

REETWIKA BASU : ECONOMIST AND RESEARCH SCIENTIST, NASA-SERVIR, UAH

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INFORMATION NASA Marshall Space Flight Center, NSSTC-1054 reetwika.basu@nasa.gov
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RESEARCH Economic Impact Analysis of Earth Observations, Natural resources and environmental economics,
INTERESTS Water resource, Agent-Based Modeling, Econometric Applications, Consumer behavior

EDUCATION **PhD in Economics** | Washington State University, Pullman, USA *Fall'18-Summer'23*
• **Specialization** : Advanced Econometrics, Environmental and Natural Resources Economics
Master of Science, Economics | Calcutta University, Kolkata, India *Aug'14-Aug'16*
• **Specialization** : Advanced Econometrics, Industrial Organization, Economics of Agriculture
Bachelor of Science, Economics | Lady Brabourne College, Kolkata, India *Aug'11-Jul'14*
• **Dissertation title** : Does Clark-Fisher Hypothesis hold for India : a post-Independence study

JOURNAL **Reetwika, B.** and R.K. Gallardo. 2021. "Economic Issues Related to Long-Term Investments in Tree
PUBLICATION Fruits" Choices. Quarter 2. https://www.choicesmagazine.org/UserFiles/file/cmsarticle_774.pdf

Das, Panchanan, **Reetwika Basu**, and Abhishek Halder. "Employment, Wage and Productivity : Analysis of Trend and Causality in Indian Manufacturing Industries." The Journal of Industrial Statistics 6.1 (2017) : 41-56. https://mospi.gov.in/sites/default/files/reports_and_publication/NSS_Journals/jr3_6_1March2017.pdf

PROCEEDINGS Abhijin Adiga, Yohai Trabelsi, Tanvir Ferdousi, Madhav Marathe, S. S.Ravi, Samarth Swarup, Anil
PAPER Kumar Vullikanti, Mandy Wilson, Sarit Kraus, **Reetwika Basu**, Supriya Savalkar, Matthew Yourek, Michael Brady, Kirti Rajagopalan, and Jonathan Yoder. 2024. "Value-based Resource Matching with Fairness Criteria : Application to Agricultural Water Trading". In Proc.of the 23rd International Conference on Autonomous Agents and Multiagent Systems (AAMAS 2024), Auckland, New Zealand, May 6-10, 2024, IFAAMAS,16 pages. <https://arxiv.org/abs/2402.06576>

REPORT Yoder, Jonathan, Crystal Raymond, **Reetwika Basu**, Suhina Deol, Alexander Fremier, Kairon Shayne Dumalag Garcia, Guillaume Mauger, Julie Padowski, Matthew Rogers, Amanda Stahl. 2022. Climate change and stream flow : Barriers and opportunities. Preliminary project report to the Washington State Department of Ecology. June. <https://apps.ecology.wa.gov/publications/documents/2211029.pdf>

WORKING **Reetwika Basu** and Eric Anderson. "Serviring Economic Prosperity : Economic Impact Analysis
PAPERS AND (EIA) on Earth Observation based Services by Servir"
REPORTS **Reetwika Basu** and Chinmay Deval "Economic Impacts of water related natural disasters in Servir countries : A Review"

Aparna R. Phalke, Sarah Cox, Loday Phuntsho, Tshering Wangchen, Rinchen Dorji, Rishiraj Dutta, Sravan Shreshtha, Faisal Qamer, **Reetwika Basu**, Eric Anderson, Ashutosh Limaye et al. "Crop yield monitoring using remote sensing for small-holder agricultural systems : Opportunities and Challenges"

Reetwika Basu, Jonathan Yoder, Joseph Cook, Jacob Grifford, Kirti Rajagopalan, Micheal Brady and Tathagata Pal. "An Agent-Based Model (ABM) of agricultural water markets under appropriative rights and droughts"

Reetwika Basu. "Economic consequences of locational restrictions on water trading : gains from trade and third-party effects using ABM"

Reetwika Basu. "Economic consequences of instream flow augmentation with downstream appropriators using ABM"

RESEARCH
EXPERIENCE

Graduate Research Assistant : School of Economic Sciences, WSU Pullman
Guide : Dr. Jonathan Yoder, School of Economic Sciences, WSU Pullman July'20-Summer'23

Project 1 : *Technology For Trade (T4T)*

- Developing an agent-based model (ABM) and simulating it using Python for water use and allocation in agricultural markets under appropriative rights and droughts
- Studying economic consequences of locational restrictions on water trading using ABM : Gains from trade and third party effects
- Studying economic consequences of instream flow augmentation with downstream appropriators using ABM

Researcher : Washington State Department of Ecology May'22-July'22

Project : *Climate Change and Streamflow : Barriers and Opportunities*

- Wrote a report (Task Lead) on Washington law and policy barriers to streamflow management in response to climate change

Graduate Research Assistant : School of Economic Sciences, WSU Pullman
Guide : Dr. Karina Gallardo, School of Economic Sciences, WSU Pullman Aug'19-June'20

Project 1 : *Asset Fixity in tree fruits and annual crops*

- Studied asset fixity in agriculture
- Studied the importance of policy implications and technology investment implications in asset fixity issues
- Analysed the difference in tree fruits and annual crops concerning asset fixity

Project 2 : *Consumer willingness to pay towards ready-to-eat meals*

- Studied the effects of information dissemination and liking preference of consumers on their willingness to pay for ready-to-eat meals processed by novel technologies c
- Conducted extensive literature survey on change in consumer behaviour from existing ready-to-eat products to eagerness towards purchasing ready-to-eat meals processed via novel techniques, key sensory taste attribute that consumers assign more importance to, or what sensory taste attributes are just terrible in ready-to-eat meals
- Analysed consumer demographic data, their ready-to-eat meal consumption and food purchasing habits; consumption of ready-to-eat meals was found to be approximately **9.3 times per week** and estimated weighted average shelf life of ready-to-eat meals was found to be **25 days**

Project 3 : *Production Statistics for variety apples in Washington State*

- Collected Data for the following :
 - Bearing acres of Gala, Red Delicious, Fuji, Golden Delicious, Granny Smith, Honeycrisp and Cripps Pink in Washington State : an in-depth comparison of data - 2006 vs. 2017
 - Distribution of the bearing acreage -2017
 - FOB prices per variety 2006-2017

TEACHING
EXPERIENCE

Section Instructor at Carson College of Business, WSU

Fall 2020

Courses : EconS555 : Managerial Economics

- Conducted weekly webinars/lectures for EconS555 MBA students and grading weekly assignments

Graduate Teaching Assitant

Aug'18-April'19

Courses : EconS302 : Intermediate Macroeconomic Analysis

- Assisted the professor in conducting help sessions for students and solved students' queries regarding course material taught and assessed mid-term and end-term answer sheets

Guest Lecturer : Loreto College, Kolkata, India

Jul'16-May'17

Course 1 :Statistical Economics ;

Course 2 :Indian Economic History ;

Course 3 :Managerial Economics

- Served as a course instructor all round the year for the above-mentioned freshmen, sophomore, and senior level classes for **50+** class strength
- Designed and assessed daily assignments, mid-term, and end-term examinations to give comprehensive knowledge about specific course topic

PRESENTATIONS

- An Agent-Based Model of Agricultural Water Markets under Appropriative Rights and Droughts
 - American Water Resources Association (AWRA), Washington Chapter, Sept.28, 2023
 - Universities Council on Water Resources (UCOWR), June 13-15, 2023
 - AgAID Annual Meeting, Oregon State University, March 6-7, 2023
 - American Water Resources Association (AWRA), November 7-9, 2022
 - School of Economic Sciences Student Seminar Series, April 2022

BOOK REVIEWS

- Auction Theory : Introductory Exercises with Answer Keys. Pak-Sing Choi and Felix Munoz-Garcia, Springer-Nature, May 2021.

TRAINING,
PROGRAMMING
SKILLS, AND
LANGUAGES

- Certified in **Financial Market** from Calcutta Stock Exchange Centre of Excellence in Financial Markets (CUCSE-CEFM), Kolkata, 2015 ; trained in functions, systems and operations of capital markets, banking and mutual funds
- Hold knowledge in **NETLOGO, Python, Stata, Eviews** and **Microsoft Excel**
- Fluent in reading, writing, and speaking English, Bengali, and Hindi

WORKSHOP AND
SEMINAR

- Conducted Seminar on **Economic Methods : Overview and Impact Assessment** at SCO NSSTC (Sept. 1,'23)
- Participated in a seminar on **Effective Teaching and Quality Upgradation** organized by Loreto College, Kolkata, India (Mar-Apr'17)
- Participated in the 7th National Seminar on Industrial Statistics organized by Central Statistics Office, Kolkata, India (Sept'16)
- Successfully completed workshop on '**R Analytics**' conducted by Orange Tree Global, Kolkata, India (Jan'16)

GRANTS

- Received Graduate Student Research Grant for Sustainability (2020-2021) from Endowment for Sustainable Development(ESD)
- Received Dissertation Grant (2020) from Graduate and Professional Students Association (GPSA)

AWARDS AND
ACHIEVEMENTS

- Received Graduate Assistantship, School of Economic Sciences, Washington State University (2018-2023)

- Received Poster Presentation Award 1st place at American Water Resources Association(AWRA) Annual Conference 2022
- Received Graduate and Professional Students Association (GPSA) Senator Scholarship for the Academic years 2020-21, 2021-22 and 2022-23
- Received E8 Angels Fellowship 2020,2021 and 2022
- E8- Angels Research Fellow (Feb' 20 - April'23)
- Received certificate of merit for Indian School Certificate Examination (ISC) (2011)

LEADERSHIP AND
SERVICES

- GPSA Senator - School of Economic Sciences (2020 - 2023)
- Secretary - School of Economic Sciences Graduate Student Association (SES GSA) (2021-22)
- Treasurer - Indian Students Association (ISA), WSU (2020-21)
- IT and PR Chair - Indian Students Association (ISA), WSU (2019-20)
- Peer Mentor - Office of International Programs, WSU (April '20-Dec '20)