

Patrick S. Ward, Ph.D.

Research Fellow
Environment and Production Technology Division
[International Food Policy Research Institute](#)
2033 K Street NW
Washington, DC 20006
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Research Interests:

Agricultural development, technology adoption, behavioral economics, risk and uncertainty, production economics, information economics.

Education:

- Ph.D. Agricultural Economics, Purdue University (2011).
- M.A. Economics, Indiana University-Purdue University at Indianapolis (2007).
- B.S. Financial Counseling and Planning, Purdue University (2002).

Employment:

International Food Policy Research Institute (IFPRI), New Delhi, India

- Research Fellow: April 2014—Present**
- Postdoctoral Fellow/Associate Research Fellow: April 2012—April 2014**

International Center for Climate Governance (ICCG), Venice, Italy

- Visiting Researcher: November 2011—March 2012**

Purdue University, Department of Agricultural Economics, West Lafayette, IN, USA

- Research Assistant: January 2008—October 2011**
- Teaching Assistant: August 2009—May 2010**
- Graduate Instructor: June 2010—August 2010**

Research:

Publications

Refereed Journals

- Bell, Andrew R., Patrick S. Ward, and Md. Azeem Ali Shah. [“Increased water charges improve efficiency and equity in an irrigation system”](#), *Ecology and Society* 21(3), DOI: 10.5751/ES-08642-210323.
- Ward, Patrick S., Andrew R. Bell, Gregory M. Parkhurst, Klaus Droppelmann, and Lawrence Mapemba (2016). [“Heterogeneous preferences and the effects of incentives in promoting conservation agriculture in Malawi,”](#) *Agriculture, Ecosystems & Environment* 222: 67–79.

3. Spielman, David J., Patrick S. Ward, Deepthi E. Kolady, and Harun-Ar-Rashid. "Public incentives, private investment, and outlooks for hybrid rice in Bangladesh and India," in press in *Applied Economics and Policy Perspectives*, DOI: 10.1093/aep/aww001.
4. Ward, Patrick S. (2016). "Transient poverty, poverty dynamics and vulnerability to poverty: An empirical analysis using a balanced panel from rural China," *World Development* 78: 541–553.
5. Ortega, David L. and Patrick S. Ward. "Information processing strategies and the effects of framing in developing country choice experiments: Results from rice farmers in India," *Agricultural Economics* 47: 493–504.
6. Ward, Patrick S. and Gerald E. Shively (2016). "Disaster risk, social vulnerability and economic development," *Disasters*, doi: 10.1111/disa.12199.
7. Ward, Patrick S. and Vartika Singh (2015). "Using field experiments to elicit risk and ambiguity preferences: Behavioral factors and the adoption of new agricultural technologies," *Journal of Development Studies* 51(6): 707–724.
8. Bell, Andrew Reid, M. Azeem Ali Shah and Patrick S. Ward (2014). "Reimagining cost recovery in Pakistan's irrigation system through willingness-to-pay estimates for irrigation water from a discrete choice experiment," *Water Resources Research* 50(8): 6679–6695.
9. Ward, Patrick S. and Gerald E. Shively (2015). "Migration and land rental as responses to income shocks in rural China", *Pacific Economic Review*, 20(4): 511–543.
10. Ward, Patrick S., David L. Ortega, David J. Spielman, and Vartika Singh (2014). "Heterogeneous preferences for drought-tolerant rice: Evidence from Bihar, India," *World Development* 64: 125–139.
11. Ward, Patrick S. and Valerien O. Pede (2015). "Capturing social network effects in technology adoption: The spatial diffusion of hybrid rice in Bangladesh", *Australian Journal of Agricultural and Resource Economics* 59(2): 225–241.
12. Ward, Patrick (2014). "Measuring the level and inequality of wealth: An application to China," *Review of Income and Wealth* 60(4): 613–635.
13. Ward, Patrick S., Raymond J.G.M. Florax and Alfonso Flores-Lagunes (2014). "Climate change and agricultural productivity in Sub-Saharan Africa: A spatial sample selection model", *European Review of Agricultural Economics* 41(2): 199–226.
14. Spielman, David J., Deepthi E. Kolady and Patrick S. Ward (2013). "The prospects for hybrid rice in India", *Food Security* 5(5): 651–665.
15. Ward, Patrick (2013). "On the use of tradable development rights for reducing flood risk". *Land Use Policy* 31: 576–583.
16. Ward, Patrick and Gerald Shively (2012). "Vulnerability, income growth and climate change". *World Development* 40(5): 916–927.

Submitted/In Review at Refereed Journals

1. Bell, Andrew R., Patrick S. Ward, Muhammad Ashfaq, and Stephen Davies. "Valuation and aspirations for drip irrigation in Punjab, Pakistan," *submitted*.
2. Ward, Patrick S. and Simrin Makhija. "New modalities for managing drought risk in rainfed agriculture: Evidence from a discrete choice experiment in Odisha, India," *submitted*
3. Ward, Patrick S., Andrew R. Bell, Klaus Droppelmann, and Tim Benton. "Early adoption of conservation agriculture practices: Understanding partial compliance in programs with multiple adoption decisions," *under review*.
4. Bell, Andrew R., Patrick S. Ward, Mary Killilea, and Md. Ehsanul Haque Tamal. "Cutting out the middle man: real-time social data collection with Android smartphones," *submitted*.
5. Fishman, Ram, Avinash Kishore, Yoav Rothler, and Patrick S. Ward. "Can information help reduce imbalanced application of fertilizers in India? Experimental evidence from Bihar," *under review*.

6. Arora, Anchal, Sangeeta Bansal, and Patrick S. Ward. "Do farmers value rice varieties tolerant to droughts and floods? Evidence from a discrete choice experiment in Odisha, India," *under review*.
7. Ward, Patrick S., David L. Ortega, David J. Spielman, Neha Kumar, Sumedha Minocha. "Complementarity of drought-tolerant rice and weather index insurance: Evidence on farmers' preferences for drought risk management in Bangladesh," *under review*.

Discussion Papers

1. Ward, Patrick S., Andrew R. Bell, Klaus Droppelmann, and Tim Benton (2016). "[Understanding compliance in programs promoting conservation agriculture in Malawi](#)", International Food Policy Research Institute (IFPRI) Discussion Paper 01530.
2. Fishman, Ram, Avinash Kishore, Yoav Rothler, Patrick S. Ward, Shankar Jha, and R.K.P. Singh (2016). "[Can information help reduce imbalanced application of fertilizers in India? Experimental evidence from Bihar](#)", International Food Policy Research Institute (IFPRI) Discussion Paper 01517.
3. Ward, Patrick S., Andrew R. Bell, Gregory M. Parkhurst, Klaus Droppelmann, and Lawrence Mapemba (2015). "[Heterogeneous preferences and the effects of incentives in promoting conservation agriculture in Malawi](#)", International Food Policy Research Institute (IFPRI) Discussion Paper 01440.
4. Ward, Patrick S., David J. Spielman, David L. Ortega, Neha Kumar, and Sumedha Minocha (2015). "[Demand for complementary financial and technological tools for managing drought risk](#)", International Food Policy Research Institute (IFPRI) Discussion Paper 01430.
5. Arora, Anchal, Sangeeta Bansal, and Patrick S. Ward (2015). "[Eliciting farmers' valuation for abiotic stress-tolerant rice in India](#)", International Food Policy Research Institute (IFPRI) Discussion Paper 01409.
6. Ward, Patrick S. and Vartika Singh (2014). "[Risk and ambiguity preferences and the adoption of new agricultural technologies: Evidence from field experiments in rural India](#)", International Food Policy Research Institute (IFPRI) Discussion Paper 01324.
7. Ward, Patrick S., David L. Ortega, David J. Spielman and Vartika Singh (2013). "[Farmer preferences for drought tolerance in hybrid versus inbred rice: Evidence from Bihar, India](#)", International Food Policy Research Institute (IFPRI) Discussion Paper 1307.
8. Spielman, David J., Deepthi Kolady, Patrick Ward, Harun-Ar-Rashid, and Kajal Gulati (2012). "[Public Expenditures, Private Incentives, and Technology Adoption: The Economics of Hybrid Rice in South Asia](#)", International Food Policy Research Institute (IFPRI) Discussion Paper 01233.

Research Notes/Briefs

1. Ward, Patrick S., David L. Ortega, David J. Spielman and Vartika Singh (2014). "[Farmer Preferences for Drought Tolerance in Inbred and Hybrid Rice: Evidence from Bihar, India.](#)" CSISA Research Note No. 5. Published online.
2. Ward, Patrick S. (2012). "Can Tradable Development Rights be used to Manage Land and Reduce Flood Risks?" *Reflections*. International Center for Climate Governance. Published online.
3. Ward, Patrick S. (2012). "Review of the Key Findings from the IPCC Special Report on Managing the Risks of Extreme Events." *Reflections*. International Center for Climate Governance. Published online.
4. Ward, Patrick S. (2012). "Opportunities for Sustainable Agricultural Development Through Conservation." *Reflections*. International Center for Climate Governance. Published online.
5. Ward, Patrick S. (2011). "Can Countries Use Energy Consumption to 'Grow' Out of Being Vulnerable to Climate Extremes". *International Climate Policy & Carbon Markets* 17, pp. 7-8.

Electronic Datasets

1. Pede, Valerien O., Vijesh Krishna, Nils Teufel, Patrick S. Ward, Takashi Yamano, Arindam Sammadar, David J. Spielman, Surabhi Mittal, Thelma Paris, Dhiraj Singh, Vartika Singh, Subhash Ghimire, and Meerah Mehrotra (2013). [Cereal Systems Initiative for South Asia \(CSISA\) Baseline Household Survey \(2010-2011\)](#). Published electronically. IFPRI Dataverse.
2. IFPRI (2014). [Farmers' preferences for abiotic stress tolerance in hybrid versus traditional rice](#). Published electronically. IFPRI Dataverse.

Studies in Progress

1. "Understanding information processing heuristics to target development interventions: The case of drought risk management interventions in Bangladesh" (with David L. Ortega and Vincenzina Caputo).
2. "The role of learning on technology adoption in Bihar, India" (with Jared Gars).
3. "Confidence and information usage: Evidence from Bihar, India" (with Jared Gars).
4. "Perspectives on agricultural mechanization in India: Historical contexts, current status, and future prospects" (with Vijay Paul Sharma and David J. Spielman).
5. "The impacts of weather index insurance on farm management and farm input utilization" (with Neha Kumar, Simrin Makhija, Nicholas P. Magnan, Md. Ehsanul Haque Tamal, David J. Spielman, Ruth Vargas Hill and Francesca De Nicola).
6. "Drought-tolerant rice cultivars as an agronomic risk management intervention" (with Md. Ehsanul Haque Tamal, Simrin Makhija, Neha Kumar, Nicholas P. Magnan, and David J. Spielman)
7. "Farmer preferences for Cotton Leaf Curl Virus-resistant cultivars: Empirical evidence from Pakistan" (with Shahzad Kouser and David J. Spielman)
8. "Bundling technology with insurance: Evidence from a randomized evaluation in Odisha, India" (with David J. Spielman and Simrin Makhija).
9. "Intrahousehold valuation, preference heterogeneity, and demand of an agricultural technology in Bihar, India" (with Kajal Gulati, Travis Lybbert, and David J. Spielman).

Other Reports

1. Pede, Valerien, Patrick S. Ward, David J. Spielman, and Thelma Paris (2012). ["Summary of the Agro-ecological and Socio-economic Context for the Cereal Systems Initiative for South Asia \(CSISA\)"](#). Published online.

Recent Conference and Seminar Presentations:

1. "Can information help reduce imbalanced application of fertilizers in India? Experimental evidence from Bihar." International Food Policy Research Institute (Washington, DC, USA), Environment and Production Technology Division Brown Bag Seminar, August 2016 (Invited presentation).
2. "Early adoption of conservation agriculture practices: Understanding partial compliance in programs with multiple adoption decisions." Agricultural & Applied Economics Association Annual Meeting (Boston, MA, USA), August 2016 (Selected presentation).
3. "Early adoption of conservation agriculture practices: Understanding partial compliance in programs with multiple adoption decisions." 20th Annual Conference of of the International Consortium for Applied Bioeconomic Research (Ravello, Italy), June 2016 (Selected presentation)
4. "New modalities for managing drought risk in rainfed agriculture: Evidence from a discrete choice experiment in Odisha, India." 20th Annual Conference of of the International Consortium for Applied Bioeconomic Research (Ravello, Italy), June 2016 (Selected presentation)

5. "Ensuring sustainable food production systems in South Asia's transforming rural economies." George Washington University (Arlington, VA, USA), June 2016 (Invited lecture).
6. "Can information help reduce imbalanced application of fertilizers in India? Experimental evidence from Bihar." Michigan State University (East Lansing, MI, USA), April 2016 (Invited presentation).
7. "Agricultural mechanization in India: Historical context, current trends, and future prospects." Workshop on "Rural and Agricultural Mechanization - Recent Histories from Odisha and its Neighbors" (Bhubaneswar, Odisha, India), December 2015 (Invited presentation).
8. "The potential role for drought-tolerant seeds in increasing drought resilience in Indian agriculture." IFPRI/Center for Good Governance national workshop on "Mitigating Agrarian Distress in Indian Agriculture" (Hyderabad, Telangana, India), October 2015 (Invited presentation).
9. "Improving surface water delivery in the Indus Basin Irrigation System: Increased cost recovery, improved maintenance, and enhanced social welfare." ICRISAT/PIM workshop on "Enabling Adoption of Water and Energy Efficient Technologies in Agriculture: Constraints, Opportunities, Strategies and Policies" (Patancheru, Telangana, India), September 2015 (Invited presentation).
10. "Demand for complementary financial and technological tools for managing drought risk." International Conference of Agricultural Economists (Milan, Italy), August 2015 (Selected presentation).
11. "Do farmers value rice varieties tolerant to droughts and floods? Evidence from a discrete choice experiment in Odisha, India." Agricultural & Applied Economics Association Annual Meeting (San Francisco, CA, USA), July 2015 (Lightening round presentation).
12. "Demand for complementary financial and technological tools for managing drought risk." Agricultural & Applied Economics Association Annual Meeting (San Francisco, CA, USA), July 2015 (Selected presentation).
13. "Demand for complementary financial and technological tools for managing drought risk." American Enterprise Institute Emerging Scholars Workshop (Washington, DC, USA), February 2015 (Invited presentation)
14. "Demand for complementary financial and technological tools for managing drought risk." International Food Policy Research Institute Seminar (New Delhi, India), February 2015.

Professional Activities

Member, Agricultural & Applied Economics Association (AAEA, 2008–Present), International Association of Agricultural Economists (IAAE, 2009–Present), European Association of Environmental and Resource Economists (EAERE, 2011–2013), South Asian Network for Development and Environmental Economics (SANDEE, 2011–Present), Agricultural Economics Society (AES, 2015–present).

Reviewer for: *American Journal of Agricultural Economics*, *World Development*, *European Review of Agricultural Economics*, *Agricultural Economics*, *Sustainability*, *Population and Environment*, *Review of Income and Wealth*, *Climatic Change*, *Journal of Environmental & Policy Planning*, *Land Economics*, *Natural Resources Forum*, *Resource and Energy Economics*, *Australian Journal of Agricultural and Resource Economics*, *Food Security*, *Food Policy*, *Journal of South Asian Development*, HarvestPlus Working Paper Series, Agricultural and Applied Economics Association (2014–2016 AAEA Annual Meetings), International Association of Agricultural Economists (2015 Triennial International Conference of Agricultural Economists).

Selected Participant–Belpasso International Summer School in Environmental and Resource Economics, 2011 (Belpasso, Sicily, Italy).

Selected Participant–American Enterprise Institute (AEI) Emerging Scholars Workshop in the area of agriculture and food economics, 2015 (Washington, DC).

Participant—European Commission Strategy for Adaptation to Climate Change (EUAdaptStrat) Workshop, March 2012 (Brussels, Belgium).

Organizing Committee–Regional, Population and Health Economics Midwest Graduate Student Summit, 2010.

Scientific Committee (Chair)–Regional, Population and Health Economics Midwest Graduate Student Summit, 2010.

Local Organizing Committee–IVth World Conference of the Spatial Econometrics Association, 2010.

Agricultural and Applied Economics Association (AAEA) Employment Services Committee, 2010–2013 (3 yr. appointment)

Cereal Systems Initiative for South Asia (CSISA) India Management Team and Country Coordinating Committee, 2012–2015.

International Food Policy Research Institute (IFPRI) Workplace Committee, Member, 2016–present.

International Food Policy Research Institute (IFPRI) Institutional Review Board (IRB), Member, 2016–present.

Honors, Awards, & Fellowships

Selected participant in American Enterprise Institute’s Emerging Scholar’s Workshop in Agriculture and Food Economics

Recipient of N.J. Yaraswy Memorial Best Paper Award at the 4th International Conference on Applied Econometrics (ICAE-IV) organized by IBS Hyderabad in collaboration with the Indian Econometric Society, 2014.

AAEA Young Professional and Graduate Student Travel Grant, 2010 and 2011.

Committee for the Education of Teaching Assistants (CETA) Teaching Award, Purdue University, 2011.

First Prize, 37th Annual James C. Snyder Memorial Lecture Graduate Student Poster Competition, 2011.

Purdue Climate Change Research Center (PCCRC) Travel Grant, 2011.

Visiting Research Fellowship, International Center for Climate Governance (ICCG), 2011-2012.

First Prize, International Food Policy Research Institute Strategic Innovations Fund Postdoctoral Competition (with Avinash Kishore)

Computer Skills

Expertise in R, Stata, Microsoft Office products, \LaTeX

Proficiency in NLOGIT, LIMDEP, Matlab, ArcMap

Familiarity with GAMS, GEMPack (GTAP)

References

Available upon request

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