

# Deepayan Debnath

Food and Agricultural Policy Research Institute  
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## AREAS OF INTEREST

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Agribusiness Management, Agricultural Policy Analysis, Bioenergy Economics, Extension Economics, Econometrics, Farm Management, Production Economics, Rural Development, and Statistics

## EDUCATION

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**Ph.D., Agricultural Economics** *Dec 2012*

***Oklahoma State University, Stillwater, OK, USA***

*Specialization* : Natural resource & environmental economics, Microeconomics, Operational research, Econometrics, Statistics, and Survey Design

**M.S., Agricultural Economics** *Dec 2010*

***Oklahoma State University, Stillwater, OK, USA***

GPA: 3.71

*Specialization* : Water economics, Mathematical programming, and Econometrics

**M.A., Economics** *Oct 2005*

***University of Kalyani, Kalyani, WB, India***

US equivalent GPA: 3.65

*Specialization* : Agricultural economics, and Financial economics

**B.A., Economics** *Jul 2003*

***University of Kalyani, Kalyani, WB, India***

US equivalent GPA: 3.65

*Minor* : Mathematics, and English

## PROFESSIONAL RESEARCH EXPERIENCE

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**International Market Analyst, Post-Doctoral Fellow** *Jan 2014 – Present*

***Food and Agricultural Policy Research Institute (FAPRI)***

***Department of Agricultural and Applied Economics***

***University of Missouri, Columbia***

- Developing and maintaining international biofuels model.
- Developed and solved multi-market multi-region partial equilibrium model for international grains market.
- Maintain and develop FAPRI-MU model for US cotton and rice.
- Developing stochastic framework of the international commodity model under FAPRI modeling framework.

**Post-Doctoral Research Associate** *Jan 2013 – Dec 2013*

***Food and Agricultural Policy Research Institute (FAPRI)  
Center of Agricultural and Rural Development (CARD),  
Department of Economics, Iowa State University***

- Construct and run commodity models of US and international grains and cotton market.
- Developing stochastic framework of the land use model under FAPRI modeling framework.
- Analyzing economic aspects of conservation practice and watershed management.

**Graduate Research Associate**

*Aug 2011 – Dec 2012*

***Department of Agricultural Economics, Oklahoma State University***

- Calibrated and validated switchgrass yield distribution-using EPIC.
- Developed optimization model to strategically lease land for switchgrass production.
- Determine the centroid of each land class using ArcGIS.
- Estimate the environmental outcomes including soil organic carbon, fertilizer runoff and soil loss of growing row crop and energy crop.
- Determine the breakeven price of switchgrass and wheat considering the environmental outcomes

**Graduate Research Associate**

*Jun 2011*

***Department of Agricultural Economics, Oklahoma State University***

- Performed benefit-cost analysis for the trout fishing program at the Lower Mountain Fork River.
- Estimated social and financial benefit-cost ratios.

**Graduate Research Assistant**

*Nov 2007 – Jul 2011*

***Department of Agricultural Economics, Oklahoma State University***

- Developed stochastic non-linear optimization model for managing multi-purpose reservoir water.
- Estimated yield response functions including stochastic plateau models using nonlinear optimization procedures.
- Performed economic feasibility analysis of reservoir water under competing uses.
- Estimates lake/reservoir visitation using time series dataset.
- Estimate urban and rural water demand using panel dataset.

**Sales Manager**

*Sep 2005 – May 2007*

***M/S Debnath Oil Mill, WB, India***

- Performed, assisted and managed sales departments with responsibility for business clients, retail sales and marketing.

**Co-ordinator**

*Sep 2003 – Jun 2005*

***Sanity-Oldage home and Orphanage, WB, India***

- Administered admission based on income status.
- Managed and scheduled member's activity.

**TEACHING EXPERIENCE**

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**Adjunct Lecturer***Aug 2013 – Dec 2013****Des Moines Area Community College (DMACC), Boone campus***

- Standalone instructor of Principles of Macroeconomics (ECON 120).

**Short Course - Instructor***Dec 2012****Department of Agricultural Economics, Oklahoma State University****Course* : Environmental Policy Impact Climate (EPIC)

- Standalone instructor of short course on EPIC v. 0509.
- Taught to build weather database.
- Taught to use SURGO soil database.

**Graduate Teaching Assistant, Dr. Arthur Stoecker***Aug 2011 – Dec 2011****Department of Agricultural Economics, Oklahoma State University****Course* : AGEC 5723: Planning and Policy for Development

- Assisted faculty in making class-notes and examinations.
- Graded assignments and examinations.
- Taught class on risk and uncertainty.

**Teaching Experience***Oct 2006 – Mar 2007****Ace Academy, WB, India****Courses* : English, Mathematics, Economics and Social science

- Taught full time.

**SKILLS**

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Microsoft Office: Excel including: Solver, Macro, Goal Seeker, Risk Solver Platform, and Simetar, Word, PowerPoint, Outlook Express, and Access.

Statistical Package: SAS (Macro), R, and STATA.

Optimization Package: MATLAB, GAMS, and GAUSS.

Operating System: MS-DOS, Microsoft WINDOWS XP, VISTA, WINDOWS 7, WINDOWS 8, and MACINTOSH.

Crop Simulation Package: ArcSWAT, ArcAPEX, and EPIC.

Computer Language: Visual C++, and Visual Basic.

Spatial Package: ArcGIS, GeoDa, and EPANET.

Other Packages: Maple, Planners Lab, Latex, Qualtrics (web based survey design tool).

Languages (fluent in written and spoken): English, Hindi, and Bengali (native).

## TRAININGS

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- EAERE – FEEM Belpasso International Summer School on Resource and Environmental Economics, Belpasso, Italy. *Sep 2013*
- Certificate course in ArcAPEX (Agricultural Policy/Environmental Extender Model), Texas A&M University. *Jan 2012*
- Completed graduate teaching assistant conference on teaching, OSU. *Jan 2012*
- Certificate course in ArcSWAT (Soil & Water Assessment Tool), Texas A&M University. *May 2011*

## HONORS AND AWARDS

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- Nominated for the AAEA Young Professional Mentorship Program  
Agricultural and Applied Economics Association. *Aug 2013*
- Awarded Spielman Scholarship *Aug 2012 – Dec 2012*  
Department of Agricultural Economics, Oklahoma State University. *Aug 2009 – Dec 2009*
- Awarded Leonard F. Miller Distinguished Graduate Fellowship *Aug 2012*  
Department of Agricultural Economics, Oklahoma State University. *Aug 2010 – May 2011*
- Awarded Endowed International Agricultural Economics Fellowship *Aug 2011– May 2012*  
Department of Agricultural Economics, Oklahoma State University.
- International Student of the Week *Mar 2009*  
Division of Agricultural Sciences and Natural Resources, Oklahoma State University.
- Awarded Scholarship for Academic Excellency and Research *Aug 2008*  
Graduate Collage of Oklahoma State University.

## FUNDING

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- Travel Fellowship *Nov 2014*  
Graduate Professional Council, University of Missouri-Columbia
- Conference Fellowship *Oct 2014*  
Indian Society of Agricultural Economics & International Association of Agricultural Economists
- 2014 Education Projects, Extension Risk Management Education, Western Center. *May 2014*
- Research Title:* “Expanding Direct Marketing Opportunities in the Intermountain West through Farm Shops.” (Co-director, \$32,000 with Kynda Curtis, Utah State University)
- International Travel Grant *Sep 2013*  
Collage of Agriculture and Life Science, Iowa State University.

Financial Assistance to support Summer School European Association of Environmental and Resource Economists.	<i>Sep</i> 2013
International Travel Grant Turkish Exporters Association.	<i>Jun</i> 2013
AAEA Student and Young Professional Travel Grant Agricultural and Applied Economics Association.	<i>Aug</i> 2012
Graduate Travel Grant Western Agricultural Economic Association.	<i>Jul</i> 2011
The Norman E. Borlaug International Agricultural Science and Technology Fellows Program. Leadership Enhancement in Agriculture Program (LEAP) (Not Funded)	<i>Oct</i> 2008
<i>Research Title</i> : “Reducing Poverty in India through Improving Marketing Efficiencies: A Case Study of Sorghum for Industrial Use.”	

## JOURNAL REVIEW & JUDGE

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Invited reviewer: Preparative Biochemistry & Biotechnology, Economic Research International,  
Journal of Agricultural and Applied Economics, Management Journals  
Associate Editor: Journal of Global Economics

Judge, Undergraduate Quiz Bowl Competition,  
Agricultural & Applied Economics Association 2012, 2013

Judge, Undergraduate Poster Competition, University of Missouri-Columbia 2014

## PUBLICATIONS IN INTERNATIONAL JOURNALS

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**Debnath, D.** “Can Carbon Credit Reduce Switchgrass Breakeven Price?” *American Journal of Biomass and Bioenergy* (February 2015) 4(1):10-27.

**Debnath, D.,** T. Boyer, A. Stoecker, and L. Sanders. “Nonlinear Optimization Model of Reservoir Water Allocation with Stochastic Inflows: A Case Study of Lake Tenkiller.” *Journal of water resource Planning and Management* (January 2015) 141:4014045-1-12.

**Debnath, D.,** A. Stoecker, and F. Epplin. “Impact of Valuing Environmental Variables on the Breakeven Price of Switchgrass.” *Biomass and Bioenergy* (August 2014) 70:184-195.

**Debnath, D.** “Integrating Economic and Hydrologic Interdependence in Reservoir Management.” *Lakes & Reservoir: Research and Management* (May 2014) 19:211-224.

**Debnath, D.,** F. Epplin, and A. Stoecker. “Managing Spatial and Temporal Switchgrass Biomass Yield Variability.” *BioEnergy Research* (February 2014) 7:946-957.

**Debnath, D.,** K. Curtis, and S. Slocum. “Expanding Direct Marketing Opportunities through Farm Shops in Western Tourism Destinations: Extension Program Design.” 2014 National Value Added

Agriculture Conference and Northeast Regional What Works Conference Proceedings (Peer reviewed). (Accepted December, 2014)

## NUMBER OF CITATIONS

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10

## WORKING PAPERS

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**Debnath, D.**, F. Epplin, and A. Stoecker. "Switchgrass Procurement Strategies for Managing Yield Variability: Estimating the Cost-Efficient D (Downtime Cost) L (Land to Lease) frontier." Submitted to the Biomass and Bioenergy. (under 1<sup>st</sup> review January, 2015)

**Debnath, D.**, W. Thompson, M. Helmar, and T. Orman. "Turkish Cotton Market in the Context of Southern Anatolia Region (GAP) Project." *working paper being prepared for submission to the International Journal of Food and Agricultural Economics.*

**Debnath, D.**, A.E. Elobeid, and M.A. Carriquiry. "Modeling the Impacts of Adopting Bt Cotton by African Countries on World Fiber and Bioenergy Crop Markets." *working chapter being prepared for LAP Lambert Academic Publishing house.*

Haque A., O. Oyelakin, X. Yuan, and **D. Debnath**. "Climate change, Microcystins and Shallow Lake Restoration." *working paper being prepared for submission to the Lake and Reservoir Management.*

Yu T., B.A. Babcock, and **D. Debnath**. "Estimating Nonlinear Weather Impacts on Corn Yield: a Bayesian Approach." *working paper being prepared for submission to the American Journal of Agricultural Economics.*"

## TECHNICAL REPORT

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**Debnath, D.** (with FAPRI Staff). "August 2014 Baseline Update for U.S. Agricultural Markets." FAPRI-MU Report #04-14, University of Missouri-Columbia, MO. August 27, 2014.

**Debnath, D.** and T. Boyer. "Benefit-Cost Analysis of the Lower Mountain Fork Trout Fishing Program." Extension Report for Oklahoma Cooperative Fish and Wildlife Research, Oklahoma State University, Stillwater, Oklahoma, June 25, 2012.

## PAPER and POSTER PRESENTATIONS

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Whistance, J., **D. Debnath**, and J. Binfield. "Biofuel Outlook." Selected paper presented at the FAPRI Baseline Review, Washington D.C. December 15-16, 2014.

**Debnath, D.**, P. Ghosh, J. Binfield, and M. Helmar. "Impact of India's food security bill on rice exports and its effect in agricultural terms of trade." selected paper prepared at the Inter-Conference Symposium of International Association of Agricultural Economists, Hyderabad, India, October 12 - 13, 2014.

**Debnath, D.,** J. Binfield, and J. Whistance. “Impacts of U.S. biofuel mandate waiver on world ethanol and biodiesel market.” selected paper presented at 2014 Agricultural & Applied Economics Association Annual Meeting, Minneapolis MN, July 27-29, 2014.

**Debnath, D.,** M. Helmar, J. Binfield, and W. Thompson. “Long term consequences of changing global food consumption patterns on U.S. agricultural commodity export demand.” selected paper presented at 2014 Agricultural & Applied Economics Association Annual Meeting, Minneapolis MN, July 27-29, 2014.

**Debnath, D.,** P. Westhoff, and W. Thompson. “Does the absence of demand side variability in stochastic partial equilibrium modeling bias outcomes? Facts and evidence from Brazil.” selected poster presented at 2014 Agricultural & Applied Economics Association Annual Meeting, Minneapolis MN, July 27-29, 2014.

**Debnath, D.,** and J. Binfield. “Global Biofuels Model” Departmental Seminar, Food and Agricultural Policy Research Institute, University of Missouri, Columbia, MO, June, 9, 2014.

**Debnath, D.,** and K. Curtis. “Expanding Direct Marketing Opportunities through Farm Shops in Western Tourism Destinations.” selected paper presented at 16<sup>th</sup> Annual National Value Added Agriculture Conference, Baltimore, Maryland, May 13-15, 2014.

**Debnath, D.,** T. Boyer, A. Stoecker, and L. Sanders. “Nonlinear Optimization Model of Reservoir Water Allocation with Stochastic Inflows: A Case Study of Lake Tenkiller.” selected paper presented at 2013 Belpasso International Summer School on Environmental and Resource Economics, Belpasso, Sicily, Italy, September 1-7, 2013.

**Debnath, D.,** A.E. Elobeid, and M.A. Carriquiry. “Modeling the Impacts of Adopting Bt Cotton by African Countries on World Fiber and Bioenergy Crop Markets.” selected poster presented at 2013 Agricultural & Applied Economics Association Annual Meeting, Washington DC, August 4-6, 2013.

**Debnath, D.,** and A.E. Elobeid. “Increased Cotton Yields in Turkey: Outcome and Implications.” selected project presented as poster at II. International Food R&D Brokerage Event, Izmir, Turkey, June 3-4, 2013.

**Debnath, D.,** A.E. Elobeid, and M.A. Carriquiry. “Impacts Analysis of Adopting Bt Cotton by West African Countries on World Fiber and Bioenergy Crop Markets using FAPRI-CARD Model.” selected poster presented at 2013 Iowa State University Post Doctoral Research Day, Ames, Iowa, June 10, 2013.

**Debnath, D.,** A. Stoecker, and F. Epplin. “Impact of Valuing Environmental Variables on the Breakeven Price of Switchgrass.” selected paper presented at Southern Agricultural Economic Association Annual Meeting, Orlando, Florida, February 4-7, 2013.

**Debnath, D.,** A. Stoecker, and F. Epplin. “Managing Expected Switchgrass Biomass Yield Variability by Strategically Land to Lease.” Selected paper presented at 2012 Agricultural & Applied Economics Association Annual Meeting, Seattle, Washington, August 12-15, 2012.

**Debnath, D.**, T. Boyer, A. Stoecker, and L. Sanders. “Nonlinear Multiobjective Optimization Model of Reservoir Water Allocation with Stochastic Inflows: A Case Study of Lake Tenkiller.” selected paper presented at 23<sup>rd</sup> Annual Research Symposium, Oklahoma State University, Stillwater, Oklahoma, February 22-24, 2012.

Haque, A., **D. Debnath**, and X. Yuan. “Psychology, Perception and Risk Communication through Dialogue: The Climate Change Implications for Lake Management.” selected paper presented at 31<sup>th</sup> International Symposium of the North American Lake Management Society, Spokane, Wisconsin, October 26-28, 2011.

**Debnath, D.**, A. Stoecker, T. Boyer, and L. Sanders. “Integrated Reservoir Management under Stochastic Conditions.” selected paper presented at 2011 Joint Annual Meeting Canadian Agricultural Economic Society and Western Agricultural Economic Association, Banff, Alberta, June 29-July 1, 2011.

**Debnath, D.**, T. Boyer, A. Stoecker and L. Sanders. “Evaluating the Effects of Changes in Recreation and Electricity Values on Lake Tenkiller Water Levels.” selected paper presented at 20<sup>th</sup> Annual Oklahoma Clean Lakes and Watersheds Association Conference, Edmond, Oklahoma, April 7-8, 2011.

**Debnath, D.** and A. Stoecker. “Integrated Reservoir Management under Stochastic Conditions.” Departmental Seminar, Department of Agricultural Economics, Oklahoma State University, Stillwater, Oklahoma, December 3, 2010.

**Debnath, D.**, A. Stoecker, T. Boyer and L. Sanders. “Integrated Reservoir Management Using Nonlinear Programming: Lake Tenkiller Case Study.” selected paper presented at 30<sup>th</sup> International Symposium of the North American Lake Management Society, Oklahoma City, Oklahoma, November 3-5, 2010.

**Debnath, D.**, A. Stoecker, T. Boyer and L. Sanders. “Best Management Practice for Reservoir Water: An Optimization Model Allocating Lake Tenkiller Water.” selected paper presented at 20<sup>th</sup> Annual Research Symposium, Oklahoma State University, Stillwater, Oklahoma, February 16-20, 2009.

**Debnath, D.**, A. Stoecker, T. Boyer and L. Sanders. “Optimal Allocation of Reservoir Water.” selected paper presented at Southern Agricultural Economic Association Annual Meeting, Atlanta, Georgia, January 31 to February 03, 2009.

**Debnath, D.**, A. Stoecker, T. Boyer and L. Sanders. “Optimal Allocation of Reservoir Water.” selected poster presented at Annual Government Conference & Annual OWRI Water Research Symposium, Oklahoma City, Oklahoma, October 28-30, 2008.

## PROFESSIONAL ACTIVITIES

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Member, American Economic Association	2014-Present
Member, Agricultural & Applied Economics Association	2012-Present
Moderator, Annual Meeting of Agricultural Applied Economic Association	2014
Member, European Association of Environmental and Resource Economists	2012-2013
Member, Information Services Committee, Department of Agricultural Economics,	



Oklahoma State University	2011-2012
Moderator, Joint Annual Meeting of Canadian Agricultural Economic Society and Western Agricultural Economic Association	2011
Member, Western Agricultural Economic Association	2011
Member, North America Lake Management Society	2010-2012
Member, Agricultural Economics Graduate Student Association, Oklahoma State University	2007-2012
Member, Southern Agricultural Economics Association	2009
Moderator, 19 <sup>th</sup> Annual Research Symposium, Oklahoma State University	2008
Member, Graduate and Professional Student Government Association, Oklahoma State University	2007-2008
Treasurer, Social Organization 'UDAYAN' WB, India	2004-2006
Vice President, Student Association, Department of Economics, University of Kalyani, WB, India	2003-2005