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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Web	https://diegogradosb.github.io	ORCID	0000-0001-5548-3204

Relevant Experience

Sep 2020 - Present

Postdoctoral Researcher - *Aarhus University*, Aarhus - Denmark
Climate and Water - Agroecology Department - Faculty of Technical Sciences

- Study of mitigation strategies for greenhouse gas emissions and adaptation practices to climate change.
- International collaboration projects: PROENV, MACSUR SciPol, ZERO, KlimaGødning.
- Dissemination of results in seminars, workshops, peer-reviewed journals and international conferences.
- Supervision of MSc and PhD thesis students.

Reference: Prof. Dr. Diego Abalos, Prof. Dr. Jørgen Eivind Olesen

Jul 2023 - Ago 2023

Visiting Researcher - *Massachusetts Institute of Technology (Faculty of Climate, Environment and Life Science)* and *Boston College (Faculty of Earth and Environmental Sciences)*, Massachusetts - United States of America

- Collaboration on using machine-learning techniques and the terrestrial Dynamic Land Ecosystem Model (DLEM) to assess nitrogen cycling and crop production from agroecosystems at global scale.

Reference: Prof. Dr. César Terrer, Prof. Dr. Hanqin Tian

Nov 2021 - Dec 2021

Visiting Researcher - *Karlsruhe Institute of Technology*, Garmisch-Partenkirchen - Germany
Institute of Meteorology and Climate Research, Atmospheric Environmental Research

- Collaboration on using the LandscapeDNDC terrestrial ecosystem model to simulate greenhouse gas emissions and crop production at site and regional scale.

Reference: Dr. Edwin Haas, Prof. Dr. Butterbach-Bahl Klaus

Jan 2020 - Mar 2020

Researcher - *KU Leuven*, Leuven - Belgium
Biostatistics and Sustainability Groups - Biosystems Department - Faculty of Bioscience Engineering

Apr 2016 - Dec 2019

PhD Researcher - *KU Leuven*, Leuven - Belgium

- Developing multi-target and system modeling methodologies for the agroecosystems' sustainability assessment.
- Dissemination of results in seminars, workshops, peer-reviewed journals and international conferences.
- Supervision of BSc and MSc thesis students in Peru (UNALM and UNCP) and Belgium (KU Leuven).

Reference: Prof. Dr. Eddie Schrevens

Nov 2014 - Apr 2019

Research Assistant - *VLIR/UOS Project*, Lima - Peru
Strengthening of Smallholder Horticultural Systems Subproject

- Co-leading the study of soil-plant-atmosphere interactions in the Peruvian Coastal Desert.
- Installation of soil, meteorological and irrigation equipment.
- Design, installation and analysis of agricultural experiments under drip irrigation systems.

Reference: Prof. Dr. Eddie Schrevens, Prof. Dr. Guido Wyseure, Prof. Dr. Jan Diels

Sep 2013 - Dec 2018

Research Officer - *VLIR/UOS Project*, Junin - Peru
Sustainable Agriculture in the Central Peruvian Andes Subproject

- Lead the design, installation and evaluation of agricultural experiments under rainfed conditions.
- Consolidation of rational databases, development of soil-plant-atmosphere models and statistical techniques.
- Analysis of agroecosystems using participatory approaches along with biophysical and biochemical assessments.

Reference: Prof. Dr. Eddie Schrevens, Prof. Dr. Sady García

Feb 2013 - Apr 2019

Research Officer - *VLIR/UOS Project*, Junin | Lima - Peru
Drone Technology in Agriculture Subproject

- Lead the feasibility study for uses of drone technology in agroecosystems.
- In charge of drone flights in Peruvian's Andes and Arid regions. Implementation of photogrammetric and GIS databases.
- Development of mathematical and statistical workflows for land use classification and field experiments' assessment.

Reference: Prof. Dr. Eddie Schrevens, Sr. R&D Dries Raymaekers

Jan 2012 - Dec 2018

Research Officer - *VLIR/UOS Project*, Junin - Peru
Watersheds Management Subproject

- Lead the study of soil-plant-atmosphere interactions and hydrology in the Peruvian Central Andes.
- Installation of soil, climatological and hydrometric equipment.
- Implementation of databases, application of hydrological models and assessment of rainfall-runoff relations.

Reference: Prof. Dr. Eduardo Chávarri, Prof. Dr. Guido Wyseure

Education

Apr 2016 - Dec 2019

PhD in Bioscience Engineering, *Biostatistics and Sustainability* - KU Leuven, Belgium
Thesis Title: "Multi-target methodologies for the improvement of agricultural systems research - *Study cases at system and field level*". | Advisor: Prof. Dr. Eddie Schrevens

Jan 2007 - Dec 2011

BSc in Agricultural Engineering, *Hydrology* - 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.agsy.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.**, Vetters, 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**
Teacher Assistant: 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**
Teacher Assistant: 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**
Teacher Assistant: 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**
Teacher Assistant: 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** Travel 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
French: Limited working proficiency
Italian and Dutch: Elementary 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 Ilustrator