

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

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CONTACT INFORMATION	Servir Science Coordination Office, NASA Marshall Space Flight Center, NSSTC-1054 Huntsville-35805, AL, USA	+1 (256) 961 7419 reetwika.basu@nasa.gov rb1133@uah.edu
RESEARCH INTERESTS	Economic Impact Analysis of Earth Observations, Natural resources and environmental economics, Water resource, Agent-Based Modeling, Econometric Applications, Consumer behavior	
EDUCATION	<b>PhD in Economics</b>   Washington State University, Pullman, USA <i>Fall'18-Summer'23</i> • <b>Specialization</b> : Advanced Econometrics, Environmental and Natural Resources Economics  <b>Master of Science, Economics</b>   Calcutta University, Kolkata, India <i>Aug'14-Aug'16</i> • <b>Specialization</b> : Advanced Econometrics, Industrial Organization, Economics of Agriculture  <b>Bachelor of Science, Economics</b>   Lady Brabourne College, Kolkata, India <i>Aug'11-Jul'14</i> • <b>Dissertation title</b> : Does Clark-Fisher Hypothesis hold for India : a post-Independence study	
JOURNAL PUBLICATION	<b>Reetwika, B.</b> and R.K. Gallardo. 2021. "Economic Issues Related to Long-Term Investments in Tree Fruits" Choices. Quarter 2. <a href="https://www.choicesmagazine.org/UserFiles/file/cmsarticle_774.pdf">https://www.choicesmagazine.org/UserFiles/file/cmsarticle_774.pdf</a>  Das, Panchanan, <b>Reetwika Basu</b> , 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. <a href="https://mospi.gov.in/sites/default/files/reports_and_publication/NSS_Journals/jr3_6_1March2017.pdf">https://mospi.gov.in/sites/default/files/reports_and_publication/NSS_Journals/jr3_6_1March2017.pdf</a>  <b>Basu, R.</b> , Anderson, E., Deval, C., Herndon, K., Markert, A., Pransky, L., ... Sayeed, A. (2024). Serving economic prosperity : economic impact assessments (EIA) on Earth observation-based services and tools by SERVIR. <a href="https://arxiv.org/abs/2405.15672">arXivpreprintarXiv:2405.15672</a>  Deval, C., Anderson, E., Kruskopf, M., Limaye, A., Bhandari, B., Markert, A., Flores-Anderson, A., Muthuke D., <b>Basu, R.</b> , Shreshtha M., Laverde-Barajas M., ... (2024). Connecting Science to Sustained Impact : SERVIR's Journey in Earth Observations for Water Resources Management and Future Pathways.  <b>Basu R.</b> , Gifford J., Brady M., Cook J., Rajagopalan K., Yoder, J. "An Agent Based Model for Assessing Agricultural Water Market Structures and Functions." submitted to JAERE (2024)	
PROCEEDINGS PAPER	Abhijin Adiga, Yohai Trabelsi, Tanvir Ferdousi, Madhav Marathe, S. S.Ravi, Samarth Swarup, Anil Kumar Vullikanti, Mandy Wilson, Sarit Kraus, <b>Reetwika Basu</b> , 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. <a href="https://arxiv.org/abs/2402.06576">https://arxiv.org/abs/2402.06576</a>	
REPORT	Yoder, Jonathan, Crystal Raymond, <b>Reetwika Basu</b> , 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. <a href="https://apps.ecology.wa.gov/publications/documents/2211029.pdf">https://apps.ecology.wa.gov/publications/documents/2211029.pdf</a>	

WORKING  
PAPERS

**Basu R.**, Anderson E., Cherrington E., Deval C., Garugai S., Herndon K., Issoufou M., Maerkert A., Matos J., Phalke A., Pransky L., Sayeed A., Sirichaovanichkarn E.. " Assessments of Impacts Using Economic Methods for Earth Observation-Based Services ".

**Basu R.**, Chinmay Deval, Diana West and Amanda Markert, "Economic Impacts of water related natural disasters in Servir countries : A Review"

**Basu R.**, Chaudhary S., Deval C., Sayeed A., Herndon K., Griffin R., "Estimating Disaster Resilience of Hurricane Helene on Florida Counties".

Farhan Majid, Wafa Orman, **Reetwika Basu**, Alqamah Sayeed, "The Cost of Inaction : Impact of Air Pollution on Child Cognition in Pakistan."

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"

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 Assistant**

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

- Economic Impact Assessment of Application of GEOGLOWS in Ecuador, AmeriGEO Week, UN-GGIM Webinar, 2024
- Economic Impact Assessment of Application of GEOGLOWS in Ecuador, AmeriGEO Week, August. 27, 2024
- 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)