Prof. Dr. Niklas Möhring

Full Professor (W3) · Head of the Production Economics Group

Institute for Food and Resource Economics (ILR), University of Bonn, Germany

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Google Scholar: Niklas Möhring | ORCID: 0000-0003-0292-4402 | ResearcherID: Y-3732-2019

RESEARCH PROFILE

Niklas Möhring is an Agricultural Economist working on human decision-making in agricultural and food systems. His research identifies pathways towards more sustainable and resilient agricultural production systems and quantifies the impacts and trade-offs of such transformations, with a specific focus on sustainable plant protection. He combines cutting-edge quantitative methods with a profound understanding of economic, agronomic, and ecological processes in agri-food systems, working with farmers, food-value-chain actors, policymakers, and researchers across disciplines and countries. His research primarily focuses on European agriculture, complemented by global comparative analyses.

Research interests: Pesticide risk & policy Solutions for sustainable crop protection Farmer behaviour & decision-making under risk Transformation of production systems Sustainability trade-offs & impact assessment Technology adoption & agricultural innovation Food value chains

Quantitative policy evaluation Bio-economic farm modelling Econometrics & causal inference Innovative data approaches Interdisciplinary & systems approaches

ACADEMIC POSITIONS

09/2023 – present
Full Professor (W3) and Head, Production Economics Group
Institute for Food and Resource Economics (ILR), University of Bonn, Germany
Vice-Dean for Research and Career Development, Faculty of Agricultural, Nutritional and Engineering Sciences (since 10/2024)

01–08/2023
Assistant Professor
Business Economics Group, Wageningen University and Research, Netherlands

02/2022 – 12/2022
Marie Skłodowska-Curie Individual Fellow
Centre d'Études Biologiques de Chizé (CEBC), CNRS, France

02/2021 – 01/2022
Postdoctoral Fellow, Swiss National Science Foundation
Centre d'Études Biologiques de Chizé (CEBC), CNRS, France

09/2019 – 12/2020
Postdoctoral Researcher and Lecturer
Agricultural Economics and Policy Group, ETH Zurich, Switzerland

02/2016 – 07/2019
Researcher and PhD Candidate
Agricultural Economics and Policy Group, ETH Zurich, Switzerland

08/2015 – 01/2016
Research Assistant
Production Economics Group, University of Bonn, Germany

EDUCATION

2016 – 2019
Doctor of Science (Dr. sc. ETH Zurich)
Agricultural Economics and Policy Group, ETH Zurich, Switzerland

Dissertation: *"Reducing Pesticide Use Risks: An Economic Analysis"*
Committee: Robert Finger (ETH Zurich); Alain Carpentier (INRAE); Stefan Hirsch (TU Munich)
Awards: SIAF Award for outstanding PhD thesis in Economics; Hans Vontobel Award for outstanding PhD thesis in Agricultural Sciences

2013 – 2015 **M.Sc. Agricultural Economics (Double Degree)**
University of Bonn, Germany, and Wageningen University and Research Centre, Netherlands

2010 – 2013 **B.Sc. Economics**
University of Münster, Germany, and Universidad del País Vasco, Spain

AWARDS AND HONOURS

2025 **Highly Ranked Scholar, ScholarGPS** – top 0.05% globally (rank 9) on "Pesticides", last 5 years

2025 **Best Article of the Year 2024**, *European Review of Agricultural Economics* (Lefebvre, Raineau, Aubert, Möhring et al.)

2022 **Top Cited Article 2021**, *Agricultural Economics* (Wiley)

2022 **Science Brief Lead**, UN Post-2020 Global Biodiversity Framework – Pesticide Pollution

2022 **Marie Skłodowska-Curie Individual Fellowship** (185,000 €; highly competitive European individual fellowship)

2021 **Postdoctoral Fellowship, Swiss National Science Foundation** (90,000 CHF, competitive Swiss individual fellowship)

2021 **Hans Vontobel Award** for outstanding discoveries in Agricultural Sciences, ETH Zurich

2021 **Best Presentation Award**, Swiss Agricultural Economics and Sociology Association (SGA)

2020 **SIAF Award** for outstanding PhD thesis in Economics, ETH Zurich / University of Zurich

PUBLICATIONS IN PEER-REVIEWED JOURNALS

2026

Garcia, V., **Möhring, N.**, Wang, Y., & Finger, R. (2026). Farmer behavior toward herbicide-free agriculture and conservation tillage. American Journal of Agricultural Economics, 108(1), 28–53. https://doi.org/10.1111/ajae.12550

Hirsch, S., Barissoul, A., **Möhring, N.**, & Koppenberg, M. (2026). Profitability and exit decisions of organic dairy farmers in the EU. Food Policy, 139, 103034. https://doi.org/10.1016/j.foodpol.2026.103034

Wuepper, D., **Möhring, N.**, Cord, A.F., Meijide, A., Storm, H., Qaim, M., Heckelei, T., Börner, J., Hadi, H., Kuhlmann, H., Stachniss, C., & Ewert, F. (2026). From technological fixes to systemic change: Vision-led innovation for Europe's crop farming systems. Agricultural Systems, 233, 104593. https://doi.org/10.1016/j.agsy.2025.104593

2025

Möhring, N., Ba, M.N., Braga, A.R.C., Gaba, S., Gagic, V., Kudsk, P., Larsen, A., Mesnage, R., Niggli, U., Qaim, M., Schreinemachers, P., Stamm, C., de Vries, W., & Finger, R. (2025). Expected effects of a global transformation of agricultural pest management. Nature Communications, 16, 10901. https://doi.org/10.1038/s41467-025-66982-4

Finger, R., & **Möhring, N.** (2025). Evidence for promoting pesticide-free, non-organic cereal production. Food Policy, 137, 102911. https://doi.org/10.1016/j.foodpol.2025.102911

Möhring, N., Mark, J., & Finger, R. (2025). Pesticide-free agriculture: insights into farmer adoption across crops. Q Open, 5(2), qoaf014. https://doi.org/10.1093/qopen/qoaf014

Perrot, T., **Möhring, N.**, Rusch, A., Gaba, S., & Bretagnolle, V. (2025). Crop yield loss under high insecticide regime driven by reduction in natural pest control. Proceedings of the Royal Society B, 292(2051), 20250138. https://doi.org/10.1098/rspb.2025.0138

Zaat, L.M., van den Burg, S.W.K., Ketelaar, T., Koppenberg, M., **Möhring, N.**, & Meuwissen, M.P.M. (2025). Prospective seaweed systems for North-West European waters. ICES Journal of Marine Science, 82(2), fsaf010. https://doi.org/10.1093/icesjms/fsaf010

2024

Lefebvre, M., Raineau, Y., Aubert, C., **Möhring, N.**, Pedehour, P., & Raynal, M. (2024). Green insurance for pesticide reduction: acceptability and impact for French viticulture. European Review of Agricultural Economics, 51(5), 1201–1272. https://doi.org/10.1093/erae/jbaf002

Dalhaus, T., Finger, R., Tzachor, A., & **Möhring, N.** (2024). Innovations for pesticide application must consider environmental impact. Nature Food, 5(12), 969–971. https://doi.org/10.1038/s43016-024-01080-0

Finger, R., & **Möhring, N.** (2024). The emergence of pesticide-free crop production systems in Europe. Nature Plants, 10(3), 360–366. https://doi.org/10.1038/s41477-024-01650-x

Finger, R., Schneider, K., Candel, J., & **Möhring, N.** (2024). Europe needs better pesticide policies to reduce impacts on biodiversity. Food Policy, 125, 102632. https://doi.org/10.1016/j.foodpol.2024.102632

Finger, R., Sok, J., Ahovi, E., Akter, S., Bremmer, J., Dachbrodt-Saaydeh, S., de Lauwere, C., Kreft, C., Kudsk, P., Lambarraa-Lehnhardt, F., McCallum, C., Oude Lansink, A., Wauters, E., & **Möhring, N.** (2024). Towards sustainable crop protection in agriculture: A framework for research and policy. Agricultural Systems, 219, 104037. https://doi.org/10.1016/j.agsy.2024.104037

Garcia, V., **Möhring, N.**, Wang, Y., & Finger, R. (2024). Risk perceptions, preferences, and the adoption dynamics of pesticide-free production. Journal of Agricultural & Resource Economics, 49(1). https://doi.org/10.3929/ethz-b-000651437

Möhring, N., Muller, A., & Schaub, S. (2024). Farmers' adoption of organic agriculture—a systematic global literature review. European Review of Agricultural Economics, 51(4), 1012–1044. https://doi.org/10.1093/erae/jbae025

Devilliers, E., **Möhring, N.**, & Finger, R. (2024). Estimation and comparison of the performance of low-input and conventional agricultural production systems. Q Open, 4(1), qoad032. https://doi.org/10.1093/qopen/qoad032

Ziehmann, E., **Möhring, N.**, & Finger, R. (2024). Economics of herbicide-free crop production. Applied Economic Perspectives and Policy, 46(4), 1692–1716. https://doi.org/10.1002/aepp.13461

2023

Dalhaus, T., Wu, J., & **Möhring, N.** (2023). Rapidly growing subsidization of crop insurance in Europe ignores potential environmental effects. Nature Plants, 9(12), 1938–1939. https://doi.org/10.1038/s41477-023-01569-9

Finger, R., **Möhring, N.**, & Kudsk, P. (2023). Glyphosate ban will have economic impacts on European agriculture but effects are heterogenous and uncertain. Communications Earth & Environment, 4(1), 286. https://doi.org/10.1038/s43247-023-00951-x

Möhring, N., Huber, R., & Finger, R. (2023). Combining ex-ante and ex-post assessments to support the sustainable transformation of agriculture: The case of Swiss pesticide-free wheat production. Q Open, 3(3), qoac022. https://doi.org/10.1093/qopen/qoac022

Möhring, N., Kanter, D., Aziz, T., Castro, I.B., Maggi, F., Schulte-Uebbing, L., Seufert, V., Tang, F., Zhang, X., & Leadley, P. (2023). Successful implementation of global targets to reduce nutrient and pesticide pollution requires suitable indicators. Nature Ecology & Evolution, 7(10), 1556–1559. https://doi.org/10.1038/s41559-023-02120-x

Wang, Y., **Möhring, N.**, & Finger, R. (2023). When my neighbors matter: Spillover effects in the adoption of large-scale pesticide-free wheat production. Agricultural Economics, 54(2), 256–273. https://doi.org/10.1111/agec.12766

2022

Finger, R., & **Möhring, N.** (2022). The adoption of pesticide-free wheat production and farmers' perceptions of its environmental and health effects. Ecological Economics, 198, 107463. https://doi.org/10.1016/j.ecolecon.2022.107463

Kuhn, T., **Möhring, N.**, Töpel, A., Jakob, F., Britz, W., Bröring, S., Pich, A., Schwaneberg, U., & Rennings, M. (2022). Using a bio-economic farm model to evaluate the economic potential and pesticide load reduction of the greenRelease technology. Agricultural Systems, 201, 103454. https://doi.org/10.1016/j.agsy.2022.103454

Möhring, N., & Finger, R. (2022). Pesticide-free but not organic: adoption of a large-scale wheat production standard in Switzerland. Food Policy, 106, 102188. https://doi.org/10.1016/j.foodpol.2021.102188

Möhring, N., Finger, R., & Dalhaus, T. (2022). Extreme heat reduces insecticide use under real field conditions. Science of the Total Environment, 819, 152043. https://doi.org/10.1016/j.scitotenv.2021.152043

2021

Mesnage, R., Straw, E.A., Antoniou, M.N., Benbrook, C., Brown, M.J.F., Chauzat, M.-P., Finger, R., Goulson, D., Leadbeater, E., López-Ballesteros, A., **Möhring, N.**, et al. (2021). Improving pesticide-use data for the EU. Nature Ecology & Evolution, 5(12), 1560. https://doi.org/10.1038/s41559-021-01567-8

Möhring, N., Kudsk, P., Ørum, J.E., Jørgensen, L.N., & Finger, R. (2021). An R package to calculate potential environmental and human health risks from pesticides using the 'Pesticide Load Indicator'. Computers and Electronics in Agriculture, 191, 106498. https://doi.org/10.1016/j.compag.2021.106498

2020

Böcker, T., Britz, W., **Möhring, N.**, & Finger, R. (2020). An economic and environmental assessment of a glyphosate ban for the example of maize production. European Review of Agricultural Economics, 47(2), 371–402. https://doi.org/10.1093/erae/jbz007

Hirsch, S., Mishra, A.K., **Möhring, N.**, & Finger, R. (2020). Revisiting firm flexibility and efficiency: Evidence from the EU dairy processing industry. European Review of Agricultural Economics, 47(3), 971–1008. https://doi.org/10.1093/erae/jbz039

Möhring, N., Bozzola, M., Hirsch, S., & Finger, R. (2020). Are pesticides risk decreasing? The relevance of pesticide indicator choice in empirical analysis. Agricultural Economics, 51(3), 429–444. https://doi.org/10.1111/agec.12563

Möhring, N., Dalhaus, T., Enjolras, G., & Finger, R. (2020). Crop insurance and pesticide use in European agriculture. Agricultural Systems, 184, 102902. https://doi.org/10.1016/j.agsy.2020.102902

Möhring, N., Ingold, K., Kudsk, P., Martin-Laurent, F., Niggli, U., Siegrist, M., Studer, B., Walter, A., & Finger, R. (2020). Pathways for advancing pesticide policies. Nature Food, 1, 535–540. https://doi.org/10.1038/s43016-020-00141-4

Möhring, N., Wuepper, D., Musa, T., & Finger, R. (2020). Why farmers deviate from recommended pesticide timing: The role of uncertainty and information. Pest Management Science, 76(8), 2787–2798. https://doi.org/10.1002/ps.5826

2019

Böcker, T., **Möhring, N.**, & Finger, R. (2019). Herbicide free agriculture? A bio-economic modelling application to Swiss wheat production. Agricultural Systems, 173, 378–392. https://doi.org/10.1016/j.agsy.2019.03.001

Möhring, N., Gaba, S., & Finger, R. (2019). Quantity based indicators fail to identify extreme pesticide risks. Science of the Total Environment, 646, 503–523. https://doi.org/10.1016/j.scitotenv.2018.07.324

2017

Finger, R., **Möhring, N.**, Dalhaus, T., & Böcker, T. (2017). Revisiting pesticide taxation schemes. Ecological Economics, 134, 263–266. https://doi.org/10.1016/j.ecolecon.2016.12.001

Peer-Reviewed Monograph

Möhring, N. (2019). Reducing Pesticide Use Risks: An Economic Analysis. Doctoral dissertation, ETH Zurich.

DATA AND SOFTWARE PUBLICATIONS

PesticideLoadIndicator (R-Package). (2021). Comprehensive R Archive Network (CRAN).

Möhring, N., & Finger, R. (2022). Data on the adoption of pesticide-free wheat production in Switzerland. Data in Brief, 41, 107867. https://doi.org/10.1016/j.dib.2022.107867

Möhring, N., & Finger, R. (2020). Adoption of pesticide-free wheat production in Switzerland (dataset). ETH Zurich Research Collection.

SCIENCE POLICY OUTPUTS

Kanter, D., **Möhring, N.** (lead on pesticide pollution), Leadley, P., Aziz, T., Castro, I., Maggi, F., Schulz, R., Schulte-Uebbing, L., Tang, F., & Zhang, X. (2022). Science briefs on targets, goals and monitoring in support of the post-2020 global biodiversity framework negotiations. Secretariat of the Convention on Biological Diversity, United Nations.

RESEARCH FUNDING (PI)

Current

2025 – 2032 **PhenoRob2 – Cluster of Excellence** (Excellence Strategy, DFG)
Lead of the Core Project on Diversified Production Systems.
Funded PhD position on "The Economics of diversified crop production systems".
PhenoRob is Germany's only DFG-funded Cluster of Excellence in agriculture.

Completed

02/2022 – 12/2022 **PESTEFFECT** (Marie Skłodowska-Curie Individual Fellowship, 185,000 €, Grant 101027340)
Project lead. Understanding farmer decision-making in complex socio-economic systems: adoption determinants and impacts of sustainable pest management.

02/2021 – 01/2022 **Towards effective and efficient pest management in agriculture** (SNF Postdoctoral Fellowship, 90,000 CHF, Grant 199245)
Project lead. Identifying and quantifying economic and ecological determinants and impacts of sustainable pest management.

SUPERVISION

PhD Students — Current (Primary Supervisor)

Bignon William Tossou – A global analysis of pesticide policies (University of Bonn, ongoing)

Laetitia Rücker – The economics of diversified cropping systems (University of Bonn, ongoing)

Andreia Arbenz – Scaling agroecology in Swiss grasslands (External PhD candidate, Agroscope, Switzerland; ongoing)

PhD Students — Completed (Co-supervisor)

Viviana Garcia Gomez – Risk perceptions, preferences, and adoption dynamics of pesticide-free production (ETH Zurich)

Eileen Ziehmann – Economics of herbicide-free production systems (ETH Zurich)

Postdoctoral Researchers — Current

Dr. Julia Freytag – Farm-level bio-economic modelling of sustainable production systems

Dr. Xiaojie Wen – Pesticide productivity and sustainable crop protection

Dr. Jan-Philip Uhlemann – The economics of automation and innovation in agriculture (University of Bonn). *Recipient of the 2026 Agricultural Economics Society Prize Paper Award for "Automating Food Production: Evidence from the Netherlands".*

Postdoctoral Researchers — Alumni

Dr. Marine Coinon (2023–2024). Awarded competitive EXPLOR'AE / France 2030 grant (BEES – Biodiversity, Pesticides and Public Policies, with Céline Bonnet, TSE-R/INRAE). Now Postdoctoral Research Fellow, Toulouse School of Economics, INRAE.

Bachelor and Master Theses

>20 Bachelor and Master theses supervised at ETH Zurich (2016–2021), Wageningen University (2023) and University of Bonn (2023–present).

TEACHING

University of Bonn (since 2023)

BSc	**Ökonomie I** (Agricultural Sciences) — German
MSc	**Production Economics** (Agricultural and Food Economics, AFECO) — English
MSc	**Decision Making and Risk in Agriculture** (AFECO) — English
MSc	**The Economics of Transformation in Agriculture** (AFECO) — English
MSc	**Seminar on Sustainable Production Systems** (AFECO) — English

Invited Lectures (Selected)

12/2025	Guest lecture: "Towards sustainable plant protection – the role of value chains", One Health Winter School, Université Côte d'Azur / INRAE, France
12/2024	"Sustainable plant protection", BOOST Winter School, Université Côte d'Azur / INRAE
2022	Lecture series: "Drivers and barriers for sustainable pest management adoption" (MSc Biology), University of Angers, France
2022	"Economics and Policies of pesticide-free production", BOOST School, Université Côte d'Azur / INRAE, France

ETH Zurich (2016–2020)

Fall 2020	Lecturer: "Microeconomics of the Agricultural and Food Sector" (BSc Agricultural Sciences) — German
Spring 2020	Co-lecturer: "Current Topics in Agricultural Economics and Policy" (MSc Agricultural Economics) — English

SERVICE TO THE PROFESSION

Academic Administration

10/2024 – present	**Vice-Dean for Research and Career Development**, Faculty of Agricultural, Nutritional and Engineering Sciences, University of Bonn
2024 – present	**Advisory Board Member**, Theodor Brinkmann Foundation
2023 – present	**Member**, Study Programme Commission "Agricultural and Food Economics", University of Bonn

Conference Organisation

2025	**Local Organising Committee**, XVIII EAAE Congress, University of Bonn (August 2025)

Science-Policy Interface

08/2020 – present	**Independent Expert**, European Commission Pilot Project: "Developing a farmers' toolbox for integrated pest management practices from across the Union"
06/2022	**Lead author**, Science Brief on Pesticide Pollution, UN Post-2020 Global Biodiversity Framework (Convention on Biological Diversity)
05–06/2022	Participant, INRAE Foresight Study on pesticide-free agriculture in 2050
05/2022	Participant, workshop "Long-term transformation pathways for the Agricultural Input Industry" (IDDRI, World Economic Forum, French Office on Biodiversity)
2019–2020	Science-industry collaboration with IP-SUISSE, JOWA, and MIGROS on pesticide-free wheat production in Switzerland

Reviewing

Journals: Science, Nature Sustainability, Nature Food, Nature Communications, Agricultural Economics, Agribusiness, Ecological Economics, Science of the Total Environment, Risk Analysis, Pest Management Science, Journal of Environmental Management, Journal of Cleaner Production, Environmental Modelling & Assessment, Environmental Impact Assessment Review, Applied Economic Perspectives and Policy, Appetite

Funding bodies: French National Research Agency (ANR), Swiss National Science Foundation (SNF), Alexander-von-Humboldt Foundation

Professional Memberships

European Association of Agricultural Economists (EAAE) | German Society of Economic and Social Sciences in Agriculture (GEWISOLA) | Agricultural Economics Society (AES)

INVITED AND KEYNOTE PRESENTATIONS (SELECTED)

04/2026	Invited presentation: "Pflanzenschutz im Wandel? Eine Produzenten und Industrieperspektive", Annual Meeting of Der Agrarhandel (industry association)
03/2026	Panel discussion: "Maximum Residue Levels: a farm-level perspective", European University Institute, Florence
02/2026	Keynote: "Herbicide-free production systems – an economic perspective", German Conference on Weed Biology and Management
01/2026	Invited presentation: "Novel business models for plant protection – an industry perspective on sustainable plant protection", FMC EMEA

02/2026	Invited presentation: "Future research and impact: the role of agricultural value chains", 10th Anniversary Meeting, Agricultural Economics and Policy Group, ETH Zurich
06/2025	Invited lecture: "The future of agro-chemicals: Towards sustainable plant protection", European University Institute, Florence
08/2024	Keynote: "Pathways for future plant protection", Agricultural Research Day, State of North-Rhine-Westphalia
11/2023	Keynote: "Pathways for advancing pesticide policies", Azole Resistance International Meeting, Wageningen University
11/2023	Invited presentation: "Crop insurance and pesticide use", Joint Research Centre (JRC), European Commission, Seville
06/2022	Keynote: "Towards holistic pesticide policies", Annual Meeting, Swiss Association for Environmental Law
02/2022	Keynote: "Towards sustainable pest management in agriculture", Workshop "Reducing Chemical Input in Agriculture", CLAND / AgroParisTech / INRAE, Paris
10/2021	Keynote: "Towards pesticide-free agriculture", Conference "Social Sciences for Pesticide Policies" (PPR CPA), Paris
09/2021	Invited research seminar: Environmental Economics Seminar, Toulouse School of Economics
03/2021	Keynote: "Pathways for a holistic pesticide policy", Annual Meeting, Swiss Society for Plant Sciences

COMMUNICATION AND OUTREACH

2026	Media interviews on sustainable plant protection and pesticide policy: Radio Bonn Rhein Sieg; Landwirtschaftszeitung Rheinland (×2); Neues Deutschland
2022	Lead organiser, public discussion event "Challenges for Sustainable Pest Management" (with World Food System Centre, ETH Zurich)
2020	Lead organiser, public webinar: "Pathways for advancing pesticide policies" (with World Food System Centre, ETH Zurich)

Research blog: mohringlab.com/blog — regular research outreach in German, English, and French.

LANGUAGES

German (Native) **English** (C2, full professional) **French** (B2, full working) **Spanish** (B1, working)

Last updated: April 2026