Jonas Jägermeyr

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Education

2012 – 2017	**Ph.D. in Geography (Dr. rer. nat., with distinction, summa cum laude)**, Potsdam Institute for Climate Impact Research (PIK) and Humboldt University of Berlin, Germany, (link to dissertation)
2011	**Graduation in Geography (Diploma, with distinction, top of class)**, Humboldt University of Berlin, Germany and NASA Ames Research Center, Mountain View, CA, USA, minors: Mathematics and Meteorology, (link to thesis)

Professional experience

1/2018 – pres.	**Postdoctoral Research Scientist** U Chicago, IL, Department of Computer Science (supervisors: I. Foster and J. Elliott) and **NASA Collaborator** Goddard Institute for Space Studies (supervisors: A. Ruane and C. Rosenzweig)
4/2017 – 12/2017	**Research staff** Potsdam Institute for Climate Impact Research, Germany
2/2019 – pres.	**Consultant** Praedictus Climate Solutions, Washington D.C.

Community service

2018 – pres.	**Co-lead and coordination** of the Global Gridded Crop Model Intercomparison (GGCMI) within AgMIP
2017 – pres.	**Scientific coordination** of the ISIMIP agriculture sector at Potsdam Institute for Climate Impact Research, Germany
2018 – pres.	**Editor** for journal *Frontiers in Sustainable Food Systems*
2018 – pres.	**Member and scientific contribution** to FAO expert committee for SDG guideline development for environmental flow implementation
2019 – pres.	**Expert Reviewer** for IPCC 6$^{\text{th}}$ Assessment Report, Working Group II
2015 – pres.	**Reviewing activity** for *Nature*, *Nature Climate Change*, *Nature Food*, *Nature Sustainability*, *Earth System Dynamics*, *Earth's Future*, *International Foundation for Science (IFS)*, and others
2017 – pres.	**Supervision** PhD candidate at Centre for Environmental and Sustainability Research, Portugal

Peer-reviewed journal articles

2020

Jägermeyr, J., Robock, A., Elliott, J., Müller, C., Xia, L., Khabarov, N., Folberth, C., Schmid, E., Liu, W., Zabel, F., Rabin, S., Puma, M.J., Heslin, A.C., Franke, J., Foster, I., Asseng, S., Bardeen, C.G., Toon, O.B., Rosenzweig, C., A regional nuclear conflict would compromise global food security, *Proc. Natl. Acad. Sci.*, (link).

Jägermeyr, J., Agriculture's Historic Twin-Challenge Toward Sustainable Water Use and Food Supply for All, *Front. Sustain. Food Syst.*, vol. 4, no. 35, pp. 1–16, (link), invited perspective paper.

Zhai, R., Tao, F., Lall, U., Fu, B., Elliott, J., **Jägermeyr, J.**, Larger Drought and Flood Hazards and Adverse Impacts on Population and Economic Productivity under 2.0 than 1.5°C Warming, *Earth's Future*, 4, (link).

Franke, J., Müller, C., Elliott, J., Ruane, A., **Jägermeyr, J.** et al., The GGCMI Phase II experiment: global gridded crop model simulations under uniform changes in CO2, temperature, water, and nitrogen levels (protocol version 1.0), *Geosci. Model Dev. Discuss.*, pp. 1–31, (link).

Franke, J., Müller, C., Elliott, J., Ruane, A., Snyder, A., **Jägermeyr, J.**, et al. The GGCMI Phase II emulators: global gridded crop model responses to changes in CO2, temperature, water, and nitrogen (version 1.0), *Geosci. Model Dev. Discuss.*, (link).

Gerten, D., Heck, V., **Jägermeyr, J.**, Bodirsky, B.L., Fetzer, I., Jalava, M., Kummu, M., Lucht, W., Rockström, J., Schaphoff, S., Schellnhuber, H.J. Feeding ten billion people is possible within four terrestrial planetary boundaries. *Nature Sustainability*, vol. 3, no. 3, pp. 200–208, (link).

2019

Huang, G., Hoekstra, A., Krol, M, Galindo, A., **Jägermeyr, J.**, Yu, C., Wang, R., Water-Saving Agriculture Can Deliver Deep Water Cuts for China, *Resources, Conservation & Recycling*, 154, article number: 104578, (link).

Franke, J., Müller, C., Elliott, J., Ruane, A., **Jägermeyr, J.**, et al. The GGCMI Phase II experiment: global gridded crop model simulations under uniform changes in CO2, temperature, water, and nitrogen levels (protocol version 1.0), *Geoscientific Model Development Discussions*, pp. 1–30, (link).

Minoli, S., Müller, C., Elliott, J., Ruane, A., **Jägermeyr, J.**, et al., Global response patterns of major rainfed crops to adaptation by maintaining current growing periods and irrigation. *Earth's Future*, 1-38, (link).

Brás, T.A., **Jägermeyr, J.**, Seixas, J., Exposure of the EU-28 food imports to extreme weather disasters in exporting countries, *Food Security*, (link).

Stenzel, F., Gerten, D., Werner, C., **Jägermeyr, J.**, Freshwater requirements of large-scale bioenergy plantations for limiting global warming to 1.5°C. *Environ. Res. Lett.*, 14(8): 084001, (link).

2018

Jägermeyr, J. and Frieler, K. Spatial variations in crop phenology pivotal to reproduce global fluctuations in maize and wheat yields. *Science Advances*, Vol. 4, no. 11, eaat4517, (link).

Schaphoff, S., von Bloh, W., Rammig, A., Thonicke, K., Biemans, H., Forkel, M., Gerten, D., Heinke, J., **Jägermeyr, J.**, et al. LPJmL4 – a dynamic global vegetation model with managed land: Part I – Model description. *Geoscientific Model Development*, 11(4), 1343-1375, (link).

Schaphoff, S., Forkel, M., Müller, C., Knauer, J., von Bloh, W., Gerten, D., **Jägermeyr, J.**, et al. LPJmL4 - a dynamic global vegetation model with managed land: Part II - Model evaluation. *Geoscientific Model Development*, 11(4), 1377-1403, (link).

Rufin, P., Levers, C. Baumann, M., **Jägermeyr, J.**, Krueger, T., Kuemmerle, T., Hostert, P. Global-scale patterns and determinants of cropping frequency in irrigation dam command areas. *Global Environmental Change*, 50, 110–122, (link).

2017 **Jägermeyr, J.**, Pastor, A., Biemans, H., Gerten, D. Reconciling irrigated food production with environmental flows for Sustainable Development Goals implementation. *Nature Communications*, 8, article number: 15900, (link).

Kummu, M., Fader, M., Gerten, D., Guillaume, J., Jalava, M., **Jägermeyr, J.**, et al. Bringing it all together: linking measures to secure nations' food supply. *Current Opinion in Environmental Sustainability*, 29, 98-117, (link) .

Frieler, K. et al. (incl. **Jägermeyr, J.**) Assessing the impacts of 1.5°C global warming - simulation protocol of the Inter-Sectoral Impact Model Intercomparison Project (ISIMIP2b), Geoscientific Model Development, 10(12), 4321-4345, (link).

2016 **Jägermeyr, J.**, Gerten, D., Schaphoff, S., Heinke, J., Lucht, W., Rockström, J. Integrated crop water management might sustainably halve the global food gap. *Environ. Res. Lett.*, 11(2): 025002, (link), (awarded ERL Highlights 2016).

Wang-Erlandsson, L., Bastiaanssen, W. G. M., Gao, H., **Jägermeyr, J.**, et al. Global root zone storage capacity from satellite-based evaporation. *Hydrology and Earth System Sciences*, 20(4), 1459-1481, (link).

2015 **Jägermeyr, J.**, Gerten, D., Heinke, J., Schaphoff, S., Kummu, M., Lucht, W. Water savings potentials of irrigation systems: global simulation of processes and linkages. *Hydrology and Earth System Sciences*, 19(7), 3073-3091, (link).

2014 **Jägermeyr, J.**, Gerten, D., Lucht, W., Hostert, P., Migliavacca, M., Nemani, R. A high-resolution approach to estimating ecosystem respiration at continental scales using operational satellite data. *Global Change Biology*, 20(4), 1191-1210, (link).

2013 Gerten, D., Hoff, H., Rockström, J., **Jägermeyr, J.**, et al. Towards a revised planetary boundary for consumptive freshwater use: Role of environmental flow requirements. *Current Opinion in Environmental Sustainability*, 5(6), 551-558, (link).

2010 Kabir, M. H., Endlicher, W., **Jägermeyr, J.** Calculation of bright roof-tops for solar PV applications in Dhaka Megacity, Bangladesh. *Renewable Energy*, 35(8), 1760-1764, (link).

Peer-reviewed journal articles (pending)

2020 Lange, S., Volkholz, J., Geiger, T., **Jägermeyr, J.**, et al., Historical warming has almost tripled global population annually exposed to extreme events. *Earth's Future*, under review.

Wang, X., Ciais, P., Müller, C., Elliott, J., Mueller, N., **Jägermeyr, J.**, Global irrigation contribution to wheat and maize yield, *Nature Communications*, in revision

Steinbuks, J., Judd, K., **Jägermeyr, J.**, Hertel, T. Modeling Uncertainty in Large Natural Resource Allocation Problems, *JAERE*, in revision.

Book chapters, solicited articles, other publications

2018 Gerten, D. & **Jägermeyr, J.** The potential impact of improved water management to alleviate water scarcity and hunger: a global perspective. In: Allan, T., Bromwich, B., Colman, T., Keulertz, M. (Eds.): *The Oxford Handbook of Water, Food and Society.* Oxford University Press (link).

2017 **Jägermeyr, J.** Managing water better is central to attaining our development goals. *The Water Blog*, World Bank (link).

Jägermeyr, J. Assessing opportunities to increase global food production within the safe operating space for human freshwater use. *Humboldt University of Berlin*, dissertation, (link).

Jägermeyr, J. To the Last Drop. *The Mark News*, syndicated worldwide (print and online) (link).

2016 Press release, Better water management could halve the global food gap (link), with extended media coverage (incl. TV, print and online), 2016, Potsdam Institute for Climate Impact Research.

Jägermeyr, J. & Gerten, D. Bessere Wassernutzung könnte globales Nahrungsdefizit reduzieren *Hydrologie und Wasserbewirtschaftung*, 60(2), 153-155.

2011 **Jägermeyr, J.**, A Continental-Scale Estimate of Ecosystem Respiration Using MODIS Land Surface Temperature and Enhanced Vegetation Index. *Humboldt University of Berlin*, diploma thesis, (link).

Open data publications and model code contributions

2019 GGCMI phase 2 – global gridded crop model simulations under uniform changes in CO2, temperature, water, and nitrogen levels, (link).

2018 LPJmL4 – a dynamic global vegetation model with managed land, (link).

2017 ISIMIP2b – Inter-Sectoral Impact Model Intercomparison Project data base, (link)

2015 Global gridded data set of crop-specific irrigation efficiencies and irrigation systems, (link).

Selected scientific presentations

2019 **Jägermeyr, J.**, Rosenzweig, C., Ruane, A., Mutter, C. Modeling opportunities for climate-smart approaches – anticipating extreme events and shocks, *invited* oral presentation, *GACSA Annual Forum*, 15-16 June, 2019, Bonn, Germany.

Jägermeyr, J., Müller, C., Elliott, J., et al. Global gridded crop modeling - understanding crop yield fluctuations, *invited* oral presentation, *Cross-sectoral ISIMIP workshop*, 04-07 June 2019, Paris, France.

Jägermeyr, J., Müller, C., Elliott, J., et al. Global gridded crop modeling within AgMIP, *invited* oral presentation, *Next-Generation Food Shock Modeling workshop*, Aspen Global Change Institute, 20-24 May, 2019, Colorado.

Jägermeyr, J., Xia, L., Müller, C., Elliott, J., et al. A regional nuclear conflict has global implications for food security, oral presentation, *3rd Agriculture and Climate Change Conference*, 24-26 March 2019, Budapest, Hungary.

2018 **Jägermeyr, J.**, Pastor, A., Biemans, H., Gerten, D. Reconciling irrigated food production with environmental flows for SDG implementation, oral presentation, *7th AgMIP Global Workshop*, 23-27 April 2018, San Jose, Costa Rica.

2018 **Jägermeyr, J.**, Pastor, A., Biemans, H., Gerten, D. Reconciling irrigated food production with environmental flows for SDG implementation, oral presentation, *Nexus 2018*, 16-18 April 2018, Chapel Hill, North Carolina, USA.

2017 **Jägermeyr, J.** & Frieler, K., Local cultivar phenology key to representing extreme weather impacts on global maize yields, invited oral presentation, *Impacts World 2017*, 11-13 October 2017, Potsdam, Germany.

2016 **Jägermeyr, J.**, Gerten, D., Schaphoff, S., Heinke, J., Lucht, W., Rockström, J., Integrated crop water management might sustainably halve the global food gap, plenary talk, *International Crop Modelling Symposium*, 15-17 March 2016, Berlin, Germany.

2015 **Jägermeyr, J.**, Gerten, D., Lucht, W., Heinke, J., Planetary opportunities in crop water management - potential to outweigh cropland expansion, invited plenary talk, *Our Common Future under Climate Change*, 7–10 July 2015, Paris, France.

2014 **Jägermeyr, J.**, Gerten, D., Lucht, W., Heinke, J., Planetary opportunities in crop water management - potential to outweigh cropland expansion, oral presentation, *EGU 2014* - European Geosciences Union General Assembly, Vienna, Austria, 27 April – 02 May 2014.

Invited workshop contributions

- Building Resilient Agricultural Systems Supported by Near-Term Climate and Yield Forecasts, session convener, AGU Fall Meeting, 2019
- Global food system vulnerabilities relevant to US institutions in a changing climate, Thomson Reuters, New York, NY, 2019

- Penn State Emergency Food Resilience Workshop, Pennsylvania State University, PA, 2019
- Monitoring and Evaluation for Climate-Smart Agriculture, FAO, Rome, Italy, 2019
- Forecasting crop yields from data, models and expert knowledge, Paris, France, 2018
- Building a Collaborative Vision for Training FEWS Leaders, Missoula, MT, 2018

Grants and Awards

- MacArthur Foundation 100&Change competition 2019, in collaboration with Heifer International, 3rd round, pending
- NSF grant "Climate – Air Quality – Agriculture interactions and decision-making to mitigate human health impacts", PI: Davis, K., pending
- EPA grant "EPA's Activities Examining Sectoral Impacts of Climate Change" (68HERH20F0177) (2020 – 2021)
- Open Philanthropy Project grant extension "Environmental and Human Impacts of Nuclear War", PI: Robock, A. and Toon, B. (2020 – 2023)
- NSF solicitation 19-501 "AccelNet – Accelerating science in the nexus of urban, water and food systems", PI: Mutter, C. Asseng, S., (2020 – 2023)
- NSF grant 1934955 "Collaborative Research: Disentangling Environmental Change and Social Factors as Drivers of Migration", PI: McDermid, S. and Bell, A. (2019 – 2024)
- Open Philanthropy Project grant "Environmental and Human Impacts of Nuclear War", PI: Robock, A. and Elliott, J. (2018 – 2020)
- Publication awarded by the editors of Environmental Research Letters, 2016
- Humboldt University award for outstanding dissertation
- Humboldt University award for best diploma thesis

Public outreach

- Active Twitter channel: @JonasJaegermeyr
- Collaboration with artist-in-residence Kate Doyle, at NASA GISS, NY, 2019
- Actor in climate change theater play "Klimaprinzessin", Potsdam Institute for Climate Impact Research, Germany, 2017

Society memberships

- AAAS, AGU, EGU

References and letters of recommendation available on request. Last update May 8, 2020.