

# NEWSLETTER

2/2016

**ESSC** EUROPEAN  
SOCIETY for  
SOIL  
CONSERVATION

Visit the ESSC Website: <http://www.soilconservation.eu>



Valcioaia gully from the Falcu Hills, Moldavian Plateau, Romania. Photo taken by Ion Ionita, Iași, (Romania) on 21 May 2014.

# E.S.S.C. NEWSLETTER 2/2016

## Executive Committee of the E.S.S.C.

**President** Prof. Dr Carmelo Dazzi  
SAGA – Dipartimento dei Sistemi  
Agroambientali  
Facolta di Agraria  
Viale Delle Scienze 13  
I-90128 Palermo, ITALY  
carmelo.dazzi@unipa.it

**Past-President** Prof. Dr José Luis Rubio  
Centro de Investigaciones sobre Desertificación –CIDE  
(CSIC, Universitat de Valencia, Generalitat Valenciana)  
Carretera Moncada-Naquera Km 4,5, Apartado Oficial  
E-46113 Moncada (Valencia), SPAIN  
jose.l.rubio@uv.es

**Vice-Presidents** Prof. Dr Michael A. Fullen  
Faculty of Science and Engineering  
The University of Wolverhampton  
Wulfruna Street  
Wolverhampton WV1 1LY, UK  
E-mail: m.fullen@wlv.ac.uk

Prof. Dr Ádám Kertész  
Geographical Research Institute  
Hungarian Academy of Sciences  
Budaörsi útca 45  
H-1112 Budapest, HUNGARY  
kertesza@helka.tif.hu

Dr Peter Strauss  
Institute for Land and Water Management Research  
Bundesamt für Wasserwirtschaft  
Pollnbergstraße 1  
A-3252 Petzenkirchen, AUSTRIA  
peter.strauss@baw.at

**Secretary** Dr Edoardo A. C. Costantini  
CRA-ABP  
Agriculture Research Council  
Agrobiology and Pedology Research Centre  
Piazza M. D'Azeglio 30  
I-50121 Firenze (Florence), ITALY  
edoardo.costantini@entecra.it

**Treasurer** Prof. Dr Wim Cornelis  
Department of Soil Management  
Ghent University  
Coupure Links 653  
B-9000 Ghent, BELGIUM  
Wim.Cornelis@UGent.be

**Co-Treasurer** Prof. Dr Donald Gabriels  
Department of Soil Management  
Ghent University  
Coupure Links 653  
B-9000 Ghent, BELGIUM  
Donald.Gabriels@UGent.be

## Members

Prof. Dr Lilian Øygarden, Aas, NORWAY

Prof. Dr Ildefonso Pla Sents, Lleida, SPAIN

Prof. Dr Thomas Scholten, Tübingen, GERMANY

Dr Saulius Marcinkonis, Vilnius, LITHUANIA

Prof. Dr Mihail Dumitru, Bucharest, ROMANIA

Dr Endla Reintam, Tartu, ESTONIA

## The NEWSLETTER is published by the Editorial Board:

**Editor in Chief** Prof. Dr Michael A. Fullen  
Faculty of Science and Engineering  
The University of Wolverhampton  
Wulfruna Street  
Wolverhampton WV1 1LY, UK  
m.fullen@wlv.ac.uk

**Assistant Editor** Dr Colin A. Booth, University of the West of England (UWE), Bristol, UK  
colin.booth@uwe.ac.uk

Produced and composed by the Editor-in-Chief at The University of Wolverhampton (U.K.)

Printed by National Agriculture and Food Centre – The Soil Science and Conservation Research Institute  
„NPPC – Vyskumny ústav pôdoznanectva a ochrany pôdy“ (Slovakia).

# CONTENTS

<b>Guest Editorial:</b> Zinc around us (Saulius Marcinkonis, Vilnius, Lithuania).....	3
Issues of Conservation and Land Management in Iceland (Andrés Arnalds, Hella, Iceland).....	7
Soil Protection with Permaculture Gardening (Ana Vovk Korže and Silvija Zeman, Maribor and Čakovec, Slovenia) .....	12
Alluvial fans on Mars (source: NASA).....	20
<b>Conference Reports .....</b>	<b>21</b>
1 <sup>st</sup> Afro-Mediterranean Soils Conference: 'Constraints and Potentialities for Durable Management,' Marrakech (Morocco), 18 – 19 December 2015 (José Luis Rubio, Valencia, Spain) .....	21
4 <sup>th</sup> European Biochar Winter School: 'Biochar applications: current developments and future perspectives,' Palermo (Italy), 9 – 12 February 2016 (Pellegrino Conte, Palermo, Italy).....	26
<b>Book Reviews .....</b>	<b>28</b>
Review of: M.A. Fullen, J. Famodimu, T. Karyotis, C. Noulas, A. Panagopoulos, J.L Rubio and D.R. Gabriels (Eds) (2015). Innovative Strategies and Policies for Soil Conservation, Advances in GeoEcology 44 (Ion Ionita, Iași, Romania).....	28
Review of the Natural Hazards Special Issue on 'Gully Erosion as a Natural and Human- Induced Hazard:' based on Symposium Papers presented at the '6 <sup>th</sup> International Symposium on Gully Erosion in a Changing World,' held in Iași (Romania), 06 – 12 May 2013 (Jeff Shellberg, Nathan, Queensland, Australia).....	30
<b>The ESSC Newsletter and supporting Ph.D. research.....</b>	<b>35</b>
ESSC Newsletter and ISSN Number (2413-9297).....	36
<b>Recent publications by ESSC Members.....</b>	<b>36</b>
Publications.....	37
<b>ESSC membership list and contact details .....</b>	<b>39</b>
Web Based Bulletin Board.....	39
ESSC membership list and contact details.....	39

**Forthcoming dates for your diary... ..40**

The '1<sup>st</sup> World Conference on Soil and Water Conservation under Global Change'  
(encompassing the 8<sup>th</sup> Congress of the ESSC) to be held in Lleida (Spain)  
from 12 – 16 June 2017.....40

Reminder for the next issue:.....43

Some Closing Thoughts.....44

This issue of the ESSC Newsletter presents the 27<sup>th</sup> of our 'Guest Editorials.' This is an opportunity for leading authorities in the soil science community to offer their perspectives on issues relating to soil conservation. This contribution is from Ion Ionita from Iași, Romania.

Catena Verlag has kindly agreed to publish a book based on Guest Editorials. This will be entitled '**Global Perspectives on Soil Conservation.**' This will form part of the Catena 'Advances in GeoEcology' series. In principle, it is agreed that there will be future volumes. Work on Volume 1 includes the first 25 Guest Editorials of the ESSC Newsletter.

### **GULLY EROSION AS AN IMPORTANT ENVIRONMENTAL THREAT IN THE MOLDAVIAN PLATEAU OF EASTERN ROMANIA**

---

**Ion Ionita**  
**Department of Geography**  
**Faculty of Geography and Geology**  
**"Alexandru Ioan Cuza" University of Iași**  
**Carol I Blvd., No. 20A**  
**700505 Iași**  
**Romania**

The Moldavian Plateau covers ~27,000 km<sup>2</sup> and occupies most of eastern Romania. It extends between the Eastern Carpathians, the Moldavian Sub-Carpathians, the north-east of the Romanian Plain, and the Prut and Danube valleys. It is regarded as the broadest and most typical plateau of Romania (Bacauanu *et al.*, 1980; Ungureanu, 1993). Its major units are the Suceava Plateau, Jijia Rolling Plain in the northern part and the Barlad Plateau and Covurlui High Plain in the central-southern area. The Barlad Plateau is the most extended high unit of the Moldavian Plateau and covers >8,000 km<sup>2</sup>. The Plateau comprises three major subunits: the Central Moldavian Plateau in the northern area, the Tutova Rolling Hills, west of Barlad Valley and the Falciu Hills, east of Barlad Valley (Figure 1).

From the stack of the Paleozoic, Mesozoic and Tertiary sedimentary strata, Middle Miocene (Sarmatian), Late Miocene (Meotian and Pontian) and Pliocene (Dacian and Romanian) layers outcrop due to erosion. The four sub-stages of the Sarmatian (Buglovian, Volhinian, Bessarabian and Kersonian) layers are dominant and occur successively by age from north to south. Clays, marls, sands and subsequent sandstones and oolitic limestones accumulated during the Sarmatian. The thickness of layers varies between 800 m in the east to 2600 m in the west (Jeanrenaud, 1961, 1971; Ionesi, 1989, 1994; Ionesi *et al.*, 2005). Then, the younger and more friable layers of Late Miocene and Pliocene, typical to the southern half of the area, consist of sands intercalated with clay seams, accumulated conformably in cross-bedded, coastal-deltaic facies. In contrast to the subsidence during the Carpathian Orogen, the strata dip slightly (<1°) to the south-east. Neotectonic uplift can be correlated with the Valachian phase, which affected the entire Moldavian Plateau (Jeanrenaud, 1961, 1971).

The Moldavian Plateau appears as an aggregate of platforms, hills and rolling hills (collines), whose surface altitudes decrease towards the south-south east. The collinar-hilly topography is strongly related to both the local characteristics of the fluvio-denudational

system developed on a monocline structure and the influence of lithology (Bacauanu *et al.*, 1980; Ungureanu, 1993). Neotectonic uplift of the Moldavian Plateau resulted in general orientation of the main drainage net and the interfluves from NNW to SSE. To the north-west of the region, the peak of the highest hill, Ciungi, is 688 m in altitude and located in the piedmont sector, followed by the Suceava Plateau (587 m in Dealul Mare-Harlau) and the Barlad Plateau (561 m on Dorosanu Hill). Altitude declines progressively south-eastward to <15 m in the Prut and Siret floodplain near Galati.

Due to its geographical position, the Moldavian Plateau has a temperate-continental climate, a feature emphasized by the major inter-annual fluctuations of temperature and precipitation. Summers are hot and winters cold, so that the absolute temperature amplitudes usually vary between 66–72°C. The mean annual temperature decreases with increasing altitude and latitude, from >10.0°C, at Pechea, in the south of the Covurlui Plain, to 6.5°C, at Straja, in the Radauți Depression. However, the most common values are between 8.0–9.5°C. Mean annual precipitation exceeds 700 mm on Ciungi Hill, within the Piedmont Plateau, and in the southern extremity of the Covurlui High Plain it is <450 mm. The higher subunits (e.g. the Piedmont Plateau, the Suceava Plateau and the Central Moldavian Plateau) usually receive >550–600 mm per year, whereas the rolling plains and valley couloirs receive <500 mm. Usually, ~60–75% of precipitation falls during the warm season (April-September).

Bio-pedo-geographically, four vegetation types have been differentiated successively from north-west to south-east. These changes are responses to both progressively decreasing altitude and the progressively increasing continentality of the climate. The vegetation types are: mixed forest, deciduous forest, silvo-steppe and steppe. Usually, native forest vegetation prevails at altitudes >200 m a.s.l., whereas at lower altitudes, silvo-steppe and steppe meadows occur (Bacauanu *et al.*, 1980; Ungureanu, 1993). Accordingly, two important soil classes have been identified and related to the distribution of the main phyto-climatic types. These are: Luvisols, specific to forest areas, and Chernisols (Chernozems in the WRB System), generally associated with the silvo-steppe and steppe (ICPA-SRTS, 2012).

The structural and lithologic landforms express themselves depending on the extent to which denudational processes highlight the different mechanical resistance of rocks within the monocline structure. When erosion-resistant sedimentary rocks, such as oolitic limestone and Sarmatian sandstone outcrop or occur near surfaces, plateaux or structural platforms develop. The most representative examples are grouped in the Suceava Plateau (Dragomirna Plateau, Falticeni Plateau and Dealul Mare-Harlau) and the Central Moldavian Plateau (Repedea-Paun, Scheia-Ipatele and Tansa), which explain why they are at the highest altitudes.

The morphological-structural essence of the Moldavian Plateau, as a significant unit developed on the general monocline structure, is expressed by characteristic forms of asymmetry, especially cuestas. These are strongly connected with subsequent valleys. Along most consequent valleys in the Moldavian Plateau, north-south oriented, smaller cuestas with west facing fronts can be identified (Ionita, 2000a). Their genesis resulted from a subsequent eastward dipping of ~3 m/km induced by the more intense tectonic uplifting at the contact with the Carpathian Orogen.

Typical of the Moldavian Plateau is the contrast between the flatness (smoothness) of hill tops, sometimes structural in nature, and the steep slopes with dynamic degradation processes. Soil erosion is widely distributed, and across the entire Moldavian Plateau it is estimated that total erosion usually varies between 15–30 t/ha (Motoc, 1983). Mass movements, especially landslides, are very typical and have varied affects, mostly on the Central Molda-

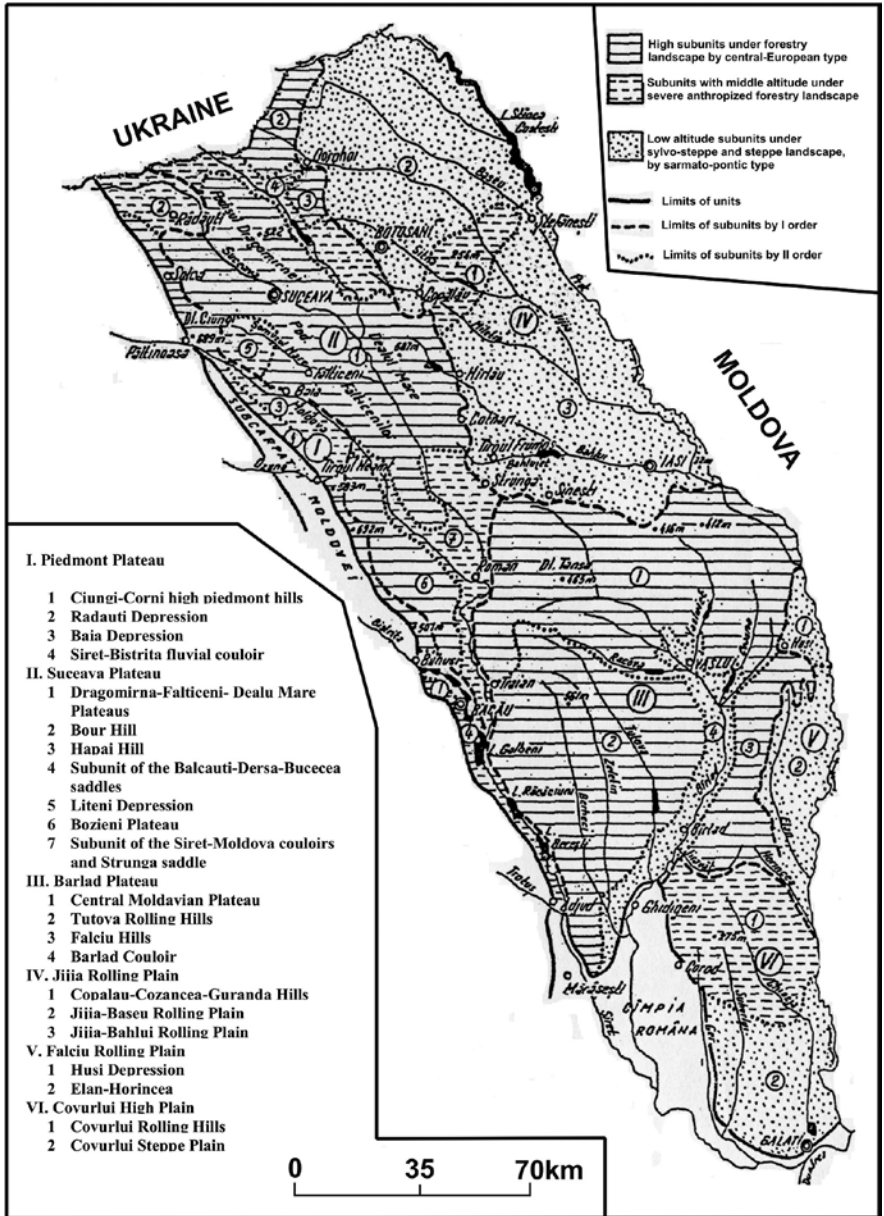


Figure 1: The physical-geographical subunits from the Moldavian Plateau of eastern Romania (Source: Ungureanu, 1993).

vian Plateau, Jijia Rolling Plain, Suceava Plateau and Tutova High Rolling Hills. For example, half of the Central Moldavian Plateau is covered with landslide debris and most of them are inactive (stable) landslides, no matter whether they are dormant, relict or stabilized by land improvements (Ionita *et al.*, 2014).

The study area is highly susceptible to rill and gully erosion, which damages the local landscape by depleting soil resources and decreasing agricultural productivity. Two main gully-eroding areas have been distinguished in the Moldavian within brackish strata, where small discontinuous gullies, usually located on valley-sides, prevail. Secondly, the southern area, extending around the town of Barlad, is typified by an impressive plateau landscape (Radoane *et al.*, 1992, 1995). Firstly, the northern area covers the Jijia Rolling Plain. Here continuous, valley-bottom gullies have developed into remarkable shapes on the loamy-sandy to sandy-loamy substrata within the Falcu Hills, Tutova Rolling Hills and Covurlui Rolling Hills. In between, in the Central Moldavian Plateau, gullying is much more limited in the context of more erosion-resistant substrata and forest cover compared with the other subunits of the Moldavian Plateau.

In order to obtain a clear image of the development of continuous gullies, 13 gullies were first sampled by Ionita (2000b, 2003, 2006) near the town of Barlad. Most have catchments <560 ha. Linear gully head advance, areal gully growth and eroded material rates were quantified for three periods (1961–70, 1971–80 and 1981–90). The mean gully rate advance ranged from 19.8 m yr<sup>-1</sup> during the 1960s and 12.6 m yr<sup>-1</sup> in the 1970s to 5.0 m yr<sup>-1</sup> during the 1980s. The results indicate that gully erosion rates have decreased since 1960. This decline in gullying results from changes in rainfall distribution and the increased influence of soil erosion control. Some authors have advocated that the decrease in gully growth rate results from the associated decrease in gully catchment area and consequent runoff (Graf, 1977; Nachtergaele *et al.*, 2002). However, the low coefficient of determination ( $R^2 = 0.44$ ) does not indicate a strong correlation between contributing drainage area and the mean annual gully head retreat from 12 catchments, each  $\leq 1000$  ha, near the town of Barlad. The mean gully head advance of 12.5 m yr<sup>-1</sup> between 1961–1990 was accompanied by a mean areal gully growth of 366.8 m<sup>2</sup> yr<sup>-1</sup> and a mean erosion rate of 4,168 t yr<sup>-1</sup>.

The mean annual regime of gullying was documented through periodic surveys of six continuous gullies over the period 1981–96 and exhibited pulsatory development. Gully development exhibited great fluctuations that ranged from stagnation to mean annual peak values of 19.1 m gully head retreat and 304.0 m<sup>2</sup> areal gully growth during 1988. The four rainy years of 1981, 1988, 1991 and 1996 contributed 66% of total gully growth. During this 16-year monitoring period, 57% of total gullying occurred during the cold season, with the remainder occurring during the warm season. The critical period for gullying is the four month period between 15–20 March and 15–20 July.

As regards small, discontinuous gullies, results have indicated that during a variable period of 6–18 years the mean gully head retreat was 0.92 m yr<sup>-1</sup> and ranged from 0.42–1.83 m yr<sup>-1</sup>. The mean areal gully growth was 17.0 m<sup>2</sup> yr<sup>-1</sup>, varying between 3.2–34.3 m<sup>2</sup> yr<sup>-1</sup>. Both values indicate slower erosion rates. Most gullies across the region have been initiated by the inappropriate layout of the road network.

A recent detailed study, on gullying in a small but representative area, the Chioara Catchment, is particularly illustrative (Ionita *et al.*, 2015). It is almost 3,000 ha in size and 15.6% average slope, located in the central part of the Falcu Hills, ~100 km south of the City of Iași and 25 km NNE of Barlad. The total gully area in Chioara Catchment is 66.4 ha (2.2% of the total). Gullies from the five study sub-catchments (Puriceni-Bahnari, Valcioaia, Tumba, Cercu-



riaria and Valea Satului) cover 44.3 ha (66.7% of the gullied area), and the associated recent landslides extend over 39.9 ha.

Considering the 1960 aerial flight as a benchmark reference, two periods of time have been distinguished (pre-1960 and 1961 – 2012) for assessing major land degradation characteristics. Surprisingly, half of the gully areal growth has occurred since 1961, although most of the gully systems exhibited higher increments by 1960. These equal weights are due to the gully contribution along the right tributaries of the Puriceni Valley, because 74% of the areal growth of Puriceni trunk gully had also occurred by 1960. As for the new landslides triggered by gullying, some 77.5% of the total landslide area occurred during the 1961 – 2012 period.

The total length of the gully systems (apart from the ephemeral gullies and many, more faintly visible, discontinuous gullies) within these five sub-catchments (2,334 ha in size) is 23.60 km. In addition, the total length of the gully network in Chioara Catchment is 33.20 km (mean density 1.11 km km<sup>-2</sup>) from which the five sub-catchments account for 71 %.

Despite decreasing catchment area and tendency of gullying over the last half century, gully erosion still remains problematically high and the main driving factors are associated with the aggradation of valley-floors and changes in land management. Top-soil along the valley-bottoms mainly consist of very recent alluvial blankets, usually 2–3 m deep, but in places can attain ≤4.0 m. This process of aggradation along the non-gullied valley-bottoms has been significantly connected to severe soil erosion when land was converted to arable use after deforestation. The accelerated aggradation of valley-floors resulted in rises in the local elevation, increases in the potential energy of the head-cut and, thus, promoted further gully erosion. By using the <sup>137</sup>Caesium dating technique, Ionita *et al.* (2015) estimated a mean sedimentation rate of 2.23 cm yr<sup>-1</sup> for the 47 year period (1963 – 2010) in the alluvial blanket along the right bank of Puriceni gully. If this rate could be considered relatively constant, then the age of the alluvial blanket of 340 cm is 150 years at the profile site. That means the start of recent sedimentation/aggradation along the Puriceni valley-bottom is around the year 1860.

Considering the most important milestones in modern Romanian history (Treaty of Adrianople of 1828 – 1829 and Land Reforms of 1864 and 1921), the breakdown of the forest in the Falcu Hills area was quite similar to the pattern in the Tutova Rolling Hills, where the extent of forest sharply decreased from 47% during the early 19<sup>th</sup> century to 22% in 1893 and 19% of the total area in 1970 (Poghirc, 1972). Based on the 1893 topographic map of Moldavia at a scale of 1:20,000 and the aerial flight of 2009, it was possible to show that at the end of the 19<sup>th</sup> century forest accounted for 27.5% of the total and decreased to 12.5% in 2009 (if the black locust (*Robinia pseudoacacia*) plantations, established during the 1970s and 1980s, are included). Since the Falcu Hills area had larger private properties, some of them >1,000 ha, we suppose that the forest covered ~55 – 60% of the study area in the early 19<sup>th</sup> Century.

Land management caused major changes in the native vegetation cover. By the 19<sup>th</sup> century it was a period of quiescence, with progressive moderate clearing of vegetation, mainly for livestock grazing. The sharp increase of population, coupled with other particular socio-economic factors, favoured rapid and drastic changes in land use over a century (1830 – 1930). This time, deforestation focused on conversion of forests to cropland, that gradually turned into small up-and-down slope orientated arable plots. Concomitantly, most of the local earth roads were laid out along valley floors or across hills. Despite temporary implementation of soil conservation practises between 1970 – 1990, inappropriate land management has continued to the present time.

The mean gully head retreat along the main continuous gullies within the Chioara Catchment was estimated at 14 m yr<sup>-1</sup> during the 19<sup>th</sup> Century, then increased to 17 m yr<sup>-1</sup> between 1893/1921/1940–1960 and decreased to 10 m yr<sup>-1</sup> between 1961–2012. That means the gully peak occurred during the first half of the 20<sup>th</sup> Century. Overall, it would result in an impressive mean of 14 m yr<sup>-1</sup> of gully head retreat along the valley-bottom within the study area over the last two centuries. More specifically, sediment losses from gully erosion are exceptionally high. Specific sediment yield by gully erosion accounted for 54–69% of the sediment mass eroded by water from the four studied sub-catchments over long periods of time (Ionita *et al.*, 2015). As Vanmaercke (2013) suggested, if these gully systems were indeed initiated by human activities, the gullied catchments of the Barlad Plateau probably represent some of the most important case-scenarios of human impacts on soil erosion in Europe.

Field measurements performed in small catchments within the Moldavian Plateau during flash stream-flows showed two types of sediment delivery, namely: synchronous and asynchronous. In the synchronous case, there is almost simultaneous production and removal of debris. In the asynchronous case, there is a preparatory stage during late winter and early spring prior to debris removal. The synchronous scenario is rare and is mostly associated with rapid thawing, and results in very high sediment concentrations (>300 g l<sup>-1</sup>) at the basin outlet and low values (≤40 g l<sup>-1</sup>) upstream of gully heads in the upper basin. Gully erosion is the main sediment source. The asynchronous scenario commonly occurs and is characterized by higher water discharges and fluctuating sediment concentrations (Ionita, 2000b, 2008).

## References

- Băcăuanu, V., Barbu, N., Pantazică M., Ungureanu Al. and Chiriac, D. (1980). Podișul Moldovei. Editura științifică și enciclopedică, București.
- Graf, W.L. (1977). The rate law in fluvial geomorphology. *American Journal of Science* 277, 178–191.
- ICPA (2012). Sistemul Român de Taxonomie a Solurilor (Romanian System of Soil Taxonomy). N. Florea and I. Munteanu (co-ordinators), SITECH Publishing House, Bucharest.
- Ionesi, L. (1989). Geologia României (volumul I). Editura Univ. "Al. I. Cuza", Iași.
- Ionesi, L. (1994). Geologia unităților de platformă și a Orogenului Nord-Dobrogean, Editura Tehnică, București.
- Ionesi, L., Ionesi, B., Lungu, A., Roșca, V. and Ionesi, V. (2005). Sarmațianul mediu și superior de pe Platforma Moldovenească. Editura Academiei Române, București.
- Ionita, I. (2000a). Relieful de cueste din Podișul Moldovei, Editura Corson, Iași, 108 pp.
- Ionita, I. (2000b). Formarea și evoluția ravenelor din Podișul *Bârladului*, Editura Corson, Iași, 169 pp.
- Ionita, I. (2003). Hydraulic efficiency of discontinuous gullies, p. 369–379 In: J. Poesen and C. Valentin (Eds) *Gully Erosion and Global Change*. *Catena* 50(2–4).
- Ionita, I. (2006). Gully development in the Moldavian Plateau of Romania, p. 133–140 In: K. Helming, J.L. Rubio and J. Boardman (Eds), *Soil Erosion Research in Europe*. *Catena Special Issue* 68(2–3).
- Ionita, I. (2008). Sediment movement from small catchments within the Moldavian Plateau of Eastern Romania, p. 316–320 In: J. Schmidt, T. Cochrane, C. Phillips, S. Elliot, T. Davies and L. Basher (Eds) *Sediment Dynamics in Changing Environments*. International Association of Hydrological Sciences Publication 325, IAHS Press, Wallingford, Oxfordshire, UK. (ISBN: 978–1-901502–84-8, ISSN: 0144–7815).
- Ionita, I., Chelaru, P., Niacșu, L., Butelcă, D. and Andrei, A. (2014). Landslide distribution and their recent development within the Central Moldavian Plateau of Romania. Carpathian

- Journal of Earth and Environmental Sciences 9(3), 241 – 252 (ISSN: 1842 – 4090).
- Ionita, I., Niacsu, L., Petrovici, G. and Blebea-Apostu, A.M. (2015). Gully development in eastern Romania: a case study from Falciu Hills. *Natural Hazards* 79 (Supplement 1), 113 – 138. (ISSN: 0921 – 030X).
- Jeanrenaud, P. (1961). Contribuții la geologia Podișului Central Moldovenesc. *An. șt. Univ. Iași*, s. II, t VII, 7.2.
- Jeanrenaud, P. (1971). Geologia Moldovei centrale dintre Siret și Prut. *Rezumatul tezei de doctorat*, Iași.
- Moțoc, M. (1983). Ritmul mediu de degradare erozională a solului în R.S.R. *Bul. Inf. ASAS*, nr.2, București.
- Nachtergaele, J., Poesen, J., Oostwoud Wijdenes, D. and Vandekerckhove, L. (2002). Medium-term evolution of a gully developed in loess-derived soil. *Geomorphology* 46, 223 – 239.
- Poghirc, P. (1972). Satul din Colinele Tutovei. *Studiu geografic*. Editura Stiintifica, Bucuresti.
- Rădoane, M. and Rădoane, N. (1992). Areal distribution of gullies by the grid square method. Case study: Siret and Prut interfluv. *Revue Roumaine de Géographie* 36, 95 – 98.
- Radoane, M., Ichim, I. and Radoane, N. (1995). Gully distribution and development in Moldavia, Romania. *Catena* 24, 127 – 146.
- Ungureanu, Al. (1993). *Geografia podisurilor si campilor Romaniei*. Editura Universitatii "Al. I. Cuza," Iași.
- Vanmaercke, M. (2013). 6th International Symposium on Gully Erosion in a Changing World (6<sup>th</sup> ISGE) held in Iași (Romania), 6 – 12 May 2013. *Newsletter of the European Society for Soil Conservation* 2013/2, 22 – 25.

**E-mail: ion.ionita72@yahoo.com**

## **MINUTES OF THE ESSC EXECUTIVE COMMITTEE AND COUNCIL MEETING HELD IN CLUJ-NAPOCA (ROMANIA) ON 15 JUNE 2016**

---

The ESSC Executive Committee and Council met on 15 June 2016 in Cluj-Napoca on the occasion of the 2016 ESSC International Conference on 'Soil: Our Common Future' held in Cluj-Napoca from 15 – 18 June 2016 from 1000 – 1150.

**Present:** C. Dazzi (President), H. Cacovean, W. Cornelis (Acting Secretary), M. Dumitru, M.A. Fullen, G. Lo Papa, I. Pla Sentis, J.L. Rubio, P. Strauss.

**Apologies:** E. Costantini, D. Gabriels, F. Glante, A. Kertész, L. Øygarden, J. Rickson, T. Scholten, S. Theocharopoulos.

### **Agenda**

1. Welcome and introductory remarks (C. Dazzi, N. Har)
2. Report by the Treasurers (W. Cornelis, D. Gabriels)
3. Report by the Secretary (E. Costantini)
4. Report by the Editor-in-Chief (M.A. Fullen)
5. Next ESSC International Congress (I. Pla Sentis)
6. ESSC grants for the next 2017 ESSC International Congress
7. Discussion on ESSC mission, vision and priorities of actions
8. Miscellaneous items.

## Report

### 1. Welcome and introductory remarks (C. Dazzi, N. Har)

The President, C. Dazzi, welcomed the Executive Committee and Council members, and Nicolae Har, President of the Organizing Committee of the Conference. The President congratulated N. Har and his team for the excellent organisation. He received much positive feedback about the Conference.

N. Har welcomed all Executive Committee and Council Members and presented some figures about the Conference. The organizers received 135 abstracts for oral and poster presentations. They scheduled 79 oral presentations (including five keynote presentations) and 57 posters. Some 85 delegates from 21 countries registered to attend. Originally, many more registered but had to withdraw because of visa problems. However, several participants registered at the first conference day (15/06/17), so the total number of participants will be higher.

Twelve (partly parallel) sessions are scheduled, spread over four rooms on Thursday and two on Friday. There are separate poster sessions, and coffee breaks will be held as well in the poster room, providing plenty of opportunities for discussion. Forty-five participants registered for the Saturday field excursion.

Regarding the publication of proceeding papers, the President will contact the editor of 'International Soil and Water Conservation Research' (WASWAC journal, published by Elsevier) requesting for a special issue on a specific conference-related topic. Possibly, an additional journal will be contacted, depending on the number and quality of submissions. The President will send an e-mail with more details to all conference participants two to three weeks after the Conference. It is evident that international peer-reviewed standards need to be followed. N. Har also expressed his wish for collaboration with European partners in future projects.

### 2. Report by the Treasurers (W. Cornelis, D. Gabriels)

The Treasurer, W. Cornelis, gave an overview about memberships and the financial situation (Appendix 1). In 2015, the ESSC had 149 paying members. As there are still members who need to pay their 2015 fees, this number might slightly increase. Over the last few years the number of paying members has fluctuated around 160 members. This reduced number (as compared to previous years) is partly due to former members retiring from their institute, and wishing to cancel their membership. The reduced number of members is only partly compensated by new members. Offering reduced registration fees to ESSC conferences always boosts the number of membership, as was also the case in 2016 with the ESSC International Conference in Cluj-Napoca. Countries with the highest number of members ( $\geq 10$ ) are Romania (40), Italy (29), Germany (13) and Belgium (10).

The total ESSC budget as of 31 December 2015 was €11,695.24. Membership fees form the main income source of the Society, whereas the major expenses are the printing and distribution of the Newsletter. Additionally, €1000 was spent for two grants for the 2015 ESSC International Congress in Moscow (2 x €500) and €20.87 to host the ESSC website.

In order to facilitate administrative procedures and to optimize the collection of individual and institutional membership fees in Romania, Professor Dumitru requested to organize a Romanian branch of the ESSC. A discussion concerning the advantages and disadvantages

es of this measure ensued. The President finally proposed to allow any country to organize themselves as they wish to facilitate the national organisation of ESSC-related matters, with informal branches or equivalent, but without having to change the statutes of the ESSC. All members supported the proposal.

### **3. Report by the Secretary (E. Costantini)**

The Secretary, E. Costantini, sent his apologies for his absence from the ESSC Executive Committee and Council meeting. The President informed the meeting that the ESSC is very active on Facebook. J.L. Rubio will receive credentials to have access to the Facebook pages, so as to contribute to posting information on the Facebook page. The Facebook page currently has over 700 followers, which is much more than the number of paying members.

### **4. Report by the Editor-in-Chief (M.A. Fullen)**

The Editor-in-Chief, M.A. Fullen, presented an overview of the current state and editorial activities (Appendix 2). The ESSC Executive Committee and Council explicitly thanked M.A. Fullen and his team (C.A. Booth and K. Vegh) for all their efforts and dedication.

### **5. Next ESSC International Congress (I. Pla Sentis)**

I. Pla Sentis presented information on the 1<sup>st</sup> World Conference on 'Soil and Water Conservation under Global Change' (CONSOWA), to be held in Lleida, Spain, from 12–16 June 2017. The Conference will, for the first time, be jointly organized by all international organisations working on soil conservation, including ESSC, ISCO, WASWAC, IUSS (Commission 3.2 and 3.6), SWCS, WASER and IECA. The Congress is also supported by Universitat de Lleida, the Spanish Society of Soil Science, Institució Catalana d'Estudis Agraris (Secció des Sòls) and the EGU. A discussion session will be organized together with IUSS in the context of the 'International Decade of Soil' to develop recommendations on future directions and needs. There will be five conference days, including a one-day field excursion, preceded by a pre-conference one-day excursion in the surroundings of Barcelona, and followed by a post-conference three-day excursion to the Canary Islands (primarily studying traditional water harvesting systems in Lanzarote and Tenerife). A web site is already active and open for registration.

Booths will be offered to all partner organisations and joint meetings will be arranged with all organising organisations to discuss future co-operation. Special issues will be published in 'International Soil and Water Conservation Research' (WASWAC journal) and the Spanish Journal of Soil Science, as well as a book. The ESSC Executive Committee and Council congratulated I. Pla Sentis and his team for organising the Congress and thanked him for all their efforts and dedication.

### **6. ESSC grants for the next ESSC International Congress 2017**

For the 2016 ESSC International Conference on 'Soil: Our Common Future' held in Cluj-Napoca, ESSC received 11 applications, from candidates from Albania (two), Azerbaijan, Latvia, Lithuania, Nepal, Nigeria, Spain (two), Serbia and Tunisia. Winners were Agne Putramaitė (Lithuania) and Vita Amatniece (Latvia). The ESSC Executive Committee and Council congratulated both scholars.

The President recommended to again offer two grants of €500 to two early-careers scientists (<35 years), to participate in the '1<sup>st</sup> World Conference on Soil and Water Conservation under Global Change' (CONSOWA). The ESSC Executive Committee and Council agreed to the proposal.

## 7. Discussion on ESSC mission, vision and priorities of actions

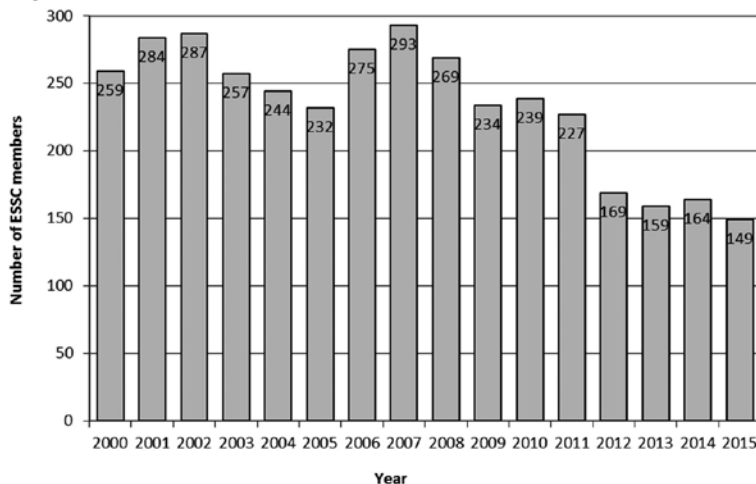
The President received two invitations for the ESSC to participate in international conferences/workshops. One was from Takashi Kosaki (Chair of IUSS Division 3, Soil Use and Management), inviting the ESSC to convene a session at the 21<sup>st</sup> World Congress of Soil Science on 'Soils to Feed and Fuel the World' to be held in Rio de Janeiro in 2018. The ESSC Executive Committee and Council accepted this invitation and suggested to organize a session on 'Soil conservation in Europe: challenges and opportunities.'

A second conference invitation was from Raimonds Kasparinskis, inviting the ESSC to organize a one-day session during the World Reference Base (WRB) Group Workshop (five days of field work and one conference day) to be held in Riga, Latvia. The ESSC Executive Committee and Council accepted this invitation, but only if the Workshop is organized in July 2017, to avoid overlap with the CONSAWA Congress in June 2017. The Council suggested organising a one-day session on linking soil conservation and soil classification, with two or three invited speakers and voluntary oral and poster presentations.

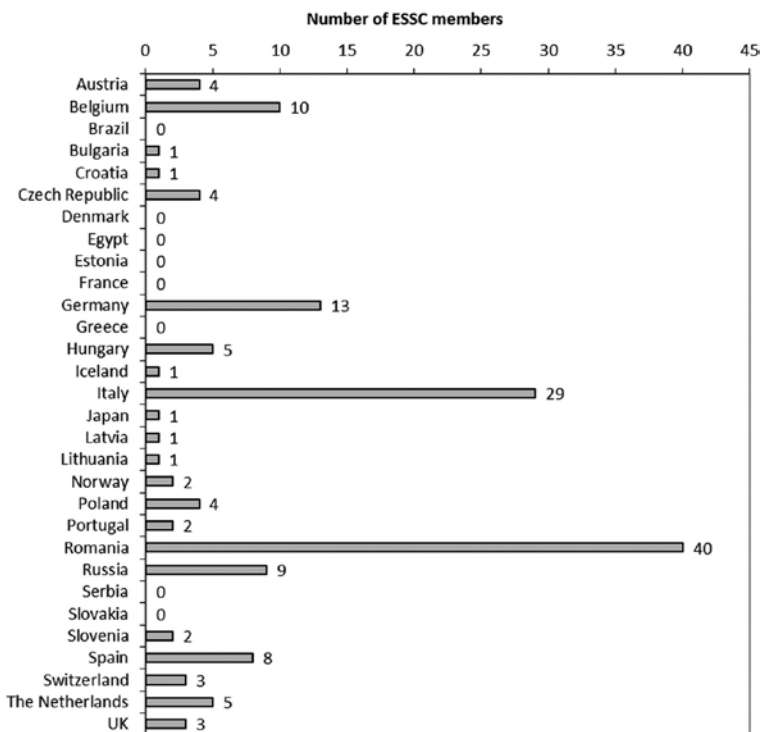
## 8. Miscellaneous

At the 2016 EGU General Assembly held in Vienna (Austria), the ESSC convened a session on 'Soil Quality and Soil Conservation' (conveners were the ESSC Executive Committee and Council members T. Scholten, W. Cornelis, L. Øygarden and M.A. Fullen). We received 24 abstracts and, thus, could organize our own oral block (the minimum number of abstracts for organising an oral block is 20; when lower, the session must be merged with others). Over 70 EGU participants attended the oral block, which is a great success for an EGU session.

## Appendix 1: Treasurer's Report 2015, ESSC Council Meeting 2016, Cluj-Napoca, 15 June 2016



Evolution of ESSC membership numbers 2000 – 2015.



**ESSC membership per country in 2015.**

### Financial Report 2011 – 2015

Year	2011	2012	2013	2014	2015
<b>Budget January 1 (€)</b>	<b>11858.64</b>	<b>14064.77</b>	<b>14335.92</b>	<b>12535.34</b>	<b>11874.17</b>
<b>Income (€)</b>					
Membership contributions	4670.12	1824.62	2366.01	463.00	2076.67
Interest (bank account)	20.31	22.83	17.96	8.43	7.04
Books sold	0.00	0.00	0.00	0.00	0.00
Conferences	0.00	0.00	0.00	0.00	0.00
Other Income	0.00	0.00	0.00	0.00	0.00
<b>Total (€)</b>	<b>4690.43</b>	<b>1847.45</b>	<b>2383.97</b>	<b>471.43</b>	<b>2083.71</b>

<b>Expenses (€)</b>					
Newsletters	2367.20	1533.00	2817.30	0.00	1195.90
Bank Account	31.20	31.20	31.20	32.60	45.87
Conferences	0.00	0.00	1330.00	1100.00	1000.00*
Other Expenses	85.90	12.10	6.05	0.00	20.87**
<b>Total (€)</b>	<b>2484.30</b>	<b>1576.30</b>	<b>4184.55</b>	<b>1132.60</b>	<b>2262.64</b>
<b>Balance (€)</b>	<b>2206.13</b>	<b>271.15</b>	<b>-1800.58</b>	<b>-661.17</b>	<b>-178.93</b>
<b>Budget December 31 (€)</b>	<b>14064.77</b>	<b>14335.92</b>	<b>12535.34</b>	<b>11874.17</b>	<b>11695.24</b>
*Grants for the 7 <sup>th</sup> ESSC International Congress in Moscow (Russian Federation) (2 x €500)					
**Domain name web site					

Ghent, 10 June 2016



**Wim Cornelis**  
ESSC Treasure



**Donald Gabriels**  
ESSC Co-treasurer

## **Appendix 2: Report to ESSC Council, Cluj-Napoca (Romania) on editorial issues, 15 June 2016**

1. The ESSC Newsletter is progressing well. Since the appointment of the new editorial team in May 2004, 32 Newsletters have been published. The Editor-in-Chief (MAF) thanked the commitment and support of the Assistant Editor (Dr Colin Booth, CAB), the Editorial team in Bratislava, Professor Carmelo Dazzi, Professor José Luis Rubio, Professor Edoardo Costantini (EC) and the ESSC Executive Committee. The 'Guest Editorials' are proving popular and, to date, 25 have been published. Issue 2015/2 is now at the printers in Bratislava and issue 2016/1 is nearly ready to be sent to Bratislava. Several logistical problems have slowed the delivery of Newsletters. However, information for rapid dissemination (e.g. conference announcements) is quickly reported on the ESSC web site.
2. Catena Verlag has kindly agreed to publish a book based on Guest Editorials. This will be entitled '**Global Perspectives on Soil Conservation**.' This will form part of the Catena 'Advances in GeoEcology' series. CAB and MAF are preparing Volume 1, which consists of the first 25 Guest Editorials. The book should be ready to go to Catena in 2017.
3. The book based on the papers presented at the ESSC Congress in Thessaloniki in May 2011 was published in July 2015. The book is 'Advances in GeoEcology 44, **OUR SOILS: Strategies and Policies for Soil Conservation**' and consists of 25 papers. The Editorial team consisted of Mike Fullen, Joseph Famodimu, Theodore Karyotis, José Luis Rubio, Christos Noulas, Andreas Panagopoulos and Donald Gabriels.
4. The 'ESSC members citation list (2000-to date)' and the 'Ph.D. theses completed by ESSC Members (2004-to date)' are proving popular in both the printed and web versions



of the Newsletter. The citation details of Ph.D. theses by ESSC members since and including 2004 have been added as an additional page to the ESSC web site. To date, the citation details and abstracts of 52 Ph.D. theses are quoted. Currently, the number of quoted publications cited on the web page is 744. These information sources are proving useful for both teaching and research. It is suggested that the Council discuss whether the database should be revised into an interactive format on the ESSC web site. This would improve searches on the web site.

5. Council members who have not already done so, are requested to provide MAF or CAB with the citation details of papers in international refereed journals and book chapters published since (and including) the year 2000.
6. We are not getting as many articles as anticipated relating to the Ph.D. process.
7. The web site is developing well, and the team in Bratislava continue their splendid work in supporting web site development and maintenance. Karol Végħ (KV) is leading ESSC publications (Newsletter and ESSC web site) at Bratislava. Our sincere thanks go to Karol. The publication activities of the ESSC based at Bratislava is receiving the full support of Professor Dr Jaroslava Sobocká (the Director of the National Agriculture and Food Centre, Soil Science and Conservation Research Institute at Bratislava).
8. KV has launched a new version of the ESSC web site. There is also a new ESSC Facebook page, which is proving popular. EC is providing particularly valuable support for the ESSC Facebook page.
9. At the ESSC Council meeting in Průhonice (Czech Republic) on 23/06/2009, it was agreed that ESSC Newsletters should carry reports on soil erosion and conservation in specific countries. To date, there have been five reports:  
Czech Republic by Jana Podhrázská (Issue 2010/3, p. 25 – 31).  
Greece by Theodore Karyotis and Constantine Kosmas (Issue 2011/1, pages 11 – 25).  
Iceland by Andres Arnalds and Johann Thorsson (Issue 2012/2, pages 10 – 21).  
Italy by Edoardo Costantini (Issue 2013/2, p. 7 – 18).  
Romania by Teodor Rusu (Issue 2015/1, p. 13 – 19).
10. It was suggested that the Council discuss a publication reviewing the first 30 years of the ESSC since its launch in 1989. This was agreed and the review will report progress to 2019.
11. MAF has received suggestions for a soil photo archive to be made available on the ESSC web site. The idea was well received at the Moscow Congress in May 2015. Dr Saulius Marcinkonis (SM; Vilnius, Lithuania) has kindly agreed to be the photo library editor. SM, KV, CAB and MAF will collaborate on the ESSC photo library (i.e. photo selection, editing of photos into topic albums and editing of photo captions).



## RECOGNITION FOR ARTICLE EDITING AND REVIEW ACTIVITIES: PUBLONS

---

**Michael A. Fullen**  
**Faculty of Science and Engineering**  
**The University of Wolverhampton**  
**Wolverhampton WV1 1LY**  
**UK**

A recurrent and major feature of a research career is the review and editing of papers for publication in refereed journals. It seems we are invited to do these on an increasingly regular basis. The process is rather time-consuming and not always inspirational! However, it is generally perceived as 'an evil necessity'. These review activities are usually performed anonymously, and so there is usually no or little recognition for the major commitment of time and effort. There is also the problem of the recent proliferation of journals, all of whom are seeking reviewers.

The situation has now changed, with the establishment of the Publons web-based platform (Van Noorden, 2014). Publons accredits reviewers, referees and editors with a point system for their activities. The web site is very efficient and user-friendly. The headquarters of Publons is in Wellington, New Zealand. Registration onto the system is quick and easy and can be achieved by visiting the web site: <http://publons.com>

On completion of a review activity, the acknowledgement of the editorial office of the journal is usually sent automatically to the referee. This e-mail is then simply forwarded to Publons at: [reviews@publons.com](mailto:reviews@publons.com). Then, the reviewer is accredited with points, usually within 72 hours or less. Publons does not place any private or confidential information or review content on their web site without the permission of the reviewer and journal.

There is no financial reward for reviewers for participation. However, at least their usual silent unnoticed refereeing activities are recognised. The accumulated points and developing personal profile on the web site could help with networking, be cited in research proposals and could be used as one of the metrics for the evaluation of the research performance of researchers by their institutions. As an example, of a personal web site, please visit:

<https://publons.com/author/954973/michael-fullen#profile>

The Publons web site reports a multitude of league tables and makes an interesting web-based browse. These league tables include countries and institutions within countries. The statistical outputs are supported by informative and impressive graphics. Currently, Publons has a community of over 90,000 researchers and editors. The top five peer reviewing countries are (from one to five) the USA, Italy, the UK, Portugal and Spain (as of 14/01/17).

For individual referees, Publons gives their ranking; globally, nationally and within their institution. There is a wealth of personal descriptive statistics. These include your personal acceptance rate, the impact factor profile of journals you have reviewed for, the number of completed reviews per month and the word-length of your average review. These statistics even include your profile of the days of the week you complete your reviews, called your 'weekly review punchcard'! The profile includes comparative statistics with other reviewers in your subject discipline. Having used the system now for about six-months, I have noticed that more features are being built into the system at a rapid rate.

Leading reviewers and editors are recognised in the Publons 'Sentinels of Science' Programme (Palus, 2016). These include the top 10% of reviewers for each discipline, the top three overall contributors to peer review, the top three peer review contributors from the top five reviewing countries (by number of reviews) and the top three contributing editors (most manuscripts handled, by number).

There is some personal and professional satisfaction in having contributed something to the progress of science by engaging in editorial, refereeing and reviewing activities. As William Thomas Stead (1849 – 1912) observed "*an editor is the uncrowned king of an educated democracy.*"

## References

- Palus, S. (2016). Peer review is a thankless task. Slate:  
[http://www.slate.com/articles/health\\_and\\_science/science/2016/09/top\\_peer\\_reviewers\\_are\\_motivated\\_by\\_their\\_dedication\\_to\\_science.html](http://www.slate.com/articles/health_and_science/science/2016/09/top_peer_reviewers_are_motivated_by_their_dedication_to_science.html)
- Van Noorden, R. (2014). The scientists who get credit for peer review. Nature 09 October 2014.  
DOI: 10.1038/nature.2014.16102

**E-mail: [m.fullen@wlv.ac.uk](mailto:m.fullen@wlv.ac.uk)**





**THE INTERNATIONAL CONFERENCE OF THE ESSC,  
CLUJ NAPOCA, ROMANIA, 15 – 18 JUNE 2016**

---

The annual scientific meeting of the ESSC was organized in Cluj Napoca (Romania), between 15 – 18 June 2016. In collaboration with the Executive Board of the ESSC, and co-ordinated by ESSC President Professor Dr Carmelo Dazzi, three important institutions from Cluj Napoca jointly organized the Conference. These were Babeş-Bolyai University, the University of Agriculture Sciences and Veterinary Medicine and the Office for Pedological and Agrochemical Studies. All three institutions are engaged in fundamental and applied research soil research. Together with the ESSC they organized the 2016 ESSC International Conference on 'Soil – Our Common Future.' The Conference was dedicated to the 'UN Day of Combatting Desertification,' which was celebrated on 17 June. Thus, scientists from around the world came together to Cluj Napoca to prove the vital interconnection between soil and life, as well as its importance for the future of human society.

The Opening Ceremony took place on 15 June in Aula Magna of Babeş-Bolyai University (Plate 1). Five plenary lectures were presented by invited speakers. These provided the introduction to the main Conference themes and clearly identified some of the most important challenges for soil scientists.

The key-note plenary lectures were:

1. I. Pla Sentís (University of Lleida, Lleida, Spain): 'Hydrological approaches to land management under global change.'
2. I. Calciu, C. Simota, M. Dumitru (National Institute of Research-Development for Pedology, Agrochemistry and Environmental Protection, Bucharest, Romania): 'Indicators for evaluation of agricultural land degradation risk.'
3. G. Corti, St. Cocco (Università Politecnica delle Marche, Ancona, Italy): 'Climate change and soil threats: Salinization and vertisolization.'
4. R.E. Creamer<sup>1</sup>, F. Bampa<sup>1</sup>, S. Sturel<sup>2</sup>, B.B. Ghaley<sup>3</sup>, T. Lehtinen<sup>4</sup>, K. Madena<sup>5</sup>, J. Staes<sup>6</sup>, T. Rusu<sup>7</sup>, R.P.O. Schulte<sup>1,8</sup> (1Teagasc, Wexford, Ireland ; 2Chambres d'agriculture (APCA), Paris, France ; 3Department of Plant and Environmental Sciences, Faculty of Science, University of Copenhagen, Denmark; 4Department for Soil Health and Plant Nutrition, Institute for Sustainable Plant Production, Austrian Agency for Health and Food Safety, Austria; 5Chamber of Agriculture, Lower Saxony, Germany; 6Department of Biology, University of Antwerp, Belgium; 7University of Agricultural Sciences and Veterinary Medicine, Cluj-Napoca, Romania, 8Latvia University of Agriculture, Latvia): 'The multi-tasking soil: How do we manage multiple soil functions?'

5. M. Sellitto (Microspore S.p.A, Italy): 'Using products based on soil micro-organisms in sustainable agriculture.'

Denotes presenter of the lecture.



*Plate 1: The Opening Ceremony of the 2016 ESSC International Conference in Aula Magna of Babeş-Bolyai University, Cluj Napoca, 15 June 2016.*

The presentations of 16 and 17 June were dedicated to scientific presentations. These were organized into oral and poster presentations within 12 sessions. These sessions covered important and complex topics in soil research, including desertification, food security, monitoring of soil functions, improving soil quality, organic farming and land management in changing environments. The 2016 ESSC International Conference gathered together 127 contributions as oral and poster presentations, representing the scientific results of over 200 scientists from all over the world (Table 1). It was a wonderful celebration of science on behalf of our Planet Earth!

**Table 1:** Summary of Scientific Sessions at the ESSC Conference in Cluj Napoca.

Scientific session	Oral presentations	Posters	Total
01. Desertification and food security	6	2	8
02. Organic soils, protection and conservation	3	2	5
03. Management of soil functions: monitoring and remediation	11	12	23
04. Post-fire soil management in natural and anthropogenic fire	4	2	6

Scientific session	Oral presentations	Posters	Total
05. Urban soil: technical evaluation and engineering	1	–	1
06. Soil conservation issues in organic farming and conservation agriculture	5	12	17
07. Forest soil: conservation policies	4	2	6
08. Land management in a changing environment	28	5	33
09. Soil quality improvement using natural materials	6	11	17
10. Climate-smart agriculture: modelling and prediction	2	–	2
11. Pedotechniques in large-scale farming	2	1	3
12. Remediation of mine, quarry and oil field soils	2	4	6
Total	74	53	127



*Plate 2: Conference delegates studying land remediation issues at the tailing pond of the former Iara Mine during the Conference field trip on 18 June 2016.*

The programme of scientific presentations was accompanied by a field trip on 18 June. The field trip focused on several important environmental topics. These included:

1. Several prepared soil profiles.
2. The former mining area of Iara-Băișoara (Plate 2).
3. The Arieș River, which drains gold and copper mining sites from the Apuseni Mountains (e.g. Roșia Montană, Baia de Arieș and Roșia Poieni).
4. The spectacular land morphology developed around the limestone cliffs from northern Trascău Mountains (Colții Trascăului Jurassic limestone).
5. The Agricultural Research-Development Station at Turda.

The field trip also included interesting touristic sites. These included Rimetea village, with its remarkable architectural heritage of houses built in the 18<sup>th</sup> and 19<sup>th</sup> centuries, as well as the old Salt Mine in Turda-Dârgău (Salina Turda). Wonderful moments were also spent by the participants at the Romanian cultural evening, which took place in the open-air authentic environment of the Romanian Village Museum of Cluj Napoca.

Certainly, the scientific meeting from Cluj Napoca and the direct connection and inter-actions between participants represented important experiences for all conference delegates and will benefit future co-operation between soil scientists.

**Report by:**

**Nicolae Har**

**President of the Conference Organizing Committee**

**Facultatea de Biologie si Geologie**

**Departamentul de Geologie**

**Str. Kogalniceanu nr. 1,**

**Babeş-Bolyai University**

**400084 Cluj Napoca**

**Romania**

**E-mail: nicolae.har@ubbcluj.ro**

## **ESSC BOOTH AT THE EUROPEAN GEOSCIENCES UNION (EGU) GENERAL ASSEMBLY IN VIENNA, 18 – 22 APRIL 2016**

For the first time, the ESSC presented itself at the European Geoscience Union (EGU) General Assembly 2016 in Vienna (Austria) from 18–22 April 2016. The Booth was shared by the ESSC, International Union of Soil Sciences (IUSS), British Soil Science Society (BSSS) and the Japanese Society of Soil Science and Plant Nutrition (JSSSPN). The presentation gave the opportunity to distribute leaflets, posters, newsletters, bookmarks and publications of the ESSC and to publicize its activities.

The Booth was prepared and attended by ESSC President Carmelo Dazzi, ESSC Secretary Edoardo Costantini and ESSC Vice-President Peter Strauss. They introduced and advertised ESSC events to Congress participants. In particular, the next 2016 International Conference: 'Soil – Our Common Future' from 15–18 June 2016 in Cluj-Napoca (Romania). They also publicized the '1<sup>st</sup> World Conference on Soil and Water Conservation under Global Change' (CONSOWA), which will be held in Leida (Spain) from 12–16 June 2017.



*Plate 1: The ESSC Booth at the EGU General Assembly in Vienna in April 2016.*

Overall, EGU 2016 attracted 13,650 participants, bringing together geoscientists from all over the world, covering all disciplines of the Earth, Planetary and Space Sciences. It is expected that the broader audience obtained by ESSC at the EGU Assembly will enhance the awareness of geoscientists of soil conservation issues in general and ESSC initiatives and activities in particular. Plans are progressing for a further ESSC Booth at EGU 2017.



*Plate 2: Carmelo Dazzi and Edoardo Costantini presenting ESSC information at the ESSC Booth*

**Report by:**

**Carmelo Dazzi (Palermo, Italy); E-mail: [dazzi@unipa.it](mailto:dazzi@unipa.it)**

**Edoardo Costantini (Florence/Firenze, Italy); E-mail: [edoardo.costantini@entecra.it](mailto:edoardo.costantini@entecra.it)**

**Peter Strauss (Petzenkirchen, Austria); E-mail: [Peter.Strauss@baw.at](mailto:Peter.Strauss@baw.at)**

**WASWAC 3RD INTERNATIONAL CONFERENCE,  
BELGRADE (SERBIA) 22 – 26 AUGUST 2016,  
CONCLUSIONS AND RECOMMENDATIONS OF CONFERENCE TOPIC F (SOCIAL AND  
ECONOMIC ASPECTS AND POLICIES RELATED TO SOIL AND WATER CONSERVATION)**

---

It is well established that human well-being depends on soil and water quality and their conservation. The lack of understanding of, and information on, the value of soil and water in providing ecosystem services has generally led to their omission in public decision-making processes. During the Topic F presentations, several aspects were considered and several questions arose. Soil scientists are convinced of the importance and relevance of soil and



water. Now, from the perspective of the social and economic aspects and policies related to soil and water conservation, the problem is to convince the others. The first skill of the soil scientist is to be able to improve the societal perception of the importance of soil and water.

We must start to consider soil and water both as natural resources and perhaps mainly as economic resources! For three reasons:

Because we face problems and priorities, resulting from scenarios involving soil and water conservation, which are functions of the perception that people have of soil and water.

Because the perception of soil and water was traditionally linked to agriculture, ignoring that actually soil functions support all human activity, although the influence is not always apparent.

Because in recent years we have found that attempts to disseminate the culture of soil is a difficult task, especially if the 'insiders' are the only ones who talk about soil and its conservation.

It is, therefore, a priority to widen and raise awareness among citizens and administrators on the importance of soil and water, involving different expertise. In this context, international scientific societies, such as WASWAC and ESSC, can play important roles in bringing together experts from several disciplines (such as environmental engineers, environmental economists, epidemiologists and biomedical scientists) to be able to give both a social and an economic added value to both soil and water, so that these resources can acquire increased consideration in all spheres of society.

**Report by:**

**Carmelo Dazzi (President of the ESSC)**

**Dipartimento di Scienze Agrarie e Forestali, Università di Palermo**

**Viale delle Scienze, Ed. 4**

**90128 Palermo**

**Italy**

**E-mail: dazzi@unipa.it**

## **SOIL MAPPING AND IT SERVICES GATHER MOMENTUM IN SPAIN! (SANTANDER, 8 – 9 SEPTEMBER 2016)**

---

The Spanish Society of Soil Science (SECS) and the FAO Office in Spain (FAOES) have promoted the institutional programme INFORCAS.es. This is aimed at:

(1) Soil information in Spain being consistent and inter-operable internationally, as contemplated by the INSPIRE European Directive.

(2) Archiving and making accessible the available information concerning soil mapping in Spain.

To this end, a meeting was organized in Santander on 8–9 September 2016 (Plates 1 and 2). At the meeting the Spanish Regional and National authorities presented their own 'state of the art' work on soil mapping. They also discussed their ideas about how the proposed network should be established and operate, within the framework of, and in collaboration with, the European Commission and EU member states. SECS and FAO also invited

some international experts to give their perspectives on the subject. These were Dr Edoardo Costantini (Council for Research in Agriculture and Economy, CREA, Florence, Italy); Dr Rainer Baritz (Global Soil Partnership, FAO, Rome); Dr Luca Montanarella (European Commission, Ispra, Italy) and Dr Allan Lilly (The James Hutton Institute, Aberdeen, UK and Chair of the European Soil Bureau Network) (Plate 3).

The proceedings of the meeting will be published in the SECS Bulletin and online at: <http://www.secs.com.es/>



*Plates 1, 2 and 3: Plates 1 and 2. General view of the meeting. Plate 3. Dr Allan Lilly presenting his talk to the meeting.*

**Report by:**

**Edoardo A.C. Costantini (ESSC Secretary).**

**Consiglio per la ricerca in agricoltura e l'analisi dell'economia agraria, CREA-AA  
Research Centre for Agriculture and Environment  
via Lanciola 12/A**

**50125 Florence/Firenze**

**Italy**

**E-mail: [edoardo.costantini@crea.gov.it](mailto:edoardo.costantini@crea.gov.it)**

## 4TH INTERNATIONAL CONFERENCE ON BIOHYDROLOGY (ALMERÍA, SPAIN, 13 – 16 SEPTEMBER 2016)

---

'Biohydrology 2016' was the fourth International Conference on Biohydrology, after those of Prague (2006), Bratislava (2009) and Landau (2013). On this occasion, the meeting was jointly organized by the Spanish National Research Council (CSIC) and the University of Almería. This year the focus was on drylands, as the environmental conditions of south-east Spain, one of the driest in Europe, are exceptionally well represented. Following the aim of previous conferences, 'Biohydrology 2016' provided a forum to discuss questions related to interactions between biotic systems and hydrology, as defined by Professor Lubomir Lichner (Slovak Academy of Sciences), organizer of this Conference series. Such interactions can be simple, bidirectional or complex, including feedback, and occurring at any spatial or temporal scale. Over 100 experts in Ecology, Hydrology, Geography, Soil Science, Environment, Biology, Geomorphology, Forestry and related fields, gathered in Almería for the four-day conference (Plate 1).

Five invited world-known scientists gave plenary lectures. Professor Rainer Horn discussed 'Soil science societies and their role for improving soil governance at a global level.' The presentation by Professor Esteban G. Jobaggy considered 'Hyperplains, the unique eco-hydrological imprint of extreme flatness.' Professor Fernando T. Maestre presented a lecture on 'Biotic controls of ecosystem functioning in global drylands under global change.' Professor K.R.J. Smettem discussed 'Forest survival and hydrologic feedbacks in a seasonally dry deep regolithic environment: options for management.' Professor Tammo Steenhuis presented a lecture on 'Community gully conservation with biological and structural controls in the humid Ethiopian highlands.' Five sessions, led by 17 key-note speakers, discussed the specific topics, in both oral presentation and poster format.

### **1 Water limited conditions and Biohydrology**

Within this Session, the main topics were: the importance of water release through plant roots in drylands, the eco-hydrological feedbacks underlying dryland functioning and dynamics, dryland shrubs as ecosystem engineers, the key-role of biocrusts and their possible contradictory effects on perennial plants, how remote sensing and geophysics help ground-water detection for ecosystem dependence, water exclusion experiments, how aridity induces non-linear effects of human disturbance on precipitation-use efficiency in Mediterranean woodlands, the importance of water redistribution through semi-arid hillslopes, including the role of runoff and hillslope length, infiltration both in natural and agricultural soils and the role of net CO<sub>2</sub> exchanges over different covered surfaces.

### **2 Biohydrology in land degradation and restoration**

In this session, many soil and plant parameters were analysed related to the degradation and restoration of arid and semi-arid lands. The thermodynamic perspective of water in terrestrial ecosystems, and the effects of soil macrofauna, organic amendments and mulches on land restoration. The land treatments that were discussed included rock fragments, surfactants, irrigation, topographic modifications, adapted vegetation and cyanobacteria.



*Plate 1: Conference delegates on the campus of the University of Almería.*

### **3 Hydrological effects of plant-soil complex from patch to landscape**

This session identified the hydrological effects of root water fluxes, the effects of land management on soil properties and hydrological connectivity, the impact of plants on soil composition and transport processes in soils, and the effects of soil hydrophobicity at different scales. The role of soil structure and pore walls, the impact of root-soil interactions on soil hydraulic conductivity and changes in soil properties and water flow were studied in relation to vegetation succession. Other topics included sediment connectivity in relation to contrasting Mediterranean vegetation, drought enhancing net CO<sub>2</sub> release via vadose zone ventilation, and factors affecting CO<sub>2</sub> fluxes; wetting agents increasing plant uptake of nitrogen from urea fertilizer, and how electrical capacitance can be useful to monitor root growth. Relationships between micro-organisms and physical and chemical soil properties were also considered. Methodological aspects were also discussed, including the use of tomography to quantify soil macropores; metaproteomics to characterize both hydrophilic and hydrophobic soils; a simple drought index for forest ecosystems; and a new model of coupled water uptake and mucilage exudation to understand water dynamics within the rhizosphere.

### **4 The impact of forest fires on hydrology**

In this session, both short and long-term hydrological and erosion responses to fires were analysed in south-west Australia, the western USA, Slovakia and Mediterranean Spain. Discussed issues included the effects of prescribed fires on runoff water quality, the influence of hydrological connectivity before and after wildfires, and the effects of ash hydrophobicity.

### **5 The role of biogeochemical interfaces in Biohydrology**

The issues included in this session included: characterization of biopore walls and aggregate coatings for describing mass transfer during preferential flow; microbial 'hot spots'

for pollutant degradation; long-term effects of crop management on soil structure; a new method to enhance rhizosphere formation, and the use of Atomic Force Microscopy to integrate nanoscale imaging and quantitation of nano-mechanical soil properties. Other issues included the effect of pH modification on wetting kinetics, the 'gel effect' of mucilage on water properties, the contribution of hydrogel swelling to the stability of soil microstructure, and linkages between soil wetting properties and soil elemental composition. The effect of flow interruption on colloid transport processes were reviewed, as well as the prediction of unsaturated hydraulic conductivity and capillary-sorption potential of water. Finally, some contributions were related to climatic change, showing that increased air temperature alters soil water repellency and relationships between temperature and the dissolution of organic matter.

A mid-conference field trip allowed participants to visit several sites. These included an experimental greenhouse, where new developments are in progress to save irrigation water and fertilizers by managing crop residues. The El Cautivo Experimental Area, within the Tabernas Desert, was visited. Here, the Desertification and GeoEcology Group from EEZA-CSIC did much experimental research on Eco-Hydrology and Geomorphology. The third visited site was the Balsa Blanca Experimental Area within the Cabo de Gata-Níjar Nature Park. Here experiments are in progress on rainfall exclusion on ecophysiological functioning of alpha grass at the plant scale, along with monitoring of ecosystem-scale evapotranspiration and CO<sub>2</sub> fluxes.

The social programme included an informal tapas dinner, as well as the Conference dinner, both in the historic centre of Almería; and a guided visit to the Alcazaba (Moorish castle). A post-conference tour on Saturday 17 September visited the Alhambra, Granada, which is an UNESCO World Heritage Site.

Further information is available at:

**[http://www.biohydrology2016.es/event\\_detail/3577/detail/4-th-international-conference-en-biohydrology.html](http://www.biohydrology2016.es/event_detail/3577/detail/4-th-international-conference-en-biohydrology.html)**

**Report by**

**Roberto Lázaro**

**Albert Solé-Benet**

Departamento de Desertificación y Geoecología

Estación Experimental de Zonas Áridas

Consejo Superior de Investigaciones Científicas

Carretera de Sacramento s/n

04120 Almería

Spain

**Yolanda Cantón**

Departamento de Agronomía

Escuela Superior de Ingeniería

Universidad de Almería

La Cañada de San Urbano S/N

04120 Almería

Spain

**E-mails: Roberto Lázaro: [lazaro@eeza.csic.es](mailto:lazaro@eeza.csic.es)**

**Albert Solé-Benet: [albert@eeza.csic.es](mailto:albert@eeza.csic.es)**

**Yolanda Cantón: [ycanton@ual.es](mailto:ycanton@ual.es)**

**LOURDES LUNA (2016). RESTORATION OF CALCAREOUS QUARRIES UNDER SEMIARID CLIMATE. PH.D. THESIS, UNIVERSITY OF ALMERÍA (SPAIN), 222 PP. (IN ENGLISH AND SPANISH)**

---

**Abstract**

In the calcareous quarry belonging to the Cement Factory in Gádor (Almería, south-east Spain), under the climatic boundary between arid and semi-arid zones, the Desertification and GeoEcology Group (Arid Zone Research Institute, National Research Council of Spain) started an experimental soil restoration project in 2008. Two organic amendments (sewage sludge from a waste-water treatment plant and compost from the organic fraction of urban wastes) and two mulches (gravel and woodchips), with the corresponding controls, were tested in a 3 x 3 factorial design experiment. Five and six years later, soil/substrate properties and their hydrological behaviour, were assessed and their effects on native planted vegetation.

The soil/substrate assessment consisted of evaluating:

- a) Essential morphological properties, including 2D-porosity, physical (particle size, bulk density), chemical (pH, electrical conductivity, cation exchange capacity, CaCO<sub>3</sub>, total organic C, total N, P, and K), biochemical (basal respiration, enzyme activities as dehydrogenase, β-glucosidase, urease and alkaline phosphatase) and biological properties (composition and structure of microbial community through PLFAs and PCR-DGGE analysis).
- b) Aggregate stability by two direct methods (water drop test and wet sieving) and glomalin content (glomalin-related soil protein [GRSP], and easily extractable glomalin-related soil protein [EE-GRSP]).
- c) Hydrological behaviour (infiltration front and rate, runoff and sediment production) by means of rainfall simulations.

The natural, undisturbed soil from the neighbouring area was also analysed and considered as reference soil and its hydrological behaviour assessed. The effects of the experimental substrates were tested every year on the survival and growth of three autochthonous plant species (*Anthyllis cytisoides*, *A. terniflora* and *Macrochloa tenacissima*) planted in nine plots of 75 m<sup>2</sup> (15 x 5 m).

The combination of organic amendments and mulches enhanced soil aggregate stability and the content of aggregate binding agents, such as total organic C and glomalin. However, the role of organic amendments, especially compost, was more important than mulch in increasing TOC and glomalin, showing the closest values to the undisturbed reference soils. Despite the considerable improvement in water stable aggregates found in sewage sludge-amended plots, the reference soils had the highest values.

Restoration treatments, especially organic amendments, led to lower bulk density and higher total porosity compared to reference soils. Each combination of treatments resulted in a different pore system with very diverse hydrological responses. Organic amendments conditioned increased infiltration and decreased water erosion. Woodchip mulch was more effective at trapping runoff and sediment, although this type of mulch did not favour ver-

tical water movement towards deeper horizons. Therefore, the use of organic amendments should be encouraged in mine soil restoration for its proven environmental benefits (improvement of soil structure and infiltration and decreased soil erosion). Conversely, mulches did not produce the expected results in the tested arid to semi-arid area.

Organic amendments, especially compost, also improved soil chemical and biochemical properties as well as microbial biomass. Soils treated with sewage sludge and compost showed bacterial PLFA concentrations similar to those of reference soils, but compost treatments presented much higher fungal PLFA concentrations. On the other hand, the effects of mulch application did not show a clear trend with respect to soil functionality and did not increase microbial biomass. Each combination of organic amendment and mulch was selective for a specific microbial community. Nevertheless, increases in soil functionality and microbial biomass were not related to changes in microbial diversity. After five years, the microbial properties of restored soils had not yet converged to values recorded in the reference soils. However, the combination of mulches and organic amendments, particularly compost treatment, is suggested to be beneficial for restoring degraded soils from quarrying areas, because they stimulate microbial growth and activity, with positive implications for increased soil fertility and quality.

The response to soil treatments of each plant species was different, due to the specific physiological mechanisms of the species. *M. tenacissima* had the highest survival (92%), while both *Anthyllis* species presented had lower survival rates (15% and 36% in *A. terniflora* and *A. cytisoides*, respectively). Although organic amendments did not have positive effects on plant survival, the improvement in chemical, microbiological and physical soil properties induced by sewage sludge, and especially compost treatment, enhanced plant growth. *M. tenacissima* and *A. cytisoides* reached the highest growth rates in compost treatments and *A. terniflora* reached its maximum growth rate in plots amended with sewage sludge. On the other hand, changes induced by mulches on soil properties did not provide clear evidence, either positive or negative, in terms of plant establishment. These results suggest that the improvement induced by organic amendments in restored mine soils can create favourable conditions to support revegetation with native species. These practises can redirect vegetation dynamics towards later successional stages, thus improving ecosystem recovery.

## Acknowledgements

The support of the Cement Factory of Gádor and the Andalusian Regional Government (Project RNM-5887), who provided essential funding for the 'Experimental soil restoration in calcareous quarries in the Gador Range' Project, is gratefully acknowledged. COST ACTION: 'Arid Lands Restoration and Combat of Desertification' (ES1 104) provided support for 'Short-Term Scientific Missions' to Florence/Firenze (Italy).

**Supervisors: Albert Solé Benet and Isabel Miralles Mellado.**

**Estación Experimental de Zonas Áridas**

**Consejo Superior de Investigaciones Científicas**

**Carretera de Sacramento, s/n**

**04120, La Cañada de San Urbano**

**Almería**

**Spain**

**E-mail: lourdes@eeza.csic.es**

## **PUBLISHER REPORT: DEVELOPMENTS AT CATENA VERLAG GMBH**

---

We are happy to inform you that long-time ESSC partner and founding member Margot Rohdenburg (CATENA VERLAG GmbH) agreed for the CATENA VERLAG Publishing Programme and the complete stock of CATENA Soil Science and GeoEcology book titles to be taken over by Schweizerbart Science Publishers (Stuttgart, Germany). The transfer came into effect on 1 October 2016.

Margot Rohdenburg expresses her sincere thanks to all editors, authors and clients of the CATENA VERLAG book programme. With their help and confidence, ideas, co-operation and loyal support, CATENA VERLAG was able to publish for over 40 years (the programme was founded in 1975). Publications have reported the results of the ground-breaking concept of the necessity of interdisciplinary research at the interfaces of Geosciences, GeoEcology and Soil Science. To enhance the dissemination of this knowledge, Schweizerbart Science Publishers are enthusiastic to continue in the spirit of CATENA VERLAG; that is to market established and to develop new Soil Science titles and publications.

The current status of new and previously published CATENA VERLAG titles is available at the new CATENA web site, where all publications may now be ordered on-line. Margot Rohdenburg is facilitating the smooth transition of book projects to Schweizerbart and will be involved with the revised publishing programme for some time. Dr Nägele and Dr Obermiller, who are both scientists, are the new editorial contacts for CATENA VERLAG books at Schweizerbart Science Publishers.

Both M. Rohdenburg and W. Obermiller are enthusiastic and look forward to continuing the long-established and fruitful co-operation with the ESSC and its members. They cordially invite you to discuss and develop future publication projects with them. Please do not hesitate to contact us with your publication ideas and proposals.

**Margot Rohdenburg M.A.**

**Mas de Came de Parre/Bonabosc**

**66150 Arles s/Tech**

**France**

**Tel: 00 33 46 8390654**

**E-mail: [catenamargo@gmail.com](mailto:catenamargo@gmail.com)**

**Dr Walter Obermiller**

**Schweizerbart Science Publishers**

**Johannesstr. 3A, 70176 Stuttgart**

**Germany**

**Tel: 00 49 711 – 351456-0**

**E-mail: [obermiller@schweizerbart.de](mailto:obermiller@schweizerbart.de)**



# The Newsletter and supporting Ph.D. research

## Editor's note:

At the ESSC Council meeting in Lleida (Spain) in September 2006, the interactions between the ESSC and younger soil scientists were discussed (see Newsletter 2006/3, p. 5–8). It was decided that the ESSC should be more proactive in its support of younger scientists. As part of that initiative, we welcome articles from both Ph.D. researchers and supervisors. We would like to hear from recent Ph.D. graduates; what advice and experience do you have which you would like to share with your colleagues in earlier stages of their research? We would also like to hear from current Ph.D. researchers; what are the factors which both encourage and limit progress? What are the particular challenges facing part-time Ph.D. researchers? We also invite contributions from experienced Ph.D. supervisors. What experience would you like to share with less experienced colleagues? If you are a less experienced Ph.D. supervisor, what supervisory issues do you find challenging? In short, please tell us “what I know now, which I wish I knew then!”

## Editor's note:

The citation details of Ph.D. theses by ESSC members since and including 2004 have been added as an additional page to the ESSC web site. To date, 53 Ph.D. theses are quoted. On the ESSC web site, please look under ‘Publications.’ Please forward the citation details of any additional Ph.D. thesis completed since the year 2000 by an ESSC member to any of the Editorial team. We will then add the thesis citation details to the web site.

## Recent Publications by ESSC Members

Included are the citation details of papers and books produced by ESSC members. These 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. Students of ESSC members (both undergraduate and postgraduate) are increasingly accessing this facility in their literature searches. Currently, the number of quoted publications cited on the web page is 772. 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.

## PUBLICATIONS

- Almagro, M., de Vente, J., Boix-Fayós, C., García-Franco, N., Melgares de Aguilar, J. González, D., Solé-Benet, A. and Martínez-Mena, M. (2016). Sustainable land management practices as providers of several ecosystem services under rainfed Mediterranean agroecosystems. **Mitigation and Adaptation Strategies for Global Change** 21(7), 1029–1043.  
<http://link.springer.com/article/10.1007/s11027-013-9535-2>
- Cantón, Y., Rodríguez-Caballero, E., Contreras, S., Villagarcía, L., Li, X.Y., Solé-Benet, A. and Domingo, F. (2016). Vertical and lateral soil moisture patterns on a Mediterranean karst hillslope. **Journal of Hydrology & Hydromechanics** 64(3), 209–217.  
<http://www.degruyter.com/view/j/johh.2016.64.issue-3/johh-2016-0030/johh-2016-0030.xml?format=INT>

- Demirkiran, A.R., Fullen, M.A. and Williams, C.D. (2016). Comparative analysis of the physico-chemical and oil adsorption characteristics of clinoptilolites from Turkey and the USA. **Oxidation Communications** 39(1), 787–807.
- Luna, L., Miralles, I., Andrenelli, M.C., Gispert, M., Pellegrini, S., Vignozzi, N. and Solé-Benet, A. (2016). Restoration techniques affect soil organic carbon, glomalin and aggregate stability in degraded soils of a semiarid Mediterranean region. **Catena** 143, 256–264. <http://www.sciencedirect.com/science/article/pii/S0341816216301503>
- Luna, L., Pastorelli, R., Bastida, F., Hernández, T., García, C., Miralles, I. and Solé-Benet, A. (2016). Effects of organic amendments and mulches on soil enzyme activity and microbial community composition in quarry restoration in a semiarid climate. **Applied Soil Ecology** 107, 33–47. <http://www.sciencedirect.com/science/article/pii/S0929139316301573>
- Pereira, L.D.S., Rodrigues, A.M., Jorge, M.C.O., Guerra, A.J.T. and Fullen, M.A. (2016). Processos hidro-erosivos em solos degradados em relevo de baixa declividade (Hydro-erosive processes in degraded soils on gentle slopes). **Revista Brasileira de Geomorfologia** 17(2), 299–316.
- Rodríguez-Caballero, E., Afana, A., Chamizo, S., Solé-Benet, A. and Canton, Y. (2016). A new GIS adaptive method to filter terrestrial laser scanner point clouds using spectral and structural information and conserving surface micro-topography. **ISPRS Journal of Photogrammetry and Remote Sensing** 117, 141–148. <http://www.sciencedirect.com/science/article/pii/S0924271616300442>
- Salvati, L., Kosmas, C., Kairis, O., Karavitis, C., Kelly, C., Acikalin, S., Carlussi, M., Belgacem, A.O., Solé-Benet, A., Chaker, M., Fassouli, V., Gokceoglu, C., Gungor, H., Hessel, R., Khatteli, H., Kounalaki, K., Laouina, A., Ocakoglu, F., Ouessar, M., Ritsema, C., Sghaier, M., Sonmez, H., Taamallah, H., Tezcan, L. and De Vente, J. (2016). Assessing the effectiveness of sustainable land management practices for combating desertification: A data mining approach. **Journal of Environmental Management** 183(3), 754–762. <http://dx.doi.org/10.1016/j.jenvman.2016.09.017>
- Shokr, M.S., El Baroudy, A.A., Fullen, M.A., El-Beshbeshy, T.R., Ali, R.R., Elhalim, A., Guerra, A.J.T. and Jorge, M.C.O. (2016). Mapping of heavy metal contamination in alluvial soils of the Middle Nile Delta of Egypt. **Journal of Environmental Engineering and Landscape Management** 24(03), 218–231.

## ESSC membership list and contact details

### 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, research studentship opportunities, impending conferences and other items of important information for rapid dissemination. Of course, we will also continue the regular circulation of information via our Newsletter.

The ESSC web site is:  
<http://www.soilconservation.eu/index.html>

The full ESSC membership list is held on the ESSC web site. Under 'members' you can obtain 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. Some members have requested that we do not add their e-mail addresses to the web site, to avoid uninvited 'spam' e-mails. Of course, we respect this request. Therefore, while we retain a list of the e-mail addresses of ESSC members, this list will not be available on the web site.

Editorial matters in Bratislava are handled by Ing Karol Végh. In terms of membership lists, contact details and the ESSC web site, please send updated information to Karol at:

**E-mail: [kajove@gmail.com](mailto:kajove@gmail.com)**

Please also use and refer to the '**Directory of European Organizations and Persons Working on Soil Protection**' as a reference source for European colleagues, both members and non-members of the ESSC. This publication contains the e-mail addresses of most ESSC members and will be subject to periodic updates. The reference citation is:

Rubio, J.L., Imeson, A.C., Bielek, P., Fullen, M.A., Pascual, J.A., Andreu, V., Recatala, L. and Ano, C. (2006). Directory of European Organizations and Persons Working on Soil Protection. Soil Science and Conservation Research Institute, Bratislava, 190 pp. (plus CD-Rom).

This publication is available as a pdf document on the 'Publications Archive' on the ESSC web site.

Future dates for your diary...

**ESSC** EUROPEAN  
SOCIETY for  
SOIL  
CONSERVATION

# 8th ESSC CONGRESS

12-16 June 2017  
Lleida (Spain)

To be held under the framework of the  
“1st WORLD CONFERENCE ON  
SOIL AND WATER CONSERVATION  
UNDER GLOBAL CHANGE”  
(CONSOWA)

[www.consowalleida2017.com](http://www.consowalleida2017.com)

As President of CONSOWA 2017, I cordially invite you to participate in the '1<sup>st</sup> World Conference on Soil and Water Conservation under Global Change' to be held from 12 – 16 June 2017 in Lleida (Spain). For the first time, all the main World scientific organizations promoting wise and sustainable use, management and conservation of the main natural resources of soil and water have decided to stage a joint Conference.

The venue of the Conference is Lleida, which is a pleasant middle-sized city in Catalonia, on the River Segre and surrounded by the most extensive irrigated fruit plantations in Spain. It also has the oldest University in northern Spain, founded in 1297. The programme of field tours will investigate interesting issues relating to soil and water conservation, especially the management of dry-lands and intensive irrigated agriculture.

Professor Dr Ildefonso Pla Sentís

President of ISCO, Vice-President of WASWAC, Member of the Executive Council of ESSC, President of the Soil and Water Conservation Section of SECS.

**Pre-Conference field trip:** Saturday 10 June 2017 (Soil use and landscape in periurban areas of Barcelona).

**Conference:** Monday 12 June-Friday 16 June 2017.

**Field tours (five options):** Wednesday 14 June.

**Post conference field trip:** Saturday 17 June-Monday 19 June 2017 (Traditional rain-fed agricultural systems and desertification processes in semi-arid volcanic islands; Canary Islands of Lanzarote and Fuerteventura).

### **Deadlines**

Submission of Short Abstracts: 30/11/2016; Letter of acceptance: 15/01/2017.

Submission of extended abstracts: 31/03/2017.

Early registration fee €400: 31/12/2016; (fee for officially confirmed students: €200).

Late registration fee (after 31/03/2017) €550 (fee for officially confirmed students: €275).

Payment of the fee for the Pre-Conference field trip: 15/02/2017.

Payment of the fee for the Pre-Conference field trip: 15/03/2017.

### **Contact**

**Av. de Jaume II**

**67 bis, 3a planta.**

**Campus de Cappont**

**25001 Lleida**

**Spain**

**Tel.: 00 34 973003557**

**E-mail: [fundacio@udl.cat](mailto:fundacio@udl.cat)**

**Conference web site: [WWW.CONSOWALLEIDA2017.COM](http://WWW.CONSOWALLEIDA2017.COM)**



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

We invite proposals for special thematic issues of the Newsletter. We also 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).
- (v) At the ESSC Council at Průhonice (Czech Republic) in June 2009, it was agreed that the Newsletter will present a series of national reports on soil erosion and soil conservation activities in individual European countries. If you would like to volunteer a contribution, please contact any member of the Editorial team.

Send these details to either:

Professor Mike Fullen: **m.fullen@wlv.ac.uk**

or

Dr Colin Booth: **colin.booth@uwe.ac.uk**

and they will include this information in the next issue.

**PLEASE NOTE:**

**We publish two Newsletter issues per year. The deadlines are:  
1 March and 1 September.**

The following three verses are a selection of translated ancient songs (ballads) of the Hani minority people of Yuanyang, Yunnan Province, south-west China. The Hani are world-famous as the builders and guardians of the rice terraces of Yuanyang (Plate 1). Until recently, the Hani had no written language. These ballads were collated by Hongzhen Zhang, based on meetings with the Mopi (elders of the Hani). The verses were abstracted from:

**Hongzhen Zhang (2010). Interpretations of the Hani Seasonal Production Ballads. Yunnan Press Group Company and Yunnan Art Press Company, Kunming, 248 pp. (ISBN 978 – 7-5489 – 0034-4).**



*Plate 1: Autumn rice harvest in progress, near Qingkou village, Yuanyang. The red colour is 'mosquito fern' (Azolla imbricata (Roxb.) Nakai), which fixes atmospheric nitrogen. Azolla is harvested, dried and used to feed pigs. Photo taken by Mike Fullen (Wolverhampton, UK) on 12 November 2010.*

#### IV. On the Arrival of the Three Months of Autumn



##### Verse 236

*The best threshing machine of Dai people is made of one big tree,  
Cut with axe resembling the mouth of the woodpecker,  
Carved with axe similar to the mouth of the Chala bird;*



*Ten kinds of trees cannot be chopped,  
Such as the kapok tree in front of the houses of Dai people,  
Since it marks the season for the Dai;  
The peach tree in front of the houses of Han people cannot be chopped,  
Since it marks the season for the Han;  
The teak in the village should not be chopped,  
It tells Hani people the turn of the year;  
The toon on the hilltop is to be chopped  
For us to make a pretty threshing machine.*



#### **Verse 240**

*The men and women are busy with the endless work,  
Unlike the forced work of buffaloes and horses;  
The men and women do what they can do,  
And work to their hearts' content.  
When walking, you should better arrange the time,  
When working, you should better plan considerately;  
Despite the long way, you will find your way home,  
Despite the hard work, you will fulfil your task;  
So keep on working, just like eating without a break.  
When the grain has been harvested,  
They are put upstairs on the bamboo floor,  
It is cosy for the grains to be on the bamboo floor,  
Supported by the pole of the Xida tree.*



#### **Verse 242**

*We harvest ample foods to treat hundreds of Dai people,  
And hundreds of Pula people;  
The men and women are engaged in endless labour,  
On which their value depend.  
The autumn is almost gone.  
The cicada goes back to earth to rest,  
And Dayue returns to earth to sleep;  
They live in the section between the loess and black-land,  
Where the thin roots in earth are used as clothes and quilts.  
They have to drink fallen dew into earth,  
And taken care of by Zheboranyi.  
The three months of autumn have come to an end,  
A round of 13 days and nights have come to an end,  
And a year of 12 months has come to an end,  
The three months of winter is just around the corner.*

These three verses complete the 33 predominantly agricultural verses of the 121 verses presented in the ballads of the Hani people, collated by Hongzhen Zhang (2010).

Thanks to Professor Li Yong Mei (Yunnan Agricultural University, P.R. China) and Professor Wang Weiguang (The University of Wolverhampton, UK) for their editorial help with the Hani ballads.

VERANDA VIEW – SAINT ARNAUD OR  
THE FOUR HORSEMEN OF THE ELLIPSE

---

Rob Youl  
Rob Youl Consulting Pty Ltd  
113 Nelson Road  
South Melbourne  
Victoria 3205  
Australia

*From my city hearth I often head bush  
To Saint Arnaud<sup>1</sup> – far from the madding push  
Northwest; beyond the Divide stretch the dry Pyrenees<sup>2</sup>  
And wide Murray plains – the old inland sea<sup>3</sup>*

*At the edge of the plain, within foothills blue  
Running north-south, pretty well true  
Ordovician ridge - obvious firebreak for Dja dja wurrung<sup>4</sup>  
Of its curlews and lowans<sup>5</sup> they must often have sung*

*We came along: miners, officials and settlers  
Shearers, woodcutters, railway fettlers  
Who cleared, grazed, surveyed, picked it over for gold  
Now there's a Kookaburra kit home, thirty years old  
The house has vistas to east and to west  
Blue mallee trees obscure the rest  
Look west – out the back – Russell Drysdale futility<sup>6</sup>  
Scrubby screen, saltbush, logistics, utilities*

*Water is the tank, earth the gravel track  
Air is the northerlies; one day fire will attack  
Till then we drive up and park – so easy our life  
A century ago – a drover's wife<sup>7</sup>*

*But eastwards, o'er vast horizon, up with the sun  
From that quarter our four horsemen ride daily as one  
Earth and water, fire and air  
Carving the Avoca valley, its folds so long bared<sup>8</sup>*

*Mined and farmed hard for 160 years  
As its settler-custodians, we're deep in arrears  
The economic ends of the assembly line  
Have been the flourmill, woolshed and Lord Nelson mine*

*The timber jinker, wood stacks, eucalyptus oil still  
Year after year, pockets were filled  
(There was a human output too; young men died in war  
But many young women helped even the score ...*

*Becoming teachers, bank clerks and nurses  
And overlooking gauche alcoholic curses!  
Can we keep profits coming for two centuries more?  
Let's look anew at this valley so raw*

*From the veranda today it's obviously hard-pressed  
This dry battered land, but out of the west  
Comes a rain-soaked grey front bringing us hope  
Eighteen millimetres, a lifeline, greenness, new mallee growth*

*But much of the rain drains quickly downhill  
Despite riplines and cover, it enlarges the rills  
So we dig numerous ponds to slow down the flow<sup>9</sup>  
Along the gullies, to help repay what we owe  
We transplant reeds and sedges to hasten  
Change from sterile gutter to series of basins  
New homes for frogs and freshwater crays  
Then a white-faced heron stabs at its prey*

## Notes

- 1 One-time gold-mining town 250 km north-west of Melbourne, Victoria (Australia), whose name commemorates the French Marshal Saint Arnaud, of Crimean War fame.
- 2 Low range of hills named by early British explorer Major Thomas Mitchell, who had campaigned in the Peninsular Wars, running north-south from the Dividing Range.
- 3 The Murray-Darling Basin, which covers one-seventh of mainland Australia.
- 4 Aboriginal tribe occupying the region for tens of millennia before European settlement and the advent of sheep grazing; the term 'firebreak' refers to Aboriginal land management skills, in particular low-intensity burning in cooler months.
- 5 Megapode (mallee fowl) incubating its eggs in mounds of fermenting vegetation, or occasionally in piles of gravel; found across arid southern Australia in stands of mallee (multi-stemmed eucalypts growing from a durable and sometimes huge root-stock).
- 6 Russell Drysdale was a famed painter of the Outback and its harshness.
- 7 A reference to Henry Lawson's classic short story of rural hardship, *The Drover's Wife*.
- 8 The local river, the Avoca, has only seasonal flow, the waters of which only reach the River Murray in exceptionally wet years; its catchment, mostly agricultural, is degraded in places.
- 9 By hiring excavators occasionally, with a sensitive operator, the writer and family are trying to restore the original profiles of their waterways, which were originally 'chains of ponds'; but these useful and pleasing features have almost all been destroyed by grazing and cropping over the last 150 years and converted into eroding gullies.

**E-mail: [robmyou@gmail.com](mailto:robmyou@gmail.com)**



*Is the drought breaking?* Rob Youl, April 2016.

*“You will eat your food  
until you return to the ground,  
since from it you were taken;  
for dust you are  
and to dust you will return”*

*(The Bible, Genesis, Chapter 3, Verse 19).*

*“This soil of ours, this precious heritage, what an unobtrusive existence it leads!...To the rich soil let us give the credit due. The soil is the reservoir of life”*

*(J.A. Toogood, Our Soil and Water).*

*“People in cities may forget the soil for as long as a hundred years, but Mother Nature’s memory is long and she will not let them forget indefinitely”*

*(Henry Cantwell Wallace, 1866 – 1924).*

*“Tilth is something every farmer can recognize but no scientist can measure”*

*(Walter Russell, 1861 – 1973).*

*“Look after the soil and it will look after you”*

*(Anonymous, student exam script  
at the University of Wolverhampton (UK) on 10 May 2012).*

*“The wise teach without telling,  
allow without commanding,  
have without possessing,  
care without claiming”*

*(Lao Tzu, Tao Te Ching, Verse 2; Ralph Alan Dale Edition, 2002).*

*“No longer talk about the kind of man that a good man ought to be, but be such”*

*(Emperor Marcus Aurelius (121 – 180 AD), Book Ten, Verse 16).*

*“No bird flies with another’s wings, and no bird can soar too high with its own”*

*(William Blake, 1757–1827).*

*“An intention is like an arrow in flight. Nothing can deflect it. So aim carefully”*

*(Diana Cooper, 2000).*

*“Be the captain of your own ship”*

*(Sanaya Roman, 1986).*

*“The whole basis of outer success is positive, clear intention. When you passionately want it, when you believe you can get it, when you put your full attention on it, you will have the power to make your dreams come true and live the life you were meant to live”*

*(John Gray, 1999).*

*“When you think you can, or think you can’t, you’re usually right”*

*(Henry Ford, 1863–1947).*

## 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 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.*

## OBJECTIVOS 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 el 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.*

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

Institutional Membership € 15 per member per year.

Institutional membership involves the payment of a flat rate of € 15 (per member per year) for institutes/societies with at least 10 members. This fee is irrespective of the country.

Members of the specific institute or society would be full members of the ESSC and receive the ESSC Newsletter.

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):*

- Credit card (MasterCard, Visa)
- PayPal (from your personal PayPal account or with your credit card as a PayPal guest; send an e-mail to [Wim.Cornelis@UGent.be](mailto:Wim.Cornelis@UGent.be) and you will receive a money request)
- Bank Transfer (Branch address: Fortis Bank, Zonnestraat 2, B-9000 Ghent, Belgium;

International transaction codes: 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, Professor Dr Wim Cornelis  
Department of Soil Management, Ghent University,  
Coupure links 653, B-9000 Ghent, BELGIUM  
[Wim.Cornelis@UGent.be](mailto:Wim.Cornelis@UGent.be)