

Saoli Chanda, Ph.D.

Instructional Assistant Professor, Agronomy and Agricultural Statistics
Department of Agriculture, Agribusiness & Environmental Sciences
Texas A&M University – Kingsville (TAMUK), Kingsville, TX, USA, 78363
Office: 361-593-3369, Email: saoli.chanda@tamuk.edu

TEACHING, RESEARCH, and EXTENSION SUMMARY

My teaching, research, and extension interests include agronomy, sustainable agriculture, crop production, agroecology, wetland soil ecology, precision agriculture, and big data management in agricultural research

- Teaching & mentoring summary: Courses teaching/taught: 4; Lab instructor: 1; Guest lecture: 3 courses; Invited speaker: 4; Early career teaching workshops attended: 1; Student projects worked: 4; Teaching workshop organized: 2
- Research summary: \$652,000 (as PI and Co-PI); Southern SARE (USDA); Publications: 9 (published); 6 (under review/in preparation); Book chapters: 1; Conference proceedings: 20; Technical reports: 4
- Extension/Outreach activities: Webinar organized: 3; Interviews with agricultural stakeholders: more than 50; Extension/Media/news reports: 5

EDUCATION

- 2015 Ph.D. in Soil Fertility and Plant Nutrition, Louisiana State University, Louisiana, USA (took 17 credit hours of Statistics courses including a professional SAS programming)
- 2011 M.Sc. in Soil Science & Agronomy, Bidhan Chandra Krishi Viswa Vidyalaya, West Bengal, India
- 2008 B.Sc. in Agriculture (Agronomy and soil science major), Visva Bharati University, West Bengal, India

THESIS AND DISSERTATION

- 2015 The agronomic use and application of canopy reflectance within visible and near-infrared wavebands and its relation with nitrogen fertilization in Energy cane production in Louisiana, Louisiana State University, 129 Pp
- 2011 Effect of nitrogen sources and irrigation scheduling on yield and water use of summer baby corn in Gangetic alluvial zone, BCKV, India, 105 Pp

WORK HISTORY

- 2024 - present Instructional Assistant professor, Department of Agriculture, Agribusiness, and Environmental Sciences, Texas A&M University – Kingsville (TAMUK), Kingsville, TX, 78363
- 2018 – 2023 Postdoctoral scholar, Agronomy and Crop Production, Department of Earth and Environment, Florida International University, Miami, FL, USA, 33199
- 2016 – 2018 Postdoctoral scholar, Analytical Soil Chemistry, Southeast Environmental Research Center, Florida International University, Miami, FL, USA, 33199
- 2015 – 2016 Laboratory manager, Southern Soils Lab Inc. Yazoo City, MS, 39194
- 2012 – 2015 Graduate research assistant, Soil Fertility and Plant Nutrition, Louisiana State University, Baton Rouge, LA, 70803
- 2011 – 2011 Technical Research Assistant, National Food Security mission (NFSM), Government of India, West Bengal, India, 732101

2007 – 2007 Rural/Social Agricultural Work Experience (RAWE) Internship, Visva Bharati, West Bengal, India, 731235

A. COURSES TEACHING

Texas A&M University – Kingsville (TAMUK)

1. Fall 2024:
ANSC 4308: Statistics in Agriculture [Total students: 25]
ANSC 5390: Advance Agricultural Statistics [Total students: 9]
PLSS 4326: Horticultural Fruit Crop Production [Total students: 10]

B. GUEST LECTURE

1. Guest lecture: Soil Health and Productivity (PLSS 4329); Fall 2023 [Total students: 16]
2. Guest lecture: Principles of Biology I (BSC 2010) Laboratory, Fall 2018, Spring 2019 [Miami-Dade College, Miami] Two classes

C. INVITED SPEAKER

1. Invited speaker – ‘Farm to Fork: Supply Chain Resiliency in Florida, USA Impacted by Climate Change’, India: [Virtual; total students: 55] Spring 2023
2. Invited speaker – ‘Principles of Soil Fertility and Crop Production’ (CHM 1084) at Florida Gulf Coast University: Spring 2022 [total number of students: 35 to 40]

D. TEACHING WORKSHOP ORGANIZED

1. Statistical analysis and experimental design for agricultural students [students attended: 15 to 20]
2. Demonstrated DSSAT (Decision Support System for Agrotechnology Transfer) crop simulation model to the students

E. TEACHING WORKSHOP ATTENDED

1. Teaching workshop and scientific reviewer of NAGT for early career faculty, Kansas State University, 2018

F. MENTORING EXPERIENCE

1. Mentoring committee (unofficial): PhD, MSc, and undergraduate students of agroecology program, and four REU students at Florida International University (FIU)
2. Supervisor of CREST Student at FIU (unofficial), Summer 2018 (summer interns for three months)

G. MENTORING GRADUATE/UNDERGRADUATE STUDENT PROJECTS (while working as a postdoctoral scholar)

1. Evaluate nutrient lability in soils of Everglades National Park Ecosystem using enzyme assay techniques
2. Evaluate efficacy of microbial inoculants to reclaim salt effected (problematic land) soils of South Florida
3. Use of biochar to prevent runoff of agricultural chemicals specifically atrazine
4. Evaluate efficacy of different cover crops in fruit crop production, weed suppression, and carbon sequestration

H. RESEARCH PROJECTS – Funded

1. Co-PI: Fostering climate-friendly sustainable farming through integration of biochar and cover crops in Texas and Florida. Funding agency: Southern SARE (USDA). Fund: **\$398,000** 2024-2027. Project #
2. Co-PI: The Use of Cyanobacterial Biofertilizer to Increase Crop Productivity, Improve Soil Health, and Agricultural Sustainability in Florida. Southern SARE, United States Department of Agriculture (USDA); ID # AWD000000012318 Fund **\$242,000** 2021-2024. Project # LS21-354
Website: https://projects.sare.org/sare_project/ls21-354/

3. PI: Efficacy of Cyanobacteria Biofertilizer and Two Other Common Organic Nutrient Sources for Snap Bean Production. YES Grant, Southern SARE USDA, Fund \$4,433 2022.
4. Co-PI: Efficacy of Organic Nutrient Sources to Improve Soil Water Holding Capacity: An Experiential Learning for Young Scholar in Agricultural Science. YES Grant, Southern SARE USDA, Fund \$4,939 2023.

I. RESEARCH PROJECTS – Worked as a project manager

1. Ecosystem dynamics in the White Zone: history, drivers, and restoration implications, National Park Service. South Florida Natural Resources Center (SFNRC) with National Park Service, # P15AC01625. 2017 to 2018
2. Effects of dry down and re-hydration on sediment phosphorus storage in Storm water Treatment Area. ENP with SFWMD. 2017 to 2018
3. Florida tomato and strawberry supply chain: strategies for a resilient future. Walmart foundation funded project. 2018 to 2021

J. PEER-REVIEWED PUBLICATIONS (Published)

1. **Saoli Chanda**, Sanku Dattamudi, Krishnaswamy Jayachandran, Mahadev Bhat, and Leonard Scinto (2023). Use of cyanobacteria biofertilizer for okra production and improving agricultural sustainability in Florida, USA. *Environments* 11(3), 45
2. **Saoli Chanda**, Mahadev Bhat, Kateel Shetty, and Krishnaswamy Jayachandran. (2021). Technology, Policy, and Market Adaptation Mechanisms for Sustainable Fresh Produce Industry: The Case of Tomato Production in Florida, USA. *Sustainability*, 13(11), 5933.
3. **Saoli Chanda**, Yumiko Kanke, Marilyn Dalen, Jeffrey Hoy, and Brenda Tubana. (2018). Coefficient of Variation from Vegetation Index for Sugarcane Population and Stalk Evaluation. *Agrosystems, Geosciences & Environment* 1, 180016 (2018). doi:10.2134/age2018.07.0016
4. Ariel Freidenreich, **Saoli Chanda**, Sanku Dattamudi, and Krishnaswamy Jayachandran. (2022). Effect of Glyphosate and Carbaryl Applications on Okra (*Abelmoschus esculentus*) Biomass and Arbuscular Mycorrhizal Fungi (AMF) Root Colonization in Organic Soil. *Horticulturae*, 8(5), 415.
5. Sanku Dattamudi, **Saoli Chanda**, and Leonard J. Scinto. (2021). Microbial respiration and enzyme activity downstream from a phosphorus source in the Everglades, Florida, USA. *Land* 10(7) 696.
6. Sanku Dattamudi, Prasanta K. Kalita, **Saoli Chanda**, A.S. Alquwaizany, and Bikkar Singh Sidhu. (2020). Agricultural nitrogen budget for long-term row crop production in a Midwest US watershed. *Agronomy* 10(11), 1622.
7. Claudia Lyl. Garcia, Sanku Dattamudi, **Saoli Chanda**, and Krishnaswamy Jayachandran. (2019). Effect of salinity stress and microbial inoculations on glomalin production and plant growth parameters of Snap Bean (*Phaseolus vulgaris*). *Agronomy*, 9(9), 545.
8. Shagufta Gaffar, Sanku Dattamudi, Amin Rabiei Baboukani, **Saoli Chanda**, Jeffrey M. Novak, Donald W. Watts, Chunlei Wang, and Krishnaswamy Jayachandran. (2020). Physiochemical characterization of six different biochar feedstocks and their effects on sorption behavior of atrazine in organic rich soil. *Agronomy* 11(4) 716.
9. Sanku Dattamudi, Geetika Banta, Bikkar S. Sidhu, Hargopal Singh, and **Saoli Chanda**. (2018). Effect of treated sewage water on survival of microbial community and rice production in northwest India. *Acta Scientific Agriculture* 12(2):103-111.

K. PEER-REVIEWED PUBLICATIONS (In preparation/Under Review)

1. **Saoli Chanda**, Yared Bayissa, Mahadev Bhat, Assefa Melesse, Kateel Shetty, and Krishnaswamy Jayachandran. (2024). Impact of Climate Change on Tomato and Strawberry Productions in Florida: Crop Modeling Approach and Analysis. Target journal: *European Journal of Agronomy*. [In preparation].
2. **Saoli Chanda**, Sanku Dattamudi, and Krishnaswamy Jayachandran. (2023). Application of cyanobacteria biofertilizer for sustainable tomato production in Florida, USA. *Nitrogen* (under review).
3. **Saoli Chanda** and Brenda Tubana. (2024). Feasibility of using canopy spectral reflectance collected at early energy cane growth stage to predict harvest yield. Target Journal: *Precision Agriculture*. [In preparation]

4. Sanku Dattamudi, **Saoli Chanda**, and Leonard J. Scinto. (2024). Effect of Recent Landscape Modifications on P distribution in the Everglades, Florida, USA. Target journal: *Wetlands*. [In preparation].
5. Sanku Dattamudi, **Saoli Chanda**, and Krishnaswamy Jayachandran (2024). Warm season perennial grasses and carbon accumulation in the soil: a review. Target journal: *GCB Bioenergy* [In preparation].
6. Sanku Dattamudi, **Saoli Chanda**, Sri Madhabushi, and Krishnaswamy Jayachandran (2024). Comparative ability of different organic nutrient sources for subtropical okra production. [In preparation]

L. BOOK CHAPTERS

1. Maimona Saeed., Noshin Ilyas, Saman Sarfraz and **Saoli Chanda** (2024). Role of Crop Microbiomes in Crop Production Under Changing Climate: Past, Present and Future. In *Plant Holobiome Engineering for Climate-Smart Agriculture* (pp. 87-98). Singapore: Springer Nature Singapore.

M. TECHNICAL & RESEARCH PROJECT REPORTS

2. Sanku Dattamudi, **Saoli Chanda**, Krishnaswamy Jayachandran, Mahadev Bhat, and Leonard Scinto. 2022. Application of cyanobacteria as biofertilizer for okra production in Florida. Annual report. Submitted to USDA Southern SARE. 52 pp.
3. **Saoli Chanda**, Yared Bayissa, Mahadev Bhat, Carlos Parra, Kateel G. Shetty, Ronald Mesia, Assefa Melesse, Krishnaswamy Jayachandran and Stephany Alvarez-Ventura. 2020. Florida tomato and strawberry supply chain: strategies for a resilient future. Final report. Submitted to Walmart Foundation. 75 pp
4. Mike Ross, Jack Meeder, Leonard J. Scinto, Jay Sah, Susana Stoffella, Himadri Biswas, Sean Charles, Sanku Dattamudi and **Saoli Chanda**. 2018. Ecosystem dynamics in the White Zone: history, drivers, and restoration implications. *Annual report*, Task agreement # P15AC01625, Submitted to SFNRS (Everglades and Dry Tortugas National Parks), 72 pp
5. John S. Kominoski, Evelyn Gaiser, Leonard Scinto, Joel Trexler, **Saoli Chanda**, Sean Charles, Sanku Dattamudi, Diana Johnson, Michael Kline, Shishir Sarker, Franco Tobias, Mary Zeller. 2019. Assessing Near-Field and Landscape Scale Ecological Effects of the Modified Water Deliveries and Comprehensive Everglades Restoration Plan Projects in Northeast Shark River Slough (NESS), Everglades National Park. Technical Report, Task agreement # P14AC01639, 78 pp

N. EXTENSION/MEDIA/NEWS REPORTS

1. Saoli Chanda, Sanku Dattamudi, Krishnaswamy Jayachandran, Leonard J Scinto, and Mahadev Bhat. Water pollutant could be soil savior. *FIU News*. March 28. 2024
<https://news.fiu.edu/2024/water-pollutant-could-be-soil-savior>.
2. **Saoli Chanda**, Sri Madhabushi, Sanku Dattamudi and Krishnaswamy Jayachandran. Mentoring the next generation of scientists. *USDA Southern SARE Mentoring news*, August, 2023.
<https://southern.sare.org/news/mentoring-the-next-generation-of-scientists/>
3. Sanku Dattamudi, **Saoli Chanda**, Krishnaswamy Jayachandran, Mahadev Bhat and Leonard Scinto. Exploring algal bloom as biofertilizer in vegetable production. *USDA Southern SARE news*, August, 2023.
<https://southern.sare.org/news/exploring-algal-blooms-as-biofertilizer-in-vegetable-production/>
4. Mahadev Bhat, **Saoli Chanda**, Yared Bayissa. Florida tomato and strawberry supply chain: climate, market & strategies for a resilient future. *September, 2021*. (Bifold extension publication)
5. **Saoli Chanda**, Yared Bayissa, Ekta Shah, Mahadev Bhat, Stephany Alvarez. Florida Tomato and Strawberry Supply Chain Study: Strategies for a Resilient Future. *March, 2020*. <https://case.fiu.edu/earth-environment/agroecology/supply-chains-study/> (Webpage article)
6. Claudia Garcia, Sanku Dattamudi, **Saoli Chanda**, and Krishnaswamy Jayachandran. Oh, snap: Bacteria, fungus combo can help crops fight salty conditions. *FIU News*. December, 2019.

O. ABSTRACTS AND PROCEEDINGS

1. Sanku Dattamudi, **Saoli Chanda**, Krishnaswamy Jayachandran. Comparative analysis of various organic nutrient sources for okra production. (Abstract submitted to ASA Southern Region). 2024. Atlanta, GA
2. Sanku Dattamudi, **Saoli Chanda**, Krishnaswamy Jayachandran, Mahadev Bhat, and Leonard J. Scinto. Efficacy of cyanobacteria biofertilizer for sustainable tomato production. 2023, St. Louis, USA.
3. Sanku Dattamudi, **Saoli Chanda**, and Krishnaswamy Jayachandran. Application of Cyanobacteria as Biofertilizer for Producing Okra and Improving Ecological Sustainability in Florida. 2023, Hawaii, USA
4. Sanku Dattamudi, Leonard J Scinto, Evelyn Geiser, **Saoli Chanda**, Diana Johnson and Carlos Pulido. Potential Effects of Hydrologic Loading on Nutrient Content, Microbial Activity, and Other Ecological Parameters in Northeast Shark River Slough (NESS) of Everglades National Park (ENP), 2017, Tampa Bay, FL, USA
5. **Saoli Chanda**, Leonard J Scinto, Sanku Dattamudi, and Diana Johnson. Spatial Distribution in Everglades Nutrient Budgets and Their Effects on Biogeochemical Processes, 2017, Tampa Bay, FL, USA
6. Carlos Pulido, Leonard J Scinto, Sanku Dattamudi, and **Saoli Chanda**. Effects of dry down and re-hydration on sediment phosphorus storage in Stormwater Treatment Area, ENP, 2017, Tampa Bay, FL, USA
7. Alex Crow, Sanku Dattamudi, Leonard J Scinto, **Saoli Chanda**, and Diana Johnson. Evaluation of microbial respiration and enzyme activity downstream in the North-East Shark River Slough, 2017, MMC, Florida International University, Miami, FL, USA
8. M.S. Dalen., S. Kwakye., K.J. Han., **S. Chanda**, and B. Tubana. 2015. Nitrogen supply and harvest dates effects on nutrient removal and biomass chemical composition of energy cane. ASA-CSSA-SSSA International Annual Meetings. November 15-18, 2015, Minneapolis, MN.
9. M.S. Dalen., S. Kwakye., **S. Chanda**, J. Hoy, and B. Tubana. 2015. Effects of different planting schemes on yield, quality parameters, lignocellulosic composition and nutrient uptake of different cane varieties. ASA-CSSA-SSSA International Annual Meetings. November 15-18, 2015, Minneapolis, MN.
10. **S. Chanda**., S. Maia, B. White, M.S. Dalen, P. Dupree, and B. Tubana. 2014. Evaluation of nitrogen response pattern between early-season biomass production and biomass yield at harvest in energy cane. ASA-CSSA-SSSA International Annual Meetings. November 2-5, 2014, Long Beach, CA.
11. M.S. Dalen, K. Han, **S. Chanda**, S. Maia, L. Barbosa, P. Dupree, T. Babu, and B. Tubana. 2014. Nitrogen rate and harvest date effects on energy cane yield, quality parameters, and biomass chemical composition. ASA-CSSA-SSSA International Annual Meetings. November 2-5, 2014, Long Beach, CA.
12. B. Tubana, M. Martins, P. Dupree, B. White, M.S. Dalen, **S. Chanda**, T. Babu, D. Munoz, F. Agostinho, R. Frazier, and D. Burns. 2014. Analysis of within-field variability in cotton on large-scale field tests in north Louisiana. ASA-CSSA-SSSA International Annual Meetings. November 2-5, 2014, Long Beach, CA
13. B. Tubana, W. Paye, T. Babu, P. Dupree, B. White, **S. Chanda**, M.S. Dalen, S. Maia, M. Martins, and D. Harrell. 2014. Impact of silicate slag fertilization on grain yield, silicon accumulation and plant essential nutrient content of rice. ASA-CSSA-SSSA International Annual Meetings. November 2-5, 2014, Long Beach, CA
14. **S. Chanda**, J. Hoy, P. Dupree, B. White, M. de S. Martins, M.S. Dalen, T. Babu, D. F. Munoz, and B. Tubana. Application of coefficient of variance for population stand monitoring of cane using canopy reflectance-based vegetation index readings. NUE conference. August 4-6, 2014. Sioux falls, South Dakota.
15. M.S. Dalen, **S. Chanda**, P. Dupree, B. White, and B. Tubana. Optical sensor-based estimation of early season biomass and yield of energy cane. NUE conference. August 4-6, 2014. Sioux falls, South Dakota.
16. M.S. Dalen, **S. Chanda**, S. Maia, B. White, P. Dupree, and B. Tubana. Non-destructive estimation of energy cane yield using optical sensor technology. Poster Presentation at the 10th Annual Economic Development Assistantships Symposium, LSU Union Ballroom, April, 28, 2014.
17. **S. Chanda**, M.S. Dalen, S.C.M. Maia, P. Dupree, B. White, P. Lunliu, and B. Tubana. 2013. Calibrating energy cane biomass and nitrogen uptake with vegetation indices derived from canopy reflectance at the red, red-edge, and near infrared wavebands. ASA-CSSA-SSSA International Annual Meetings. November 3-6, 2013, Tampa, FL.
18. **S. Chanda**, J. Hoy, P. Dupree, M.S. Dalen, T. Babu, B. Tubana, B. White, and S.C.M. Maia. 2013. Population stand monitoring of cane using coefficient of variance of canopy reflectance-based vegetation index readings. ASA-CSSA-SSSA International Annual Meetings. November 3-6, 2013, Tampa, FL.

19. B. Tubana, D.S. Burns, R. Frazier, P. Dupree, W. Maddox, Y. Kanke, **S. Chanda**, M.S. Dalen, T. Babu, B. White, P. Lunliu, and J.S. Kruse. On-farm implementation of optical sensing system to increase nitrogen use efficiency in cotton production in Louisiana. ASA-CSSA-SSSA International Annual Meetings. November 3-6, 2013, Tampa, FL.
20. C. Narayanswamy, **S. Chanda**, L. Datnoff, and B. Tubaña. 2012. Effect of different sources on acetic acid-extractable silicon content of two alluvial soils of Louisiana. ASA-CSSA-SSSA International Annual Meetings. October 21-24, 2012, Cincinnati, OH.
21. C. Narayanaswamy, B. Tubaña, **S. Chanda**, and L. Datnoff. 2012. Biomass and silicon uptake of wheat in response to different levels of plant available silicon. ASA-CSSA-SSSA International Annual Meetings. October 21-24, 2012, Cincinnati, OH.

P. EXTENSION and OUTREACH ACTIVITIES

1. Outreach activities at Organic Farmers Meet in South Florida, 2019
2. Conduct numerous field visits, face to face interviews, and meetings with the Florida agriculture industry stakeholders (e.g., growers, handlers, aggregators, distributors, logistics company, food donating organizations, and retailers)
3. Organizer/Facilitator of Round Table event managed by ‘Stronger2gether’, 2019
4. Physical meetings, phone conferences with Underserved Hispanic Farmers in South Florida, 2019- present
5. GrowFest for Hispanic farmers, Growers and Stakeholders, FIU representative, 2018
6. Collaboration with South Florida Water Management District (SFWMD) and US Army Corps of Engineers (USACE) for wetland ecology management, Everglades
7. Farmers Field Day (FFD), Louisiana State University, 2014, 2015

Q. WEBINER ORGANIZED

1. Fresh Produce Certification & Sustainability; March 12, 2020 [Fresh produce industry stakeholders participated: 35]
2. Tomato and Strawberry Industry in Florida: Where are We Heading? June 11, 2020 [Fresh produce industry stakeholders participated: 65]
3. The Future of Fresh produce: Co-creating a Sustainable Supply Chain in Florida; December 4, 2020 [Fresh produce industry stakeholders participated: 37]

R. ACADEMIC AWARDS AND HONORS

1. School of Plant, Environmental, and Soil Sciences (SPESS) of Louisiana State University graduate student award, 2013 & 2014
2. First prize in graduate student poster competition at annual meeting of ASA-CSSA-SSSA, 2014
3. Graduate research assistantship at Louisiana State University (LSU), 2012 to 2015
4. Junior Research Fellowship (JRF, ICAR, All India rank 31), 2008 to 2010
5. University Merit Scholarship during undergraduate studies, 2003 to 2008

S. REVIEWER FOR SCHOLARLY JOURNALS

1. Frontiers in Soil Science
2. Agronomy (MDPI)
3. Journal Agronomy
4. Sustainability
5. Wetlands
6. Agriculture

T. PROFESSIONAL MEMBERSHIP

1. American Society of Agronomy (ASA)
2. Soil Science Society of America (SSSA)
3. Crop Science Society of America (CSSA)
4. National Association of Geoscience Teachers (NAGT)
5. Gamma Sigma Delta (The honor society for Agriculture)

U. CERTIFICATION/LICENSE

1. CITI Human Subjects Research Course certificate
2. Florida Tomato Food Safety Certification (T-GAP)
3. DBHYDRO training certificate at Florida International University (hydrological, meteorological, hydrogeological, & water quality data)
4. Lab Safety Training certificate at Florida International University and Louisiana State University

V. JUDGE/SELECTION COMMITTEE

1. Judge at FFA sub-district contests, Redland Middle School, 2018
2. Judge at INTEL International Science and Engineering Fair, FIU, 2019
3. Judge at Miami-Dade STEAM Expo, Miami-Dade College, 2018