

# Diego Grados

As a bioscience engineer and applied statistician, my work is centered on solving sustainable development challenges in agriculture. I use interdisciplinary approaches focusing on the fundamental and applied aspects of soil-plant-atmosphere interactions, agroecosystem analysis and remote sensing. With extensive involvement in international research projects alongside multidisciplinary partners, I have honed my teamwork and communication skills. I am proficient in programming languages for data-processing applications and process-based modelling. Additionally, I am enthusiastic about creating integrated assessments that use data science to translate information into knowledge.

## Personal Data

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## Relevant Experience

SEP 2020 - PRESENT	<b>Postdoctoral Researcher</b> - <i>AARHUS UNIVERSITY</i> , Aarhus - Denmark <i>Climate and Water - Agroecology Department - Faculty of Technical Sciences</i> <ul style="list-style-type: none"><li>- Study of mitigation strategies for greenhouse gas emissions and adaptation practices to climate change.</li><li>- International and national collaboration projects: PROENV, MACSUR SciPoI, ZERO, KlimaGødning.</li><li>- Dissemination of results in seminars, workshops, peer-reviewed journals and international conferences.</li><li>- Supervision of MSc and PhD thesis students.</li></ul> Reference: Prof. Dr. Diego ABALOS, Prof. Dr. Jørgen Eivind OLESEN
JUL 2023 - AGO 2023	<b>Visiting Researcher</b> - <i>MASSACHUSETTS INSTITUTE OF TECHNOLOGY (Faculty of Climate, Environment and Life Science)</i> and <i>BOSTON COLLEGE (Faculty of Earth and Environmental Sciences)</i> , Massachusetts - United States of America <ul style="list-style-type: none"><li>- Collaboration on using machine-learning techniques and the terrestrial biosphere model (DLEM) to assess nitrogen cycling and crop production from agroecosystems at global scale.</li></ul> Reference: Prof. Dr. César TERRER, Prof. Dr. Hanqin TIAN
NOV 2021 - DEC 2021	<b>Visiting Researcher</b> - <i>KARLSRUHE INSTITUTE OF TECHNOLOGY</i> , Garmisch-Partenkirchen - Germany <i>Institute of Meteorology and Climate Research, Atmospheric Environmental Research</i> <ul style="list-style-type: none"><li>- Collaboration on using the LandscapeDNDC terrestrial ecosystem model to simulate greenhouse gas emissions and crop production at site and regional scale.</li></ul> Reference: Dr. Edwin HAAS, Prof. Dr. Klaus BUTTERBACH-BAHL
JAN 2020 - MAR 2020	<b>Researcher</b> - <i>KU LEUVEN</i> , Leuven - Belgium <i>Biostatistics and Sustainability Groups - Biosystems Department - Faculty of Bioscience Engineering</i>
APR 2016 - DEC 2019	<b>PhD Researcher</b> - <i>KU LEUVEN</i> , Leuven - Belgium <ul style="list-style-type: none"><li>- Developing multi-target and system modeling methodologies for the agroecosystems’ sustainability assessment.</li><li>- Dissemination of results in seminars, workshops, peer-reviewed journals and international conferences.</li><li>- Supervision of BSc and MSc thesis students in Peru (UNALM and UNCP) and Belgium (KU Leuven).</li></ul> Reference: Prof. Dr. Eddie SCHREVENs
NOV 2014 - APR 2019	<b>Research Assistant</b> - <i>VLIR/UOS PROJECT</i> , Lima - Peru <i>Strengthening of Smallholder Horticultural Systems Subproject</i> <ul style="list-style-type: none"><li>- Co-leading the study of soil-plant-atmosphere interactions in the Peruvian Coastal Desert.</li><li>- Installation of soil, meteorological and irrigation equipment.</li><li>- Design, installation and analysis of agricultural experiments under drip irrigation systems.</li></ul> Reference: Prof. Dr. Eddie SCHREVENs, Prof. Dr. Guido WYSEURE, Prof. Dr. Jan DIELS
SEP 2013 - DEC 2018	<b>Research Officer</b> - <i>VLIR/UOS PROJECT</i> , Junin - Peru <i>Sustainable Agriculture in the Central Peruvian Andes Subproject</i> <ul style="list-style-type: none"><li>- Lead the design, installation and evaluation of agricultural experiments under rainfed conditions.</li><li>- Consolidation of rational databases, development of soil-plant-atmosphere models and statistical techniques.</li><li>- Analysis of agroecosystems using participatory approaches along with biophysical and biochemical assessments.</li></ul> Reference: Prof. Dr. Eddie SCHREVENs, Prof. Dr. Sady GARCÍA
FEB 2013 - APR 2019	<b>Research Officer</b> - <i>VLIR/UOS PROJECT</i> , Junin   Lima - Peru <i>Drone Technology in Agriculture Subproject</i> <ul style="list-style-type: none"><li>- Lead the feasibility study for uses of drone technology in agroecosystems.</li><li>- In charge of drone flights in Peruvian’s Andes and Arid regions. Implementation of photogrammetric and GIS databases.</li><li>- Development of mathematical and statistical workflows for land use classification and field experiments’ assessment.</li></ul> Reference: Prof. Dr. Eddie SCHREVENs, Sr. R&D Dries RAYMAEKERS
JAN 2012 - DEC 2018	<b>Research Officer</b> - <i>VLIR/UOS PROJECT</i> , Junin - Peru <i>Watersheds Management Subproject</i> <ul style="list-style-type: none"><li>- Lead the study of soil-plant-atmosphere interactions and hydrology in the Peruvian Central Andes.</li><li>- Installation of soil, climatological and hydrometric equipment.</li><li>- Implementation of databases, application of hydrological models and assessment of rainfall-runoff relations.</li></ul> Reference: Prof. Dr. Eduardo CHÁVARRI, Prof. Dr. Guido WYSEURE

## Education

APR 2016 - DEC 2019	<b>PhD in Bioscience Engineering, Biostatistics and Sustainability</b> - KU Leuven, Belgium Thesis Title: “Multi-target methodologies for the improvement of agricultural systems research - <i>Study cases at system and field level</i> ”.   Advisor: Prof. Dr. Eddie SCHREVENs
JAN 2007 - DEC 2011	<b>BSc in Agricultural Engineering, Hydrology</b> - Agrarian National University La Molina , Peru Honor Thesis Title: “Analysis of flood peaks in small Andean watersheds, Junin Department, Peru (2011-2012 Period)”.   Advisor: Prof. Dr. Eduardo CHÁVARRI

Relevant Publications

1. Grados, D., Butterbach-Bahl, K., Chen, J., Van Groenigen, K. J., Olesen, J., Van Groenigen, J. W., Abalos, D., 2022. Synthesizing the evidence of nitrous oxide mitigation practices in agroecosystems. *Environmental Research Letters*. <https://doi.org/10.1088/1748-9326/ac9b50>.

2. Grados, D., Reynafarje, X., Schrevens, E., 2020. A methodological approach to assess canopy NDVI-based tomato dynamics under irrigation treatments. *Agricultural Water Management*, 240, 106208. <https://doi.org/10.1016/j.agwat.2020.106208>.

3. Grados, D., García, S., Schrevens, E., 2020. Assessing the potato yield gap in the Peruvian Central Andes. *Agricultural Systems*, 181, 102817. <https://doi.org/10.1016/j.agry.2020.102817>.

4. Grados, D., Schrevens, E., 2019. Multidimensional analysis of environmental impacts from potato agricultural production in the Peruvian Central Andes. *Science of The Total Environment*, 663, 927–934. <http://doi.org/10.1016/j.scitotenv.2019.01.414>.

Relevant Conference Proceedings [PEER-REVIEWED]

2019 Grados, D., García, S., Schrevens, E., Nitrogen and water use efficiency under rain-fed potato agriculture: An experimental study. *Acta Horticulturae (1253, 243–252)*. *International Symposium on Water and Nutrient Relations and Management of Horticultural Crops*, Istanbul, Turkey, 12-16 Aug 2018. <http://doi.org/10.17660/actahortic.2019.1253.33>.

2017 Grados, D., Vetter, E., Heuts, R., Schrevens, E., A model based technical sustainability analysis of potato production systems in the Mantaro Valley, Central Highlands, Peru. *Acta Horticulturae (1154, 155-152)*. *Symposium on Applications of Modelling as an Innovative Technology in the Horticultural Supply Chain*, Wageningen, The Netherlands, 11-14 Oct 2015. <http://doi.org/10.17660/actahortic.2017.1154.20>.

2016 Grados, D., Vera, J., Schrevens, E., Corn-faba bean associations in the Peruvian Central Andes. *Acta Horticulturae (1128, 79-88)*. *International Symposium on Horticulture in Developing Countries and World Food Production*, Brisbane, Australia, 19-22 Aug 2014. <http://doi.org/10.17660/actahortic.2016.1128.11>.

Teaching Experience

FA 2021 - 2023	Carbon Cycling and Climate Change - Master in Agrobiology, Aarhus University <b>Teacher Assistant:</b> I lectured on soil nitrogen cycling and nitrous oxide emissions. I guided students during the discussion and practical sessions to assess agroecosystems. I supported them on the development of their research papers. [20 students]
FA 2017 - 2019	Applied Multivariate Statistical Analysis - Master in Bioscience Engineering, KU Leuven <b>Teacher Assistant:</b> I taught students how to analyze their databases using statistical software by leading R-tutorials. I was responsible for the practical sessions on data wrangling and visualization, matrix algebra, R-programming and advanced multivariate techniques. [80 students]
FA 2019	Biological Production Systems - Bachelor in Bioscience Engineering, KU Leuven <b>Teacher Assistant:</b> I guided students during discussions and practical sessions to assess agroecosystems. I taught them the essentials of process-based mathematical modelling and supported them on the development of their research papers. [25 students]
SP 2016	Ecosystems Modelling - Master in Bioscience Engineering, KU Leuven <b>Teacher Assistant:</b> I taught students how to develop and utilize ecosystems models at diverse scales by leading R-tutorials. I guided the practical sessions on mathematical and statistical concepts, data wrangling and visualization, R-programming. I taught them the fundamental topics on process-based modelling of ecosystems: identification, implementation, calibration and validation. [10 students]

Fellowships and Grants

2023	Land-CRAFT Research Grant [6 000€]
2022	Aarhus University Travel Grant [400€]
2021	iClimate Research Grant [3 600€]
2020	FONDECYT-CONCYTEC Research Grant [5 500€]
2016 - 2019	VLIR/UOS PhD Fellowship [82 000€]
2013   2014   2015	VLIR/UOS International Scholar Fellowships [67 000€]

Ad-Hoc Reviewer

*Agronomy for Sustainable Development, Agricultural Systems, European Journal of Agronomy, Geoderma, Journal of Cleaner Production, Plant and Soil, Soil Use and Management.*

Languages

English: Full professional proficiency	Italian and Dutch: Elementary working proficiency
French: Limited working proficiency	Spanish: Native/Bilingual

Technical Skills

Programming	R, Python
Markup	Markdown, $\LaTeX$
Other	RStudio, Spyder, Office, QGIS, ArcGIS, Git/GitHub, HTML/CSS, HPC, Open Science Framework, Adobe Illustrator