NEWSLETTER 1 + 2 / 1998

ESSC EUROPEAN SOCIETY for SOIL CONSERVATION

Task forces

E.S.S.C. NEWSLETTER 1 + 2 / 1998

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ESSC COUNCIL MEETING, 17-19 OCTOBER 1997

The 1997/4 edition of the ESSC Newsletter carried a short report outlining the decisions made at the Council Meeting. A full report on the meeting is now given below.

Report on the ESSC Council Meeting held at the Zentrum für Agrarlandschafts- und Landnutzungforschung (ZALF), Müncheberg, Germany, 17-19 October 1997.

Present: Prof K.Auerswald (Germany), Prof. H.R.Bork (Germany), Prof. D.Gabriels (Belgium), Dr K.Helming (Germany), Dr Á.Kertész (Hungary), Prof. J.Madruga (Portugal), Prof. O.Nestroy (Austria), Prof. J.Poesen (Belgium), Prof. G.Richter (Germany), Dr. P.Schjønning (Denmark), Dr N.Vagstad (Norway).

Apologies: Prof R.Morgan (UK), Dr J.Rubio (Spain), Dr D.Torri (Italy).

After the opening remarks by the President (Prof G.Richter), the Treasurer (Dr K.Helming) and the Secretary (Prof J.Poesen) reported on the present state of the Society.

1. ESSC Membership

1.1 On 13 October 1997, the ESSC had 518 members. Compared to the situation in December 1996, 218 members had dropped out of the Society and there were 68 new members.

1.2 Ukraine now has 33 members and Romania has 44 members. These countries can therefore be represented in the ESSC Council.

1.3 From 1 January 1998 onwards, ESSC members from Croatia, Czech Republic, Hungary, Poland, Slovakia and Slovenia will pay a membership fee of DM 20.00 per year.

1.4 The Council also decided that from 1 January 1998, students wishing to become an ESSC member would receive a 50% discount on the official membership rate for two consecutive years, i.e. they would by DM 25.00 per year (instead of DM 50.00) in all west European countries and DM 10.00 (instead of DM 20.00) in Croatia, Czech Republic, Hungary, Poland and Slovakia.

2. ESSC Council Members

2.1 Given the large number of members in Ukraine and Romania, the Council

decided to co-opt:

- Prof Dr Vitali V. Medvedev (Soil Science and Agrochemistry Institute, Ukrainian Academy of Agricultural Sciences, Chaikovski 4, 310024 Kharkov, Ukraine) to serve on the Council as the representative of the Ukraine; and

- Prof Dr Mihail Dumitru (Research Institute for Soil Science and Agrochemistry, Bd. Marasti 61, 71331 Bucharest, Romania) to serve on the Council as the representative of Romania.

2.2 At present, the ESSC Council has 31 members. Therefore, the Council decided that at least 10 members should be present at future meetings in order to obtain a quorum for decisions to be made.

2.3 Dr Ad de Roo has resigned as Council Member for The Netherlands because of a change in job. Dr F.Kwaad retires at the end of 1997. The President will seek the advice of both these members on obtaining a replacement for The Netherlands. In future, The Netherlands will have only one representative on Council

3. ESSC Newsletter - ESSC Publications - ESSC Homepage

3.1 A written report on the status of the Newsletter, the link with CABI and the ESSC Leaflet, prepared by Prof R.Morgan, was presented by Prof G.Richter.

3.2 All ESSC members, and Council members in particular, are requested to send in reports on any soil conservation issue in the various European countries. The ESSC welcomes, in particular, short (1-2 pages) reports on any recent PhD theses relating to soil conservation. Reports can be send directly to Prof R.Morgan (Editor-in-chief) or to the President (Prof G.Richter) or the Secretary (Prof J.Poesen). Prof. Madruga, Prof. Nestroy and Prof. Gabriels agreed to send reports within three months.

3.3 Prof R.Morgan will prepare a draft ESSC Leaflet and send to the Executive Committee members for comments.

3.4 Prof Karl Auerswald announced the forthcoming issue of *Soil and Tillage Research* containing 18 papers presented at the Second ESSC Congress at Weihenstephan (1-7 September 1996).

3.5 The Council very much welcomed the idea proposed by Prof R.Morgan to edit a special publication on soil erosion in Europe in the near future. Prof Morgan is asked to announce this in the next ESSC Newsletter. Interested contributors are requested to contact Prof Morgan.

3.6 Prof D.Gabriels will produce a homepage for the ESSC as soon as the ESSC Leaflet is produced. The content of the leaflet will be put on to the homepage in four languages.

3.7 Prof Richter received a short report for the Newsletter on the Rangeland Desertification Conference held in Iceland last September.

3.8 Dr P.Schjønning will write a short report for the Newsletter on a forthcoming Soil Quality meeting to be held in Copenhagen, Denmark.

4. ESSC and the EC Fifth Framework Programme

4.1 The ESSC was invited as a European organization to participate in two meetings related to the development of the EC Fifth Framework Programme. The meetings were held in Brussels, Belgium (28 February-1 March 1997; see report by Dr A.Kertész in Newsletter 1997/2+3, pp. 46-47) and in Baveno, Italy (29-31 June 1997). Prof Richter participated in the validation workshop of the EC Environment Water Task Force in Baveno. At this workshop he stressed that water conservation is intimately linked to soil conservation and that soil conservation deserves more attention in Framework 5. At present, the ESSC Secretariat is waiting for the final document incorporating all the suggestions made at the workshop.

5. National Branches of the ESSC

5.1 The Council decided unanimously that national branches of the ESSC will not be founded.

6. ESSC policy related to collaboration with other national and international societies

6.1 Before fixing the principles of the ESSC policy related to the collaboration with other national and international societies, the President requests all Council Members to express their view on the matter and to answer the following questions:

- The ESSC is a European Society. What are the main targets for the future? Only conferences, workshops and publications?

- Do you agree that the ESSC should avoid carrying out activities that lead to competition with national societies?

- Should the collaboration with national societies comprise more formal items like exchange of information and sponsorship?

- Could and should the ESSC try to become a kind of bridge between national societies which deal with soil conservation? If yes, what should be done to reach this aim?

- What are the principles of collaboration with other international societies, e.g. ISCO, ISTO, WASC?

All Council members are asked to send their answers to these questions to the President before 31 March 1998.

7. Bundesverband Boden (BVB)

7.1 Dr K.Auerswald reported on the activities of the BVB where he is also a member of the Council. The BVB would like to establish formal links with the ESSC. Before responding to this request, the President would like to have the opinion of the ESSC Council Members (see the second and third questions under point 6, above).

7.2 After a lively debate, the following was decided. Prof Richter will contact the BVB in order to let them know that, in principle, the ESSC is willing to collaborate more closely. The ESSC could do the following for the BVB:

- provide pan-European experience in matters related to soil degradation and soil conservation;

- provide a European forum and a network of scientists for exchange of ideas and experiences related to soil degradation and soil conservation;

- help, where possible, to push legislation related to soil degradation and soil conservation in the right direction;

- help structure European experience related to soil degradation and soil conservation;

- provide moral support for projects related to priority issues for the ESSC.

In return, the ESSC would expect from the BVB input on all matters of soil conservation in Germany, e.g. soil loss tolerance and harmonization of measurement techniques for assessing the status and intensity of soil degradation.

8. Strategy discussion on research priorities in the field of soil conservation in Europe

8.1 Dr P.Schjønning presented an interesting research topic: 'The concept of soil quality as related to the strategy of the ESSC'. The Council requested Dr Schjønning to:

- write a report on the topic for the next ESSC Newsletter;
- take the lead in establishing a working group to discuss the topic;
- report on future developments in this field at the next Council meeting; and
- organize a session on 'Soil Quality' during the Third ESSC Congress in Spain.

9. Task Forces investigating important soil conservation problems

9.1 The Council agreed to found task forces to investigate important soil conservation issues in Europe. Any ESSC member may propose a topic for a task force. Interested members are asked to write a statement for the Newsletter and to ask other interested people to join. These people then convene in a workshop, discuss the problem and decide on the establishment of a task force.

9.2 The following members have already taken an initiative with a view to founding a task force:

- Soil quality criteria in relation to soil conservation (leader: Dr P.Schjønning).
- Soil erosion in Europe - the production of a new map and publication (leaders: Prof G.Richter and Prof. R.Morgan)
- Tolerable soil losses in Europe (leaders: Dr M.Frielinghaus and Prof H.R.Bork)
- Data bank on erosion plot studies in Europe (leader: Prof D.Gabriels)
- Rainfall erosivity map of Europe (leader: Prof D.Gabriels)
- Snowmelt erosion and soil conservation in northern and eastern Europe (leader: Dr N.Vagstad)
- Water conservation by soil conservation (leader: Prof G.Richter)
- Long-term effects of land use on soil erosion and soil quality: an historical perspective (leader: Prof H.R.Bork).

10. Future ESSC Conferences

Mass movements and soil erosion in alpine environments. Graz, Austria, 3-7 June 1998 (Prof O.Nestroy) (*Note: changed to 1-4 October 1998*).

Long-term effects of land use on soil erosion: an historical perspective. Müncheberg, Germany, 11-13 September 1998 (Prof H.R.Bork).

Soil conservation on volcanic soils. Açores, Portugal, 1-7 October 1999 (Prof J.Madruga).

Third International ESSC Congress, Spain, March 2000 (Dr J.Rubio).

Snowmelt erosion and related problems. Oslo, Norway, Autumn 2000 (Dr P.Botterweg).

In addition to these meetings, the ESSC will be co-sponsoring the following conferences:

ISCO '99, West Lafayette, IN, USA (23-28 May 1999)

Tillage erosion conference, Leuven, Belgium (second half of 1999) (*Note: changed to 12-16 April, 1999*)

11. Next Council Meeting

The next Council Meeting will be held during the conference in Graz (*now 1-4 October 1998*).

Prof G.Richter
President ESSC

Prof J.Poesen
Secretary ESSC

ESSC TREASURER'S REPORT 1997

At the end of 1997, the ESSC had 512 members within 46 countries. The ESSC budget for the year is given in the table below. The difference between expenses (DM 15 320) and income (DM 11 711) was DM 3 608. The costs for printing and mailing the Newsletters 1997/2+3 and 1997/4 are not included.

Budget as at 1 January 1997 DM 17 654.67

Income	DM	Expenses	DM
Membership contributions	9 400.00	Printing	5 952.60
Interest (bank account)	12.83	Mailing	8 681.82
Books sold	260.00	Bank account	221.20
Conferences	2 000.00	Money transfer	339.68
Other income	38.89	Other expenses	125.00
Total	**11 711.72**	**Total**	**15 320.30**

Budget as at 1 January 1998 DM 14 046.09

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Treasurer ESSC
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ESSC MEMBERS

Country	1992	1993	1994	1995	1996	1997
Albania				1	1	1
Austria	3	3	3	4	4	4
Belgium	39	41	38	38	37	19
Belarus	1	1	1	1	1	1
Bulgaria	2	5	6	7	7	7
Croatia	2	2	3	3	3	3
Czech Rep.	7	5	9	9	9	9
Denmark	12	14	15	14	11	8
Estonia	1	1	1	1	1	1
Finland	2	2	2	2	2	2
France	45	45	43	46	46	17
Georgia	1	1	1	1	1	2
Germany	76	75	73	78	79	55
Greece	26	28	26	29	31	15
Hungary	9	9	10	14	14	14
Iceland	2	2	2	2	2	1
Ireland	1	1	1	1	1	
Italy	21	27	26	27	27	20
Lithuania				2	2	3
Luxembourg	4	4	3	4	3	1
Moldova	2	2	2	2	2	4
Netherlands	22	24	24	28	27	17
Norway	4	4	4	5	6	5
Poland	18	18	19	21	22	22
Portugal	31	34	36	38	38	21
Romania	3	4	4	5	5	44
Russia	55	60	60	66	66	65
Serbia	2	2	2	2	2	2
Slovakia	5	5	5	5	5	5
Slovenia	1	1	2	2	3	3
Spain	86	93	97	105	103	59
Sweden	16	17	17	18	15	5
Switzerland	15	15	15	15	15	10
Turkey	1	1	1	1	1	1
Ukraine	9	10	10	11	11	33
United Kingdom	31	35	37	42	39	21
Other countries	21	20	20	23	24	11
Total	**577**	**611**	**619**	**674**	**667**	**512**

TASK FORCE ON LONG-TERM EFFECTS OF LAND USE ON SOIL EROSION IN AN HISTORICAL PERSPECTIVE

The focus of the task-force is a functional and structural analysis of the development of catenas and landscapes during mediæval and modern times in Europe.

The recent effects of land use systems on soils in Europe and their sustainability cannot be evaluated without site-specific quantitative information on long-term soil development, degradation and erosion. The functional and structural development of soils during mediæval and modern times gives information on the type, amplitude and frequency of degradational events and processes, as well as on the potential for restoration. If the information can be successfully transferred to entire landscapes, it can help to place soil erosion risk assessments in a broader time scale and give a sounder basis for evaluating the effects of land use on European cultural landscapes.

In addition to the quantification of soil erosion by recent experiments, soil profile analysis provides interpretive information on long-term amounts of soil erosion and colluvial deposition and their variation in the past. Even more information can be gained by extending data sources from small pits or drilling holes to fully two-dimensional exposed catenas.

The ESSC Council is aware of the need to quantify long-term erosion and movement of sediment and wants to establish a task force to address these objectives. Members of the Society who are interested in long-term changes in erosion and deposition processes induced by land use change are cordially invited to contribute to the task force.

A first workshop will take place in Müncheberg, Germany, in September 1998. The details are:

- September 11, 14.00 hours: paper and poster session
- September 12: excursion
- September 13: paper and poster sessions, ending at 20.00 hours.

During the excursion, several large profile trenches will be shown in north-east Germany. The profiles give complete acccess to holocene sedimenrs and truncated profiles on typical slope sequences. By physical dating and from evidence of numerous ceramic fragments, a highly precise chronology of most of the colluvial strata has been established. The overall exposition of the strata in the trenches also allows detailed and well-proven functional and structural interpretations to be made. Palæo-ecological systems of the period before an erosion event can be derived from

analysis of the dislocated soil sediments. The erosion event itself can be traced from the composition, spatial distribution, amount and bedding of the colluvial deposits. By redistributing the colluvial material to the related catchment and by estimating the material removed from truncated profile sections, sediment balances for the historical erosion of small catchments and even landscape segments can be calculated. Results show that almost all sites in central Europe have been subject to soil erosion during mediæval and modern times. While erosion rates general have been increasing over the centuries, at least two periods of extraordinary erosion due to extreme rainstorms are proven for most of central Europe.

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TASK FORCE ON TOLERABLE SOIL LOSS IN EUROPE

The scientific discussion about tolerable soil loss is influenced by the growing appreciation of the functional relationships between soil properties and sustainability in agricultural landscapes. In addition, the consideration of environmental effects (offsite damage) is of increasing importance for the evaluation of the consequences of soil erosion. Both these aspects force a dispute on the term 'tolerable soil loss' which is important when using the parameter for compensating control measures in Europe and North America.

Tolerable soil loss can be defined as the value which guarantees the conservation of soil fertility. On this basis, completely different definitions and threshold levels of what is tolerable have emerged. In practice, tolerance levels were established as a function of soil depth and soil texture, grouping soils into renewable and non-renewable classes. Another approach was to correlate the tolerance level with a 'natural erosion' level. The latter was defined as the level which allows the conservation of the soil layer available for plant roots, thereby preserving potential soil productivity.

The soil formation rate provides an essential basis for the establishment of soil loss tolerance levels. The rate of new soil formation is a function of the parent material characteristics on the one hand, and of the soil material balance, water supply, vegetation cover and land use characteristics on the other. Reliable knowledge about medium-term soil formation rates is very poor. Some test results indicate that the long-term soil formation rate for natural forest conditions in central Europe is more than 1 ton per acre per year. Accordingly, the rate of soil formation due to physical, chemical and biological weathering is extremely low. The rate is controlled by the depth of the weathering layer and is thought to increase exponentially when a threshold depth of the weathered layer is exceeded. Therefore, no linear relationship can be established between a soil loss tolerance level and rate of soil formation. The soil formation rate approaches zero when the soil reaches its 'Klimaxstadium'.

Long-term measurements of soil loss rates on various plots indicate that the values are far higher than soil formation rates. Water and wind erosion leads, therefore, to a decrease in soil volume, thus constantly reducing the storage, buffer and filter capacity of the soil profile. Additionally, the selectively of transport processes towards fine particles and clay-humus complexes decreases the buffer and filter capacity of the remaining soil volume. As a consequence, the ability of soil to 'balance' the processes which transform landscapes is also constantly reduced.

Taking the increasing offsite damages into account, soil erosion cannot be tolerated. On the other hand, water and wind erosion are physical processes that cannot be completely avoided in agricultural areas sensitive to erosion. The challenge is to

minimize the processes by erosion-control measures. A drastic reduction of soil loss can be obtained by plant or plant residue cover of some 70 per cent of the soil surface all year round.

To date, the established methods for estimating the 'tolerable soil loss' are far from ideal. Additionally, the hypothesis that new soil formation might balance the soil losses is questionable, since the losses of soil as a natural resource cannot be tolerated. For minimizing soil loss, effective erosion-control measures are available. Since, in Europe, tolerable soil loss is evidently not only a question of the soil depth, its defintion is an important topic of research and international cooperation. Therefore, the ESSC Council has agreed to initiate a task force on the subject. The present state of knowledge in different regions of Europe should be a topic for the exchange of information. Decision-support materials for erosion-control measures should be developed. The results should be presented during a workshop in 1999.

If you are interested in cooperating in the task force, please send a short note with your intended contribution to:

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TASK FORCE ON THE CONCEPT OF SOIL QUALITY

Background

The ESSC is dedicated to investigating and realizing soil conservation in Europe. The Statutes of the Society set out how this is done, e.g. by supporting investigation on soil degradation, soil erosion and soil conservation. However, the term 'conservation' does not explicitly define the ideal state of soil which should be aimed at. It might be useful for the ESSC to address this topic in the context of the interest in indicators of soil quality being discussed at present world-wide.

History tells about several periods characterized by severe degradation of the soil resource (Kjærgaard, 1994). Present-day soil management is often thought to be based on lessons learned from history. However, the mechanized agricultural systems are manipulating the soil in a way that has never before been seen. Side effects, such as soil compaction, reduced structural stability, surface runoff and water erosion, wind erosion and general reduction in soil fertility, are often reported in literature. Therefore, the scientific community (including the ESSC) has an important challenge in addressing the problems.

The concept of soil quality

The increased awareness of the problems has led to increased attention to the term 'soil quality; as is reflected in numerous reports from recent international symposia (NN, 1991; Janzen et al, 1992; Doran et al, 1994; Greenland and Szabolcs, 1994; Doran, 1996; Finke, 1996). In a recent review on the topic, Karlen et al (1997) define soil quality as 'the capacity of a specific kind of soil to function, within natural or managed ecosystem boundaries, to sustain plant and animal productivity, maintain or enhance water and air quality, and support human health and habitation'.

Larson and Pierce (1991) and Doran and Parkin (1994) made an analogue to a human medicine and the former authors suggested a Minimum Data Set (MDS) of soil parameters which could be used to express the 'health' of a soil (like blood pressure and pulse rate for humans). A first step in this respect is the identification of soil parameters that are comparable across several soil types. The concept of 'scoring functions' as suggested by Karlen and Stott (1994) might overcome a problem of different 'scales' for contrasting soils. Further, soil quality indicators should be sensitive to the influence of soil management and, at the same time, have relatively small fluctuations in the short term compared to the time scale of continued performance of a certain soil management practice. Finally, a soil quality indicator should preferably integrate a number of the more basic soil conditions of importance to the overall function of the soil.

The term 'soil quality' has been widely discussed among scientists and conservationists, especially in North America (USA and Canada) (e.g. Doran et al. 1994; Acton and Gregorich, 1995). The Soil Quality Institute has been formed in the USA for the purpose of acquiring and developing technology for use by soil conservationists and scientists. The goal of this institute is to integrate the concepts of soil quality into conservation planning and resource inventory activities (NN, 1996).

In a recent report entitled *Environment indicators for agriculture*, the Organization for Economic Cooperation and Development (OECD, 1997) addresses soil quality and soil quality indicators. Based on work of Bomans et al (1996) and the North American literature, the OECD recommends further work on the potential of integrating indicators that address the issue of soil quality with other indicators, particularly farm management (OECD, 1997). The European Union also has activities in the area of soil quality. Recently a new topic centre (ETC/S, headed by the ESSC Vice-President, J.L.Rubio) for soil quality has been established in relation to the European Environment Agency (see ESSC Newsletter 1997/2+3, pp. 48-49). The ESSC and the scientific community have the opportunity of interacting with these organizations in the challenges of conserving soil resources.

The soil quality concept is a valuable tool in getting scientists involved with managed soil systems, giving a mutual focus to their research efforts. Studies into soil productivity, biological diversity and impacts on the surrounding environment of agricultural systems should be combined to give a more complete description of the soil resource as a dynamic living system. As stated by Karlen et al (1997), society demands solutions from science. Simply measuring and reporting the response of an individual soil parameter to a given perturbation or management practice is no longer sufficient.

A strategy for the ESSC

The 'new' concept of soil quality may be regarded as a means of differentiating and quantifying our understanding of soil behaviour, especially in relation to soil conservation. In that way it could be fruitful for the Society to discuss the potential of perhaps identifying in more detail some specific areas of interest, which is the main purpose of this note.

One simple way of highlighting soil quality indicators is to schedule and invite contributions to the next ESSC Congress more specifically for work where the effects of soil degrading processes or conservation activities on soil quality indicators are stressed. Another possibility is to include a special session about soil quality indicators.

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ESSC members are encouraged to respond to the idea that the term soil quality *could be beneficial in the efforts of the Society to address questions of soil conservation. Any ideas of how the term could be used in future research are welcomed. If you would like to be involved in the construction of an electronic mailing list, please contact Per Schjønning at ps@pvf.sp.dk*

TASK FORCE ON SOIL EROSION MAP OF EUROPE

It was in the early years of the formation of the ESSC that our first President, Professor Dr Jan De Ploey, created a soil erosion map of western Europe based on a satellite image and data collected by colleagues in different countries in the field. The map provided the first overview of the problem at a European scale.

Now that the ESSC has a wide membership from almost all countries in Europe, the opportunity exists to replace this map with up-to-date information, using the specific knowledge of our members. The aim of the task force is to create a new soil erosion map of Europe. We consider this project, not as an interesting academic exercise, but as providing information of practical value for planners and decision-makers.

The first phase will be to develop an appropriate methodology to guarantee a comparable assessment over the whole continent. Scientists could then use the methodology to evaluate the situation in their own countries and create maps and explanatory texts. At the end of the project, the ESSC would develop a European-wide map with accompanying notes. Compared with previous projects (e.g. GLASOD, Oldeman et al. 1991), the aim would be to base the map on detailed measurements of erosion at different scales, e.g. plots, small catchments, large catchments. Estimates of erosion using models would not be used as a basis of the maps unless the models have been validated against field measurements. Again, compared with GLASOD, the aim would be to provide more spatially-detailed information in each country but restricted in focus to soil erosion.

The steps to bring about such a project are:

(1) Please let us know if you are interested in collaborating in the task force to produce a new soil erosion map of Europe.

(2) Send us information on what maps exist for your country at present and the methodology on which they are based.

(3) A first workshop will then be organized to assess the present state of knowledge.

(4) Several meetings of the task force will be necessary to develop and test a methodology.

(5) The agreed methodology will then be applied at appropriate scales to produce information on each country or region.

(6) The ESSC will present the results at a European scale to national and European decision-makers to provide a base for better conservation in the future.

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The ability of soils to mitigate the transformation and translocation processes of heat, water and mineral matter is of crucial importance for how a landscape functions, including conservation of natural resources and sustainable land use. For example, the soils determine the quantitative and temporal partitioning of rainfall into runoff and infiltration, as well as evapotranspiration and groundwater production. Also, the filter capacity of the soils controls the chemical composition of both the percolating and runoff water.

Soils under agricultural use, therefore, can be the source of an accelerated water pollution. This occurs as a result of the use and misuse of soils by mobilization of soil particles, fertilizers, pesticides and heavy metals by the following transport processes:

(1) leaching of fertilizers and pesticides towards the groundwater;
(2) transport of dissolved fertilizers and pesticides in the surface runoff towards river beds and flood plains; and
(3) soil erosion and transport of suspended soil particles in combination with fertilizers and heavy metals in the surface runoff towards river beds and flood plains.

As soon as suspended soil particles and dissolved fertilizers and pesticides reach the river courses they act as pollutants. In most cases this transport is interrupted by temporal deposition and continued by remobilization. The latter may be in the form of:

(1) remobilization in the flood plain by river erosion;
(2) remobilization in river beds by floods; and
(3) remobilization in lakes and reservoirs by throughflow.

From field sites, flood plains, river beds, reservoirs and lakes, even from the groundwater and the oceans, an entrance of dissolved matter into the food chain is possible and, indeed, probable (Figure 1).

Soil conservation measures aim at sustaining the infiltration and storage capacity as well as the filter capacity of the soils. Soil degradation may reduce these capacities significantly with possible seriously detrimental effects, e.g. increased risk of flooding, erosion, surface water contamination due to a reduced infiltration capacity, desertification due to a reduced storage capacity, and groundwater contamination due to a reduced filter capacity.

Although the interrelationships and mutual benefits between soil conservation and

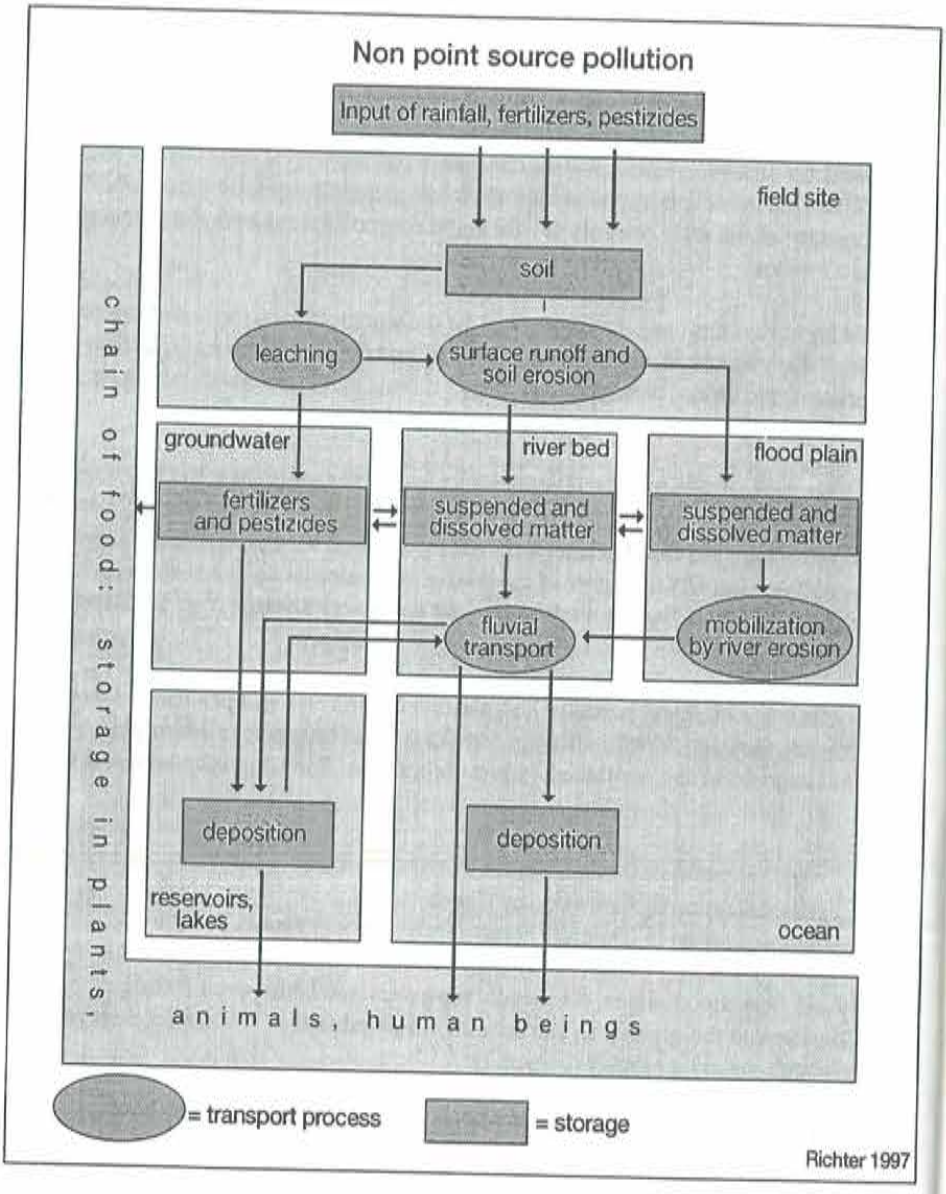

Figure 1. Transfer and storage of water and material matter in the landscape

water conservation are quite obvious, the quantitative effects of changes in soil properties on water resources are not well understood. Specifically, three objectives need further investigation:

- the interrelating effects of land use characteristics and soil properties on water resources;
- the effects of climatic and geological conditions on velocity and direction of water resources responses to soil conservation measures; and
- the temporal and spatial scales at which soil conservation measures are effective for water conservation systems.

The ESSC is aware of the significance of research in this area and wants to establish a task force to address these objectives. Members of the ESSC, both those who are already working in the field and those who have in interest in doing so, are cordially invited to contribute to the task force.

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TASK FORCE ON RAINFALL EROSIVITY MAP OF EUROPE

It is envisaged to produce a rainfall erosivity map of Europe. The map will be based on the rainfall erosivity index, $R = EI_{30}$ and/or the modified Fournier index F', or any other index related to R or F'. So far there have been studies carried out in different European countries and through different research projects. It is now time that these studies were combined and presented in a uniform way. Therefore a task force is proposed to call upon ESSC members to provide the following information:

(1) Available data and number of years:
- precipitation amount - monthly, daily, hourly, . . .
- intensity
- drop-size distribution
- kinetic energy
- $R = EI_{30}$
- Fournier index F'
- precipitation concentration index PCI

(2) Existence of maps:
- region
- scale

(3) Data available as:
- diskette
- reports
- books

(4) Publications related to erosivity.

After receiving the information, the coordinator will contact the persons involved in order to work on the data. The map is scheduled for completion by end of 1999.

Coordinator:
Prof. Dr. ir. Donald Gabriels
Department of Soil Management and Soil Care
University of Ghent
Coupure links 653
B-9000 Ghent
Belgium

Tel: 00-32-9-264 6050
Fax: 00-32-9-264 6247
e-mail: donald.gabriels@rug.ac.be

TASK FORCE ON DATA BANK OF EROSION PLOT STUDIES IN EUROPE

As the ESSC will be co-sponsoring the ISCO '99 conference at West Lafayette, Indiana, USA (23-25 May 1999), a joint ESSC contribution representing different European countries is envisaged in the following way.

The ISCO '99 conference will be organized at Purdue University, National Soil Erosion Research Laboratory, where long-term erosion data have been collected using the so-called 'Wischmeier erosion plots'. This technique of collecting soil loss data, with subsequent development of the Universal Soil Loss Equation, was applied in other parts of the world. The idea has arisen of making an encyclopædia on erosion plots all over the world. The ESSC could take on the task of collecting the information on erosion plots in Europe. All the information could then be presented in report form, book form or on diskette at the conference.

Scientists, researchers and members of the ESSC from any European country are invited to send the following information to the coordinator (please adhere to the following sequence):

- name, institute and address of main researcher(s)
- description of erosion plots:
  - place, coordinates
  - soil
  - topography (slope steepness, length, width)
  - number of plots
  - vegetation cover
  - mulch
  - management
  - other . . .
- period of measurement on the plots
- available data:
  - precipitation
  - erosivity
  - erodibility
  - runoff
  - soil loss
  - nutrient erosion
  - other . . .
- form of data:
  - diskette
  - report
  - book

- aim of research:
  - assessment of erosion risk
  - comparison of erodibility
  - soil conservation practices
  - vegetation cover
  - nutrient balance
  - mapping
  - others . . .
- photographs (slides or prints)
- literature / references related to the plots

All information should be forwarded to the coordinator.

Coordinator:
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SOIL CONSERVATION ACTIVITIES IN HUNGARY

The most important event last year related to soil conservation was the MEDALUS III Fourth Plenary Meeting and Conference in Budapest, 10-15 October 1997.

The Geographical Institute of the Hungarian Academy of Sciences has taken part since 1994 in the MEDALUS (Mediterranean Desertification and Land Use) project. It is a multidisciplinary project funded by Directorate-General XII of the European Community. The primary objective is the understanding of the fundamental processes of desertification in Mediterranean Europe, their varying intensities in space and time, and the methods available to mitigate their impacts on human activity. In addition to the Mediterranean countries, Hungary has been involved in the programme as a region which borders on the Mediterranean where increasing aridity is leading to environmental change.

The meeting in Budapest took place in the headquarters of the Hungarian Academy of Sciences. Some 56 abstracts were submitted, including 30 oral presentations. Most of the papers were concerned with topics like environmentally-sensitive areas, land degradation, long-term field monitoring, basin scale modelling, dynamics of the natural Mediterranean vegetation, regional climatic processes and ephemeral rivers and channels.

The meeting was followed by a field trip to the Kiskunság National Park to look at land degradation processes, sand dunes, alkali environments, reorganization of land ownership, and isolated farmstead patterns. The Park offers a very good possibility for interesting research topics. Large-scale river regulations in the last century and accompanying changes in land use, salinization and blowing sand spoiled the newly-cultivated land in the Hungarian Puszta, once mainly covered with marshland and oak groves. This 'new' landscape of the nineteenth century has undergoing further change caused by a trend towards aridification. Thus the groundwater level is falling and the vegetation of the sand dunes is shifting into the interdunal depressions. The cultivated soils show changes in water budgets, resulting in reduced suitability for agriculture. At the same time, the hydrodynamic properties of the soils lead locally to excess water appearing on the surface, endangering both infrastructure and croplands.

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H-1338 Budapest
Hungary

SOIL CONSERVATION ACTIVITIES IN ROMANIA

Romanian members of the ESSC have been active in 1997 in various research projects and meetings organized by different institutions and learned societies.

The Fifteenth Conference of the Romanian Society of Soil Science was attended by many ESSC members. Some 30 papers on soil erosion, soil pollution and monitorin of soil quality were presented, and various aspects of soil conservation were discusse during a three-day field trip.

A workshop on *Soil tillage in hilly areas* was organized by the Romanian Branch of the International Soil Tillage Research Organization. A dozen papers were presented and visits were arranged to two pilot soil conservation areas (in Perieni, mainly for field crops, and in Fălticeni for orchards). Most discussion focused on recent advances in soil conservation, especially on ways to adjust conservation measures to the private, small-sized farms set up in the last few years.

Research projects on soil erosion, soil pollution, soil compaction and other related issues are continuing in many research institutions and universities. A major project on setting up a national soil monitoring system is coming to the end of its first stage. Some 944 monitoring sites have been identified on a 16 x 16 km grid; soil profiles have been described at each site and soil samples collected and analysed. The processing of the data is in progress and a book summarizing the results will be issue soon. Over the next few years more detailed investigations will be carried out in problem areas. A second stage, analysing all 944 sites is foreseen.

In 1998, the participation of Romanian scientists within the ESSC is increasing rapidly. There are now some 44 Romanian members representing a wide cross-section of the institutions dealing with soil conservation in the country.

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Romania

SOIL CONSERVATION ACTIVITIES IN UKRAINE

In 1997 the number of ESSC members in Ukraine increased by four, bringing the total to 37 members.

Due to the efforts of the Ukrainian membership of the ESSC, a collection of papers has been published in English, representing a scientific report on soil conservation activity in the country. One of the papers was published in the ESSC Newsletter 1997/4.

Four papers from Ukrainian scientists were presented at the International Symposium on *Soil erosion and dryland farming* held in China in September 1997. The papers gave details on the problem of soil erosion in the Ukraine and possible solutions.

Several scientific papers were published during the year including a book, *Agroecological evaluation of Ukrainian lands and crop distribution* under the editorship of Prof V.V.Medvedev (Kiev, 1997, 164 pp.). A collection of documents has also been prepared on the organization of the soil conservation service in Ukraine. At present there are difficulties in the relationships between the Ukrainian government and soil scientists in spite of their common concern about the increasing level of soil degradation.

V.V.Medvedev and S.Y.Bulygin
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310024 Kharkov
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FIFTEENTH CONFERENCE OF THE ROMANIAN SOCIETY OF SOIL SCIENCE

The Fifteenth Conference took place on 26-30 August 1997 in Bucharest. Some 200 soil scientists attended, including guests from Belgium, Bulgaria, Germany, Greece, Hungary, Moldova and Syria. More than 150 papers were presented during plenary, commission and poster sessions.

Some 15 papers were of interest to soil conservation, discussing various questions of erosion control, salinity, pollution (a special symposium was dedicated to this topic) and monitoring of soil quality.

Soil erosion was discussed in meetings of Commission 1 (Soil Physics and Technology) and 4 (Soil Mapping and Classification) as well as in the Soil Pollution Symposium. Experimental results were presented on possible use of soil conditioner for prevention of erosion (P.Voicu et al), landslides in southwestern Romania (Gh.Rogobele et al), water erosion in Bulgaria (V.Vylev et al; S.Rousseva and A.Lazarov) and wind erosion in Bulgaria (G.Dochev).

Two papers on soil salinity (N.Florea et al., and K.Joumaa) resulted from cooperation between Romanian and Syrian scientists and presented results obtained from research in Syria.

The Symposium on Soil Pollution included 23 papers with two additional ones being presented in the Plenary Session of the Conference. Several papers referred to heavy metal pollution in Romanian soils (C.Rauta et al; M.Dumitru et al; R.Lacatusu et al; and S.Udrescu et al), in Bulgarian soils (E.Velbarova et al; L.Satnislavova et al; and A.Arsova) and in water (C.Gheorgiu et al). Soil pollution with oil residues was discussed in papers by Romanian (M.Tottl et al; C.Constantin et al; and L.Latis et al) and Bulgarian (E.Stoianova et al; and N.Dimitrov) scientists. Pollution resulting fro use of sewage sludge and feedlot wastes in agriculture was studied in Romania (M.Dumitru et al) and in Bulgaria (S.Marinova). H.P.Blume (Germany) discussed th matter of redoximorphic soils in urban environments. Other papers considered enzimology as related to pollution (S.Kiss; and D.Pesca et al) and relationships of microflora to salinity (G.Mihalache et al) and to herbicide pollution (A.Voiculescu et al).

Monitoring of soil quality was a widely-discussed subject. Methods now used in Romania (C.Rauta et al; N.Geambasu et al) and in Moldova (V.Cerbari et al) were presented. The need for specific legislation on soil protection was discussed by St.Carstea.

The meeting was followed by a three-day field trip. A dozen soil profiles under

agriculture, forestry and alpine pasture were inspected and three research institutions were visited. Soil degradation and soil conservation were the main topics discussed at each site. Among other topics, structural degradation was noticed on an intensively-cropped vermic chernozem in the Danube Plain. Very severe compaction, erosion and pollution of alpine pasture soils resulting from uncontrolled tourist activity was also noted.

The papers presented at the Conference were published in a four-volume set and are available from the Romanian Society of Soil Science, Bd. Marasti 61, 71331 Bucharest, Romania.

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GENERAL RULES FOR FINANCIAL RESPONSIBILITY FOR ORGANIZERS OF ESSC CONFERENCES

The President of the ESSC has requested that the General Rules be republished in the ESSC Newsletter as a reminder to all members who may be organizing or considering organizing conferences for the ESSC.

1. In general, the financial calculations, the setting of conference fees for members and non-members of the ESSC and the financial outcome (surplus or deficit) is the responsibility of the local organizers.

2. The local organizers may ask the ESSC Executive Committee for an advance to cover pre-conference expenses. The monies involved will be reimbursed to the ESSC after the conference.

3. Under exceptional circumstances, the local organizers may request the Executive Committee to share the financial responsibility of a conference. Such a request must be made at least one year before the date of the conference.

4. In this case, the budget for the conference must be presented to the Executive Committee at least six months before the conference.

5. The Executive Committee will then decide whether or not to support the request.

6. In the event that support is agreed, the Executive Committee and the organizers will decide how any surplus or deficit will be shared.

REQUEST FOR INFORMATION - AGNPS MODEL

DOES ANYONE HAVE EXPERIENCE WITH THE AGNPS 5.0 MODEL?

I AM VALIDATING THIS MODEL WITH RECORDED RAINFALL AND RUNOFF DATA FOR SOME WATERSHEDS IN THE CZECH REPUBLIC.

IN ONE CASE, A WATERSHED OF SOME 80 KM^2, THE MODEL PRODUCES WRONG OUTPUTS. SPECIFICALLY, WHEN TESTING WITH SCS TR 55 AND VARIOUS TYPES OF STORMS, I SIMULATE MORE RUNOFF THAN THE TOTAL RAINFALL APPLIED.

DOES ANYONE HAVE ANY IDEA WHAT MAY BE THE REASON?

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REQUEST FOR INFORMATION - SOILS MAPS FOR THE ROMAN EMPIRE

I AM A PhD STUDENT WORKING ON THE DEVELOPMENT OF ROMAN FORTIFICATIONS ALONG THE FRONTIERS OF THE ROMAN EMPIRE. I AM INTERESTED IN POSSIBLE RELATIONSHIPS BETWEEN FORT PLACEMENT AND SOIL TYPES WITH A VIEW TO SEEING HOW FORTS WERE PLACED TO MAKE BEST USE OF LOCAL AGRICULTURAL RESOURCES.

I NEED TO ACQUIRE SOILS MAPS FOR THE RELEVANT PARTS OF THE MEDITERRANEAN BASIN AND WESTERN EUROPE.

I KNOW THAT THE BRITISH GOVERNMENT PRODUCED A 1:250 000 SCALE SET OF MAPS OF BRITISH SOILS IN THE 1960s BUT I HAVE BEEN UNABLE LOCATE THE PUBLISHERS. FURTHER, I HAVE BEEN UNABLE TO FIND OU WHETHER SIMILAR MAPS EXIST FOR OTHER AREAS.

IF YOU KNOW OF ANY SUCH MAPS, I WOULD BE GRATEFUL FOR ANY ASSISTANCE YOU COULD PROVIDE.

I AM INTERESTED IN:

- *BRITAIN*
- *THE RHINE RIVER AND AREA WITHIN 100 KM OF THE RIVER*
- *THE DANUBE RIVER AND AREA WITHIN 100 KM OF THE RIVER*
- *NORTHERN AFRICA AND EGYPT*
- *THE MIDDLE EAST AS FAR EAST AS BAGHDAD*

David Johnson
2/77 Woniora Road
Hurstville
New South Wales 2220
Australia

REQUEST FOR INFORMATION - HERITAGE SITES

THE HERITAGE CONSERVATION PROGRAM, PUBLIC WORKS CANADA, IS CURRENTLY WORKING ON THE VIMY MEMORIAL SITE AND THE BEAUMONT-HAMEL-NEWFOUNDLAND MEMORIAL SITE, BOTH IN FRANCE.

THE BATTLEFIELD TERRAIN CONTAINS CRATERS, SHELL HOLES AND TRENCHES WHICH ARE IMPORTANT FEATURES OF EACH SITE. THE TERRAIN IS SUBJECT TO ON-GOING DETERIORATION DUE TO THE NATURAL PROCESSES OF EROSION AND DEPOSITION, FOOT TRAFFIC, INAPPROPRIATE MAINTENANCE AND, IN THE CASE OF BEAUMONT-HAMEL, SHEEP TRAFFIC.

THREE MAIN CONDITIONS OF TERRAIN EXIST: FOREST, MANICURED TURF GRASS AND LONG NATURAL-GROWTH GRASSES. ALTHOUGH THE RATE OF DETERIORATION IS UNKNOWN, SIGNIFICANT PROFILE HAS BEEN LOST OVER THE YEARS. IT APPEARS THAT WITHIN 25-30 YEARS, THE SITE WILL BECOME EVEN MORE IMPACTED.

MY SPECIFIC TASK IS TO CONDUCT A LITERATURE REVIEW OF EARTHWORK AND BATTLEFIELD TERRAIN INVESTIGATIONS, MONITORING AND CONSERVATION METHODS. I WOULD LIKE TO KNOW OF ANYONE WHO HAS STUDIED DIFFERENT OPTIONS FOR THIS TYPE OF CONSERVATION.

WHAT ARE THE BEST CONDITIONS FOR CONSERVING THE TERRAIN'S CONTOURS?

ARE ANY REGULAR ACTIONS PARTICULARLY DAMAGING?

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Heritage Conservation Program
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ESSC LINKS WITH RESEAU EROSION

Le Réseau Erosion a pour objectif de diffuser l'information concernant les pro posés par l'érosion, la restauration de la productivité des sols et la gestion dura l'eau, de la biomasse et de la fertilité des sols. Il réunit des chercheurs (45%), formateurs (20%) et des développeurs (35%) de diverses disciplines et leur per publier un français leurs résultats et de participer au grand débat sur le dévelop durable et l'environnement. Il valorise la recherche francophone en même tem le savoir faire de la coopération et rassemble une base documentaire sur l'érosi unique en France. Il a permis à maintes reprises l'établissement de contacts aboutissant à des conventions, des expertises et à la représentation des francopl dans des instances internationales de conservation des sols comme l'ISCO (International Soil Conservation Organization) et l'Association Mondiale de Conservations des Sols (WASWC) dont Dr Eric Roose est vice président.

Actuellement le réseau compte 700 participants répartis dans 52 pays - 300 Européens, 300 Africains, 80 Latino-américains et Québecois, et 10 Asiatiques. Chaque année, depuis 14 ans nous avons organisé « les Journées du Réseau Ero (2 jours de discussion en salle et 1 ou 2 jours sur le terrain) réunissant 50 à 150 participants de 10 à 20 pays sur deux thèmes d'actualité. Nous avons publié 17 bulletins de Réseau Erosion de 400 à 600 pages diffusés à 700 exemplaires, dor contenu est analysé depuis 1994 par CAB International. Par ailleurs nous accue les documents produits par nos membres et sympathisant (une centaine de livres thèses, revues et articles résumés dans le bulletin).

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In order to encourage links between the ESSC and Réseau Erosion, our Vice-President, Prof Dr Ádam Kertész will represent the Society at future meetings of Réseau Erosion.

WORLD OVERVIEW OF CONSERVATION, APPROACHES AND TECHNOLOGIES (WOCAT)

Programme Description

In 1992, WOCAT was launched as a programme of the World Association of Soil and Water Conservation (WASWC). WOCAT is organized as a consortium of various international institutions and coordinated by a Management Board selected from those institutions (see below).

The goal of WOCAT is to contribute to sustainable use of soil and waIn 1992, WOCAT was launched as a programme of the World Association of Soil and Water Conservation (WASWC). WOCAT is organized as a consortium of various international institutions and coordinated by a Management Board selected from those institutions (see below).ter through collection, analysis, presentation and dissemination of soil and water conservation (SWC) technologies and approaches world-wide. While a global assessment of soil degradation problems was presented in the GLASOD study (Oldeman, Hakkeling and Sombroek, 1990), WOCAT aims to make an overview of what is actually being done to reduce soil degradation (erosion in particular) in the world. Its ultimate objective is to increase productivity and food security by promoting the integration of successful soil and water conservation (SWC) into land use systems world-wide. It will look for advantages and disadvantages of SWC systems and try to find answers to why technologies were accepted or rejected by local users, through the collection of comprehensive information on SWC activities.

The WOCAT programme operates on the assumption that

- world-wide, many Soil and Water Conservation (SWC) specialists, land use planners and decision-makers assist local land users in improving soil productivity through SWC activities;
- valuable experience based on these activities is usually not available to people in other locations; and
- in the search for better land and water management and sustainable resource use, sharing experience on a global basis will help to promote SWC and sustainable natural resource management.

WOCAT has developed three comprehensive questionnaires, forming a framework for the evaluation of soil and water conservation and a methodology for data collection at the same time. Data are entered in an interactive database management and analysis system. Although developed as a global system, the WOCAT methodology can also be

applied at regional, national and even more detailed scales.

Regional training and data collection workshops have been organized in Africa, each involving 5 to 8 countries, and national workshops have been held in Thailand and China. Moreover, various meetings have taken place and still continue to be held, to discuss the development and improvement of the methodology based on feedback from workshop participants and others. In spite of the involvement of several European institutions in the methodology development and coordination, no data have been collected in Europe as yet, but institutions that are interested to collaborate are invited to contact WOCAT.

Outputs of WOCAT consist of books and reports on appropriate SWC technologies and approaches, maps of SWC activities, databases, a decision support system and world-wide accessible information in paper or digital format and through the internet. Mid 1998, a CD ROM will be published that contains copies of the questionnaires and databases, as well as preliminary results of studies from Africa, Thailand and China.

List of Collaborating and Funding Institutions (March 1998)

ADB	Asian Development Bank, Manila, Philippines
ASOCON	Asia Soil Conservation Network, Jakarta, Indonesia
CDCS	Centre for Development Co-operation Services, Vrije Universiteit Amsterdam, The Netherlands
CDE	Centre for Development and Environment, University of Bern, Switzerland
CIAT	Centro International de Agricultura Tropical, Cali, Colombia
DLD	Department of Land Development, Ministry of Agriculture and Cooperatives, Bangkok, Thailand
FAO	Food and Agriculture Organisation of the United Nations, Rome, Italy
FSWCC	Fujian Soil and Water Conservation Centre, Fuzhou, China
GTZ	Gesellschaft für Technische Zusammenarbeit, Eschborn, Germany
IBSRAM	International Board for Soil Research and Management, Bangkok, Thailand
ICARDA	International Center for Agricultural Research in the Dry Areas, Aleppo, Syria
ICIMOD	International Centre for Integrated Mountain Development, Kathmandu, Nepal
ICRISAT	International Crops Research Institute for the Semi-Arid Tropics, Niamey, Niger
IDRC	International Development Research Centre, Ottawa, Canada
IRE	Institute of Resources and Environment, University of British

	Columbia, Vancouver, Canada
ISCW	Institute for Soil, Climate and Water of the Agricultural Research Council, Pretoria, South Africa
ISRIC	International Soil Reference and Information Centre, Wageningen, The Netherlands
OSS	Observatoire du Sahara et du Sahel, Paris, France
PASOLAC	Programa de Agricultura Sostenibile en Laderas de América Central, Managua, Nicaragua
RELMA	Regional Land Management Unit (former RSCU), SIDA, Nairobi, Kenya
SDC	Swiss Agency for Development and Cooperation, Bern, Switzerland
UNEP	United Nations Environment Programme, Nairobi, Kenya
WASWC	World Association of Soil and Water Conservation, Ankeny, USA

WOCAT Management Board: CDE, FAO, ISRIC, OSS, DLD

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Pollution of soils with oil and brine (salty water) and methods for their amelioration

Toti S. Mihai

University of Agricultural Sciences and Veterinary Medicine (USAMV), Bucharest, Romania, 1997

The thesis is concerned with the problem of soil pollution with crude oil, oil products and wastes and salty water (brine) resulting from the oil industry in Romania where more than 50,000 ha are affected by these pollutants. Under the conditions of such pollution, the soil becomes unproductive and has to be completely removed from economic activity. The thesis is the first complete assessment of environmental pollution with oil and associated salty water at national level; it describes the pollution process and its effect on soil fertility.

The thesis presents the methodology for field, greenhouse, laboratory and office studies to assess the degree of soil loading with pollutants in the vicinity of oil and gas derricks. Based on soil taxonomic units identified in the field, the distribution of polluted areas is examined for derricks, counties and the entire country. The inorganic compounds of the colloidal complex in the soils and the physical, chemical and biological changes to soils under the impact of pollution with oil and salty water are discussed.

Methods were developed to classify soils according to their oil content (validated by experiments carried out in the greenhouse) and the groundwater content in oil. Oil pollution types were also classified. Soil management techniques using biological ameliorative methods (based on oil biodegradation) were elaborated and tested. After application, the soil fertility returns closer to that of unpolluted soils.

Research concerning the chemical behaviour of fluorine in calcareous and non-calcareous soils and its pollutant effect

Gamenţ Eugenia

Research Institute for Soil Science and Agrochemistry (RISSA), Bucharest, Romania, 1997

The thesis describes field, laboratory and greenhouse studies on the chemical

behaviour of fluorine in soils and its pollutant effect. The research was made on non-calcareous soils from around the Slatina Aluminium Plant and the ROMFOSFOCHIM Chemical Fertilizers Plant from Valea Călugărească and on calcareous soils from around the Năvodari Chemical Fertilizers Plant.

The chemical behaviour of fluorine was studied in all three areas under the respective physical, chemical and biological conditions. Areas with maximum pollution were marked, depending on the degree of loading of soils and plants with fluorine. The distribution of fluorine throughout the soil profile was analysed for both total and soluble forms. The solubility of fluorine depended on clay, pH and $CaCO_3$ content.

The results of laboratory experiments are presented concerning the adsorption capacity of some soils for this chemical element along with the results of greenhouse experiments on the behaviour of fluorine in the soil in the case of two chemical compounds, NaF and KF and its negative effects on vegetable yields. In the case of NaF in the presence of CaO, it was noticed that the direct toxic action of fluorides was completed by the change of several physical, chemical and biological indicators only for very large amounts of total fluorine. Results are also presented on the distribution of assessment classes for the content of soluble fluorine for the whole of Romania within the level I monitoring (16 x 16 km grid) on 855 sites.

Theoretical and applied principles of rational use of sloping irrigated agro-landscapes of the southern and droughty steppes of Ukraine

S.G.Cherny

National Agrarian University, Kiev, 1997

The thesis examines the quantification of water erosion, erosion resulting from irrgation and the rate of soil formation in the sloping agro-landscapes of the southern and droughty steppes of Ukraine. The correlation between the rates of erosion and soil formation is the basic criterion for determining soil protection measures. A logical mathematical model of water erosion has been applied to irrigated conditions in the area. Theoretical and seasonal distributions of hydrometeorological parameters related to water erosion have been established and the erosion resistance of irrigated soils determined. The results of the mathematical model are used as a base condition to determine the effectiveness of using sewage within the irrigation water as an amelioration technique.

The organization of soil protection and soil amelioration measures as a fundamental stage in the cultural evolution of agro-landscapes (a theoretical evaluation of practical activity in the field)

V. I. Burakov

Kharkhov State University, Kharkhov, 1997

The development of agricultural landscapes must bring about changes from the present destructive agricultural practices to systems that are self-regulating, stable, self-restoring and self-renewing, such as are characteristic of the natural landscape. Such systems involve permanent soil protection and soil amelioration measures like shelterbelts, and contour and other across-slope structures for removing surface runoff. These measures form and fix the territorial layout of the agro-landscape, effectively determining the conditions for agriculture, especially the provision of water for plant growth.

EUROPEAN SOCIETY FOR SOIL CONSERVATION SYMPOSIUM

MASS MOVEMENT AND EROSION IN ALPINE AREAS

Graz, Austria, 1-4 October 1998

Programme:
October 1: Travel to Graz and introductory session
October 2: Sessions and poster presentation
October 3: Excursion around Graz concerning mass movement and soil erosion by water
October 4: Sessions, Council Meeting and depart.

Oral presentations: Each presentation will be allocated 20 minutes including time for discussion
Poster presentations: Posters will be displayed in the main room. Time will be allowed for discussion of the presentations
Language: The official language of the symposium will be English

Accommodation:	Raiffeisenhof, Graz
Registration:	ASch 700.00
Lunch (without drinks):	ASch 100.00 approximately
Dinner (without drinks):	ASch 70.00 approximately
Bed and breakfast (per person):	ASch 425.00 (single room per night)
	ASch 375.00 (double room per night)

Maximum number of participants: 40

If you are interested in receiving further information, please contact:

O.Nestroy
Institut für Technische Geologie
Technische Universität Graz
Rechbauerstraße 12
A-8010 Graz
Austria

Please indicate if you would like to: (a) offer a lecture
(b) submit a poster

• **24-30 August 1998 - Commission on Land Degradation and Desertification of the International Geographical Union seminar and field trip on land degradation and desertification**
Spain and Portugal

The seminar comprises a field trip through some Spanish (Extremadura and Sierra Morena) and Portuguese (Alentejo) regions affected by land desertification and degradation. It begins on 24 August in Sevilla and ends in Lisbon on 30 August; a one-day paper and poster session will take place in Evora on 29 August. Seminar leads into the Regional Conference of Lisbon on *The Atlantic: past, present and future* which takes place from 30 August to 2 September.

Registration: PTE 160,000 (regular participant), PTE 145,000 (student or accompanying person)

Further details from: Celeste Coelho, Departamento Ambiente e Ordenamento, Universidade de Aveiro, P-3800 Aveiro, Portugal
tel: + 351 - 34 - 370831
fax: + 351 - 34 - 29290
e-mail: coelho@dao.ua.pt

• **12-16 April 1999 - Second international symposium on tillage erosion and tillage translocation**
Catholic University of Leuven, Belgium

Although papers dealing with any aspect of tillage erosion and translocation will be considered, special attention will be given to: experimental investigations; models; effects on soil properties and soil quality; relative and absolute contribution to land degradation at various spatial and temporal scales in various agricultural systems; interaction with other land degradation processes; and prediction of future effects. Symposium consists of 2-3 days of papers and poster presentations and 1-2 days of excursion in the Belgian loam belt. The language of the Symposium is English.

Registration fee: BEF 5000 (includes conference materials and excursions).

Deadlines: Abstracts - 30 November 1988.

Further details from: Gerard Govers, Laboratorium voor Experimentele Geomorfologie, Katholieke Universiteit Leuven, Redingenstraat 16, B-3000 Leuven, Belgium.
tel: + 32 - 16 - 326423
fax: + 32- 16 - 326400

e-mail: gerard.govers@geo.kuleuven.ac.be

Also from: Timothy Quine (t.a.quine@exeter.ac.uk); David Lobb (dlobb@cuslm.ca); Jean Poesen (jean.poesen@geo.kuleuven.ac.be); Wouter van Muysen (wouter.vanmuysen@geo.kuleuven.ac.be).

• **19-21 April 1999 - International Erosion Control Association's first Asia-Pacific conference and trade exhibition on ground and water bioengineering for erosion control and slope stabilization**
Shangri La's EDSA Plaza Hotel, Manila, Philippines

Papers and presentations accepted from any professionals (engineeers, landscape architects, consultants and other design professionals, researchers and academics, government personnel and contractors) involved with bioengineering in Asia-Pacific environments in the following categories: infrastructure and transport development; forestry; mining; agriculture; rivers, canals and shorelines; watershed management; socio-economic. Conference includes technical papers, poster presentations, workshop, panel session, short courses. Official conference language is English.

Deadlines: Abstracts - 1 May 1998

Further details from: First Asia-Pacific Conference on Ground and Water Bioengineering, c/o Philippine Congress Organizing Center, 2nd Floor Physicians' Tower, 633 United Nations Avenue, P O Box 4486, Ermita, Manila, Philippines.
tel: + 63 - 2 - 521-4844 or + 63 - 2 - 522-0541 to 48
fax: + 63 - 2 - 522-1090 or + 63 - 2 - 521-2831
e-mail: pcoc@manila-online.net

Also visit the International Erosion Control Association's web site:
http://www.ieca.org

• **12-15 May 1999 - Soil conservation in large-scale land use**
Bratislava (Drotárska cesta), Slovakia

Topics: physical soil deterioration in large-scale farming; physical soil deterioration in forest land management; chemical and biological soil determination; soil conservation - legislative, social and environmental aspects. Excursions: 1 full day and one ½-day to see erosion phenomena and other ecological impacts. Meeting held in collaboration with ISSS.

Further details from: Dr Pavel Jambor, President of the Soil Science Society of Slovakia, Soil Fertility Research Institute, Gagarinova 10, 827-13 Bratislava, Slovakia.

tel: + 421 - 7 - 5220866 or + 421 - 7 - 235626, 292000, 292021
fax: + 421 - 7 - 295487 or 5227485

• **4-9 July 1999 - Fifth international meeting on soils with Mediterranean type of climate (IMSMTC)**
Barcelona, Spain

Main themes: genesis, properties, classification, fertility and conservation of soils in regions with a Mediterranean climate. Topics include soil degradation (erosion, pollution, depletion of organic carbon, salinization); soil resilience; soil restoration (remediation, revegetation). In addition to papers on the Mediterranean area, contributions are welcome relating to California, Chile, South Australia and South Africa. Language of the Conference is English.

Registration: special rates before 30 January 1999 - Ptas 50,000 (members of ISSS, SECS, ESSC); Ptas 56,000 (normal); Ptas 22,000 (students). Fees include conference dinner. Post-meeting tour: Ptas 8,000.

Deadlines: Abstracts - 30 November 1998.

Further details from: Prof J.Bech, Chair of Soil Science, Department of Plant Biology, Faculty of Biology, University of Barcelona, Avenida Diagonal 645, E-08028 Barcelona, Spain.

tel: + 34 - 3 - 4021455
fax: + 34 - 3 - 4112842
e-mail: jabechbo@porthos.bio.ub.es

Note: The ESSC is a sponsoring partner of this meeting. Reduced registration fees are available for ESSC members.

CONTRIBUTIONS TO ESSC NEWSLETTER - GUIDE TO AUTHORS

Contributions are welcome from both members and non-members of the ESSC.

Please use the Newsletter for your reports and announcements of any items which may be of interest to members of the Society: e.g.

- short reports on erosion research and conservation projects,
- reports of congresses, symposia and workshops,
- letters in response to items in previous newsletters,
- requests for information,
- announcements of forthcoming meetings,
- theses, and
- publications.

Contributions are accepted in English, French, German or Spanish. They will be published in the language submitted without translation.

Generally, contributions should be no longer than 4-5 pages of the Newsletter or about 2,000 words.

The Newsletter also publishes occasional collections of papers around a theme. If you have suitable material for a thematic issue, please contact the Editor-in-Chief before preparing any material.

Manuscripts should be sent to the Editor-in-Chief both as printed 'hard-copy' and on diskette. Please indicate which word processing package has been used and, if possible, save text in Rich Text File (RTF) format or as an ACII-text file.

The manuscript should be arranged in the order: title, text (use no more than two levels of headings), references, figures, tables, photographs.

All photographs and figures should be sent as hard copy originals.

References in the text should be cited as author (year) or (author, year).

In the list of references, titles should be arranged in alphabetical order, according to the author's surname, and chronologically per author. Please use the following style: Author's surname; author's initials; year; title of paper; name of journal, book or multi-authored book with name(s) of editor(s); volume number and page numbers (for journals) or pages, publisher and place of publication (for books).

Where the references are published in either the Cyrillic or Greek alphabets, please

give the title of the paper, journal or book in the original alphabet with an English translation in parenthesis.

Please give journal titles in full. Do not use abbreviations.

Examples:

Huth, A. 1994. The use of ERDAS in soil erosion modelling. *Journal of Soil and Water Conservation* 52: 144-151.

Favis-Mortlock, D.T. and Savabi, M.R. 1996. Shifts in rates and spatial distributions of soil erosion and deposition under climate change. In Anderson, M.G. and Brooks, S.M. (eds), *Advances in hillslope processes. Volume 1*. pp. 529-560, Wiley, Chichester.

Nikolov, S. and Daskalov, J. 1982. Исследование влияния энергии осадков на поверхностный сток и эрозию почвы (The study of the influence of precipitation energy on the surface runoff). In Tregubov, P.S. (ed), *Эрозионные процессы и почвозащитные меропиятия в странах - членах сэв (Erosion processes and soil erosion control in the COMECON countries)*. pp. 33-39, Dokuchaev Publishing House, Moscow.

Contributions:

Contributions in English should be sent to: R.P.C.Morgan, ESSC Editor-in-Chief, Cranfield University at Silsoe, Silsoe, Bedford MK45 4DT, U.K.

Contributions in French should be sent to: H.Vogt, Unité de Géeographie, Université Louis Pasteur, 3 rue de l'Argonne, F-67083 Strasbourg, France.

Contributions in German should be sent to: K.Auerswald, Institut für Bodenkunde, T.U.München, Hohenbachermstraße, D-85354 Freising-Weinhenstephan, Germany.

Contributions in Spanish should be sent to: J.Gallardo Díaz, Escuola Tecnica Superior Ingenieros Agrónomos, Ciudad Universitaria, E-28040 Madrid, Spain.

AIMS OF THE SOCIETY

The ESSC is an interdisciplinary, non-political association, which is dedicated to investigating and realising 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,*
- *by informing the public about major questions of soil conservation in Europe,*
- *by 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 geo-sciences, agriculture and ecology; farmers; agricultural planning and advisory boards; industries and governmental institutions.

ZWECK DER VEREINIGUNG

Die ESSC ist eine 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 Öffentlichkeit 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 problèmes 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.

OBJETIVOS DE LA SOCIEDAD

La ESSC es una asociación interdisciplinar, no-política, dedicada a la investigación y a la realización de acciones orientadas a la conservación del suelo en Europa.

La ESSC persigue sus objetivos en los sectores científicos, educacionales y aplicados, en al ámbito europeo:
- *promocionando la investigación sobre degradación, erosión y conservación de suelos,*
- *informando 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.

YES, I WANT TO JOIN THE ESSC !

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LAST NAME .....

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The ESSC membership contribution is 50,00 DM per year. For members in Croatia, Czech Republic, Hungary, Poland, Slovakia and Slovenia the contribution is 20.00 DM per year. For members in the other "former East European" countries membership is free for 1998. Students are eligible for a 50% reduction in the membership fee for two years (written confirmation of student status should be signed by your supervisor).

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Please send the form to the ESSC Treasurer, Dr K.Helming, ZALF, Eberswalder Strasse 94, D-15374 Müncheberg, Germany