Christian Folberth
International Institute for Applied Systems Analysis
Schlossplatz 1
A-2361 Laxenburg
Austria

Position

2016 –	**Research Scholar**

Agriculture, Forestry, and Ecosystem Services Research Group (AFE), Biodiversity and Natural Resources Program (BNR), International Institute for Applied Systems Analysis, Austria

Professional experience

2015 – 2016   **Research Fellow and Co-Group Leader**
Research and Teaching Unit Human-Environment Relations, Department of Geography, Ludwig Maximilian University of Munich, Germany

2015 – 2016   **Guest Research Scholar**
Agro-Environmental Systems Group, Ecosystem Services and Management Program, International Institute for Applied Systems Analysis, Austria

2013 – 2015   **Research Scholar**
Agro-Environmental Systems Group, Ecosystem Services and Management Program, International Institute for Applied Systems Analysis, Austria

2009 – 2013   **Research Assistant**
Swiss Federal Institute of Aquatic Science and Technology (Eawag), Switzerland

Education

2014   PhD (Doctor of Sciences ETH Zurich)
Modeling crop yield and water use in the context of global change with a focus on maize in sub-Saharan Africa
Department of Environmental Systems Science, ETH Zurich, Switzerland

2008   M.Sc. (with distinction) Environmental Planning and Ecological Engineering
Technical University of Munich, Germany

2005   B. Sc. (with distinction) Horticultural Sciences
Technical University of Munich, Germany

Fellowships and grants

2021 – 2023   Sustainable Agriculture Matrix consortium, Funder Belmont Forum/FWF, Partner-PI (Total approx. EUR 340k, share 70k)

2015 – 2016   LMUexcellent Research Fellowship of the Center for Advanced Studies, Ludwig Maximilian University of Munich, Germany (equivalent approx. EUR 160k)

Organization of scientific meetings

2019 – Session "Modeling agricultural systems under global change", EGU General Assembly. Co-convener with C. Müller, F. Lutz, S. Minoli.
2018   Session "Agricultural management in ecosystem models for biogeochemical and agricultural assessments", EGU General Assembly. Co-convener with C. Müller, F. Lutz, S. Minoli.
2016   Workshop "Sustainable Phosphorus Management for Future Food Security", Center for Advanced Studies, LMU Munich. Co-convener with Prof. Caroline Gutjahr
2015   Dialogue session "Soil and land information: How to support decision making?", Global Soil Week 2015. Co-planner with partners from IIASA, JRC, ICRAF, and ISRIC among others

Professional societies

2018 – European Geoscience Union

Editorial board services

2019 – Editorial Board member, Geoscientific Model Development

Peer-review and refereeing

Journals: Agricultural and Forest Meteorology; Agriculture, Ecosystems and Environment; Agricultural Systems; Agronomy; Archives of Agronomy and Soil Science; Climatic Change; Earth System Dynamics; Ecological Modelling; Environmental Research Letters; Frontiers in Nutrition; Global Food Security; Nature Sustainability; Resources, Conservation and Recycling; Science of the Total Environment

Research funds: Agence Nationale de la Recherche (France), SNSF (Switzerland)

Other professional activities (selected)

2019   Invited workshop participant, Sustainable Agricultural Matrix pursuit project, SESYNC, MD, USA
2019   Invited workshop participant, Footprint methodologies and their role in policy development and communication, German Development Institute, Bonn, Germany
2018   Invited workshop participant, Sustainable Agricultural Matrix pursuit project, SESYNC, MD, USA
2015   Invited speaker, Land use workshop of Heinrich-Böll-Foundation stipends, Munich, Germany
2012 – Member of the Inter-Sectoral Impact Model Intercomparison Project (ISIMIP) and Global Gridded Crop Model Intercomparison (GGCMI) initiative
2011 – Invited guest lectures and seminars on crop modelling, tropical agriculture, and agricultural climate change impacts at University of Kassel (Germany, 2010), University of Bonn (Germany, 2011), University of Basel (Switzerland, 2012, 2014), Technical University of Munich (Germany, 2015, 2015), and University of Natural Resources and Life Sciences Vienna (Austria, 2016, 2018)

Teaching

Resources and sustainability; Land use systems and land use conflicts; Transition paths towards sustainability; Introduction to anthropogeography; Crop modelling across scales; Data handling and visualization in R

Supervision and capacity building

2021   Co-Supervision of IIASA Young Scientists Summer Program (YSSP) participants Henrique Moreno Dumont Goulart (VU Amsterdam, NL) and Jincheng Li (Beijing University, CHN)
2020   Supervision of IIASA Young Scientists Summer Program (YSSP) participant Xiaobo Wang (Chinese Academy of Sciences, CHN); continued as one year guest research stay at IIASA
2018   Co-Supervision of IIASA Young Scientists Summer Program (YSSP) participant Tony Carr (University College London, UK)
2015   Co-Supervision of B.Sc. student Leonie Keil at Ludwig Maximilian University of Munich, Germany
2014   External technical advisor to PhD student Liu Wenfeng (ETH Zurich and Eawag, Switzerland)

Technical skills

Software: ArcGIS, QGIS, STAN, Vensim, Adobe CS, MS Office
Programming environments: R, Linux shell scripting, C, VBA, Fortran, Python
Data processing: handling of large data, visualization, machine learning applications, parallel computing

Languages

German   native
English   fluent
French   good written, moderate communication
Spanish   good written, moderate communication
Romanian   basic understanding

Publications

Website: https://iiasa.ac.at/staff/christian-folberth
Scopus: https://www.scopus.com/authid/detail.uri?authorId=35483580300
ORCID: 0000-0002-6738-5238

Total publications (Scopus): 64
h-index (Scopus): 29

Selected recent publications

Wang, X. et al., 2022. Crop Calendar Optimization for Climate Change Adaptation in Rice-Based Multiple Cropping Systems of India and Bangladesh. *Agricultural and Forest Meteorology* 315. https://doi.org/10.1016/j.agrformet.2022.108830.
Jägermeyr, J. et al., 2021. Climate impacts on global agriculture emerge earlier in new generation of climate and crop models. *Nature Food* 2, 873–885. https://doi.org/10.1038/s43016-021-00400-y
Goulart, H. M. D. et al., 2021. Storylines of weather-induced crop failure events under climate change. *Earth System Dynamics* 12, 1503–1527. https://doi.org/10.5194/esd-12-1503-2021.
Folberth, C. et al., 2020. The Global Cropland-Sparing Potential of High-Yield Farming. *Nature Sustainability* 3, 281–289. https://doi.org/10.1038/s41893-020-0505-x.
Folberth, C. et al., 2019. Spatio-temporal downscaling of gridded crop model yield estimates based on machine-learning. *Agricultural and Forest Meteorology* 264, 1–15. https://doi.org/10.1016/j.agrformet.2018.09.021