

E-mail: mjamshad18@gmail.com

Mobile: +92-321-1616003

DR. JAMSHAD HUSSAIN



Summary:

Change in the environment has threatened food security globally. The use of modern tools to quantify and rectify the adverse impacts of changing environment is a focus area of my study for sustainable and intensive production of field crops. Among Modern tools, crop modelling is a widely used tool for impact quantification of climate change on crops for current and future climate. During my career, I have been using DSSAT and APSIM for different crops such as wheat, rice, maize, pearl millet, mungbean, soybean, and sunflower. In brief, I have worked with (1) Agriculture Model Intercomparison and Improvement Project (AgMIP) for four years (2) the University of Florida, USA (3) University of Agriculture, Faisalabad and (4) Sustainable Rice Platform (SRP) and Galaxy Rice Mills Private Limited as project manager funded by HELVETAS- Swiss Intercooperation, Switzerland, and WESTMILLS, UK.

During my career, I have visited many times abroad for trainings, conferences, presentations and seminars with great scientists in crop modelling and climate change.

Currently, I am working as Research Officer Agronomy at Adaptive Research Farm, Karor Layyah, Government of Punjab, Pakistan related to developing adaptations for crop production under changing climate scenarios and publishing research work in peer-reviewed journals.

Employment History:

			Duration		
S. No	Organization	Position	From	To	Main Responsibilities
1	Adaptive Research Farm, Karor, Govt of Punjab, Pakistan	Assistant Research Officer	August , 2020	To date	Developing Adaptations for of crops under changing climate scenarios
2	Department of Agriculture extension, Govt of Punjab, Pakistan	Agriculture Officer Extension, Punjab	January, 2019	July, 2020	Implementation of Govt Policies, Consultancy to farmers of field crops
3.	Sustainable Rice Platform and Galaxy Rice Mills Private Limited Gujranwala	Project Manager of Sustainable Rice Platform	August , 2017	December, 2018	Won Project of \$544,830/= from International Organizations
4	University of Florida, USA	Visiting Scholar	Nov., 2015	April, 2016	Simulation of Multiple crop models (CERES- Wheat, APSIM- Wheat, N-Wheat and CROPSIM- Wheat)
5.	University of Agriculture, Faisalabad, AgMIP Project	Research officer in AgMIP	August , 2013	May, 2015	Modeling Climate Change Impacts on Rice-wheat cropping System

Qualifications:

Sr. No.	Examination Passed	Board/University	Major Subjects	Year	Division /Grade
1.	Ph.D Agronomy	University of Agriculture, Pakistan & University of Florida, USA	Agronomy (crop modeling and climate change)	2012-2018	A/First
2.	M.Sc (hons) (2 Years) Agronomy	University of Agriculture Faisalabad Pakistan	Agronomy (Crop production Under changing climate)	2010-2012	A/First
3.	B.Sc (hons) 4 Years Agriculture	University of Agriculture Faisalabad	Agronomy	2006-2010	A/First

Research Publications:

1. Hussain, S., J. Yang, J. Hussain, A. Sattar, S. Ullah, I. Hussain, S. U. Rahman, P. Zandi, X. Xia, and L. Zhang. 2022. **Mercury fractionation, bioavailability, and the major factors predicting its transfer and accumulation in soil–wheat systems.** Science of The Total Environment,157432.
2. Hussain, J., S. Hussain, N. Tahir, I. Rasool, A. Ullah, S. Ahmad. 2022. **Climate Change and Rice Production: Impacts and Adaptations.** In book: Modern Techniques of Rice Crop Production Publisher: Springer Nature Singapore
3. Abbas, Z., G. Abbas, J. Hussain, T. Mehmood, M. Amer, S. Hussain, M.N. Ahmad. 2021. **Basal and foliar application of macro and micronutrients enhances cotton production.** 2022. Journal of Environmental & Agricultural Sciences. 23(3 & 4): XX-xx.
4. Ghaffar, A., M.H., Rahman, S. Ahmed, G. Haider, I. Ahmad, M.A., Khan, J. Hussain, M. Afzaal, S. Ahmed, S. Fahad, A. Ahmed. 2022. **Adaptations in Cropping System and Pattern for Sustainable Crops Production under Climate Change Scenarios.** In Improvement of Plant Production in the Era of Climate Change. CRC Press.
5. Hussain, S., Y. Jianjun, J. Hussain, P. Zandi, Subhanullah, X. Xing, Z. Liandong, T. Yu, A. Ali, Z. Kebin. 2022. **The rhizospheric transformation and bioavailability of**

mercury in pepper plants are influenced by selected Chinese soil types. Environmental Geochemistry and Health. 35124755.
<https://doi.org/10.1007/s10653-022-01209-9>.

6. Hussain J, T. Khaliq, H.M., Rahman, A. Ullah, I. Ahmed, A.K. Srivastava, T. Gaiser, A. Ahmad. 2021. **Effect of temperature on sowing dates of wheat under arid and semi-arid climatic regions and impact quantification of climate change through mechanistic modeling with evidence from field.** Atmosphere. 12(7):927.
<https://doi.org/10.3390/atmos12070927>.
7. Hussain, S., J. Yang, J. Hussain, I. Hussain, M. Kumar, S. Ullah, L. Zhang, X. Xia, Y. Jia, Y. Ma, Y. Gao,. 2021. **Phytoavailability and transfer of mercury in soil-pepper system: Influencing factors, fate, and predictive approach for effective management of metal-impacted spiked soils.** Environmental Research. 207: 112190.
<https://doi.org/10.1016/j.envres.2021.112190>.
8. Hussain, J. T. Khaliq, S. Asseng, U. Saeed, A. Ahmad, B. Ahmad, I. Ahmad, M. Fahad, M. Awais, A. Ullah and G. Hoogenboom. 2020. **Climate Change Scenarios, Impacts and Adaptations on Wheat through Multiple Climate and Crop models.** Climatic Change, 163(1), 253-266.
9. Hussain, J. T. Khaliq, A. Ahmad, S. Asseng and J. Akhtar. **Yield and phenological responses of wheat to different temperature regimes in semiarid climate.** Pakistan Journal of Agriculture Sciences. Accepted
10. Hussain, J., T. Khaliq, A. Ahmad, J. Akhtar. 2018. **Performance of four crop model simulations of wheat phenology, leaf growth, biomass and yield across planting dates.** PLOS ONE, 13(6): e0197546.
11. Hussain, J., T. Khaliq, A. Ahmad, A. Senthild, and G. Hoogenboom. 2018. **Wheat responses to climate change and its adaptations: A focus on arid and semi-arid environment.** International Journal of Environmental Research. 12: 117–126.
12. Ullah, A., I. Ahmad, A. Ahmad, T. Khaliq, U. Saeed, M. Habib-ur-Rahman, J. Hussain, S. Ullah, G. Hoogenboom. 2019. **Assessing climate change impacts on pearl millet under arid and semi-arid environments using CSM-CERES-Millet model.** Environmental Science and Pollution Research. 26 (7), 6745-6757.
<https://doi.org/10.1007/s11356-018-3925-7>.

13. Ahmed, I., M.H. Rahman, S. Ahmed, J. Hussain, A. Ullah, J. Judge. 2018. **Assessing the impact of climate variability on maize using simulation modeling under semi-arid environment of Punjab, Pakistan.** Environmental Science and Pollution Research. 25(28): 28413-28430. <https://doi.org/10.1007/s11356-018-2884-3>.
14. Awais, M., A. Wajid, M. F. Saleem, W. Nasim, A. Ahmad, M.A.S. Raza, M.U. Bashir, M. Mubeen, H.M. Hammad, M.H. ur Rahman, U. Saeed, M.N. Arshad and J. Hussain. 2018. **Potential impacts of climate change and adaptation strategies for sunflower in Pakistan.** Environmental science and pollution research. 25: 13719–13730.
15. Awais, M., A. Wajid, W. Nasim, A. Ahmad, M.F. Saleem, M.A.S. Raza, M.U. Bashir, M. Habib-ur-Rahmanh, U. Saeed, J. Hussain, N. Arshad, and G. Hoogenboom. 2017. **Modeling the water and nitrogen productivity of sunflower using OILCROP-SUN model in Pakistan.** Field Crop Research, 205: 67–77.
16. Awais., M., A. Wajid, A. Ahmad, F. Saleem, U. Bashir, U. Saeed, J. Hussain, and H. Rehman. 2015. **Nitrogen fertilization and narrow plant spacing stimulates sunflower productivity.** Turkish journal of field crops. 20 (1), 99-108.
17. Wajid, A., M.H. Rahman, A. Ahmad, T. Khaliq, N. Mahmood, F. Rasul, M.U. Bashir, M. Awais, J. Hussain and G. Hoogeboom. 2013. **Simulating the interactive impact of nitrogen and promising cultivars on yield of lentil (*Lens culinaris*) using CROPGRO-legume model.** International Journal of Agriculture and Biology, 15: 1331–1336.
18. Rehman, M., T. Khaliq, A. Ahmad, S.A. Wajid, F. Rasul, J. Hussain & S. Hussain. 2014. **Effect of Planting Time and Cultivar on Soybean Performance in Semi-Arid Punjab, Pakistan.** Global Journal of Science Frontier Research. 14:41-45.
19. Malghani A.L., A.U. Malik, A. Sattarb, F. Hussain, G. Abbas and J. Hussain. 2012. **Response of growth and yield of wheat to NPK fertilizer.** Science International, 24(2):185-189.
20. Mubeen. M., T. Khaliq, A. Ahmad, A. Ali, F. Rasul and J. Hussain. 2012. **Quantification of Seed cotton yield and water use efficiency of cotton under variable irrigation schedules.** Crop and Environment, 3: 54-57.
21. Ashfaq A., T. Khaliq, J. Hussain and M. Shaukat, 2014. **Country Paper from Pakistan: Crop Management Technologies and Practices to Adapt Changing Climate.** 14-AG-16-GE-CON-AForum on Mitigating Negative Effects of Climate Change on

Agriculture Bali, Indonesia, 30 September–3 October 2014, Tokyo Japan.

- 22 Ahmad, A., M. Ashfaq, G. Rasul, S. A. Wajid, T. Khaliq, F. Rasul, U. Saeed, J. Hussain, I.A. Baig, A.A. Naqvi, S.A.A. Bokhari, S. Ahmad, W. Naseem, and G. Hoogenboom. 2015. Impact of Climate Change on the Rice-Wheat Cropping System of Pakistan. Handbook of Climate Change and Agro-ecosystems, Vol. 3 (editors Daniel Hillel and Cynthia Rosenzweig) Published by Imperial College Press and the American Society of Agronomy.
- 23 McDermid, S.P., A.C. Ruane, C. Rosenzweig, N.I. Hudson, M.D. Morales, P. Agalawatte, S. Ahmad, L.R. Ahuja, I. Amien, S.S. Anapalli, J. Anothai, S. Asseng, J. Biggs, F. Bert, P. Bertuzzi, V. Bhatia, M. Bindi, I. Broad, D. Cammarano, R. Carretero, A.A. Chattha, U. Chung, S. Debats, P. Deligios, G. De Sanctis, T. Dhliwayo, B. Dumont, L. Estes, F. Ewert, R. Ferrise, T. Gaiser, G. Garcia, S. Gbegbelegbe, V. Geethalakshmi, E. Gerardeaux, R. Goldberg, B. Grant, E. Guevara, J. Hickman, H. Hoffmann, H. Huang, **J. Hussain, et al., 2015: The AgMIP Coordinated Climate-Crop Modeling Project (C3MP): Methods and protocols.** In Handbook of Climate Change and Agroecosystems: The Agricultural Model Intercomparison and Improvement Project (AgMIP). C. Rosenzweig, and D. Hillel, Eds., ICP Series on Climate Change Impacts, Adaptation, and Mitigation Vol. 3. Imperial College Press, 191-220, doi:10.1142/9781783265640_0008.

Papers presented in International Conferences

- 1 Khaliq, T., S.A. Wajid, A. Ahamd, M.H. Rahman, **J. Hussain**, U. Saeed, F. Rasul and G. Hoogenboom, 2014. **Multi-model evaluation and climate change impact assessment on farmers' surveyed data in wheat. Grand Challenges Great Solutions;** ASA, CSSA, & SSSA International Meetings November 2-5, 2014, Long Beach, California, Abstract No. 88430.
- 2 Ahmad, A., A. Wajid, K. Tasneem, M. Habib-ur-Rehman, F. Rasul, S. Umer, J. Hussain, G. Hoogenboom, 2015. **Farmer rice field adaptation technology for rice-wheat cropping system in Punjab, Pakistan under future changing climate.** Global Science Conference, March 16-18, 2015. Montpellier France. Page No. 97.
- 3 Ahmad, A., G. Hoogenboom, A. Wajid, T. Khaliq, S. Ahmad, W. Nasim, **J. Hussain**, M. Habib-ur-Rahman and U. Saeed 2013. **Climate change vulnerability of fine rice productivity in Pakistan.** Water, Food, Energy and Innovation for a Sustainable World, ASA, CSSA, SSSA International Annual Meetings, Nov., 3-6, 2013, Tampa

Florida.

4. Wajid, S.A., A. Ahmad, G. Hoogenboom, T. Khaliq, F. Rasul, M.H. Rahman, **J. Hussain** and U. Saeed, 2013. **Assessing Climate Vulnerability in Wheat Using CERES-Model under DSSAT**. AgMIP-Pakistan Kickoff Workshop & International Seminar on Climate Change “Crop Modeling – An Artistic Tool for Risk Management in Agriculture” (June 4-6, 2013), Department of Agronomy, University of Agriculture, Faisalabad - Pakistan. Page No. 1.
5. Ahmad, A., S.A. Wajid, T. Khaliq, **J. Hussain**, M.H. Rahman, U. Saeed, S. Tahir and I. Ahmad, 2013. **Climate Change: A Serious Threat to Fine Rice Productivity**. AgMIP-Pakistan Kickoff Workshop & International Seminar on Climate Change “Crop Modeling – An Artistic Tool for Risk Management in Agriculture” (June 4-6, 2013), Department of Agronomy, University of Agriculture, Faisalabad - Pakistan. Page No. 2.
6. Ahmad, A., G. Hoogenboom, S.A. Wajid, T. Khaliq, F. Rasul, U. Saeed*, M.H. Rahman, **J. Hussain** and G. Shabbir, 2013. **Impact Assessment of Changing Climate on Rice Yield Using Farmers’ Field Data**. AgMIP-Pakistan Kickoff Workshop & International Seminar on Climate Change “Crop Modeling – An Artistic Tool for Risk Management in Agriculture” (June 4-6, 2013), Department of Agronomy, University of Agriculture, Faisalabad - Pakistan. Page No. 3.

ROFESSIONAL TRAININGS:

1. AgMIP Multimodel Training Program at AgMIP and ICRISAT at Nepal on 18-22 March, 2013
2. AgMIP Regional Research Teams “Finish Line Workshop” on 30-January to 4- February, 2014 at Arusha-TNZANIA
3. Hands on Training for AgMIP IT tools during November, 2015 at Department of Agriculture and Biological Engineering, **University of Florida, USA**
4. Hands on Training for “**Assessment of Uncertainty Among Crop Multi-Models**” during March, 2016 at Department of Agriculture and Biological Engineering, University of Florida, USA
5. **Annual meeting of American Society Agronomy (ASA), Crop Science Society of America (CSSA) & Soil Scientist Society of America (SSSA) at Tampa, USA** on 3-6, November 2013
6. Agricultural Models Intercomparisons and Improvement Project (AgMIP) for **South Asia Research and Coordination Team Mid Term Workshop at NEPAL** on 22-26 July, 2013
7. Special Agricultural Models Intercomparisons and Improvement Project (**AgMIP**) **Session, Tampa Waterside, Tampa, USA** on November 4th, 2013

8. **AgMIP 4th Annual Global Workshop- USA at Columbia University, New York City, USA** on 28–30, October 2013
9. Resource Person for Hands on Training for mechanistic models “**Agricultural Production System Simulator (APSIM)**” on 17-20 November, 2016 at University of Agriculture, Faisalabad Pakistan Funded by AgMIP
10. Resource Person for Hands on Training for mechanistic models “**Agricultural Production System Simulator (APSIM)**” on 8-11 August, 2016 at Sindh Agriculture University, Tandojam Pakistan Funded by CSIRO Australia.
11. Resource Person for **Hands on Training for mechanistic models “Agricultural Production System Simulator (APSIM)”** on 17-20 November, 2016 at University of Agriculture, Faisalabad Pakistan Funded by AgMIP
12. Resource Person for Hands on Training for mechanistic models “**Agricultural Production System Simulator (APSIM)**” on 17-20 November, 2016 at University of Agriculture, Faisalabad Pakistan Funded by AgMIP
13. Resource Person for Hands on Training for “**Decision Support System for Agro-Technology Transfer (DSSAT)**” on August 18 to August 19, 2015 at University of Agriculture Faisalabad, Funded by AgMIP Pakistan in Collaboration with Climate Change Chair under U.S.-Pakistan Center.
14. Resource Person for Hands on training of **Agricultural Production System Simulator (APSIM)** Model on June 5, 2013 at Video Conference Room, University of Agriculture, Faisalabad-Pakistan.
15. Resource Person for Hands on training of **Decision Support System for Agro-Technology Transfer (DSSAT)** on June 6, 2013 at New Senate Hall, University of Agriculture, Faisalabad-Pakistan
16. National Workshop on “**Simulation Modeling: decision support system for agro-technology transfer for improving the standards of research**” was held on March 4-5, 2013 at Bahauddin Zakaria University Pakistan

References:-

1. **Prof. Dr. Gerrit Hoogenboom,**
Professor and Preeminent Scholar,
Crop Modeling, Decision Support Systems, Food Security,
Email: gerrit@ufl.edu
Contact No. 352-294-1036
Institute for Sustainable Food Systems, University of Florida, USA
2. **Prof. Dr. Ashfaq Ahmad**
Agriculture Sector Risk Assessment Specialist,
[Email: ashfaq.chatta@adpc.net](mailto:ashfaq.chatta@adpc.net)
Contact No. +92-3007204372
Asian Disaster Preparedness Center,
Bangkok-Thailand
3. **Prof. Dr. Shakeel Ahmad**
Professor
Email: shakeelahmad@bzu.edu.pk
Contact No. +92-333731911
Department of Agronomy,
Bahauddin Zakariya University, Multan, Pakistan