RAAHIL MADHOK

Faculty of Land and Food Systems
University of British Columba
2357 Main Mall, Vancouver, BC V6T 1Z4

Mobile: (+1 647) 745-4482
Email: madhokr@mail.ubc.ca
Website: www.raahilmadhok.com

RESEARCH AREAS

Environmental Economics, Development Economics

EDUCATION

2017 - 2023	Ph.D., Food and Resource Economics, Faculty of Land and Food Systems, UBC *Advisors*: Sumeet Gulati (LFS), Patrick Baylis (Economics) *Committee*: Siwan Anderson (Economics), Frederik Noack (LFS)
2015	M.A., Economics, University of British Columbia
2012	B.A., Economics, Environmental Studies, McGill University

SELECTED FELLOWSHIPS AND AWARDS

2022	Delegate to Lindau Nobel Laureate Meetings
2021-22	Fellow, Institute for Asian Research, UBC School of Public Policy
2020	Nehru Humanitarian Award in Indian Studies
2019-	SSHRC Joseph-Armand Bombardier Doctoral Fellowship
2015	W. Erwin Diewert Graduate Prize for Best Economics Masters Thesis

WORKING PAPERS

1. "Infrastructure, Institutions, and the Conservation of Biodiversity in India" (Job Market Paper)

   Abstract: Biodiversity in the tropics is severely threatened by land use change. This paper studies how infrastructure expansion degrades biodiversity in India and the role of local institutions in mitigating the tradeoff. Combining new data on infrastructure-driven deforestation with one million birdwatching diaries, and using within-observer variation for identification, I document a sizeable infrastructure-biodiversity tradeoff. Transport, irrigation, resettlement camps, and mining projects account for 20% of total species loss. Publicly owned projects are especially harmful, and species diversity does not recover in the medium run. Lastly, I find that species loss is more than halved when local institutions enable marginalized communities, who are excluded from project planning, to mobilize around their interests. Informed consent by indigenous tribes is a key mechanism, underscoring the importance of grassroots institutions for balancing development and conservation.

   Coverage: Ideas of India Podcast

2. "Rural-Urban Migration and the Re-organization of Agriculture" with Frederik Noack, Mushfiq Mobarak, and Olivier Deschenes

   Abstract: This paper studies the response of agricultural production to rural labor loss during the process of urbanization. Using household microdata from India and exogenous variation in migration induced by urban income shocks interacted with distance to cities, we document sharp declines in crop production among migrant-sending households residing near cities. Households with migration opportunities do not substitute agricultural labour with capital, nor do they adopt new agricultural machinery. Instead, they

divest from agriculture altogether and cultivate less land. We use a two-sector general equilibrium model with crop and land markets to trace the ensuing spatial reorganization of agriculture. Other non-migrant village residents expand farming (land market channel) and farmers in more remote villages with fewer migration opportunities adopt yield-enhancing technologies and produce more crops (crop market channel). Counterfactual simulations show that over half of the aggregate food production losses driven by urbanization is mitigated by these spillovers. This leads to a spatial reorganization in which food production moves away from urban areas and towards remote areas with low emigration.

3. "The Long-Term Health Impacts of Power Plants'' with Rohini Pande, Kevin Rowe and Anish Sugathan

Abstract: This paper quantifies the long-run effects of India's dramatic expansion of coal-fired electric power plants from 1970 to 2017 on neonatal, infant, and child health. We use a particle trajectory model that draws wind-driven patterns of emissions dispersion from power plants to construct an exogenous measure of cumulative pollution exposure over three decades. Our measure of historic power plant exposure predicts present-day air quality three to six times better than conventional wind-direction instruments in the literature. A one standard deviation increase in long-run exposure to power plant emissions increases neonatal, infant, and child deaths by 0.6 (2 percent of the mean), 0.9 (1.9 percent), and 1.3 (2.2 percent) per 1000 live births, respectively. These effects are largely driven by exposure in-utero, as well as exposure to private power plant clusters forming between 1992-2005. We find no evidence of differential economic development between more- and less-exposed districts, ruling out adaptation, and underscoring pollution as the main mechanism.

PUBLICATIONS

1. "Ruling The Roost: Avian Species Reclaim Urban Habitat During India's COVID-19 Lockdown (with Sumeet Gulati)". *Biological Conservation (2022), Vol. 271: 109597*.
2. "Saving the world from your couch: The heterogeneous medium-run benefits of COVID-19 lockdowns on air pollution (with Jean-Philippe Bonardi, Quentin Gallea, Dimitrija Kalanoski, Rafael Lalive, Frederik Noack, Dominic Rohner, and Tommaso Sonno)" *Environmental Research Letters (2021), 16(7): 074010*.

POLICY WRITING

1. "Multi-media Impacts of Cannabis Production in Metro Vancouver''. *MetroVancouver Policy Report (2019).*
2. "Water Pollution and Public Health in India: The Potential for a Market-Based Approach'' (with Michael Greenstone, Rohini Pande, and Hardik Shah). *Health and South Asia Digital Handbook (2013).*

PRESENTATIONS (* Scheduled)

2022	NBER Summer Institute (Environment & Energy Economics), UBC Vancouver School of Economics, PacDev, OSWEET, Columbia IPWSD, WEAI, AERE, CREEA
2021	Camp Resources, AERE, CREEA (Best Paper Prize), Columbia IPWSD, UBC CFREE
2020	UBC CFREE, TWEEDS (postponed)
2019	Berkeley/Sloan Summer School, UBC CFREE, UBC LFS Graduate Conference

TEACHING

Instructor of Record

FRE 460: Economics of Food Consumption (Winter 2022)

Teaching Assistant

International Macroeconomics (GPP 502, Fall 2019), Graduate Microeconomic Theory (LFS 500, Winter 2018), Intermediate Macroeconomics (ECON 302, Winter 2017), Intro. Microeconomics (ECON 101, Winter 2014), Intro. Macroeconomics (ECON 102, Fall 2015)

RESEARCH EXPERIENCE

2019	Consultant, Metro Vancouver, Environmental Regulation & Enforcement
2015 - 2016	Pre-Doctoral Fellow to Rohini Pande, Harvard Kennedy School
2012 - 2014	Research Assistant to Michael Greenstone, Rohini Pande, Nick Ryan, and Anant Sudarshan, J-PAL South Asia
2012	Short-Term Consultant, The World Bank

PROFESSIONAL ACTIVITIES

Referee for: *Environment and Development Economics, Environmental Research Letters*

Membership: American Economic Association, Association of Environmental and Resource Economists

SKILLS

Software: Stata, R, Python

Languages: English (Native), Hindi (Conversational), Spanish (Conversational)

PERSONAL INFORMATION

Born: September 27, 1990 Citizenship: Canada, USA Hobbies: Hiking, hip hop, Improv

REFERENCES

Sumeet Gulati
Food and Resource Economics
Faculty of Land and Food Systems
University of British Columbia
2357 Main Mall Vancouver, B.C., Canada, V6T 1Z4
Phone: 604-822-2144

Patrick Baylis
Vancouver School of Economics
University of British Columbia
6000 Iona Drive Vancouver B.C., V6T 1L4
Phone: 604-827-2161

Frederik Noack
Food and Resource Economics
Faculty of Land and Food Systems
University of British Columbia
2357 Main Mall Vancouver, B.C., Canada, V6T 1Z4
Phone: 604-822-2619

Siwan Anderson
Vancouver School of Economics
University of British Columbia
6000 Iona Drive Vancouver B.C., V6T 1L4
Phone: 604-827-0009

Ahmed Mushfiq Mobarak
Yale School of Management
Yale University
165 Whitney Avenue, New Haven, CT, 06520
Phone: 203-432-5787