

RAM FISHMAN

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ACADEMIC EMPLOYMENT

Assistant Professor of Economics,
George Washington University September 2012 - Present

Secondary Appointment, the Elliot School of International Affairs,
George Washington University January 2013 - Present

Giorgio Ruffolo Post-doctoral Fellow in Sustainability Science,
Harvard Kennedy School September 2011 - August 2012

Faculty Hosts: Michael Kremer, Rohini Pande, Venky Narayanamurti

EDUCATION

PhD, Sustainable Development, Columbia University 2011
Dissertation: "Theoretical and Applied Dimensions of Natural Resource Management"
Committee: Scott Barrett (chair), Jeffrey Sachs, Upmanu Lall, Geoffrey Heal and Matthew Kotchen

M.Sc., Physics (High Energy Physics & String Theory), Weizmann Institute of Science 2002

B.Sc., Mathematics, Tel Aviv University, Summa Cum Laude 1994

FIELDS OF SPECIALIZATION

Environmental, Agricultural and Development Economics, Sustainability, Water Resources, Climate Change

PUBLICATIONS

Aharony, O., Antebi, Y. E., Berkooz, M. and **Fishman, R.** 'Holey Sheets' - Pfaffians and Subdeterminants as D-brane Operators in Large N Gauge Theories. *J. High Energy Phys.* JHEP12(2002)069.

Siegfried, T., Stefan S., Pradeep R., **Fishman R.**, Vasquez, V., Narula, K., Lall, U. and Modi, V.: Modeling Irrigated Area to Increase Water, Energy, and Food Security in Semiarid India. *Weather, Climate and Society*, 2010, 2, 255-270.

Fishman, R., Siegfried, T., Raj, P., Modi, V. and Lall, U. Over-Extraction from Shallow Bedrock versus Deep Alluvial Aquifers: Reliability versus Sustainability Considerations for India's Groundwater Irrigation. *Water Resources Research* 47.6 (2011).

Fishman, R., Devineni, N., & Raman, S. (2015). Can improved agricultural water use efficiency save India's groundwater?. *Environmental Research Letters*, 10(8), 084022.

PAPERS UNDER REVIEW

"Can Electricity Pricing Save India's Groundwater? Field Evidence from a Novel Policy Mechanism in Gujarat" (with Vijay Modi, Upmanu Lall and Nikunj Parekh) - Revision requested.

"More Extreme Distributions Overturn the Benefits of Increased Rainfall for Future Food Security"
- Revision Requested.

PAPERS UNDER REVIEW - CONTINUED

- “Weather Shocks, Crime and Agriculture: Evidence from India” (with David Blakeslee)
- “When Water Runs Out: Scarcity, Adaptation and Migration in Gujarat” (with Avinash Kishore and Meha Jain)
- “Naive and Sophisticated Saving”
- “Heterogeneous Patience, Bargaining Power and Environmental Policy”
- “Does Subjective Well Being Reflect Non-Income Dimensions of Poverty?”
(with Yannay Shannan and Matan Hoffman)
- “A Tale of two Food Stands- Observational Learning in the Field”
(with Arthur Fishman and Uri Gneezy)

SELECTED WORKING PAPERS

- “Irrigation and Adaptation to Rainfall Shocks by Farmers in India”
- “Caste, Markets, and Access to Scarce Water: Evidence from Gujarat, India” (with Dishant Patel)
- “Technological Diffusion and Learning on Large Scales – Evidence from Drip Irrigation in India” (with Shan Li)
- “Do Subsidies Increase Access to New Technologies? – Evidence from Drip Irrigation in India” (with Sahil Gulati)
- “The Long-term Impact of High Temperatures: Evidence from Ecuadorian Earnings Data”
(with Paul Carrillo and Jason Russ)
- “Do Agricultural Extension and Input Subsidy Programs have Persistent Effects? – Evidence from a ‘Reverse Randomized Control Trial’ Design in Uganda” (with Vida Bobic, Yao Pan and Stephen Smith)

WORK IN PROGRESS

- “Can Groups of Smallholders Overcome Diseconomies of Scale in Technology Adoption? – Evidence from an Irrigation Program in Senegal” (with Vida Bobic and Stephen Smith)
- “Do Water Saving Technologies Save Water? – Evidence from Drip Irrigation in India” (with Sahil Gulati)
- “Does Soil Health Testing Affect Fertilizer Usage? – Evidence from a Field Experiment in Bihar, India” (with Avinash Kishore and Yoav Rothler)
- “Do Floods have long-term Impacts on Human Capital and Wages? – Evidence from the 1983 El-Nino Flood in Ecuador” (with Paul Carrillo and Jason Russ)
- “Water Scarcity, Agricultural Productivity and Structural Transformation – Evidence from Gujarat’s Dark Zones”
(with Saher Asad and Meha Jain)
- “The College Dorm as a Lab for Sustainable Behavior” (with the students in the class *The Economics of Sustainability and the Environment*)

TEACHING EXPERIENCE

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| Human Ecology and Sustainable Development (PhD and Master level classes)
Columbia University | 2007-2011 |
| The Economics of Sustainability and the Environment (Undergraduate)
George Washington University | 2012-2014 |
| Environmental and Resource Economics and Sustainable Development (PhD)
George Washington University | 2014 |

RESEARCH GRANTS

“A Novel, Market Based Mechanism to Incentivize Efficient Groundwater/Energy use in Indian Agriculture – Setting Up a Field Experiment in Gujarat”: Awarded by the International Growth Center, 2012 (10,000 GBP).

“Rural – Urban migration, Groundwater depletion and Rural infrastructure – Seed Study”, with Avinash Kishore and Anjal Prakash: Awarded by the International Growth Center, 2012 (5,000 GBP)

“Food Security for the World's Poorest Farmers: A Field Study of an Innovative Agricultural Development Program in Haiti and Nepal”: Awarded by the Food for Thought Intramural Competition, 2013 (32,000 USD)

“Expanding Drip and Sprinkler Irrigation in India- Can the Right Policies Save the Country's Water Resources?”: Awarded by the University Facilitating Fund, George Washington University, 2013 (20,000 USD)

“Complementarities of Training, Technology, and Credit in Smallholder Agriculture: Impact, Sustainability, and Policy for Scaling-up in Senegal and Uganda”, with Stephen Smith: Awarded by the BASIS AMA Collaborative Support Research Program (700,000 USD)

“Adoption and use of micro irrigation systems in India”, with Avinash Kishore, Meha Jain and Alicia Harley: Awarded by the International Growth Center India Central Program, 2013 (14,700 GBP)

“Adoption of Balanced Use of Chemical Fertilizers: Farmers’ Response to Scientific Evidence and Social Learning”, with Avinash Kishore, Patrick Ward and David Spielman: Awarded by the International Growth Center India Bihar Program, 2013 (15,840 GBP)

“The Nutritional Impacts of Irrigated Horticulture in the Sahel: Leveraging a Large Scale Randomized Controlled Trial in Senegal”, with Jessica Fanzo and Amadou Niang: Awarded by the FAO SIAC program, 2014 (130,000 USD).

“Reviving springs and providing access to solar powered irrigation pumps (SPIP) through community based water use planning: Multiple approaches to solving agricultural water problems in mid hills and Terai in Nepal and India”, consultant, with Aditi Mukherjee, ICIMOD: Awarded by the CGIAR Research Program on Water, Land and Ecosystem, 2014 (749,824 USD)

“Using Global Agricultural, Health and Demographic Datasets to Identify the Impacts of CGIAR’s Modern Seed Varieties Since 1960s”, with Gordon McCord, Prabhat Barnwal, Nathan Mueller and Jan Van Der Goltz: Awarded by the Standing Panel on Impact Assessment, CGIAR, 2015, (170,000USD).

“Adaptation to persistent drought and groundwater depletion: Evidence from Karnataka”, with V. S. Prakash, K. V. Raju, David Blakeslee and Avinash Kishore. Awarded by the International Growth Center India Central Program, 2015 (25,000 GBP)

“Does restricting subsidized power and water supply reduce growth? - Evidence from the dark zones of Gujarat”, with Saher Asad and Meha Jain: Awarded by the International Growth Center India Central Program, 2015 (6,000 GBP)

ACADEMIC PRESENTATIONS

2009: American Geophysical Union Meeting, San Francisco; Dept. of Economics, University of Toulouse; 11th Occasional California Workshop on Environmental and Resource Economics, University of California Santa Barbara; 11th Annual Colorado University Environmental and Resource Economics Workshop, Vail, Colorado; 17th Annual Conference of the European Association of Environmental and Resource Economists, Amsterdam.

2010: Workshop on Environmental and Development Economics, University of California, Santa Barbara; American Geophysical Union Meeting, San Francisco; Fourth World Congress of Environmental and Resource Economists, Montreal, Canada; Monte Verità Conference on Sustainable Resource Use and Economic Dynamics - SURED, Ascona, Switzerland

2012: Agricultural and Applied Economics Association Annual Meeting, Seattle;

ACADEMIC PRESENTATIONS - CONTINUED

2013: University of Oslo, Dept. of Economics seminar; University of California, Davis, Dept. of Economics Seminar; University of Maryland, College Park, Dept. of Economics Seminar; American Geophysical Union, San Francisco, USA; George Mason University, Dept. of Economics Seminar; Northeast Universities Development Consortium Conference, Harvard University; 4th IGC-ISI India Development Policy Conference, New Delhi, India

2014: Bank-Fund Environment and Energy Research Seminar, The World Bank, Washington D.C.; South Asia Seminar Series, the World Bank, Washington D.C.; Ben Gurion University, Israel, Dept. of Economics Seminar; Hebrew University of Jerusalem, Israel, Dept. of Agricultural Economics Seminar; Tel Aviv University, Dept. of Public Policy Seminar; 11th Annual Meeting of the International Water Resource Economics Consortium (IWREC), The World Bank; Tufts University, Dept. of Economics Seminar; Workshop on Innovation for Vulnerable Farmers: Drought and Water Scarcity Adaptation Technologies, Harvard University; Economic Research Service, United States Dept. of Agriculture; Northeast Universities Development Consortium Conference, Boston University; Drylands, Deserts and Desertification 2014, Sde Boker, Israel; Delhi Winter School 2014, Delhi School of Economics; 10th Annual Conference on Economic Growth and Development, Indian Statistical Institute, New Delhi.

2015: Aalto University, Helsinki, Finland, Dept. of Economics Seminar; Hebrew University of Jerusalem, Israel, Dept. of Agricultural Economics Seminar; IGC ISI India Development Policy Conference, New Delhi, India; ATREE, Bangalore, India.

REFEREE SERVICE

Journal of Development Economics; Journal of Environmental Economics and Management; Journal of the Association of Environmental and Resource Economists; Climatic Change