Engr. Muhammad Usman ALI

Lecturer

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Education:

Ph.D. (2020-Continue)	**Agricultural Engineering (Hydrology-Machine learning)** Bahaudin Zakariya University, Multan
M.Sc. (2007-2010)	**Agricultural Engineering (Irrigation & Drainage)** University of Agriculture Faisalabad
B.Sc. (2003-2007)	**Agricultural Engineering** University of Agriculture Faisalabad
F.Sc. (2001-2003)	**Higher Secondary/Intermediate Examination** Board of Intermediate and Secondary Education Faisalabad
Matriculation (1999-2001)	**Secondary School Examination** Board of Intermediate and Secondary Education Faisalabad

ACADEMIC DISTINCTION:

- Approved Supervisor for M.Sc. Students
- University Merit Scholarship Holder throughout the university career

EXPERIENCE AND EMPLOYMENT:

- **Lecturer (BPS),** Department of Agricultural Engineering, Faculty of Agricultural Sciences & Technology. Bahauddin Zakariya University, Multan, Pakistan. **(7th November 2017 to date)**

- **Field Engineer,** National Development Consultants (Pvt) Ltd. under world bank funded project title: Punjab Irrigation-Agriculture Productivity Improvement Project (PIPIP), Lahore **(**Head Office experience **25th January 2016 to March, 2017),** Field experience Okara, Multan and Mianwali **(April 2016 to 6th November 2017)**
- **Research Fellow,** Climate Change Alternate Energy and Water Resources Institute (CAEWRI), NARC, under USDA/ICARDA-funded Watershed Rehabilitation and Irrigation improvement for livelihood project, CAEWRI-NARC, Fateh Jang **(October 2013 to December 2015)**
- **Technical Sales Officer (TSO) HEIS**, Ali Akbar Enterprises (Pvt) Ltd. (Ali Akbar Group), Bahawalpur, Rahimyar Khan, **(1st October 2012 to 3rd October 2013)**
- **Agricultural Engineer,** Farm Dynamics Pakistan (Pvt) Ltd. In Lahore as HEIS Designer, Solar thermal projects at JK Diaries, Rahimyar Khan, Couple of irrigation water management projects, Soil Moisture Monitoring, Farm based weather station at JDW sugar mill farms, Rahimyar Khan, Drip Irrigation, Soil Moisture Monitoring, Farm based weather station, Aquifer Storage and Recovery Model installation at Ali Tareen Farm Lodhran and many other HEIS projects**. (1st January 2010 to September 2012)**

Cumulative Impact Factor = (23.858)

International Publications:

- Tanweer Abbas, Muhammad Shoaib, Raffaele Albano, Muhammad Azhar Inam Baig, Irfan Ali, Hafiz Umar Farid and **Muhammad Usman Ali 1,** 2025 Statistical Model Development for Estimating Soil Hydraulic Conductivity Through On-Site Investigation. *Hydrology **2025**, 12, 55*, https://doi.org/10.3390/hydrology12030055 **(IF= 3.2)**
- Tanweer Abbas, Muhammad Shoaib, Raffaele Albano, Muhammad Azhar Inam Baig, Irfan Ali, Hafiz Umar Farid and **Muhammad Usman Ali ,** 2025 Artificial-Intelligence-Based Investigation on Land Use and Land Cover (LULC) Changes in Response to Population Growth in South Punjab, Pakistan. *Land* 2025, *14,154*, https://doi.org/10.3390/land14010154 **(IF= 3.2)**
- Hamza Salahudin, Muhammad Shoaib, Raffaele Albano, Muhammad Azhar Inam Baig, Muhammad Hammad, Ali Raza, Alamgir Akhtar and **Muhammad Usman Ali,**

2023 Using Ensembles of Machine Learning Techniques to Predict Reference Evapotranspiration (ET0) Using Limited Meteorological Data. *Hydrology* 2023, *10*(8), 169, https://doi.org/10.3390/hydrology10080169 **(IF= 3.2)**

- Muhammad Tariq Khan, Muhammad Shoaib, Raffaele Albano, Muhammad Azhar Inam, Hamza Salahudin, Muhammad Hammad, Shakil Ahmad, **Muhammad Usman Ali**, Sarfraz Hashim and Muhammad Kaleem Ullah, 2023 Intercomparison and Assessment of Stand-Alone and Wavelet-Coupled Machine Learning Models for Simulating Rainfall-Runoff Process in Four Basins of Pothohar Region, Pakistan. *Atmosphere* 2023, *14*(3), 452 https://doi.org/10.3390/atmos14030452 **(IF= 2.91)**

- Ghulam Rasool, Guo Xiang Ping, Wang Zhen Chang, Chen Sheng, Ikram Ullah, **Muhammad Usman Ali**, and Muhammad Saifullah, 2021 Effect of Fertigation Levels on Water Consumption, Soil Total Nitrogen, and Growth Parameters of Brassica Chinensis under Straw Burial. Communications in soil science and plant analysis Vol, 52, No. 1, 32- https://doi.org/10.1080/00103624.2020.1845345 **(IF= 1.8)**

- Ghulam Rasool, Xiang Ping Guo, Zhenchang Wang, **Muhammad Usman Ali**, Sheng Chen, Shuxuan Zhang, Qijin Wuc, Muhammad Saif Ullah, 2020 Coupling fertigation and buried straw layer improves fertilizer use efficiency, fruit yield, and quality of greenhouse tomato. Agriculture Water Management 239(2020)106239 https://doi.org/10.1016/j.agwat.2020.106239 **(IF= 6.7)**

- Shakoor, A., Z.M. Khan, H.U. Farid, I. Ahmad, N. Ahmad, M. Nadeem, **M. Usman Ali,** F. Baig. (2018). Delineation of regional groundwater vulnerability and determining its impact on agriculture productivity. Arabian Journal of Geosciences (2020) 13: 195 **(IF= 1.148)**

- Hafiz U. Farid, Allah Bakhsh, **Muhammad U. Ali,** Zahid Mahmood-Khan, Aamir Shakoor, Imran Ali. 2017. Field investigation of aquifer storage recovery (ASR) technique to recharge groundwater: a case study in Punjab province of Pakistan. Water Science and Technology: Water Supply https://doi.org/10.2166/ws.2017.083 **(IF= 1.7)**

NATIONAL (Other):

- Muhammad Bilal Khalid, Muhammad Arshad, Aamir Shakoor, Hafiz Umar Farid, Muhammad Nadeem, Faisal Baig, **Muhammad Usman Ali** and Hafiz Muhammad Awais. 2018. Embedment of sandy soil to increase surface irrigation efficiency and crop yield under modeling and experimental approach. J. Glob. Inn. Agri. Sci. 6(3) 88-93.

- Akhtar Ali, Hafiz Umar Farid, Zahid Mehmood, Aamir Shakoor, Muhammad Nadeem, **Muhammad Usman Ali,** Faisal Baig, Muhammad Usman and Huzaifa Shahzad. 2018. Subsurface investigation for groundwater formation in district Rahim Yar Khan (Pakistan) using vertical electrical techniques. J. Glob. Inn. Agri. Sci. 6(3) 94-100.

Book Chapter:

- Muhammad Hammad, Muhammad Shoaib, M. Hamza Salahudin, M. Azhar Inam Baig, **M. Usman Ali**, (2023), Use of AI for Disaster Risk Reduction in Agriculture, http://dx.doi.org/10.1007/978-981-99-1763-1_22

Training as a Resource Person:

- Participation in 8th professional training as a resource person organized by Climate Change Alternate Energy and Water Resources Institute, NARC under USAID-ICARDA funded project Title "Watershed Rehabilitation and Irrigation Technology Improvement" at Fateh Jang Field Station.
- Participation in 3- days training program organized by South Asian Conservation Agriculture Network (SACAN) with the collaboration of Climate Change Alternate Energy and Water Resources Institute, NARC in Fateh Jang at Farmer Field.

Conferences:

- National Conference on Climate Change and Water Resources 28-29 February, 2024 Organized by the Department of Agricultural Engineering. BZU, Multan
- Attend and present research article in " 6th International Conference on Sustainable Agriculture in Changing Climate: Strategies and Management (6th ICSACC 2019)" on 19-21 June,2019 at University of the Poonch Rawalkot, AJK, Pakistan

Training/Seminar/workshop:

- Attended a lecture on "Current Status and Future Trends in Design and Development of Agricultural Machinery" held on 14th February 2018 at Department of Agricultural Engineering, BZU under CPD (Continuing Professional Development) Programme of Pakistan Engineering Council
- Attended water seminar titled "Indus Water Treaty & Related Issues" held on 22nd March 2018 at Department of Agricultural Engineering, BZU
- Attended a lecture on "Application of Soft computing Approches in Water Resources Engineering" under CPD (Continuing Professional Development) Programme of Pakistan Engineering Council held on 18th April 2018 at Department of Agricultural Engineering, BZU
- Participation in "Faculty Teaching Training Programme" held at 19th April 2018 organized by ORIC BZU, Multan
- Attended one day international seminar on "Hill Torrents Management-Sediment Challenges and Options" organized by Irrigation Departmen Government of the Punjab at Ghazi University, Dera Ghazi Khan on 26th November, 2018
- Participated in the workshop on: "Outcome Based Education and Development of Self Assessment Report" held on 27th September 2018 at Department of Agricultural Engineering, BZU, Multan. Attend and present research article in "6th International Conference on Sustainable Agriculture in Changing Climate: Strategies and Management (6th ICSACC 2019)" on 19-21 June,2019 at University of the Poonch Rawal Akot, AJK, Pakistan
- One day of hands-on training on QGIS for land and water resources management on 22nd March, 2023 Organized by the Department of Agricultural Engineering. BZU, Multan
- Hand On Training on 3D Scanner and Drone spray organized by the Department of Agricultural Engineering. BZU, Multan with the collaboration of AMRI, Multan
- Four days of hands-on training on Aqua Crop model from 11-14 December,2023 organized by FAO under the project of Transforming Indus Basin with Climate Resilient Agriculture and Water Management, in Lahore