

Personal Information



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Sex: Female | Date of birth: 26/11/1976 | Nationality: Belgian | 2 children

Education and Training

1994-1998	BSc & MSc in Geography at KULeuven, with <i>Magna Cum Laude</i> . Thesis received the 'Outstanding Graduate Student Award' of Flemish Association of geographers
1998-2002	PhD in Physical Geography at KULeuven (" <i>Geomorphic Response to Environmental change in Tropical Mountain Areas</i> "). FWO Individual Grant. Four fieldwork campaigns in northern Andes, with 18-month stay at Universidad de Cuenca, Ecuador.
2014-2015	Sabbatical leave. One-month stay at University of Colorado (Boulder, US), one-month at Arizona State University at 6-months at National Research Foundation (Senescyt, Ecuador)

Work Experience

2002-2003	Postdoctoral researcher at Laboratory for GIS and Remote Sensing at UCLouvain.
2003-2005	Marie Curie Individual postdoc grant on Geochemical approaches for geomorphology at University of Hannover (Germany). Three stays at ETH-Zurich (Switzerland). One-month fieldwork in Sri Lanka and two months in Ecuador.
2005-2009	FNRS Individual postdoc grant on human-accelerated erosion processes at UCLouvain. Three-month stay at Dartmouth College (US), and one-month stay at MIT (US).
2006-2013	Tenured Lecturer in Geomorphology in Faculty of Sciences at UCLouvain (chargé de cours)
2014	Guest professor in Department of Earth and Environmental Sciences at KULeuven
2013-now	Tenured professorship in Physical Geography at UCLouvain (since Oct 2019: Full professor)

Research Activities

Research fields:

- Geomorphology and Landscape evolution
- Sediment dynamics (4D landscape monitoring and modeling)
- Human-Landscape interactions (human-accelerated erosion and degradation)
- Isotopic tracers for soil production, erosion and weathering processes
- Remote sensing applications in geomorphology (drone, optical remote sensing)

PhD and Post-Doc supervision

- 16 PhD projects completed as supervisor, 1 PhD project ongoing
- 2 post-doc projects completed, 2 post-doc projects ongoing

Main scientific achievement

My research aims to better understand human-landscape system interactions. In my recent work, I stipulated that the sensitivity of the physical environment to human disturbances is ecosystem dependent, and related to potential vegetation cover disturbances from human impact. My research group develops and applies geochemical techniques based on cosmogenic radionuclides to quantify earth surface process rates bringing new insights in soil production, chemical weathering, denudation, and river incision processes. We also develop UAV-based and satellite-based techniques to monitor vegetation and landscape disturbances. My projects focus on fundamental scientific questions that are relevant for ecosystem services management in economically developing countries.

Activities in the scientific community and main honors

- Outstanding Young Scientists Award, European Geosciences Union Geomorphology division, 2012
- Prometeo Outstanding Research Grant (2014-2015), National Secretary of Higher Education, Science and Technology, Ecuador.
- Development Cooperation Prize for contribution to applied science for development. Belgian Directorate-General, 2003.
- Member of the National Committee of Belgian Quaternary Sciences (BELQUA) at the Royal Academies for Science and Arts of Belgium.
- **Visiting scientist** (> 10 days) at Stanford Woods Institute for the Environment at Stanford University (2015), the Ecuadorian Ministry of Environment (2014), the Cooperative Institute for Research in Environmental Science at the University of Colorado (2015), the School of Earth and Space Exploration at Arizona State University (2014), the Earth, Atmospheric and Planetary Science Department, Massachusetts Institute of Technology (2006), Department of Earth Sciences, Dartmouth College (2006) and the Ion Beam Physics Lab at ETH Zurich (2004).
- **Academic coordinator for ARES-CCD** (Académie de Recherche et d'Enseignement Supérieur de la Fédération Wallonie-Bruxelles) for the long-term planning of research for development activities in Ecuador (2016-2023)
- Member of **Mountain Research Initiative's Science Steering Committee** (2014-2019). <https://www.mountainresearchinitiative.org/>
- **Steering Group member of the IGBP - PAGES working group GLOSS** on "Global soil and sediment transfers in the Anthropocene (2015-2018). <http://igbp-scor.pages.unibe.ch/my-pages/paleo-jobs/other/152-initiatives/working-group/gloss>
- Counterpart of **the UNESCO FRIEND/NILE basin project of UNESCO-Flanders Science Trust Fund**. Scientific backstopping of component on Sediment Transport and Watershed Management in the Nile Basin, 2002-2012.
- **Associate and Founding Editor** for Anthropocene (2012-2023), Associate Editor for Earth Surface Dynamics (2013-now), regular reviewer for > 15 ISI-listed journals.
- **Invited keynote (selection for past 10 yrs)** for Cuchline King Symposium of British Society for Geomorphology Annual conference (2023), the Annual Meeting of European Geosciences Union (Union Session 2019, thematic session 2023), 10th International conference on Geomorphology (Coimbra, 2022), International conference on Past plant diversity, climate change and mountain conservation (Ecuador, 2019), Leopoldina-Symposium on "Earth surface shaping by biotic processes" (German Academy of Sciences, 2018), 18th Geomorphological Meeting (Chambéry, 2016), Annual meeting of American Geophysical Union (San Francisco, 2016), International conference on "Mountains of our Future Earth" (Perth, 2015).
- **Invited member of PhD panels and examiner at:** KULeuven (5 times), UGhent (3), Wageningen University (1), CSIC-Spain (2), Potsdam University (2), Université de Strasbourg (1), Université de Rennes (1), BOKU-Austria (1), Vrije Universiteit Brussels (1), Université de Liège (2), University of Edinburgh (1), University of Zurich (1), Deakin University, Australia (1), Universidad de Cordoba (1), University of Edinburgh (1), BOKU-Vienna (1) and UCLouvain (18)
- **Organisator of the PAGES GLOSS 2nd workshop** on "Global soil and sediment transfers in the Anthropocene", UCLouvain, 30 January – 1 February 2017, Louvain-la-Neuve, Belgium
- **Co-organizer of International Symposium** on Land Use Change and Geomorphic, Soil and Water Processes in Tropical Mountain areas, Ecuador, 2002; and Co-organizer of fieldtrip.
- Member of CONDESAN, Consorcio para el Desarrollo Sostenible de la Region Andina (since 2000), Belgian Soil Science Society (2002-now), Mountain Research Forum (since 2002), European Geosciences Union (since 2005)

Teaching activities and academic functions

2007-2013	Teaching five courses (148h/academic year) at UCLouvain: “Geomorphology” and “Geography of Belgium” at BSc level, and “Field excursion in the Alps”, “Tectonic Geomorphology” and “Advanced Physical Geography” at MSc level.
2013-now	Teaching seven courses (175h/academic year) at UCLouvain: “Histoire de la Terre”, “Géographie de la Belgique”, and “Paysages et Territoires” at BSc level, “Tectonic Geomorphology”, “Advanced physical geography” and “Field excursion in the Alps” at MSc level.
Since 2007	Supervision of MSc thesis (36). Scientific backstopping of PhD (21) and postdoc (4) students Training of visiting scientists (7) from University of Leeds (UK), Universität Köln (Germany), Universidad San Simon Mayor (Bolivia), Universidad de Cuenca (Ecuador), KULeuven
2011-now	Academic coordinator of international student exchanges (ERASMUS+, Mercator) for the School of Geography at UCLouvain.
2019, 2022	Organisation of 4-day Summer School in Geochronology, in the scope of BELQUA activities, at Royal Academy of Sciences, Brussels.

Funded projects (only reported for 2010 – now)

Funding ID	Period	Title	Budget
EU-FP7	2010-2012	Marie Curie EIF Programme. Effects of land cover change and land abandonment on sediment yield in semi-arid Mediterranean catchments. Project leader	160kEUR
CIUF-CUD	2008-2013	Improving water resource planning at the scale of micro-dam catchments in Tigray, Northern Ethiopia: learning from success and failure. Project partner.	402kEUR
FNRS	2009-2013	Sediment dynamics in tropical mountain regions: influence of climatic and anthropogenic disturbances on erosion and sediment transfer mechanisms.	1 PhD
CIUF-CUD	2009-2014	Strengthening the scientific and technological capacities to implement spatially integrated land and water management schemes adapted to local socio-economic and physical settings. Project leader.	410kEUR
BelSpo Bilateral	2010-2014	Land use change resulting from socio-economic development and its implications on environmental services in Vietnam. Project leader.	150kEUR
BelSpo Stereo II	2010-2015	Remote Sensing of the forest transition and its impact on ecosystem services in mountain ecosystems. Project partner	183kEUR
BelSpo PAI	2012-2017	InterUniversity Attraction Pole. Phase VII. The Soil systems under Global Change (SoGlo). Project partner and WP leader	900kEUR
SCK-CEN	2014-2016	SCK-CEN, Collaborative project (2015-2020). Quaternary evolution of the Campine Plateau. Project partner	15kEUR
CAI-UCLouvain	2017-2021	Climatic and geological controls on erosion and sediment yield in Andean basins. Project leader	4-year PhD
BelSpo Stereo III	2017-2021	Reforcha : Continuous satellite-based indicators for mapping subtropical forest degradation and its environmental impacts. Project coordinator	321kEUR
ARES PRD	2017-2022	ParamoSUS: Global change and soil and water conservation in the High Andes. Project leader.	510kEUR
ARES POP	2018	Erosion and sediment yield in response to climate change and variability in Andean watersheds. Project leader.	35kEUR
FSR	2019-2020	Using meteoric ¹⁰ Be to constrain rock weathering and erosion in the Galapagos Archipelago. Project leader.	56kEUR

Forest Trends	2019-2020	Systematic review and meta-analysis on the role of natural infrastructure in the face of extreme rain events and risk management for the coast and Andean range. Project leader.	38kEUR
FNRS	2020-2023	Constraining sedimentary cascade by combining isotopic data with numerical landscape modeling	3-year postdoc
ARC (Fédération Wallonie-Bruxelles)	2021-2026	LandSense: Pushing the boundaries of Critical Zone research: Unravelling hydrological controls on carbon and nutrient fluxes by integrating proximal sensing, field measurements and smart modelling. Project partner	845k€
FNRS PDR	2022-2025	Topographic and climatic Control on Soil-Landscape Development in Basalt Flows	313k€

Publications

Major publications as author and co-author

Veerle Vanacker (ORCID: [0000-0002-8237-3446](https://orcid.org/0000-0002-8237-3446)) has published 104 peer-reviewed research articles ([G Scholar](#) H-index 44; i-10 index 84) and 9 book chapters. She was guest editor of 4 ISI-journal special issues, and has shared her research outcomes with peer scientists and policy makers in more than 250 scientific venues over the last 20 years. Her work counts with over 6,200 citations in a wide variety of subject areas including earth and planetary sciences, environmental sciences, archaeology and land use science. Her recent publication on “erosion acceleration after European colonization” was published in Nature Communications (Jan 21), and received broad interest in VrtNieuws (02/12/20), La Libre Belgique (08/12/20), Daily Science (08/12/20) and EOS Magazine (11/01/21).

Selection of 6 papers illustrating broad expertise in soil geography, landscape and earth surface dynamics

Vanacker, Veerle, Molina Verdugo, Armando, Rosas Barturen, Miluska, Bonnesoeur, V., Román-Dañobeytia, F., Ochoa-Tocachi, B.F. & Buytaert, W. (2022). The effect of natural infrastructure on water erosion mitigation in the Andes. SOIL, 8, 133-147. doi :10.5194/soil-8-133-2022.

Kemp, D., Sadler, P.M., Vanacker, V. (2020). The human impact on North American erosion, sediment transfer and storage in a geologic context. Nature Communications, 11, 6012. doi: 10.1038/s41467-020-19744-3.

Clapuyt, F., Vanacker, V., and Van Oost, K. (2016). Reproducibility of UAV-based earth topograph reconstructions based on Structure-from-Motion algorithms. Geomorphology, 260, 4-15. doi: 10.1016/j.geomorph.2015.05.011

Vanacker, V., Linderman, M., Lupo, F., Flasse, S. and Lambin, E. (2005), Impact of short-term rainfall fluctuation on interannual land cover change in sub-Saharan Africa. Global Ecology and Biogeography, 14: 123-135. <https://doi.org/10.1111/j.1466-822X.2005.00136.x>

Vanacker, V., von Blanckenburg, F., Govers, G., Molina, A., Poesen, J., Deckers, J., Kubik, P. (2007). Restoring natural vegetation reverts mountain erosion to natural levels. Geology 35: 303-306. doi: 10.1130/G23109A.

Vanacker, V., Vanderschaeghe, M., Govers, G., Willems, E., Poesen, J., Deckers, J., De Bievre, B. (2003). Linking hydrological, infinite slope stability and land use change models through GIS for assessing the impact of deforestation on landslide susceptibility in High Andean watersheds. Geomorphology 52: 299-315. doi:10.1016/S0169-555X(02)00263-5

References

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Prof. Dr. F. von Blanckenburg. Geochemistry of the Earth Surface. FU Berlin. Tel.: +49 30 838 70686. Email: f.v.b@fu-berlin.de