

## CURRICULUM VITAE

### Personal details

Name: Bas van Wesemael  
Date of Birth: 17 July 1959  
Sex: Male  
Nationality: Dutch

### Professional address

Geography department  
Université catholique de Louvain  
Place Louis Pasteur 3  
B 1348 Louvain-la-Neuve, Belgium  
E-mail: [bas.vanwesemael@uclouvain.be](mailto:bas.vanwesemael@uclouvain.be)  
phone: +32 10 472056; fax: +32 10 472877

### Qualifications

- BSc Physical Geography; University of Amsterdam; May 1982
- MSc Physical Geography; University of Amsterdam; February 1987
- PhD Environmental Science; University of Amsterdam; June 1992

### Career details

10-2003-	Professor in physical geography, Université Catholique de Louvain, Belgium
10-2005-	Chair of Department Geology and Geography, UCL.
9-1999 to 10-2003	Chargé de cours, Université Catholique de Louvain, Belgium
9-1997 to 8-1999	Senior Lecturer, Member of Flood Hazard Research Centre, Middlesex University, United Kingdom
9-1995 to 8-1997	Lecturer Middlesex University, United Kingdom
1-1993 to 6-1995	Katholieke Universiteit Leuven; Post doc research associate in European research project on Mediterranean desertification and land use (MEDALUS II)
8-1992 to 12-1992	Valkenberg Raadgevend Ingenieursbureau, Haarlem, The Netherlands, Environmental consultant working on soil contamination
4-1987 to 6-1992	Universiteit van Amsterdam, research assistant funded by National Fund for Scientific Research (NWO)

### Professional activities

2005-	Associate editor European Journal of Soil Science
2007-	Member of the Editorial Board of Catena
2005-	Member of the Commission 'Earth Science and Climate of the Fund for Scientific Research (FWO), Flanders

Reviewer for: Ambio, Earth Surface Processes and Landforms, Journal of Hydrology, Soil and Tillage Research, Journal of Arid Environments, Agriculture, Ecosystems & Environment

## Research interests

The dynamics of soil properties at the landscape and regional scale. Case studies in Belgium and the Mediterranean are used to investigate the drivers leading to spatial patterns in soil properties, their impact on the carbon and water cycle, and the effects of mitigation measures.

## Public output from research and scholarly activity

*Peer-reviewed articles in journals covered by the Science Citation Index [Impact factor 2007]*

- Evrard, O., Vandaele, K., van Wesemael, B. and Bielders, C.L. (accepted). Monitoring a grassed waterway and earthen dams to control muddy floods from a cultivated catchment. *Geomorphology* [IF 2.12].
- Evrard, O., Vandaele, K., Bielders, CL and van Wesemael, B. (accepted) Seasonal evolution of runoff generation on agricultural land in the Belgian loess belt and implications for muddy flood triggering. *Earth Surface Processes and Landforms*[IF 1.78]
- Lesschen, JP, Cammeraat, LH, Kooijman, A. van Wesemael, B. (accepted) Development of spatial heterogeneity in vegetation and soil properties after land abandonment in Southeast Spain. *Journal of Arid Environments* [IF 1.24]
- Frot, E., van Wesemael, B., Solé-Benet, A. and House, M.A., 2008. Water harvesting potential in function of hillslope characteristics, a case study from the Sierra de Gador (Almeria province, southeast Spain). *Journal of Arid Environments* 72, 1213-1231 [IF 1.24].
- Stevens, A., van Wesemael, B., Bartholomeus, H., Rosillon, D., Tychon, B. and Ben-Dor, E.,2008. Laboratory, field and airborne spectroscopy for monitoring organic carbon content in agricultural soils. *Geoderma* 144, 395-404[IF 2.12].
- Stevens, A. and van Wesemael, B., 2008. Soil organic carbon dynamics at regional scale as influenced by land use history: a case study in forest soils from southern Belgium. *Soil Use and Management* 24, 69-79[IF 0.74].
- Dendoncker, N., van Wesemael, B., Smith, P., Lettens, S., Roelandt, C. and Rounsevell, M., 2008. Assessing scale effects on modelled soil organic carbon contents as a result of land use change in Belgium. *Soil Use and Management* 24, 8-18 [IF 0.74].
- Lettens, S., De Vos, B., Quataert, P., van Wesemael, B., Muys, B. and Van Orshoven, J. 2007. Variable carbon recovery of Walkley-Black analysis and implications for national soil organic carbon inventories. *European Journal of Soil Science* 58, 1244-1253 [IF 2.0].
- Goidts, E., van Wesemael, B. 2007. Regional assessment of the changes in soil organic carbon stocks of agricultural soils in southern Belgium between 1955 and 2005. *Geoderma* 141, 341-354 [IF 2.12].
- Evrard, O., Bielders, C.L., Vandaele, K. and van Wesemael, B. 2007. Spatial and temporal variation of muddy floods in central Belgium: Off-site impacts and potential control measures. *Catena* 70, 443-454. [IF 1.29]
- Frot, E., van Wesemael, B., Vandenschrack, G., Souchez, R. and Solé Benet, A. 2007. Rainfall typology for recharge of a karstic aquifer in the western Mediterranean. Sierra de Gador - Campo de Dalias (South-east Spain). *Hydrological Processes* 21, 359-368 [IF 1.64].
- Roelandt, C., Dendoncker, N., Rounsevell, M., Perrin, D. and van Wesemael, B. 2007. Projecting future N<sub>2</sub>O emissions from agricultural soils in Belgium. *Global Change Biology* 13, 18-27 [IF 4.34].

- Evrard, O., Persoons, E., Vandaele, K. and van Wesemael, B. 2007. Impacts of spatial and temporal land cover change on the muddy floods in the loam belt : a case study in a village of Belgium. *Agriculture Ecosystems and Environment* 118, 149-158 [IF 1.83]
- van Wesemael, B., Rambaud, X., Poesen, J., Mulligan, M., Cammeraat, E. and Stevens A., 2006. Spatial patterns of land degradation and their impacts on the water balance of rainfed treecrops: a case study in south east Spain. *Geoderma* 133, 43-56 [IF 2.12].
- Stevens, A., van Wesemael, B., Vandenschrick, G., Touré, S. and Tychon, B. 2006. Detection of Carbon Stock Change in Agricultural Soils Using Spectroscopic Techniques. *Soil Science Society of America Journal* 70, 844-850 [IF 1.87].
- Smith, P., André, O., Karlsson, T., Perälä, P., Regina, K., Rounsevell, M. & van Wesemael, B., 2005. Carbon sequestration potential in European croplands has been overestimated. *Global Change Biology* 11, 2153-2163 [IF 4.34].
- Letpens, S., Van Orshoven, J., van Wesemael, B., Muys, B. and Perrin, D., 2005. Soil organic carbon changes in landscape units of Belgium between 1960 and 2000 with reference to 1990. *Global Change Biology* 11, 2128-2140 [IF 4.34].
- Vande Walle, I., Van Camp, N., Perrin, D., Lemeur, R., Lust, N., van Wesemael, B., Laitat, E., 2005. Growing stock-based assessment of the carbon stock in the Belgian forest biomass. *Annals of Forest Science* 62, 853-864 [IF 1.29].
- Roelandt, C., van Wesemael, B. and Rounsevell, M., 2005. Estimating annual N<sub>2</sub>O emissions from agricultural soils in temperate climates, *Global Change Biology* 11, 1701-1711 [IF 4.34].
- van Wesemael, B., Letpens, S., Roelandt, C. and Van Orshoven, J., 2005. Modelling the evolution of regional carbon stocks in Belgian cropland soils. *Canadian Journal of Soil Science* 85, 511-521 [IF 0.76].
- Letpens, S., Van Orshoven, J., van Wesemael, B., De Vos, B. and Muys, B. (2005) SOC content and SOC content change of landscape units in Belgium derived from heterogeneous datasets for 1990 and 2000. *Geoderma* 127, 11-23 [IF 2.12]
- Dendoncker, N., van Wesemael, B., Rounsevell, M. and Roelandt, C., 2004. Belgium's CO<sub>2</sub> mitigation potential under improved cropland management. *Agriculture, Ecosystems and Environment* 103, 101-116 [IF 1.83]
- Letpens, S., Van Orshoven, J., van Wesemael, B. and Muys, B., 2004. Soil organic and inorganic carbon content of landscape units in Belgium for 1950 – 1970. *Soil Use and Management* 20, 40-47 [IF 0.74]
- Van Wesemael, B., Cammeraat, L.H., Mulligan, M. and Burke, S., 2003. The impact of soil properties and topography on drought vulnerability of rainfed cropping systems in southern Spain. *Agriculture Ecosystems and Environment* 94, 1-15 [IF 1.83].
- Vandenschrick, G., van Wesemael, B., Frot, E., Pulido-Bosch, A., Molina, L., Stiévenard, M. and Souchez, R. 2002. Using stable isotope analysis ( $\delta D$ - $\delta^{18}O$ ) to characterise the regional hydrology of the Sierra de Gador, S-E Spain. *Journal of Hydrology* 265, 43-55 [IF 2.12].
- van Wesemael, B. and Lambin, E.F., 2001. Carbon sinks and conserving biodiversity. *Science* Volume 294, Number 5549, 2094-2095 [IF 30.0].
- van Wesemael, B., Mulligan, M. and Poesen, J., 2000. Spatial patterns of soil water balance on intensively cultivated hillslopes in a semiarid environment: the impact of rock fragments and soil thickness. *Hydrological Processes* 14, 1811-1828 [IF 1.64].
- Mellouli, H.J., van Wesemael, B., Poesen, J. and Hartmann, R., 2000, Evaporation losses from bare soils as influenced by cultivation techniques in semi-arid regions. *Agricultural water Management* 42, 355-369 [IF 1.12].

- Quine, T.A., Govers, G., Poesen, J., Walling, D., van Wesemael, B. and Martinez Fernandez, J., 1999. Fine earth translocation by tillage in stony soils in the Guadalentin, south-east Spain: An investigation using Caesium-134. *Soil & Tillage Research* **51**, 279-301 [IF 1.62].
- van Wesemael, B., Poesen, J., Solé Benet, A., Cara Barrionuevo, L., and Puigdefàbregas, J., 1998. Collection and storage of runoff from hillslopes in a semiarid environment: Geomorphic and hydrologic aspects of the aljibe system in Almería Province, Spain. *Journal of Arid Environments* **40**, 1-14 [IF 1.24].
- Poesen, J., van Wesemael, B., Bunte, K. and Sole-Benet, A., 1998. Variation of surface rock fragment cover and size along semiarid hillslopes: A case study from Southeast Spain. *Geomorphology* **23**, 323-335 [IF 1.70].
- Kosmas, C.S., Danalatos, N.G., Poesen, J. and van Wesemael, B., 1998. The effect of water vapour adsorption on soil moisture content under Mediterranean climatic conditions. *Agricultural Water Management*. **36**, 157-168 [IF 1.12].
- Nachtergaele, J., Poesen, J. and van Wesemael, B., 1998. Application and efficiency of gravel mulches in southern Switzerland. *Soil and Tillage Research*. **46**, 51-59 [IF 1.62].
- Poesen, J., van Wesemael, B., Govers, G., Martinez-Fernandez, J., Desmet, P., Vandaele, K., Quine, T. and Degraer, G., 1997; Patterns of rock fragment cover generated by tillage erosion; *Geomorphology* **18**, 183-197 [IF 1.70].
- van Wesemael, B., Poesen, J., Kosmas, C.S., Danalatos, N.G. and Nachtergaele, J., 1996. Evaporation from cultivated soils containing rock fragments; *Journal of Hydrology* **182**, 65-82 [IF 2.12].
- Vandaele, K., Poesen, J., Govers, G. and van Wesemael, B., 1996. Geomorphic thresholds for ephemeral gully incision. *Geomorphology* **16**, 161-173 [IF 1.70].
- van Wesemael, B., Verstraten, J.M. and Sevink, J., 1995. Pedogenesis by clay dissolution on acid, low-grade metamorphic rocks under Mediterranean forests in southern Tuscany (Italy); *Catena* **24**, 105-125 [IF 1.29].
- van Wesemael, B., Poesen, J. and de Figueiredo, T., 1995. Effects of rock fragments on physical degradation of cultivated soils by rainfall. *Soil & Tillage Research* **33**; 229-250 [IF 1.62].
- van Wesemael, B., Poesen, J., de Figueiredo, T. and Govers, G., 1995. Effects of rock fragments on soil surface roughness evolution during rainfall. *Earth Surface Processes and Landforms*; **21**, 399-441 [IF 1.78].
- van Wesemael, B., 1993. Adsorption complex, pH relationships in some acid Mediterranean forest soil profiles; *Zeitschrift für Pflanzenernährung und Bodenkunde*; **156**; 25-31 [IF 0.99].
- van Wesemael, B., 1993. Litter decomposition and nutrient distribution in humus profiles in Mediterranean forests on acid soils; *Forest Ecology and Management*; **57**; 99-114 [IF 1.84].
- van Wesemael, B. and Verstraten, J.M., 1993. Organic acids in a moder type humus profile under a Mediterranean oak forest and their influence on the chemistry of the soil solution; *Geoderma*; **59**; 75-88 [IF 2.12].
- van Wesemael, B. and Veer, M.A.C., 1992. Soil organic matter accumulation, litter decomposition and humus forms in Mediterranean forests of southern Tuscany, Italy; *Journal of Soil Science*; **43**; 133-144 [IF 2.0].
- Finlayson, B. Gerits, J. and van Wesemael, B., 1987. Crusted microtopography on badland slopes in SE Spain; *Catena*; **14**; 131-144 [IF 1.29].

*Other peer-reviewed articles*

- van Wesemael, B., Lettens, S., Roelandt, C. and Van Orshoven, J., 2004. Changes in soil carbon stocks from 1960 to 2000 in the main Belgian cropland areas. *Biotechnologie, Agronomie, Société et Environnement* 8, 133-140.
- Lettens, S., Van Orshoven, J., van Wesemael, B., Perrin, D. and Roelandt, C., 2004. The inventory-based approach for prediction of SOC change following land use change. *Biotechnologie, Agronomie, Société et Environnement* 8, 141-146.
- Poesen, J., Vandaele, K. and van Wesemael, B., 1996. Contribution of gully erosion to sediment production on cultivated lands and rangelands. *IAHS Publ.* **236**, 251-266.
- van Wesemael, B., Poesen, J., Kosmas, C.S., and Danalatos, N.G., 1995. The role of rock fragments in evaporation from cultivated soils under mediterranean climatic conditions; *Physics and Chemistry of the Earth* **20**, 293-299.
- van Wesemael, B. and Dirks, P., 1987. Amsterdam University Survey Expedition, the relation between the natural landscape and the spatial distribution of archaeological remains; *Mitteilungen des Deutschen Archäologischen Instituts Abteilung Kairo*; band **43**; 25-31.

*Articles and chapters in edited books*

- Van Wesemael B. et Brahy, V., 2007. La matière organique dans les sols. In *Cellule Etat de l'Environnement Wallon. Rapport analytique sur l'état de l'environnement wallon 2006-2007*. MRW-Direction générale des ressources naturelles et de l'environnement, Namur. pp. 468-475.
- Brouwers, J., Claes, C., Moorkens, I., Briffaerts, K., Van Rompaey, H., De Groote, W., Boeckx, P. and van Wesemael, B., 2004. Klimaatsverandering. In M. Van Steertegem (ed.). *MIRA T 2004, Milieu- en natuurrapport Vlaanderen*. Vlaamse Milieu Maatschappij en Uitgeverij Lannoo. pp. 285-302
- van Wesemael, B. and Stevens A. 2005. Evolution of soil carbon stocks as a result of historical land use change: a case study from the Belgian Ardennes. In A. Canarache and R Enache (eds.) *Soils under Global Change – a Challenge for the 21<sup>st</sup> Century*. Editura Estfalia, Bucharest. Pp. 179-192.
- van Wesemael, B. Lettens, S. and Van Orshoven, J., 2003. A methodology to estimate carbon sequestration potential and its impacts on valuable habitats in Belgium. *Proceedings of the International Conference under the Belgian Presidency of the European Union 'Carbon sinks and biodiversity'* Liège, 24-26 October 2001, DGRNE, Région wallonne, Travaux 26, pp. 181-190.
- Van Wesemael, B., Lettens, S., Van Orshoven, J. and Roelandt, C. 2003. A framework to estimate carbon stocks and sequestration potential of Belgian agricultural soils. In Smith, C.A.S. (ed.) *Soil organic carbon and agriculture: Developing Indicators for policy analyses*. Proceedings of an OECD expert meeting, Ottawa Canada. Agriculture and Agri-Food Canada, Ottawa and Organisation for Economic Co-operation and Development, Paris. 329 pp.
- van Wesemael, B., Poesen, J., Kosmas, C., Danalatos, N. and Nachtergaele, J. 2002. The impact of rock fragments on soil degradation and water conservation. In N.A. Geeson, C.J. Brandt and J.B. Thornes (eds) *Mediterranean desertification: A mosaic of processes and responses*. John Wiley and Sons, Chichester, pp. 131-145.
- Poesen, J. Vandekerckhove, L., Nachtergaele, J., Oostwoud Wijdenes, D., Vestraeten, G. and van Wesemael, B., 2002. Gully erosion in dryland environments. In L.J. Bull and M.J. Kirkby (eds) *Dryland rivers: Hydrology and geomorphology of semi-arid channels*. John Wiley and sons, Cichester. pp. 229-262.

- van Wesemael, B., Mulligan, M. and Poesen, J., 2001. Spatial patterns in water use efficiency created by intensive cultivation on semiarid hillslopes. 1128-1133 pgs. In: D.E. Stott, R.H. Mohtar, and G.C. Steinhardt (eds). *Sustaining the Global Farm – Selected papers from the 10th International Soil Conservation Organization Meeting, May 24-29, 1999, West Lafayette, IN.* International Soil Conservation Organization in cooperation with the USDA and Purdue University, West Lafayette, IN. CD-ROM available from the USDA-ARS National Soil Erosion Laboratory, West Lafayette, IN. Web site <http://topsoil.nserl.purdue.edu/nserlweb/isco99/pdf/isco99pdf.htm> (verified 2 May 2002).
- van Wesemael, B and Poesen, J. (in press). Climatic influences on soil organic matter and aggregate stability. In: Boardman, J. and Favis-Mortlock, D. (eds.) *Climate change and soil erosion.* Imperial College Press.
- Danalatos, N.G., Kosmas, C.S., van Wesemael, B. and Poesen, J., 2000. The effect of rock fragments on runoff, erosion, soil moisture conservation and biomass production. In Balabanis, P., Peter, D., Ghazi, A. and Tsogas, M. (eds) *Mediterranean Desertification, Research results and policy implications.* Pp. 214-224 Office for Official Publications of the European Communities, Luxembourg.
- Taplin, J. and van Wesemael, B., 2000. Impacts of spatial variation in soil properties on hydrology of semiarid hillslopes. In: G. Enne, Ch Zanolla and D. Peter (eds). *Desertification in Europe: Mitigation strategies, Land use and Planning Advanced study course.* EUR 19390, Office for Official Publications of the European Communities, Luxembourg. pp. 473-481.
- van Wesemael, B., Poesen, J., Solé Benet, A., Cara Barrionuevo, L., and Puigdefàbregas, J., 1999. *Aljibes: An old water harvesting system in SE Spain; its efficiency controlled by some geomorphic and hydrological parameters.* In Mather, A.E. and Stokes, M. (eds.) *BSRG/BGRG SE Spain Field Meeting Guide Book.* University of Plymouth, England. pp. 157-163.
- van Wesemael, B., Poesen, J., Solé Benet, A., Cara Barrionuevo, L., and Puigdefàbregas, J., 1998, Traditional management of a water harvesting system on hillslopes in south-east Spain. In: H. Wheather and C. Kirkby (eds) *Hydrology in a Changing Environment, Volume II.* John Wiley. pp. 465-472.
- Poesen, J., van Wesemael, B. and Bunte, K.; 1998. Soils containing rock fragments and their response to desertification; In: P. Mairota, J. Thornes and N. Geeson (eds.); *Atlas of Mediterranean Environments in Europe: The Desertification Context;* John Wiley and Sons; Chicester pp. 50-52.
- Poesen, J., Vandaele, K. and van Wesemael, B., 1998. Gully erosion: Importance and model implications; In: J. Boardman and D. Favis-Mortlock (eds.); *Global Change: Modelling Soil Erosion by Water;* NATO ASI Series, Vol. 155. Kluwer Academic Publishers; Dordrecht. pp 285-311.
- Poesen, J. and van Wesemael, B., 1995, The effects of rock fragments on the structural collapse of tilled topsoils during rain; In: E. Derbyshire, T. Dijkstra and I.J. Smalley (eds.); *Genesis and Properties of Collapsible Soils;* Kluwer Academic Publishers, Dordrecht; pp. 333-343. Kluwer, Dordrecht.
- Berael, C., Poesen, J. and van Wesemael, B., 1995. Rill and gully erosion in relation to rock fragment cover and surface slope along a hillslope in southeastern Spain; in: D. Peter, P. Balabanis, J. Rubio and R. Fantechi (eds.); *Desertification in a European Context: Physical and Socio-economic Aspects;* EUR 15415, Commission of the European Communities, Luxembourg; pp.371-375.
- van Wesemael, B., 1988, The relation between the natural landscape and distribution of archaeological remains in the north-eastern Nile delta; In: van den Brink, E.C.M. (ed.). *The*

Archaeology of the Nile Delta, Egypt: problems and priorities; Netherlands Foundation for Archaeological Research in Egypt; Amsterdam; pp 125-134.

*Non-refereed articles*

- Frot, E., van Wesemael, B., Vandenschrick, G., Souchez, R. and Solé Benet, A., 2002. Characterising rainfall regimes in relation to recharge of the Sierra de Gador - Campo de Dalias aquifer system (south-east Spain). *Belgeo* 2, 145-153.
- Six, S., Poesen, J. en van Wesemael, B., 2000. Bewerkingserosie in zuid-oost Spanje: Resultaten van een ploegexperiment op lange termijn. *De Aardrijkskunde* 3: 3-12.
- van Wesemael, B., Poesen, J., Solé Benet, Cara Barrionuevo, L. and Puigdefabregas, J., 1998. Siguen siendo utiles los aljibes ganaderos de la Provincia de Almeria? *Investigacion y Gestion* 3-4, 207-216. Sociedad Almeriense de Historia Natural
- Nachtergaele, J., Poesen, J. and van Wesemael, B., 1996. De grindmulstechniek: een traditionele techniek met actuele toepassingsmogelijkheden? *De Aardrijkskunde*, 1-2: 53-62.
- Degraer, G., Poesen, J., Govers, G., Van Wesemael, B. and Desmet, P., 1996. Ruimtelijke spreiding van gesteentefragmenten aan het bodemoppervlak op intensief bewerkte landbouwgrond (Zuidoost Spanje). *De Aardrijkskunde* 1-2: 13-21.

*Official reports*

- van Wesemael, B., Roelandt, C., Rounsevell, M., Barancikova, G., Lettens, S., Van Orshoven, J., Perrin, D., Torres, G., Pissart, G., Lebègue, C. & Laitat, E. (sous presse). METAGE : Modelling Ecosystem Trace Gas Emissions. Politique Scientifique belge, Bruxelles.
- Poesen, J., Oostwoud Wijdenes, D., Vandekerckhove, L. and van Wesemael, B. 1999. Management of stony soils. Final Report MEDALUS III; Mediterranean Desertification and Landuse, Contract ENV4-CT95-0118; European Commission.
- Poesen, J. and van Wesemael, B.; 1995; Stony soils. Second Annual Report; Covering the Period 1 January to 31 December 1994; Mediterranean Desertification and Landuse, Contract EV5V-CT92-0128; European Commission.
- Poesen, J. and van Wesemael, B.; 1995; Stony soils. Final Report MEDALUS II; Mediterranean Desertification and Landuse, Contract EV5V-CT92-0128; European Commission.
- Poesen, J. and van Wesemael, B.; 1994; Stony soils. First Annual Report; Covering the Period 1 January to 31 December 1993. Mediterranean Desertification and Landuse; Contract EV5V-CT92-0128; European Commission; pp. 87-102.
- van Wesemael, B., and Poesen, J.; 1993; Bepaling van de erosiegevoeligheid van mijnsteenmateriaal op de terril van de mijn Winterslag; Kempense Steenkoolmijnen, Belgium.

**Co-organiser workshops and conferences**

- Thematic day of the Belgian Soil Science Society 'Carbon sequestration in terrestrial ecosystems, Brussels, November 2003
- International Conference 'Soils under global change; a challenge for the 21<sup>st</sup> century, Constanta, Romania, September 2002.
- International Conference under the Belgian presidency of the EU on Carbon sinks and Biodiversity, Liège, October 2001

## Research supervision

### *Completed PhD's*

2002 Grégoire Vandenschrick co-promotion with Prof. R. Souchez (ULB): 'L'excès en deuterium comme moyen d'étude des paléoprécipitations'

### *PhD's submitted for evaluation in 2008*

Antoine Stevens: 'Changes in soil organic carbon at regional scales: strategies to cope with spatial variability'. (prédéfense 18 janvier 2008)

Olivier Evrard: 'Muddy floods in the Belgian loess belt : problems and solutions' (co-promoter Prof. CL Bielders; (prédéfense 19 février 2008)

### *Current PhD students*

1999- Elisabeth Frot: 'Étude hydrologique pour la recharge de la nappe en régions semi-arides en fonction de la variabilité spatiale des caractéristiques du milieu'

2003- André Meerkerk: ' Conditions for restoration of desertified croplands using vegetation'

2005- Esther Goidts: 'Evolution du stock de carbone organique dans les sols agricoles de Wallonie'

2008- Jeroen Meersmans

## Administrative roles

- Président de la Commission de Géographie 2000-2003, Université catholique de Louvain
- Secrétaire de la Commission d'Enseignement dans les Candidatures, 2003-2005, Université catholique de Louvain
- Secrétaire du jury des examens, Université catholique de Louvain
- Academic group chair Geography Environment and Development 1998, Middlesex University
- Programme leader BA/BSc Environment and Society from 1996 to 1998, Middlesex University
- Programme leader MA/MSc Agriculture and Rural Development from 1997 to 1998, Middlesex University

## Contribution to society

- Formulation of recommendations for regional policy on the impacts of carbon sequestration on biodiversity for the Ministry of the Walloon Region. These recommendations were presented and finalised by Bas van Wesemael and Eric Lambin during the international conference on Carbon sinks and biodiversity, Liège 24-26 October 2001.

**Research grants and awards**

- Subcontractor to Laboratorium voor Experimentele Geomorphologie, KU Leuven in MEDALUS III EU research project; 1996-1999; Research on impact of stoniness and soil depth on hydrology in south east Spain; £2500
- Flood Hazard Research Centre, Middlesex University; Research on impact of channelisation of rivers in north Spain on channel characteristics and river corridor habitat; 1996-1997; £500
- Middlesex University Non Formula Funded Research Fund, 'The impact of spatial variation of soil properties on catchment hydrology; September 1998- September 2001; £19,280
- British Council, UK-Dutch scientific research project, June 1998 Travel grant; £550.
- Middlesex University, Research equipment grant: hydrological monitoring equipment; £4000
- Nato collaborative research grant, Impact of spatial variation of soil properties on runoff water harvesting, travel grant with partners from CSIC Spain and INRAT Tunisia, June 1999: BEF 187,000
- The impact of land use change on water use efficiency of dryland farming systems: Université catholique de Louvain, Fonds Spécial de la Recherche; August 1999-October 2002; 70 651 Euro
- Estimating greenhouse gas fluxes from Belgian ecosystems under global change scenarios: Services du Premier Ministre, Affaires Scientifiques, Technique et Culturelles (SSTC, Belgium; Contract EV/10/14A) December 2000-February 2005; 252 708 Euro
- Formulation of policy recommendations on carbon sinks and biodiversity: Ministère de la Région Wallonne, Direction générale des Ressources Naturelles et de l'Environnement, August-October 2001, 4958 Euro
- Quantification de la dynamique de carbone dans le sol relatée au changement de l'utilisation du sol. (October 2003-October 2004) Crédit aux chercheurs, Fonds National de la Recherche Scientifique, 2500 Euro
- Conditions for restoration of desertified croplands using vegetation (1 February 2004 – 31 January 2007). Conditions for Restoration and Mitigation of Desertified Areas using Vegetation (acronym: RECONDES), E.U., 6<sup>th</sup> Framework Programme, Specific Targeted Research or Innovation Project (STREP), GOCE-CT2003-505361, 113 400 Euro,.
- Modelling soil organic carbon dynamics in Belgian croplands as a result of changes in management. Fellowship for scholars from central and eastern Europe; Services du Premier Ministre, Affaires Scientifiques, Technique et Culturelles (SSTC, Belgium) May 2003-April 2004; 32 100 Euro
- Quantification de l'évolution du stock de COS à long terme dans les principaux systèmes agraires de la Wallonie et détermination de l'influence de la gestion agricole sur cette évolution. Ministère de la Région wallonne; January 2004- December 2007, 293 780 Euro
- Soil organic carbon dynamics resulting from historical land use change: European Space Agency; February 2004-August 2004, 12,395 Euro
- Carbon sequestration in the main Belgian terrestrial ecosystems: Services du Premier Ministre, Affaires Scientifiques, Technique et Culturelles (SSTC, Belgium) December 2004-December 2006; 35 831 Euro
- Detecting soil carbon, its spatial variability and its components by Imaging Spectroscopy : Services du Premier Ministre, Affaires Scientifiques, Technique et Culturelles (SSTC, Belgium), June 2005-October 2006, 10,000 €
- Quantitative analysis and modelling of the effect of human-induced land use/cover change on the rate and spatial pattern of desertification in the Mediterranean using novel geochemical

techniques (COSMERO). EU, Marie Curie European Reintegration Grant, January 2006-December 2006, 40,000 €

- The application of cover crops in semi-arid, rainfed agriculture, Université catholique de Louvain, Fonds Spécial de la Recherche; October 2006-October 2007, 28,500 €
- Suivi du carbone organique dans les sols en utilisant des techniques de spectroscopie d'images (MOCA), Stereo II, Politique Scientifique, décembre 2006-juin 2008, 45,250 €
- Changements d'affectation de sol et le transport de Si à travers le bassin de l'Escaut. (LUSI), La Science pour un développement durable, Politique Scientifique, janvier 2007-juillet 2009, 136,891 €
- Recherche d'intérêt général visant à actualiser les indicateurs de l'état de l'environnement wallon relatifs aux teneurs en matières organiques dans les sols. Ministère de la Région wallonne, DGRNE, janvier-mars 2008, 10,000 €

### **Consultancy**

- Impacts of erodibility on re-modelling of spoil heaps; Kempense Steenkoolmijnen, Belgium, June 1993.
- Environmental audit on soil contamination and remediation for Fairview New Homes plc, September-December 1998: £4000
- Contributing author for report on the state of the Flemish environment (MIRA-T 2004 to MIRA-T 2006 Climate change; Vlaamse Milieumaatschappij, June-October 2004, 2005, 2006
- Contributing author to 'Etat de l'Environnement wallon 2006'; chapters: Greenhouse gas emissions, Soil fertility

### **Guest lectures**

- 1999-2003 Visiting academic Middlesex University
- 2004 Invited professor Summer school 'Los problemas del agua y sus posibles soluciones' University of Almeria, Spain
- April 2007 Invited Professor, Geography department, Université Louis Pasteur, Strasbourg, France.

### **Formal and non-formal research contacts**

- Laboratory for Experimental Geomorphology, Katholieke Universiteit Leuven, Belgium
- Department of Applied Analytical and Physical Chemistry, Universiteit Gent
- Estacion Experimental de Zonas Aridas, CSIC, Almeria, Spain
- Department of Geography, King's College London
- Institute for Biodiversity and Ecosystem Dynamics, Universiteit van Amsterdam
- Flood Hazard Research Centre, Middlesex University, UK
- School of Biological Sciences, University of Aberdeen, UK
- Centro de Edafología y Biología Aplicada del Segura, CSIC, Murcia, Spain
- State Key Laboratory of Soil and Sustainable Agriculture, Chinese Academy of Sciences, Nanjing, China
- Mekelle University, Ethiopia
- Department of Geography and the Human Environment, Tel Aviv University

**Membership of professional bodies**

- American Society of Agronomy/Soil Science Society of America
- International Soil Science Society/Nederlandse Bodemkundige Vereniging
- European Society for Soil Conservation
- Belgian Society of Soil Science (board member 2005- )
- Belgian Association of Geomorphologists (secretary 2002-2006)