River catchment. Moreover, soils and sediments along a slope catena in Nodebais were studied in detail in a 67 m long trench in a dry valley. Colluvial and alluvial sediments were characterized and their stratigraphy was described. A time frame for the Holocene sediment dynamics was established, based on the deposition chronologies of colluvial and alluvial sediment archives. Sediments were dated using radiocarbon and optically stimulated luminescence (OSL).

Most contemporary soils in the study area are Eutric Luvisols. On the slopes soils are generally truncated, whereas in the valleys the palaeosols were covered with colluvium. Originally, slopes were much steeper than today (slope rates up to 25% versus 10%) and valleys were several metres deeper. In Nodebais, for example, the former valley bottom soil (an Albeluvisol) was covered by 3.15 m of Holocene colluvium.

On the plateau the loess cover in which the soil was formed is decalcified to an average depth of 2.3 m. The clay-illuviation horizon is located between 0.4 and 1.5 m. If we (1) take this depth as a reference for an uneroded soil profile, and (2) assume that a uniform reference soil initially covered the entire catchment, also on the slopes and in the valley bottoms, then it is possible to estimate the total soil truncation and sediment thickness for each augering. These estimates can then be used to establish a sediment budget. This was done for the three zero-order catchments and for the entire Nethen River Catchment.

Erosion intensities and sediment thicknesses were calculated for five morphometric units (plateau, 3 slope classes, thalweg) and are in the same order of magnitude for the three zero-order catchments. However, from the data it is also clear that reference soil profiles on the three different locations are not identical. More specifically, the decalcification depth of the loess varies significantly. This hampers the use of parameters like decalcification depth for the estimation of soil truncation, and influences the resulting sediment budget.

Sediment ages in Nodebais and Beauvechain show that sediment supply towards the dry valleys was insignificant until the Late Bronze Age. Sediment deposition started from the Early Iron Age onwards (800-475 BC). However, deposition rates in both places did not evolve synchronously. On the one hand, this is due to the complexity of the sediment transport processes. On the other hand, this points to the fact that human impact on sediment dynamics overrules climatic factors.

Sediments in the alluvial plain of the Nethen and its tributaries were studied in 12 transects. It was found that the alluvial deposits in the Nethen valley consist of three different units. The lower unit contains a lot of peat and many tufa layers. This unit predates 2900 BC. On top of this lies a unit with peaty layers, but containing few tufa layers. The age of these deposits ranges from 2900 BC to AD 1000. The youngest deposits, in the upper sediment unit, were deposited during the last 1000 years, and contain little or no peaty material, and almost no calcareous deposits. This youngest unit contains half of the total sediment mass, stored in the alluvium. During the last phase the average accumulation rate rose drastically, from c. 0.23 mm a^{-1} to 1.81 mm a^{-1}.

All available data were summarized in a Holocene sediment budget for the Nethen River Catchment. This sediment budget gives an idea of the amount of sediment that was transported and deposited in different morphometric units (plateaux, slopes and valleys) of the river basin. The total eroded sediment mass was estimated at c. 55×10^6 t. About 38% of this mass (c. 21×10^6 t) was stored in colluvial sediment sinks on the footslopes and in dry valleys. Another 23% was deposited further downstream, in the alluvial deposits along the Nethen and its tributaries. Finally, 39% of the eroded volume was exported out of the Nethen Catchment. The nature of this research, and the methodology used, inevitably result in large uncertainties. For the erosion and deposition volumes, these are in the order of 30%.

Long-term sediment transport on a landscape-scale is a complex, non-linear process. In the dry zero-order valleys in the catchment of the Nethen sediment accumulated fast from the Iron Age onwards (c. 800 BC), whereas in the alluvial plain a faster accumulation only occurred from medieval times onwards (c. 1000 AD). This shows that changing erosion intensities in the catchment of a river do not necessarily lead to immediate responses downstream of the sediment cascade. Higher sedimentation rates in the upstream area of the Nethen were only followed by higher sedimentation rates in the alluvial plain after a few centuries. The complex response mechanism probably depends on the degree of coupling between different subsystems, or the connectivity between different landscape elements.

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International Conference on 'Environmental Change, Geomorphic Processes, Land Degradation and Rehabilitation in Tropical and Subtropical Highlands' 19 – 22 September 2006 in Mekelle, Ethiopia

The impressive line-up of dignitaries at the opening ceremony for this conference, including an ambassador, a regional president, a president of one university and the vice-rector of another, set the tone of this meeting: it was not just about scientific understanding, but also about international co-operation in using science to address the problems of a degraded landscape. The Conference addressed three themes: 1) changing environments and intensities of geomorphic processes since late Pleistocene times, 2) natural and anthropogenic controls of land degradation, and 3) techniques and implementation of soil and water conservation. In the opening ceremony Jean Poesen posed three questions to be addressed by these themes: 1) how have environmental changes impacted on the type and intensity of geomorphic processes since late Pleistocene times? 2) What factors control the intensity of land degradation and its on-site and off-site impacts? and 3) What is the effectiveness and efficiency of traditional and recently introduced soil and water conservation techniques?

Each theme was introduced by a keynote paper (Francesco Dramis on 'Travertine dams' in theme 1; Tony Parsons on 'Hillslope processes, vegetation change and land degradation' in theme 2; and Eric Roose on 'Soil and water conservation strategies' in theme 3). These were followed by oral presentations in the lecture hall, presentations in the field and posters (totalling circa 100 presentations). This mix of presentation styles and the scheduling of them made for a most varied and enjoyable programme. Day 1 and Day 4 were in the lecture hall, and each of these days was broken by an extensive period for viewing poster presentations. The technique of allowing poster presenters one minute and one overhead in which to introduce their posters is, in our experience, a most effective way of getting the audience to engage with posters: each person knows quickly and efficiently which posters they are going to seek out.

After a day in the lecture hall, it was good to get out into the field (especially for those of us new to Tigray) and see some of the things we had heard about, and some new things as well. The two field days had presentations on all three themes and, for logistical purposes, it was not possible to keep the three separate, but that is understandable and it made eminent sense to have presentations about research in the local area where presenters were able to demonstrate the experiments, practices and effects of soil conservation, as well as the context and land degradation problems. Over the two days, we had 23 such field presentations in a very well organized programme.

Aspects of this Conference that were particularly impressive included the high quality of presentations from young researchers, especially in the field, and the amount of research and actual application of soil conservation practices that is going on.

Some of the experiments and practices are of longstanding such that effects on runoff, sediment yields, land degradation and crop fertility can now be assessed. There is a very high degree of co-operation between researchers and local people, admirably nurtured by the Belgian programmes and Mekelle University.

In the final session of the Conference two rapporteurs for each of the three themes were asked to reflect on what they had heard, identify gaps in research and new questions to be addressed. As the Conference was being held at the point when existing funding period was ending and a new one being planned, this session held more than intellectual interest for the local researchers.

Although the Conference formally ended on the Friday, a number of post-Conference activities followed: one- and two-day excursions to the Danakil Depression (the hottest place on Earth), a one-day meeting between scientists and farmers, and a three-day UNESCO workshop on sediment transport as part of the FRIEND Nile Project.

It is not easy to organize a conference for around 200 delegates from 20 countries in a regional town in the fourth poorest country in the world. The task is made even more difficult when the national ruling party is holding its party conference in the town at the same time. Some last-minute changes of hotel accommodation, and sudden disappearances of hotel reservations, caused some late nights for the organizers but these hiccups were addressed with admirable skill, such that disruptions for the participants were minimal. Our congratulations go to Dr Jan Nyssen and Dr Mitiku Haile from Mekelle University, and Sophie Bruneel, Viviane Crabbe and Martine Dekoninck from K.U.Leuven.

Late September proved to be the ideal time (from a climatic perspective) to have a conference in Tigray. The summer rains (this year very good) are over, the crops are growing and the landscape looks green and promising. We think everyone there left hoping that the Conference had helped in the efforts to make that promise both realizable and sustainable.

Plate shows stone bunds built recently in Tigray under the 'Food for Work' Programme (photo taken by Professor Tony Parsons).

Tony Parsons, The University of Sheffield, UK
Janet Hooke, The University of Portsmouth, UK.

An international workshop on 'Horizons in Soils Research' 26 – 27 September 2006 in London, U.K.

This international workshop had the aim of *"translating society's needs into stretching science for the future"*. The workshop's mission was to *"examine and define novel and relevant areas of soil science in order to inform the UK government and research councils of new opportunities and directions that are pertinent to the UK, but set within an international context"*. The meeting was organized and convened by the 'UK Soils Research Advisory Committee' (SRAC) and aimed to distil the main concerns and priorities of the soil science community. These summarized views are being transmitted to the relevant UK Research Councils (The Biotechnology and Biosciences Research Council (BBSRC), The Natural Environment Research Council (NERC)) and the UK Government 'Department for the Environment, Food and Rural Affairs' (Defra) in advisory briefing sessions.

The workshop had 62 participants, primarily from the UK, but with representatives from six other countries (Australia, Austria, Greece, Ireland, New Zealand and the USA). There were seven keynote speakers, invited to present visionary and scene-setting lectures to catalyse discussion:

1. Brent Clothier (Horticultural Research, New Zealand) discussed 'Imperatives for Soil Science' and, based largely on experience in New Zealand, argued that we need to recognize soil as an integral component of natural capital, which is one of the six forms of capital (cultural, economic, human, institutional, natural and social).

2. Tony O'Donnell (University of Newcastle, UK) reviewed 'Soils and Biodiversity' and argued that soil systems were essential for the food security (provision of ample food quantities in sufficient quality) and increasingly for biofuel security.

3. John Crawford (Abertay University, UK) discussed 'Soil in Sustainable Systems' and stated that recent estimates are that we have, as a global average, only 56 years of topsoil left. He argued that at the 'core to field' scale, soil systems are quite well understood. However, considerable progress needs to be made in understanding soils at the 'pore to core' scale. John argued that complexity is the key to understanding soil biological systems and that we must embrace this complexity.

4. Bob Foy (Agriculture, Food and Biosciences Institute, Belfast, UK) discussed 'Soil-water interactions' and reviewed the challenges in achieving the goals of the 'Water Framework Directive.' He also stressed the need for integrated research at the farm-system scale.

5. Peter Cox (Exeter University, UK) reviewed current progress in 'Soil-climate interactions' and presented the complexity of interactions and feedbacks in the systems, which pose major challenges to the progress of predictive models.
6. Winfried Blum (European Confederation of Soil Science Societies (ECSSS), Vienna, Austria) presented his perspectives on 'Novel issues for soil research' and argued for more research on soil compaction and the effects of urbanization in Europe. Winfried praised UK research efforts in soil science, especially in soil biology and long-term observations and described the long-term experiments at Rothamsted as "a treasure".
7. Diana Wall (Colorado State University, USA) attempted to distil the essence of future progress in her presentation on 'novel and relevant areas for soils research', paying particular emphasis on linkages between soil systems and human health. In 2002 the World Health Organization (WHO) estimated that over 6,155,000 people died from soil-borne diseases.

Participants divided into four 'breakout' groups, designed to *"brainstorm the key research opportunities for soils research"*. Each group was chaired by a pre-assigned discussion leader (Declan Barraclough, Helaina Black, Jim Harris and Steve McGrath). Then the SRAC, chaired by Karl Ritz (Cranfield University, UK), engaged in the difficult task of abstracting the fundamental views and are refining these for presentation as a succinct vision for soils research to executives of the BBSRC, NERC and Defra on 18 October 2006.

In my opinion, the main integrated perspectives were:

- Soil system dynamics could be a strong overarching theme to present our research mission to policy makers and society in general.
- We need better models, with improved understanding of soil resilience, thresholds, tipping points and how to optimise 'soilscapes' and their management.
- We need 'soil observatories', which integrate the efforts of soil scientists and other disciplines in 'collective experimental design'.
- There was strong emphasis on promoting links and dialogue between soil scientists and economists and social scientists.
- Emerging research paradigms include carbon sequestration, linkages between soils and human health, the management of urban soils, linkages between soil systems and biofuels and interactions between soil systems and water management.

The workshop forms part of a long-term dialogue on progress in soil science and will embrace perspectives from the new EU Soils Directive. Further information can be gained from the following web site, which will be regularly updated as the dialogue develops and progresses:

http://www.iger.bbsrc.ac.uk/SRACWorkshop/

To me, the take-home messages were:

- The soil is the world's biggest water filter.
- We need to fully and properly recognize the value of the ecosystem goods and services provided by soil systems.
- Agriculture remains the world's largest industry and soil science is pivotal to the maintenance of agricultural systems.
- We need to improve the image of soil science.
- We need to communicate better with policy makers and the general public and attract more young scientists into the discipline.

The UK soils community are deeply indebted to the excellent preparations of the workshop organizers Richard Bardgett, Phil Haygarth, David Hopkins, Linda Jewell and Karl Ritz.

Mike Fullen, The University of Wolverhampton, UK.

(The views expressed in this report are those of the author and are not necessarily the same as the official views of the Workshop Organizing Committee).

Conference Reports

8TH 'CZECH-ITALIAN PEDOLOGICAL MEETING' AND '1ST BULGARIAN-CZECH-ITALIAN PEDOLOGICAL MEETING' SOFIA, BULGARIA (29 SEPTEMBER – 3 OCTOBER 2006)

The Meeting was organized by the following institutions: **Italy:** Universities of Sassari, Milan-Bicocca, Palermo; **Bulgaria:** Institute of Soil Science 'N. Poushkarov', AgroBio Institute (Sofia), University of Sofia; **Czech Republic:** Research Institute for Soil and Water Conservation and the University of Prague. The Meeting was sponsored by the Italian Society for Soil Science (Fifth Commission) and by the Italian Society of Pedology (SIPe). The Meeting involved 30 researchers working in the field of the soil sciences and the environment.

The first day was devoted to a trilateral conference ('Soil in the Environment: experiences from different Nations') concerned with the followings aspects: ectopic *terra rossa* (Cantelli), podzolization features on ultramafic rocks (D'Amico), relationships between soil and environment (Buondonno and Ferrè), soil pollution from mining and industrial activities (Vacha and Capra), soil erosion (Novak) and water re-use in agriculture (Virdis). A four day field trip was dedicated to visiting the 'Institute

for Mountain Stock Breeding and Agriculture' (Trojan), a research centre for new vegetable species (micropropagation) and animals selected races; the AgroBio Institute (Sofia), biotechnology research centre (topics include GMOs and Plant Biotechnolgy); the mining area of Vraca, where on 1 May, 1966, the dam failure caused the escape of about 1,500,000 tonnes of polluted material. On the last day of the Meeting, a series of preliminary agreements were discussed for future co-operation in applied research between four different nations (Bulgaria, Czech Republic, Italy and Spain).

Plate shows the participants to the meeting during the visit to the Institute for Mountain Stock Breeding and Agriculture (Trojan, Bulgaria).

The 2007 event will welcome the participation of Spanish researchers and will probably be held in Spain in October 2007.

Gian Franco Capra, Università di Sassari, Italy.
Carmelo Dazzi, Università di Palermo, Italy.

Soil Erosion in Europe

John Boardman and Jean Poesen (Editors)
ISBN: 0-470-85910-5
Hardcover
878 pages
Published October 2006
£160.00 / €240.00

Editor's note: We are pleased to announce that, as we go to press, the Book 'Soil Erosion in Europe' has been published. This represents an important initiative, edited and led by John Boardman (Oxford, UK) and Jean Poesen (Leuven, Belgium). Many members of the ESSC have contributed to this work. The Book will be more fully reviewed and reported in Newsletter 2007/1.

Selected Papers from the ESSC Conference held in Tartu (Estonia) May 2005

We are pleased to announce that selected papers presented at the ESSC Conference on **'Soil Conservation Issues in Nordic Countries'** held in Tartu (Estonia) 25 – 26 May 2006, have been published in the journal **'Archives in Agronomy and Soil Science'.** The 12 published papers have been subject to normal peer-review. Professor Markku Yli-Halla (Helsinki University, Finland) has kindly agreed to review the special issue, which will be reported in Newsletter 2007/1.

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Special Issue

Soil Conservation in Nordic Countries – Contributions of the Conference of the European Society of Soil Conservation (ESSC) in May 2005 in Tartu, Estonia.

Contents

(**Editor's note**: This Preface will be presented in full in Newsletter 2007/1).

We are including the citation details of papers and books produced by ESSC members. This will provide a growing resource for exchange of valuable information to both research and teaching. The cumulative citation list is being added to and updated on the ESSC web site. Please e-mail the citation details of papers in international refereed journals since and including the year 2000 to any member of the Editorial team.

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Web Based Bulletin Board

The ESSC wishes to rapidly disseminate information to its members. Please forward information to the ESSC web site to be placed on our ESSC Bulletin Board. These could include searches for potential collaborators for research proposals, calls for research proposals, job opportunities, opportunities for research studentships and other items of important information for rapid dissemination. Of course, we will also continue the regular circulation of information via our Newsletter. We launched the Bulletin Board on 18 October 2006. The ESSC web site is: http://www.essc.sk

ESSC Grants For Young Researchers of the European States

The ESSC will provide five grants of €1,000 each to five young researchers (less that 35 years old) who work in a European country. The grants will support their participation in the ESSC Congress in Palermo (Italy) in June 2007. To apply for a grant, it is necessary to fill in the following **grant application form** and send it by e-mail to the President of the Organizing Committee (dazzi@unipa.it) no later than 31 January 2007 together with:

1. An extended abstract of the paper that the applicant wishes to present to the Congress (four pages including Introduction; Materials and Methods; Results; Conclusions; Keywords).
2. A short curriculum-vitae of the applicant.
3. A letter of support from the Institution/Department of the applicant.

An ESSC Commission has been established to evaluate the grant requests.

Applicants for grants will be notified of the Commission's decision by 20 February 2007.

GRANT APPLICATION FORM

NAME	
SURNAME	
PLACE OF BIRTH	
DATE OF BIRTH	
NATIONALITY	
INSTITUTION	
ADDRESS	Mail address:
	Zip code:
	City:
	Country:
	Telephone:
	Fax:
	E-mail:
Presentation	Oral:
	Poster:
Title of presentation	

Dr Benas Jankauskas, of the Kaltinenai Research Station of the Lithuanian Institute of Agriculture and Lithuanian Representative of the ESSC, was presented to Her Majesty Queen Elizabeth II. This was on 17 October 2006 in Vilnius, on the occasion of the State Visit of Her Majesty to Lithuania.

This photo was commissioned by the British Embassy in Lithuania.

Micromorfologia de Sòls

Curs de Postgrau i d'Extensió Universitària

Barcelona, 8 – 19 January 2007

Universitat de Lleida
Universitat de Barcelona
Universiteit Gent

Venue:

Departmento Cristal·lografia
Mineralogia i Dipòsits Minerals
Facultat de Geologia
Martí i Franquès s/n
08028 Barcelona
Catalonia
Spain.
Fax: 00 34 9 34021340
Tel.: 00 34 9 34021345
http://www.ub.edu/geologia/english/facultat/map.htm

Organizing Committee

Professor Dr Rosa M. Poch, Universitat de Lleida (UdL) (Co-Director):
rosa.poch@macs.udl.es

Professor Dr Àngels Canals, Universitat de Barcelona (UB) (Co-Director):
angelscanals@ub.edu

Professor Dr Georges Stoops, Universiteit Gent (UG).

Duration

6 credits (60 lecture-hours)

Themes

Principles of mineralogy and petrography, optical mineralogy.

Submicroscopical and special techniques.

Making thin sections.

Guidelines for the description of thin sections of soils and regoliths.

Micromorphology of soil materials and identification of soil formation processes: carbonate, gypsum, and salt affected soils, volcanic soils, clay accumulation, hydromorphic soils, tropical and highly weathered soils, glacial and periglacial processes.

Micromorphometry and image processing.

Applications of micromorphology:

Soil genesis and classification.

Agronomy: sealing and crusting, structure and porosity.

Archaeology.

Geomorphology and sedimentology.

Mineral weathering.

Optional weekend excursion: Mediterranean soilscapes, soil genesis, sampling techniques.

Lecturers

Ing. M. Antúnez (UdL).
Professor A. Canals (UB).
Professor M.A. Courty (U Perpinyà).
Professor E.A. FitzPatrick (U Aberdeen).
Professor M. Labrador (UB).
Dr V.M. de Melo Marcelino (UG).
Professor R.M. Poch (UdL).
Professor J. Porta (UdL).
Professor R. Rodríguez (UdL).
Professor G. Stoops (UG).
Professor E. Tauler (UB).

Lecturing and practical sessions

First week: 09:^{00} – 13:^{30} / 15:^{00} – 17:^{00}

Second week: 09:^{00} – 13:^{30} / 15:^{00} – 18:^{00}

Evaluation

Participants are encouraged to bring their own thin sections for study and observation. Evaluation will be based on the study of specific aspects of their own material. Sets of thin sections will be provided for the rest of the participants.

Inscription fees

€420, including course materials. Accommodation and weekend excursion are not included.

Additional information and pre-inscription:

http://www.giga.ub.edu/acad/npost/fitxes/3/200511200.php

Fill in the following form:

http://www.ub.edu/geologia/postgraus/docs/full%20micromorfologia%20catalaangles.doc

and send it together with your curriculum-vitae (CV) and a copy of your passport to: ffresco@ub.edu

Accommodation

There are many hotels at all ranges of prices and qualities. Besides, there are university homes and youth hostels nearby:

- Col.legi Major Penyafort-Montserrat (5 minutes walk from the Faculty):

  http://www.penyafort.ub.es/reservas@penyafort.ub.es

  Price 2006 bed and breakfast: €34.5 + 7% VAT (prices for 2007 will be higher). When making the reservation, indicate that you are attending the course on soil micromorphology.
- Residència Torre Girona (15 minutes walk from the Faculty)

  http://www.resa.es/fichaResidenciasPrint.cfm?id=2&idioma=1
- Youth Hostel Pere Tarrés (15 minutes walk from the Faculty)

  http://www.peretarres.org/alberg/index_eng.asp

Appointment of new Ph.D. research students

Mr. Ranjan Bhattacharyya (B.Sc. BCKVV, Nadia, West Bengal, India; M.Sc. Indian Agriculture Research Institute, New Delhi, India) has been appointed as a Ph.D. research student at The University of Wolverhampton, UK. Ranjan is on secondment from the Indian Agricultural Research Council (IARC). His project title is 'Environmental contribution of palm geotextiles to sustainable development and soil conservation'. The Director of Studies is Professor Mike Fullen and the second supervisors are Dr Colin Booth and Professor Bob Sarsby (all at The University of Wolverhampton).

E-mail: ranjan_vpkas@yahoo.com

Mr. Mark Dearlove (B.Sc. Plymouth, UK) has been appointed as a part-time Ph.D. research student at The University of Wolverhampton. His project title is 'Nutrient release and seedling establishment with palm leaf geotextiles'. The Director of Studies is Professor Mike Fullen and the second supervisors are Dr Colin Booth and Dr Barry Mulholland (Duchy Agricultural College, Camborne, Cornwall, UK).

E-mail: mark.dearlove@duchy.ac.uk

Institutional movements and promotions of ESSC members

Dr Colin Booth (The University of Wolverhampton, UK) has been promoted from Research Fellow in Soil Technology to Senior Lecturer in Environmental Engineering, with effect from 1 December 2006.

ESSC membership list and contact details

The full ESSC membership details are reported in ESSC Newsletter 2005/1. These details are also held on the ESSC web site. Under 'members' you can get a full listing. Also under 'members' you can click on any member country and find a listing of members in the selected country.

We are trying to keep the membership list on the web site up-to-date. Please check your details and let us know if there are any necessary correction(s). If your details change, also please let us know. Please send updated information to Zuzana Tekelová at:

E-mail: tekelova@vupu.sk

Barcelona, 31 January 2007 – 3 February 2007

(Second circular)

Background and invitation

The aims of the Meeting are to explore issues concerning the effects of fire on soil properties. It is well known that fire and temperature produce changes in soil physical, chemical, organic and biological characteristics. The intensity and severity of forests fires has increased in recent years, and this is a widespread global phenomenon. It is important to know the effect of high intensity fires and prescribed fire as a management tool on soils. It is hoped that the exchange of information will not only contribute to a better understanding of the effects of fires on soils, but also will suggest solutions for soil amendment and management in terms of soil quality and forest regeneration.

The purpose of this Meeting is to bring together scientists who study the effects of fire on soil properties and soil recovery after fires. New research methodologies, topics and conclusions about fire impacts on soils are very welcome. The meeting will include an excursion to a study site where prescribed fire is used as a management tool (Les Gavarres Mountains, Girona).

Topics

Contributions are welcome in any field of fire effects on soils, but particularly on:

1. Fire Effects on Hydrology and Soil Physical Properties.
2. Fire Effects on Organic Matter Content, Soil Chemical and Biological Properties.
3. New Methodologies to Study Fire Effects On Soil.
4. Fire Intensity and Fire Severity Measurements.
5. Soil Recovery After Fires.

Organization

Xavier Úbeda and Luís Outeiro. GRAM (Mediterranean Environmental Research Group). www.ub.edu/gram.

Contact e-mail: xubeda@ub.edu

Scientific Advisory Panel of the Meeting

Marc Castellnou (GRAF, Grup De Recolzament Actuacions Forestals)
Artemi Cerdà (University of Valencia)
Stefan H. Doerr (University of Swansea)
Antonio Ferreira (Escola Superior Agrária de Coimbra)
Cesar Guerrero (University Miguel Hernández, Elche, Alicante)
Joan Llovet (University of Alicante)
Deborah A. Martin (USGS, Boulder, Colorado)
Domingo Molina (University of Lleida)
Eduard Plana (CTFC, Centre Tecnològic Forestal de Catalunya)
Jorge Mataix-Solera (University Miguel Hernández, Elche, Alicante)
John A. Moody (USGS, Boulder, Colorado)
Jose Luis Rubio (CIDE-Valencia)
Maria Sala (University of Barcelona)
Isabel Serrasolses (CEAM, Barcelona)
Richard A. Shakesby (University of Swansea)
Montserrat Soler (CSIC, Jaume Almera Institute, Barcelona).

Tentative Symposium Programme

Wednesday, 31 January 2007

09:^{00}			Registration and Panel organization
10:^{00}			Opening session
10:^{30}			Coffee-break
11:^{00}	–	13:^{00}	Morning session
13:^{00}	–	14:^{30}	Lunch
14:^{30}	–	20:^{00}	Afternoon session (PhD Research).

Thursday, 1 February 2007

10:00	–	11:00	Keynote Lecture (Stefan Doerr, University of Swansea, UK): Fire Effects on Soil Hydrological Behaviour.
12:00			Coffee-break
12:30	–	13:30	Panel session
13:00	–	14:30	Lunch
14:30	–	15:30	Panel session
15:30	–	19:00	Afternoon session.

Friday, 2 February 2007

			Excursion to the Gavarres Mountain
9:00			Meeting point
9:30			Departure
11:00			Arrival at Gavarres
13:00			Lunch (near the sites)
14:00	–	18:00	Visit to the experimental sites and discussion.

Saturday, 3 February 2007

10:00	–	11:00	Key Lecture (John Moody, US Geological Survey, USA): Linking Runoff Response to Burn Severity after a Wildfire.
12:00			Coffee-break
12:30	–	13:30	Panel session
13:00	–	14:30	Lunch
14:30	–	18:00	Afternoon session
18:00	–	18:30	Conclusions
20:00			Farewell Dinner.

Publications

Pre-conference materials: Meeting abstracts and registration forms will be distributed to attendees before the Conference.

Post-Conference publication: The journal CATENA will publish a selection of papers.

Registration fees

The registration cost of the Conference will be €140 (students €75). It will be free for all the PhD scholarship students who have been accepted to present an oral or panel contribution. Members of the WASWC have a €20 reduction. Farewell dinner: €40 (approximately) and excursion €20.

Accommodation in Barcelona

Residence: Estimated at €55 per person per day in the University Residences (www.resa.es). More information about hotels, hostels and youth hostels are available on: www.bcn.es

Barcelona is a very tourist-orientated city and, in some periods of the year, many international exhibitions make it difficult to find accommodation. Therefore, we recommend you book accommodation well in advance.

Venue

The Conference will take place in the Geography and History Faculty Building of The University of Barcelona.

Language

The official language of the meeting will be English.

Deadlines

2 May 2006:	Second Circular
31 July 2006:	Abstracts submission
15 September 2006:	Confirmation of accepted abstracts and third circular
15 October 2006:	Registration and payment
15 December 2006:	Fourth and last circular

http://www.ub.edu/gram

BARCELONA MEETING SPONSORS:

ESSC EUROPEAN SOCIETY for SOIL CONSERVATION

COMMISSION ON LAND DEGRADATION & DESERTIFICATION

UNIVERSITAT DE BARCELONA

SECS

SOCIETAT CATALANA DE GEOGRAFIA

World Association of Soil & Water Conservation (WASWC)

GRAM

Grup de Recerca Ambiental Mediterrània

xarxaALINFO

gea

Grupo de Edafología Ambiental

Environmental Soil Science Group

Universidad Miguel Hernández

International Conference to celebrate 60 Years of the Institute of Soil Science 'Nikola Poushkarov' entitled 'Soil Science – Base for Sustainable Agriculture and Environmental Protection', 13 – 17 May 2007, Sofia, Bulgaria

UNDER THE PATRONAGE OF THE
MINISTRY OF AGRICULTURE AND FORESTRY (MAF)
MINISTRY OF ENVIRONMENT AND WATERS (MEW)

Thematic scope

- Soil genesis, soil classification, cartography, geographic information systems (GIS).
- Soil properties and processes.
- Land evaluation and soil fertility management.
- Soil care and environmental protection.

Organizing Committee

Chairman: Dr Svetla Bachvarova: President NCAS

Vice-Chairmen: Professor Dr N. Kolev: Director of N. Poushkarov ISS, Professor Dr. I. Kolchakov: President of the Bulgarian Soil Science Society, D. Vangelov : Director of Soil Resources Agency, MAF.

Secretaries: Associate Professor Dr B. Georgiev, Professor Dr E. Filcheva, Dr M. Kercheva.

Members: Assoc. Prof. Dr N. Dinev, Prof. Dr D. Slavov, Assoc. Prof. Dr D. Stoicheva, Assoc. Prof. R. Donkova, Assoc. Prof. Dr A. Lazarov, Assoc. Prof. Dr I. Dimitrov, Dr V. Koleva (N. Poushkarov ISS), Assoc. Prof. Dr L. Malinova (University of Forestry), Assoc. Prof. Dr N. Artinova (Agrarian University, Plovdiv), V. Stefanova (Soil Resources Agency, MAF), Assoc. Prof. Dr N. Ivanova (MAF), T. Dimitrova (MEW).

Technical Secretaries: T. Popova, L. Nikolova.

Scientific excursion: Professor Dr. M. Teoharov, Assoc. Professor Dr R. Ilieva (N. Poushkarov ISS), S. Nedyalkov (Soil Resources Agency, MAF).

Scientific Committee:

Atanassov I., Bulgaria
Bakalivanov D., Bulgaria
Bech J., Spain
Behar A., Bulgaria
Bielek P., Slovakia
Blum W., Austria
Boneva K., Bulgaria
Chuldjian H., Bulgaria
Dilkova R., Bulgaria
Dumitru M., Romania
Gabriels D., Belgium
Gencheva Sv., Bulgaria
Hadjiparaskevas C., Cyprus
Haigh M., UK
Kapur S., Turkey
Kibblewhite M., UK
Kozak, Czech Republic
Krastanov Sl., Bulgaria
Mermut A., Canada
Micheli E., Hungary
Montanarella L., Italy
Nikolov N., Bulgaria
Ninov N., Bulgaria
Oenema O., The Netherlands
Pagliai M., Italy
Radcliffe D., USA
Russeva Sv., Bulgaria
Shein E., Russia
Smeian N., Belarus
Sokolowska Z., Poland
Stoinev K., Bulgaria
Stoyanov D., Bulgaria
Targulian V., Russia
Tsadilas, Greece
Varrallyay G., Hungary
Van Ranst E., Belgium
Vladiychenskiy A., Russia
Zdruli P., Italy

Preliminary Programme

13 May

17:^{00} – 19:^{00} Registration
19:^{00} onwards Welcome party

14 May

8:^{30} – 10:^{00} Registration:
10:^{00} – 11:^{00} Opening and celebration of 60 years of 'N.Poushakrov' ISS
11:^{00} – 12:^{30} Plenary session
14:^{00} – 17:^{00} Oral presentations
10:^{00} – 18:^{00} Poster sessions

15 May

9:^{00} – 12:^{30} Oral presentations
14:^{00} – 17:^{00} Oral presentations
9:^{00} – 18:^{00} Poster sessions
17:^{00} – 18:^{00} Closing session

16 – 17 May

Scientific excursion

General Information

Venue: N. Poushkarov Institute of Soil Science, Sofia 7, Shosse Bankya str. (bus No 42 from the Metro station 'Slivnitza').

Language: Bulgarian, Russian and English.

Technical support: Multimedia and overhead projection will be available in the Conference room.

Presentation: Oral presentations are limited to 10 minutes. The maximum area available for each poster will be 80 cm (height) and 90 cm (width)

Registration fee: €150. The registration fee covers Conference materials, Welcome party and Coffee-breaks.

Conference tour: €50.

The registration fee should be paid before 15 February 2007, preferably by bank transfer to: Bulbank Ltd., Kaloyan Branch, 3 Kaloyan str., 1000 Sofia, Bulgaria

BIC: BFTBBGSF IBAN: BG 45 BFTB 7630 3400 001964

Accomodation: Hotel accommodation (US$50-60/night)

Passport and visas: Participants are advised to consult the nearest consular office of Bulgaria for visa requirements. A letter of invitation will be sent upon request.

Address of the Organizing committee

Conference '07 /Lidia Nikolova, Tonya Popova/N.Poushkarov Institute of Soil Science, 7 Shosse Bankya str., Sofia 1080, Bulgaria.

E-mail: soil@mail.bg
Fax : 00 359 2 8248937
Tel.: 00 359 2 8248976: L. Nikolova
00 359 2 8240253: Dr B. Georgiev

Instructions for authors

Please submit a hard copy and an electronic copy (MS Word) of your paper of no more than 6 pages of A4, including tables, graphics, references and the abstract (mailed 3½" disk or via E-mail) before 31 January 2007. The text should be written using Times New Roman font, 12 point size, 1.5 line spacing, 2.5 cm margins all round, 1 cm indent of first line. The paper should include: Title (all caps, Bold), Authors' name (Bold), Affiliation (Italics), centred and with one line space between them, followed by the sections: Introduction, Materials and Methods, Results and Discussion, Conclusions, References, Abstract and Keywords. The text should be justified with one line space between the sections. The citation in the text should be by the names of the authors (or the first author & et. al., if there are more than two authors) and the year of the publication. The references should be ordered in alphabetical order according to the sample.

Tarchitzky D., A. Chen, A. Banin. (1993) Humic Substances and Effects on Sodium- and Calcium Montmorillonite Floculation and Dispersion. *Soil Sci. Soc. Am. J.*, **57**, (2), 367-372.

Deadlines

30/09/2006: for sending registration form.

31/01/2007: for sending the registration fee and full papers.

15/03/2007: Notification of accepted papers and final programme.

http://www.iss-poushkarov.bg
E-mail: soil@mail.bg

REGISTRATION FORM
CONFERENCE '07
13 – 17 May 2007

Name . . . . . ☐ Mr. ☐ Mrs. ☐ Dr ☐ Prof.

Surname . . . . . .

Organization: . . . . . .

Address: . . . . . .

. . . . . .

Tel. . . . . Fax: . . . . . E-mail: . . . . . .

I wish to:

☐ Attend the Conference ☐ Submit a paper ☐ Attend the excursion

Preferred presentation format: ☐ oral ☐ poster

Author(s) and Title

. . . . . .

. . . . . .

. . . . . .

Accompanying person(s) . . . . . .

. . . . . .

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

Pedometrics 2007

www.Pedometrics.org

Biannual Conference of Commission 1.5 Pedometrics, Division 1, of the International Union of Soil Sciences (IUSS)

Dear Colleagues,

We are pleased to announce **Pedometrics 2007** (the Biannual Conference of Commission 1.5 Pedometrics, Division 1, of the International Union of Soil Sciences (IUSS)) to be held 27 – 30 August 2007 in Tübingen, Germany.

Pedometrics 2007

The Conference covers all major topics of pedometrical research and their applications. It comprises geostatistics, the research fields of the related working group on digital soil mapping, proximal soil sensing, as well as soil fractals, wavelets and spatial accuracy.

We welcome all soil scientists, soil surveyors, soil geographers, environmental scientists and engineers, GIS specialists, geostatisticians, statisticians and mathematicians to join the Conference and exchange their knowledge.

A Pre-Conference Workshop on Uncertainty Propagation Analysis will be held by Gerard B.M. Heuvelink and James D. Brown. A field trip introducing the soilscapes and the famous vineyards of Baden-Wurttemberg follows the Conference.

Information

For more information on Conference venue, important dates, registration information, the workshop and the tentative agenda, visit the Conference web site:

http://www.pedometrics.de.

We would appreciate if you could please forward this message to colleagues and staff who may be interested in attending.

We are look forward to seeing you in Tübingen!

Best wishes

Thorsten Behrens, Volker Hennings and Thomas Scholten.

Contact:

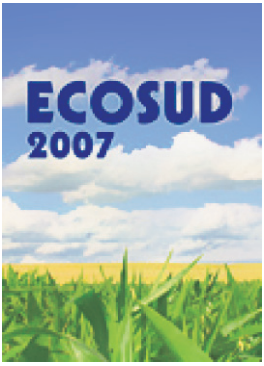
Thorsten Behrens
University of Tübingen
Institute of Geography
Ruemelinstrasse 19-23
72070 Tuebingen
Germany.
Tel: 00 49 7071 29 78943
Fax: 00 49 7071 29 5391
E-mail: thorsten.behrens@uni-tuebingen.de

Organization and Support

Eberhard Karls Universität Tübingen

BGR Federal Institute for Geosciences and Natural Resources

www.Pedometrics.org



Sixth International Conference on Ecosystems and Sustainable Development

Coimbra, Portugal, 5 – 7 September 2007.

ECOSUD 2007 is the Sixth International Conference in the well-established series on 'Ecosystems and Sustainable Development'. The meetings provide a unique forum for the presentation and discussion of recent work on different aspects of ecosystems and sustainable development, including physical sciences and modelling. The Conference aims to help create a new science in line with Prigogine's statement that *"at all levels we observe events associated with the emergence of novelties and narrative elements, which we may associate with the creative power of nature"*. ECOSUD is not only a forestage to present novel research related to ecological problems from all over the world; it also gives opportunities for new emergent ideas in science arising from the cross fertilization of different disciplines, including mathematical models and eco-informatics, evolutionary thermodynamics and biodiversity, structures in ecosystems modelling and landscapes, to mention but a few.

The aim of the Conference is to encourage and facilitate interdisciplinary communication between scientists, engineers and professionals working in ecological systems and sustainable development. Emphasis will be given to those areas that will most benefit from the application of scientific methods for sustainable development, including the conservation of natural systems around the world. The Conference objectives have evolved over the years, seeking to integrate thermodynamics, ecology and economics into 'ecodynamics'. This successful series first started in Peniscola, Spain (1997); and continued in Lemnos, Greece (1999); Alicante, Spain (2001); Siena, Italy (2003) and Cadiz, Spain (2005).

Conference Topics: Thermodynamics and ecology; Sustainability indicators; Mathematical and system modelling; Ecosystems modelling; Biodiversity; Sustainability development studies; Conservation and management of ecological areas; Socio-Economic factors; Energy conservation and generation; Environmental and ecological policies; Environmental management; Environmental risk; Natural resources management; Recovery of damaged areas; Biological aspects; Complexity; Remote sensing; Landscapes and forestation issues; Soil and agricultural issues; Water resources; Sustainable waste management; Air pollution and its effects on ecosystems. For further information, please visit our web-site:

http://www.wessex.ac.uk/conferences/2007/eco07/index.html
or e-mail the Conference Secretariat at: ecosud@wessex.ac.uk

The 'Flood Repair Network' is pleased to draw your attention to the 'First International Conference on Flood Recovery, Innovation and Response' (FRIAR)

Venue: Institute of Civil Engineers (ICE) Headquarters, Great George Street, London, UK

Dates: 21 and 22 April 2008

This two day Conference will provide a unique opportunity for Practitioners and Researchers to meet in order to exchange experience and ideas.

Scientific and technical sessions will provide an opportunity for the international flood repair community to share experiences and best practice. Themes will include flood repair, research, recovery, response, insurance and innovation in this field. A schedule of social events will also be offered.

The first call for Abstracts is currently being put into circulation, along with details of various advertising and promotional packages.

There is already significant interest in this event, so please register on our website. To obtain further details about this exciting project and to reserve your place, please visit our web site:

www.floodrepair.net

EPSRC

Engineering and Physical Sciences Research Council

2ND INTERNATIONAL CONFERENCE ON GROUND BIO- AND ECO-ENGINEERING

The Use of Vegetation to Improve Slope Stability

Beijing, China, 14 – 18 July 2008

This Conference is the second in the series 'The Use of Vegetation to Improve Slope Stability.' The first Congress was held at Thessaloniki, Greece, from 13 – 17 September 2004. In an era where more natural hazards are occurring; soil erosion, landslides and other catastrophic events result not only in the loss of lives and infrastructure, but cause major environmental damage. The aim of these meetings, therefore, is to bring together scientific researchers, practitioners, geotechnical and civil engineers, biologists, ecologists and foresters to discuss current problems in slope stability research and how to address those problems using ground bio- and eco-engineering techniques.

Ground bioengineering methods integrate civil engineering techniques with natural materials to obtain fast, effective and economic methods of protecting, restoring and maintaining the environment. Eco-engineering has been defined as a long-term ecological strategy to manage a site with regards to natural or man-made hazards. Conference sessions will focus on an area where such engineering techniques are used increasingly frequently (i.e. natural and man-made slopes). Papers will be presented on slope instability, erosion, soil hydrology, mountain ecology, land use and restoration and how to mitigate these problems using vegetation. The mechanics of root-soil interaction are of utmost importance, along with the modelling of root reinforcement and the development of decision-support systems, areas where significant advances have been made in recent years. Proceedings will be published in a special edition of an international journal. We hope that you will be able to join us at this meeting, to be held in exciting Beijing, the 2008 Olympic City!

The Organizing Committee:

T. FOURCAUD, CIRAD, Montpellier, France / LIAMA-CASIA, Beijing, China.
L. JOUNEAU, INRA Jouy / LIAMA-CASIA, Beijing, China.
H. LU, WASWC, Beijing, China.
Y. LU, Chinese Academy of Forestry, Beijing, China.
T. LUO, Institute of Tibetan Plateau Research CAS, Beijing, China.
J. NORRIS, Nottingham Trent University, Nottingham, UK.
I. SPANOS, NAGREF, Thessaloniki, Greece.
***A. STOKES**, INRA, Montpellier, France / LIAMA-CASIA, Beijing, China.
X. ZHANG, LIAMA-CASIA Beijing, China.

***Conference Chair and for further information, please contact:**

Alexia Stokes
LIAMA-CASIA, PO Box 2728,
Zhonguancun Dong Lu 95, Hadian,
Beijing 100080
P.R. China
E-mail: stokes@liama.ia.ac.cn
Tel: 00 86 10 82614528
Fax: 00 8610 62647458.

5th INTERNATIONAL CONGRESS of the European Society for Soil Conservation

Palermo - June, 25-30 2007

5th International Congress of the ESSC

EUROPEAN SOCIETY FOR SOIL CONSERVATION

Changing Soils in a Changing World: the Soils of Tomorrow

25 – 30 June 2007

Palermo, Italy

BACKGROUND

Soil is the thin layer of the Earth that fulfils fundamental functions in terms of life in general and particularly in terms of the needs and well being of human societies. Increasing demands are being imposed upon the soil by different human activities. These activities are growing and competing with each other, without taking account of the diversity of soils, their function and their potential. Consequently, soils are degraded in different ways, depending on their vulnerability.

The second half of the 20th Century was particularly disastrous: erosion, urbanization, landslides and flooding, local and diffuse contamination, salinization and entisolization were the main problems linked to an unbalanced ratio of Man/Soil. In both western and eastern Europe, the headlong rush into agricultural, industrial and urban development wrought destruction upon soils and their functions. Little has been done in reality to mitigate soil degradation and to improve the condition of soil already heavily degraded. This is largely due to ignorance, in all spheres of society, of what the soil really is and why it is necessary to preserve its functions. Such ignorance has its roots in the absence of soil awareness.

OBJECTIVES

The main objectives of the 5th ESSC International Congress is to promote exchange and discussion about the problems that affect the soils due to the pressure of Man on Soils and Landscape, that are becoming progressively more evident and to stimulate soil awareness in civil society. The Congress is open to soil scientists, educators and policymakers. It will consist of invited lectures, scientific sessions with oral and poster presentations and scientific and cultural excursions.

DEADLINES

31 January 2007	Deadline for abstract submission
28 February 2007	Deadline for registration at reduced fee
31 March 2007	Notice of acceptance of abstracts
30 April 2007	Last announcement and final programme

For registration and abstract submission, please refer to our website:
www.esscpalermocongress.it

The Organizing Committee will take into account the possibility of publishing the Congress proceedings in a volume printed by CATENA VERLAG. All participants are kindly requested to submit their papers/presentation, in compliance with the instructions indicated on the web site.

TOPICS AND INVITED SPEAKERS

Lectio Magistralis	Ahmet MERMUT	Saskatchewan	Canada
Topic 1: Soils and Society	Victor TARGULIAN	Moscow	Russia
Topic 2: Soil Erosion	Eric ROOSE	Montpellier	France
Topic 3: Soil Organic Matter	Nicola SENESI	Bari	Italy
Topic 4: Soil Degradation and Desertification	Marcello PAGLIAI	Florence	Italy
Topic 5: Soil Pollution and Contamination	Steve McGRATH	Rothamsted	United Kingdom
Topic 6: Soil Conservation and Soil Quality	Lars BERGSTRÖM	Uppsala	Sweden
Topic 7: Policies for Environmental Conservation in a Global Society	Winfried BLUM	Vienna	Austria
Topic 8: New Approaches and Technologies for Soil Assessment	Paolo SEQUI	Rome	Italy

ORGANIZING COMMITTEE

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PRELIMINARY PROGRAMME

25 June, Monday

Morning:		Arrival of participants and registration
16:00	18:00	ESSC Council Meeting
18:00	19:00	Opening ceremony
19:00	20:00	Lectio Magistralis
20:00		Welcome party

26 June, Tuesday (Topic 1 and 2)

8:30	13:00	Registration
9:00	09:45	Opening lecture
9:45	10:00	Coffee-break
10:00	12:30	Thematic session (Topic 1)
12:30	14:30	Lunch
14:30	15:15	Opening lecture
15:15	17:45	Thematic session (Topic 2)
17:45	18:00	Coffee-break
18:00	19:00	Poster sessions (Topics 1 and 2)

27 June, Wednesday (Topics 3 and 4)

9:00	9:45	Opening lecture
9:45	10:00	Coffee-break
10:00	12:30	Thematic session (Topic 3)
12:30	14:30	Lunch
14:30	15:15	Opening lecture
15:15	17:45	Thematic session (Topic 4)
17:45	18:00	Coffee-break
18:00	19:00	Poster sessions (Topics 3 and 4)
19:00	20:00	ESSC General Assembly

28 June, Thursday (Topics 5 and 6)

9:00	–	9:45	Opening lecture
9:45	–	10:00	Coffee-break
10:00	–	12:30	Thematic session (Topic 5)
12:30	–	14:30	Lunch
14:30	–	15:15	Opening lecture
15:15	–	17:45	Thematic session (Topic 6)
17:45	–	18:00	Coffee-break
18:00	–	19:00	Poster sessions (Topic 5 & 6)
21:00			Congress dinner

29 June, Friday (Topic 7 and 8)

9:00	–	9:45	Opening lecture (invited speaker)
9:45	–	10:00	Coffee-break
10:00	–	12:30	Thematic session (Topic 7)
12:30	–	14:30	Lunch
14:30	–	15:15	Opening lecture (invited speaker)
15:15	–	17:45	Thematic session (Topic 8)
17:45	–	18:00	Coffee-break
18:00	–	19:00	Poster sessions (Topics 7 and 8)
19:00	–	19:30	Conclusions of the Congress

30 June, Saturday

7:30	–	19:45	One-day scientific and cultural excursion (2 choices)
	1st choice		Scientific and cultural excursion to Sparacia Farm and Temple valley of Agrigento.
	2nd choice		Scientific and cultural excursion to Belice area and Selinunte archaeological area.

SCIENTIFIC AND CULTURAL EXCURSION

1st option

SPARACIA FARM AND TEMPLE VALLEY IN AGRIGENTO

Cultural and pedo-agronomical aspects of the Mediterranean environment. Vertic soils of the Mediterranean environment. Experimental installations for measuring water erosion at microplot, plot and basin scales in a hilly Sicilian area.

The trip proceeds to Agrigento with a visit to the TEMPLES VALLEY, where there is one of the best-preserved Greek archaeological zones in the world. An English-speaking guide will show the Concordia, Venus, Zeus and Hercules temples. At the end of the visit, return to Palermo.

2nd option

BELICE AREA AND SELINUNTE ARCHAEOLOGICAL PARK

Cultural and pedo-agronomical aspects of the Mediterranean environment. Problems of land management due poor land management decisions. Environmental problems due to soil consumption. The trip proceeds with a visit to the important ARCHAEOLOGICAL PARK OF SELINUNTE. It consists of various temples, set in a semi-deserted zone, since the old town is uninhabited nowadays. There are the remains of the old city, destroyed by an earthquake in antiquity. At the end of the visit, return to Palermo.

SCIENTIFIC COMMITTEE

Jaques Berthelin,	Nancy	France
Pavol Bielek	Bratislava	Slovakia
Andrea Buondonno	Bari	Italy
Wolfgang Burghardt	Essen	Germany
Nicola Fohrer	Kiel	Germany
Michael Fullen	Wolverhampton	United Kingdom
Donald Gabriels	Ghent	Belgium
Ádám Kertész	Budapest	Hungary
Luca Montanarella	Ispra	Italy
Paolo Nannipieri	Firenze (Florence)	Italy
Mark Nearing	Tucson	USA
Stephen Nortcliff	Reading	United Kingdom
Ildefonso Plá Sentis	Lleida	Spain
Antonio Rodriguez	La Laguna (Canary Islands)	Spain
Juan Sanchez	Valencia	Spain
Thomas Scholten	Tuebingen	Germany
Diane Stott	Lafayette	USA
Des Walling	Exeter	United Kingdom

WEBSITE: www.esscpalermocongress.it

SCIENTIFIC SECRETARIAT
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Reminder for the next issue:

Articles, reports, letters, views or comments on any aspect of soil erosion and conservation in Europe are always welcome.

We welcome any comments on the ESSC Newsletter and suggestions on how it can be improved and developed.

Do not forget to send in your details of the following information:

(i) Reviews of recent conferences.
(ii) Recent grant awards.
(iii) The citation details and abstracts of completed Ph.D. and M.Sc. theses.
(iv) Newly enrolled Ph.D. research students, title of their research topic and names of research supervisors.
(v) Recent staff institutional movements/promotions.
(iv) A reference list of your 'new' international refereed scientific journal papers, which have been published recently (since and including the year 2000).

Send these details to either:

Professor Mike Fullen: m.fullen@wlv.ac.uk
or
Dr Colin Booth: c.booth@wlv.ac.uk
and they will include this information in the next issue.

PLEASE NOTE: **We are progressively developing to four Newsletter issues per year.**
The deadlines for 2007 onwards will be:
10 January 1 April 1 July 1 October.

Some Closing Thoughts:

"The dust is gold that bears the harvest;
Save the soil that grows our bread;
Let not wind and rain remove it;
Guard with care for years ahead."

Quoted from S.G. Brade-Birks (1944, p. 189).
Brade-Birks, S.G. (1944). Good Soil. English University Press, London.

"We know more about the movement of the celestial bodies than about the soil underfoot." Leonardo da Vinci.

AIMS OF THE SOCIETY

The ESSC is an interdisciplinary, non-political association, which is dedicated to investigating and realizing soil conservation in Europe. The ESSC pursues its aims in the scientific, educational and applied sectors by:

Supporting investigations on soil degradation, soil erosion and soil conservation in Europe,

Informing the public about major questions of soil conservation in Europe,

Collaborating with institutions and persons involved in practical conservation work in Europe.

The ESSC aims at co-ordinating the efforts of all parties involved in the above cited subjects: research institutions; teachers and students of geosciences, agriculture and ecology; farmers; agricultural planning and advisory boards; industries and government institutions.

ZWECK DER VEREINIGUNG

Die ESSC ist einer interdisziplinäre, nicht politische Vereinigung. Ihr Ziel ist die Erforschung und Durchführung des Schutzes der Böden in Europa. Die ESSC verfolgt dieses Ziel auf wissenschaftlichem, erzieherischen und angewandtem Gebiet:

durch Unterstützung der Forschung auf den Gebieten der Boden-Degradierung, der Bodenerosion und des Bodenschutzes in Europa,

durch Information der Öffenlichkeit über wichtige Fragen des Bodenschutzes in Europa,

durch Zusammenarbeit mit Institutionen und Personen, die an der Praxis des Bodenschutzes in Europa beteiligt sind.

Die ESSC will alle Personen und Institutionen zusammenführen, die sich für die genannten Ziele einsetzen: Forschungsinstitutionen, Lehrer und Studenten der Geowissenschaften, der Landwirtschaftswissenschaften und der Ökologie, Bauern, landwirtschaftliche Planungs- und Beratungsstellen, Industrieunternehmen und Einrichtungen der öffentlichen Hand.

BUTS DE L'ASSOCIATION

L'ESSC est une association interdisciplinaire et non politique. Le but de l'association est la recherche et les réalisations concernant la conservation du sol en Europe. L'ESSC poursuit cette finalité dans les domaines de la recherche scientifique, de l'éducation et de l'application:

en encourageant la recherche sur la dégradation, l'érosion et la conservation du sol en Europe,

en informant le public des problemes majeurs de la conservation du sol en Europe,

par la collaboration avec des institutions et des personnes impliquées dans la pratique de la conservation du sol en Europe.

L'ESSC souhaite favoriser la collaboration de toutes les personnes et institutions poursuivant les buts définis ci-dessus, en particulier: institutions de recherche, professeurs et étudiants en géosciences, des agriculteurs, des institutions de planification et des conseil agricole, de l'industrie, et des institutions gouvernementales.

OBJECTIVOS DE LA SOCIEDAD

La ESSC es una asociación interdisciplinar, no-politica, dedicada a la investigación y a la realización de acciones orientadas a la conservación del suelo en Europa. La ESSC persigue sus objectivos en los sectores cientificos, educacionales y aplicados, en al ámbito europeo:

promocionando la investigación sobre degradación, erosión y conservación de suelos,

informanto al público sobre los principales aspectos de conservación de suelos,

colaborando con instituciones y personas implicadas en la práctica de la conservación de suelos.

La ESSC aspira a coordinar los esfuerzos, en los temas arriba mencionados, de todas las partes implicadas: centros de investigación, profesores y estudiantes de geo-ciencias, agricultura, selvicultura y ecología, agricultores, servicios de extensión agraria, industrias e instituciones gubernamentales.

Visit the ESSC Website: http://www.essc.sk

MEMBERSHIP FEES

I wish to (please mark appropriate box):

- Join the ESSC
- Renew my membership of the ESSC
- Know whether I have outstanding membership contributions to pay

Membership rates:

Standard Rates:

- One year € 25.00
- Three years € 70.00

Members in Albania, Armenia, Azerbaijan, Belarus, Bosnia-Herzegovina, Bulgaria, Croatia, Czech Republic, Estonia, Georgia, Hungary, Latvia, Lithuania, Macedonia, Moldova, Montenegro, Poland, Romania, Russia, Serbia, Slovakia, Slovenia and Ukraine:

- One year € 10.00
- Three years € 25.00

Students:

50 % reduction on above rates for three years
Your supervisor must provide written confirmation of student status

I wish to pay my membership contribution by (please mark appropriate box):

- Eurocard / Mastercard
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Branch address: Fortis Bank, Zonnestraat 2, B-9000 Gent, Belgium;
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IBAN - BE29 0014 5139 8064 and BIC - GEBABEBB;
Account name: European Society for Soil Conservation;
Account number 001-4513980-64

CARD NO. ..... EXPIRY .....

Amount: € ..... Date: ..... Signature: .....

NAME: .....

ADDRESS: .....

.....

E-MAIL: .....

MEMBERSHIP NUMBER (if known): M0 .....

Please send this form to: ESSC Treasurer, Dr Wim Cornelis, Department of Soil Management and Soil Care, Coupure links 653, B-9000 Gent, BELGIUM.

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