

CURRICULUM VITAE

Dr. MUHAMMAD ADNAN SHAHID

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PERSONAL

Father's Name:	Muhammad Ramzan Shahid
Date of Birth:	April 23, 1982
NIC #	33100-0722639-1
Domicile:	Faisalabad
Nationality:	Pakistani

ACADEMICS

- Ph.D. (Environment and Territory) from Politecnico di Torino, Italy in 2015.
- M.Sc. (Hons.) Agri. Engineering from University of Agriculture, Faisalabad in 2009; securing CGPA of 3.63/4.00 and 75.13% marks (1st Division)
- B.Sc. Agricultural Engineering from University of Agriculture, Faisalabad in 2005; securing CGPA of 3.56/4.00 and 75.07% marks (1st Division)
- F.Sc. Pre Engineering from G.C., Faisalabad in 2001; obtaining 745/1100 marks (1st Division)
- Matric from Govt. Muslim High School, Tariqabad, Faisalabad in 1999; obtaining 675/850 marks (1st Division)

PROFESSIONAL EXPERIENCE

- **Chairman** Department of Irrigation & Drainage, University of Agriculture, Faisalabad, **w.e.f. December 16, 2020 to date.**
- **Professor (B-21)** in Department of Irrigation & Drainage, University of Agriculture, Faisalabad, **w.e.f. September 07, 2024 to date.**
- Associate Professor (B-20) in Department of Irrigation & Drainage, University of Agriculture, Faisalabad, w.e.f. August 31, 2019 to September 06, 2024.
- Assistant Professor (TTS) in Water Management Research Center, University of Agriculture, Faisalabad, w.e.f. February 29, 2016 to August 30, 2019.
- Research Officer (B-17) in Water Management Research Centre, University of Agriculture, Faisalabad, w.e.f. July 16, 2007 to February 28, 2016.
- Research Fellow in ALP project entitled "Testing and Evaluation of Control Structures Alternatives for Irrigation Channels" w.e.f. June, 2006 to June, 2007.

DISTINCTIONS

- University Merit Scholarship holder at undergraduate level for the sessions 2001-02 and 2003-04
- HRDI-UESTP scholarship holder for PhD studies in Italy, funded by Higher Education Commission (HEC), Islamabad, Pakistan.

COMPUTATIONAL SKILLS

- Geospatial analysis software viz. ArcGIS, ERDAS IMAGINE, ENVI, etc.
- Different irrigation and hydrologic software viz. CropWat, WinSRFR, HEC-HMS, etc.

RESEARCH WORK

- Ph.D. dissertation entitled **“Geoinformatic and Hydrologic Analysis using Open Source Data for Floods Management in Pakistan”**
- M.Sc. (Hons.) Agri. Eng. thesis research entitled **“Enhancing Land and Water Productivity using GIS and Modeling Approach”**
- **Research Projects:**
 1. **Principal Investigator/ Lab. Director** of “Agricultural Remote Sensing Lab. (ARSL)” under the umbrella project titled “Establishment of National Center of GIS and Space Applications (NCGSA)” funded by HEC; **Amount: Rs. 74.941 Million.**
 2. Completed in 2022, as Principal Investigator, the project titled “Integrated Flood Risk Assessment and Mitigation in Selected Areas of Indus Basin Using Remotely Sensed Historic Data” funded by Higher Education Commission of Pakistan under National Research Program for Universities (NRPU); Amount: Rs. 1.906 Million.
 3. Completed in 2022, as Principal Investigator, the project titled “Development and Implementation of an Open Source Extreme Rainfall and Flood Monitoring System for Real Time Alerts and Emergency Management Activities” funded by HEC Technology Development Fund (HEC-TDF); Amount: Rs. 3.737 Million.
 4. Completed in 2021, as Principal Investigator, the project titled “Formulating Sustainable Irrigation Management Information System Using Real Time Irrigation Water Demand and Supply for Rural Areas Development” funded by Ignite (formerly known as National ICT Research & Development Fund, Islamabad); Amount: Rs. 18.76 Million.
 5. Completed in 2019, as Principal Investigator, the project titled “Designing and Implementing the Irrigation Management Information System Using Cellular Communication Networks in Selected Area of Punjab” funded by PARB; Amount: Rs. 0.574 Million.
 6. Completed in 2018, as Principal Investigator, the project entitled “Integrated Flood Hazard Mapping and Vulnerability Analysis using Remote Sensing Based Water Bodies Classification Approach” funded by Higher Education Commission of Pakistan under Startup Research Grant Program; Amount: Rs. 0.440 Million.
 7. Completed in 2019, as Co-Principal Investigator, a project titled “Development of Indigenized Soil Moisture Sensor Based Precision Irrigation Scheduling for Improving

Water Use Efficiency of Different Crops” funded by HEC Technology Development Fund (HEC-TDF); Amount: Rs. 9.585 Million.

• **Participated as Team Member in following research projects at Water Management Research Center (2008-2016):**

- ✓ Developing Guidelines for Improving Water Use Efficiency of Drip Irrigation System in Various Agro-Climatic Zones of Punjab, *funded by Punjab Agricultural Research Board (PARB)*
- ✓ On-Farm Research & Development Component of Rehabilitating Lower Chenab Canal System (Part-B), *funded by JICA*
- ✓ Optimizing Canal and Groundwater Management to Assist Water Using Associations in Maximizing Crop Production and Managing Salinization, *funded by Australian Centre for International Agricultural Research (ACIAR)*
- ✓ Dissemination of Raised Bed Technology to Address Water Shortages in Irrigated Areas, *funded by UAF Endowment Fund*

TRAININGS/ INTERNSHIPS ATTENDED

1. Participated in “3rd Global Sustainable Rice Conference” organized by Sustainable Rice Platform (SRP) on November 26-27, 2024 at Bangkok, Thailand; the visit and participation in the event was supported by Asian Development Bank (ADB).
2. Participated in “Regenerative Agriculture Policy Dialogue” organized by Yunus-Rizq Water-Energy-Food Nexus (WEFnex) Hub on November 25, 2024 at Asian Institute of Technology (AIT), Bangkok, Thailand; the visit was organized/ supported by Asian Development Bank (ADB).
3. Participated in Smart Rice Farming Field Day Event in China on October 15-16, 2024; the event and the visit organized under a collaborative project with Chinese partners.
4. International CPD workshop on “Irrigation Scheduling with Handling of AQUA CROP Modelling” organized by Dept. of Irrigation & Drainage, UAF, on 13-02-2020.
5. Attended “Two-Day Training on Outcome Based Education (OBE)” jointly organized by Pakistan Engineering Council and Faculty of Agri. Engineering & Technology in CAS Auditorium, University of Agriculture, Faisalabad, on November 29-30, 2018.
6. Two-day training course/ CPD workshop on WinSRFR Model organized by IWMI on December 15-16, 2015 at NARC, Islamabad.
7. One-day training course/ CPD workshop on WinFlume Model organized by IWMI on December 15, 2015 at NARC, Islamabad.
8. 8 weeks Online Course on “An Introduction to Interactive Programming in Python” organized by Rice University w.e.f. 16-04-2013 to 17-06-2013.
9. Four-day training course on “Extending ENVI with IDL” organized by ITHACA Research Center, Politecnico di Torino, Italy on March 25-28, 2013.
10. 2-Day Excellence Course on “Theoretical and Experimental Aspects of Two Phase Flow and Transport in Unsaturated Soils and Aquifer Systems” organized by School of Civil and Environmental Engineering, Politecnico di Torino, Italy on June 27-28, 2012.

11. One-month intensive training course on “Remote Sensing & Digital Image Processing” organized by Directorate of Research/Dept. of Irrigation & Drainage, w.e.f. November 29 to December 26, 2010
12. 15-Day Internship at Water Resources Research Institute (WRRRI), NARC, Islamabad, related to bio-fertigation, solar operated jack pump, sprinkler/trickle irrigation systems operation and design, etc.

ORGANIZATION OF EVENTS/ PARTICIPATION AS RESOURCE PERSON

1. Participated as Resource Person by delivering lecture on “Geospatial Solutions for Agriculture” in National GIS Summit organized by Institute of Space Technology (IST), Islamabad on November 20, 2024.
2. Participated in the workshop on "Groundwater Modeling and Management Strategies for the Southern Bari Doab Canal Command" organized by MNS University of Agriculture (MNSUA), Multan on May 29, 2024 and presented the research work being done at NCGSA – Agri. Remote Sensing Lab titled as “Geospatial Techniques for Agricultural Resource Management”.
3. Organized “International Conference on Geo-informatics for Water and Agricultural Resource Management (ICGWARM)” as part of research activities of NCGSA-ARSL project on April 24-26, 2024 at University of Agriculture Faisalabad.
4. Delivered lecture as Guest Speaker on “Remote Sensing Based Analysis of Flood – 2022 and its Impacts” to the Assistant Executive Engineers (Civil) of WAPDA as part of their “Technical Induction Course” on 20-07-2023 organized by WAPDA Engineering Academy, Faisalabad.
5. Delivered lecture as Guest Speaker on “Hydrological Modeling using HEC-HMS” to the participants of “Sector Specific Course (Pre-Promotion) – Special Batch Engineers (Civil) on 11-05-2022 organized by WAPDA Engineering Academy, Faisalabad.
6. Delivered hands-on training as Resource Person on “Geospatial Applications in Agriculture and Water Resources Management” as part of “One-day International Seminar on World Water Day – 2022: Groundwater; making the invisible visible” on March 30, 2022.
7. Organized “One-day International Seminar on World Water Day – 2022: Groundwater; making the invisible visible” on March 30, 2022.
8. Delivered lecture as Resource Person in One-day CPD Workshop on “GIS & Remote Sensing for Planning and Management of Water Resources” organized by WAPDA Engineering Academy, Faisalabad on 30-12-2021.
9. Participation as Panelist in the Panel Discussion on “Remote Sensing & Geographic Information Science” held on December 15, 2021 at 0915 Hrs. – 1100 Hrs. as part of International Conference on Aerospace Science & Engineering (ICASE) – 2021 at Institute of Space Technology (IST), Islamabad.
10. Oral Presentation on “Research Activities of Agricultural Remote Sensing Lab” in “Summit on Geographic Information Science & Space Applications” held on December 15, 2021 at 1600 Hrs. – 1745 Hrs. as part of International Conference on Aerospace

Science & Engineering (ICASE) – 2021 at Institute of Space Technology (IST), Islamabad.

11. Participated in organizing 10-Day Training on “On-Farm Water Management” for the staff of project entitled “US Assistance for Agri. development in Baluchistan Border Areas (USAABA)” on November 22 to December 01, 2010, and delivered lecture on “Irrigation Scheduling Using CropWat Model”.
12. Delivered lecture as Resource Person on “Use of WinSRFR Model” in International Seminar and CPD Course on “World Water Day: Water and Jobs” held on March 24, 2016 at UAF.
13. Organized an online “Training Workshop on GeoHECRAS” on August 12, 2021 at 2:30-4:00 pm in collaboration with CivilGEO Inc., USA.
14. Organized Webinar titled “Applications of Advanced Geo-Spatial Techniques in Agriculture and Land Surveying” on June 30, 2021 in collaboration with The Spatio (Pvt.) Ltd.
15. Participated as PI, Agri. Remote Sensing Lab, in Panel Discussion on “Pakistan’s Challenges in the Space Science, Technology and Applications” on 30th May from 03:00-04:00 pm as part of the International Conference titled “Glob-FIST 2021” organized by Minhaj University Lahore on May 29-30, 2021.
16. Organized International Webinar on “World Water Day-2021: Valuing Water” on April 16, 2021, and delivered lecture on “Extreme Rainfall and Flood Monitoring for Pakistan – Presentation of Activities under HEC funded project No. HEC-TDF02-117”
17. Delivered lecture on “Improved Surface Irrigation Methods and Raised Bed Planting” to the agricultural internees under the project titled “Enhancing productivity in 10 low producing tehsils through deployment of fresh Agri. Scientists at farm level”, on February 25, 2021.
18. Delivered lecture as Resource Person in One-day CPD Workshop on “Hydrologic Modeling using HEC-HMS” organized by WAPDA Engineering Academy, Faisalabad on 29-12-2020.
19. Participated as Resource Person in One-day International CPD Workshop on “Hydrologic Modeling using SWAT, HEC-HMS and R” organized by Dept. of Irrigation & Drainage, UAF, on 29-11-2019.
20. Delivered lecture on “Improved Irrigation Systems in Pakistan” as Guest Speaker in “Technical Induction Course for Junior Engineers (Civil)” organized by WAPDA Engineering Academy, Faisalabad, on November 26, 2019.
21. Delivered lecture on “Improved Surface Irrigation Methods and Raised Bed Planting” to the agricultural internees under the project titled “Enhancing productivity in 10 low producing tehsils through deployment of fresh Agri. Scientists at farm level”, on November 11, 2019.
22. Organized Workshop on “Hydrologic Analysis and River Modeling” under HEC-TDF02-117 project on June 20, 2019 in DLC-2 Hall, University of Agriculture, Faisalabad, and delivered lecture on “Hydrologic Modeling for Water Resources Management”.

23. Delivered lecture on “Hydrological Modeling and its Use in Water Resource Management” as Guest Speaker in “Sector Specific (Pre-promotion) Course for Junior Engineers (Civil)” organized by WAPDA Engineering Academy, Faisalabad, on September 13, 2018.
24. Participated as Resource Person and delivered lecture in 4-Day Training on “Laser Land Leveling Techniques” from April 23-26, 2018, jointly organized by Department of Irrigation and Drainage and ORIC, UAF.
25. Participated as Resource Person and delivered lecture in 10-Day Training on “Water Harvesting” from April 9-18, 2018, jointly organized by Department of Irrigation and Drainage and ORIC, UAF.
26. Participated as Resource Person in organizing 4-Day Training on “LASER Land Leveling” for Agricultural Officers from Baluchistan; training organized in collaboration with ORIC from May 02-05, 2017.
27. Participated as Resource Person in organizing 10-Day Training on “Improved Irrigation Systems Management” for Agricultural Officers from Baluchistan; training organized in collaboration with ORIC from April 21-30, 2017.
28. Participated as Resource Person in organizing 10-Day Training on “Rainwater Harvesting” for Agricultural Officers from Baluchistan; training organized in collaboration with ORIC from April 10-19, 2017.
29. Participated as Resource Person in six 3-day Training Sessions on “Wheat Bed Planting” for farmers from D.I. Khan and Tank districts of KP; trainings organized at WMRC in the months of February to May, 2016.
30. Participated as Resource Person in organizing 10-Day Training on “On-Farm Water Management” for Agricultural Officers from Baluchistan; training organized in collaboration with ORIC from March 21-30, 2016.

LIST OF PUBLICATIONS

Journal Articles

1. Raza, A., **M. A. Shahid**, M. Zaman, Y. Miao, Y. Huang, M. Safdar, S. Maqbool, and N. E. Muhammad. (2025). Improving Wheat Yield Prediction with Multi-Source Remote Sensing Data and Machine Learning in Arid Regions. *Remote Sens.* 2025, 17(5), 774; <https://doi.org/10.3390/rs17050774>.
2. Bilal, M., **M.A. Shahid**, M. Arshad, and M. Tahir. (2024). Calibration of soil and water assessment model for its potential impact on climate change. *Soil Environ.* 43(1): 94-111.
3. Safdar, M., **M.A. Shahid**, S. Ali, and F. Rasul. (2024). Spatiotemporal Analysis of Drought Severity and Precipitation Variability in Punjab’s Pothohar Plateau using PDSI and SPEI. *Journal of Xi’an Shiyou University, Natural Sciences Edition*, 2024(9): 380-404. DOI: 10.5281/zenodo.13828491.
4. Bilal, M., M. A. Shahid, M. Arshad, S. A. Wajid. (2024). The Evaluation of Satellite-Based Rainfall Estimates Comparison with Ground Rain Gauge Data for Selected Areas

Over the Lower Indus Basin of Pakistan. *Remittances Review*, 9(4): 2950-2963. DOI: <https://doi.org/10.33282/rr.vx9i2.16>.

5. Imran, M.A., **M.A. Shahid**, M. Safdar, S. Maqbool, N. Fatima, M. Tanveer, and Z. Ali. (2024). Wheat production in Faisalabad during Rabi-2023; A remote sensing based investigation of the factors contributing to higher yields. *Journal of Xi'an Shiyou University, Natural Sciences Edition*, ISSN: 1673-064X.
6. Zaman, M., **M.A. Shahid**, I. Ahmad, Y. Shen, M. Usman, M.I. Khan, and M. Saifullah. (2023). Spatiotemporal Variability of Precipitation Concentration in Pakistan. *Int. J. Climatol.*, 2023: 1-21. DOI: 10.1002/joc.8285.
7. Abbas, M., M. Arshad, and **M.A. Shahid**. (2023). Zoning of groundwater level using innovative trend analysis: Case study at Rechna Doab, Pakistan. *Water Resources and Irrigation Management (WRIM)*, 12(1-3): 64-80. DOI: 10.19149/wrim.v12i1-3.3155.
8. Khan, S.U., S.R. Ahmad, **M.A. Shahid**, M.A. Javed, M. Rizwan, S.M. Din, and Z. Maqbool. (2023). Assessment of Groundwater Quality in Tehsil Jhang and its Impacts on Human Health Using GIS Based Techniques. *Pak. J. Sci. Ind. Res., Ser. A: Phy. Sci.*, 2023, 66A(1): 51-62. IF: 0.43.
9. Rizwan, M., X. Li, Y. Chen, L. Anjum, S. Hamid, M. Yamin, J.N. Chauhdary, **M.A. Shahid**, and Q. Mehmood. (2022). Simulating future flood risks under climate change in the source region of the Indus River. *J. Flood Risk Management*, 2022, e12857. <https://doi.org/10.1111/jfr3.12857>. IF: 4.530.
10. Iqbal, U., A. Bakhsh, **M.A. Shahid**, S.H.H. Shah, and S. Ali. (2022). Performance assessment of indigenized soil moisture sensors for improved irrigation scheduling and maize production. *Pak. J. Agri. Sci.*, 59(4): 661-676. IF: 0.856.
11. **Shahid, M.A.**, J.N. Chauhdary, M. Usman, M.U. Qamar, and A. Shabbir. (2022). Assessment of Water Productivity Enhancement and Sustainability Potential of Different Resource Conservation Technologies: A Review in the Context of Pakistan. *Agriculture*, 2022, 12(7): 1058. <https://doi.org/10.3390/agriculture12071058>. IF: 3.408.
12. Aslam, M., M. Arshad, V.P. Singh, and M.A. Shahid. (2022). Hydrological Modeling of Aquifer's Recharge and Discharge Potential by Coupling WetSpa and MODFLOW for the Chaj Doab, Pakistan. *Sustainability*, 14 (8): 4421. <https://doi.org/10.3390/su14084421>. IF: 3.251.
13. Azzam, A., W. Zhang, **M.A. Shahid**, and A. Elbeltagi. (2022). Application of hydrological model to assess river flow in the transboundary cryosphere and data-scarce watershed, a case study: Chitral-Kabul river basin (C-KRB) in Pakistan. *Water Science and Technology: Water Supply*, 22(4): 3842-3862. IF: 1.275.
14. Iqbal, U., A. Bakhsh, **M.A. Shahid**, S.H.H. Shah, and S. Ali. (2022). Application of indigenized soil moisture sensors for precise irrigation of wheat crop under various irrigation methods. *Pak. J. Agri. Sci.*, 59(1): 105-116. IF: 0.856.
15. Muneer, M.A., M. Arshad, **M.A. Shahid**, and M.A. Haq. (2022). Efficacy of subsurface and surface drip irrigation regarding water productivity and yield of maize. *Pak. J. Agri. Sci.*, 59(1): 125-134. IF: 0.856.

16. Din, S.M., S.U. Khan, I. Yones, Z. Maqbool, **M.A. Shahid**, and A. Mubashir. (2021). Landscapes classification and its impact on agriculture using geo-spatial techniques of district Sialkot. *Pakistan Geographical Review*, 76(2): 237-251.
17. Mansoor, A., M. Arshad, **M.A. Shahid**, and A. Khaliq. (2021). Effect of Mulch, Planting Techniques and Increased MAD Level on Yield and Water Productivity of Maize under a Semi-arid Environment. *Pak. J. Agri. Sci.*, 58(2): 627-636. IF: 0.748.
18. Chauhdary, J.N., A. Bakhsh, R. Ragab, A. Khaliq, B.A. Engel, M. Rizwan, **M.A. Shahid**, and Q. Nawaz. (2020). Modeling corn growth and root zone salinity dynamics to improve irrigation and fertigation management under semi-arid conditions. *Agricultural Water Management*, 230 (2020) 105952: 1-12. IF: 4.516
19. Afzal, M.S., M.J.M. Cheema, **M.A. Shahid**, M. Arshad and T. Khaliq. (2020). Optimization of Subsurface Drip Lateral Depths and Irrigation Levels for Best Yield Response of Onion (*Allium Cepa L.*). *The Journal of Animal & Plant Sciences*, 30(3): 702-712. IF: 0.481.
20. Iqbal, U., A. Bakhsh, **M.A. Shahid**, S.H.H. Shah, S. Ali. (2020). Development of low cost indigenized soil moisture sensors for precision irrigation. *Pak. J. Agri. Sci.*, 57(1): 205-217. IF: 0.856.
21. Qamar, M.U., M. Azmat, A. Abbas, M. Usman, **M.A. Shahid**, Z.M. Khan. (2018). Water Pricing and Implementation Strategies for the Sustainability of an Irrigation System: A Case Study within the Command Area of the Rakh Branch Canal. *Water*, 10(4): 509. <https://doi.org/10.3390/w10040509>. IF: 2.069.
22. Azmat, M, M.U. Qamar, S. Ahmed, **M.A. Shahid**, E. Hussain, S. Ahmad, R.A. Khushnood. (2018). Ensembling Downscaling Techniques and Multiple GCMs to Improve Climate Change Predictions in Cryosphere Scarcely-Gauged Catchment. *Water Resources Management*, 32(9): 3155-3174. <https://doi.org/10.1007/s11269-018-1982-9>. IF: 2.644.
23. Abbas, A., T.S. Amjath-Babu, H. Kächele, M. Usman, M.A. Iqbal, M. Arshad, **M.A. Shahid**, K. Müller. (2018). Sustainable survival under climatic extremes: linking flood risk mitigation and coping with flood damages in rural Pakistan. *Environmental Science and Pollution Research*, 25(32): 32491-32505. <https://doi.org/10.1007/s11356-018-3203-8>. IF: 2.800.
24. Qamar, M.U., D. Ganora, P. Claps, M. Azmat, **M.A. Shahid**, R.A. Khushnood. (2018). Flow duration curve regionalization with enhanced selection of donor basins. *Journal of Applied Water Engineering and Research*, 6 (1): 70-84. <https://doi.org/10.1080/23249676.2016.1196621>.
25. Arshad, A., A. Bakhsh, S. Ali, A. Azzam, **M.A. Shahid**, Z. Asghar, M.A. Zaman. (2018). Developing and testing lab scale microbial fuel cell for energy harvesting from wastewater. *Proceedings of the International Academy of Ecology and Environmental Sciences*, 8 (3): 194-203. <http://www.iaees.org/publications/journals/piaees/online-version.asp>.
26. Shakoor, A., Z.M. Khan, M. Arshad, H.U. Farid, M. Sultan, M. Azmat, **M.A. Shahid**, and Z. Hussain. (2017). Regional Groundwater Quality Management through Hydrogeological Modeling in LCC, West Faisalabad, Pakistan. *J. of Chemistry*, Article ID: 2041648, 16 pages. <https://doi.org/10.1155/2017/2041648>.

27. Qamar, M.U., M. Azmat, **M.A. Shahid**, D. Ganora, S. Ahmad, M.J.M. Cheema, M.A. Faiz, A. Sarwar, M. Shafeeque, and M.I. Khan. (2017). Rainfall Extremes: A Novel Modeling Approach for Regionalization. *Water Resour. Manage.* DOI: 10.1007/s11269-017-1626-5. IF: 2.644.
28. **Shahid, M.A.**, P. Boccardo, M. Usman, A. Albanese, and M.U. Qamar. (2017). Predicting Peak Flows in Real Time through Event Based Hydrologic Modeling for a Trans-boundary River Catchment. *Water Resour. Manage.* (2017) 31 (3): 793-810, DOI: 10.1007/s11269-016-1435-2. IF: 2.644.
29. Qamar, M.U., M. Azmat, M.J.M. Cheema, **M.A. Shahid**, R.A. Khushnood, and S. Ahmad. (2016). Model swapping: A comparative performance signature for the prediction of flow duration curves in ungauged basins. *Journal of Hydrology*, DOI: 10.1016/j.jhydrol.2016.08.012. IF: 3.043.
30. Chauhdary, J.N., U.D. Khan, S.H.H. Shah, **M.A. Shahid**, and M. Arsalan. (2016). Effect of sowing methods and seed rates on wheat yield and water productivity. *Quality Assurance and Safety of Crops & Foods*, DOI: 10.3920/QAS2015.0685. IF: 0.890.
31. **Shahid, M.A.**, N. Ahmad, M. Arshad, and M. Usman. (2015). Enhancing Land and Water Productivity Through Furrow Irrigated Raised Bed Planting – A Case Study of Underutilized Lands in Pakistan. *Pak. J. Agri. Sci.*, 52(4): 981-988. IF: 0.856.
32. Usman M., R. Liedl, **M.A. Shahid**, and A. Abbas. (2015). Land Use/Land Cover Classification and Its Change Detection Using Multi-temporal MODIS NDVI Data. *J. Geogr. Sci.*, 215(12): 479-1506. IF: 1.34.
33. Usman M., R. Liedl, and **M.A. Shahid**. (2014). Managing Irrigation Water by Yield and Water Productivity Assessment of a Rice-Wheat System Using Remote Sensing. *Journal of Irrigation and Drainage Engineering*. American Society of Civil Engineers (ASCE), 04014022-1-04014022-11. IF: 0.94.
34. **Shahid, M.A.**, N. Ahmad, M. Saleem and B. Akhtar. (2011). Investigating Optimum Number of Irrigations for Wheat under Raised Bed Technology in a Semi-Arid Climate. *Int. J. Agric. Appl. Sci.* 3 (2): 89-93.

Book Chapters:

1. Raza, A., **Shahid, M. A.**, *Safdar, M., Zaman, M., & Sabir, R. M. (2023). Applications of Sensors in High-Tech Agriculture. In A. Khang (Ed.), *Handbook of Research on AI-Equipped IoT Applications in High-Tech Agriculture* (pp. 271-294). IGI Global. <https://doi.org/10.4018/978-1-6684-9231-4.ch015>
2. Raza, A., *Safdar, M., **Shahid, M. A.**, Rasul, F., & Sabir, R. M. (2023). Applications of Drones in High-Tech Agriculture. In A. Khang (Ed.), *Handbook of Research on AI-Equipped IoT Applications in High-Tech Agriculture* (pp. 88-108). IGI Global. <https://doi.org/10.4018/978-1-6684-9231-4.ch005>
3. Zahra, S.M., **M.A. Shahid**, R. Noor, M.A. Misaal, F. Rasul, S. Ali, M. Imran, M. Tasawar, and S. Azam. (2023). Assessment of Climate Change Impact on Land Use-Land Cover Using Geospatial Technology. In: Pande, C.B., Moharir, K.N., Singh, S.K., Pham, Q.B., Elbeltagi, A. (Eds.). *Climate Change Impacts on Natural Resources, Ecosystems and*

Agricultural Systems. Springer Climate. Springer, Cham. https://doi.org/10.1007/978-3-031-19059-9_17.

4. Rasul, F., H. Munir, A. Wajid, M. Safdar, M.S. Ayub, S. Shahzad, R. Mehmood, **M.A. Shahid**, A. Sarwar, M.D. Majeed, U. Gull, W.N. Jatoi, M. Mubeen, S. Jahan, and S. Ahmed. (2022). Sustainable Irrigation Management for Higher Yield. In: Sultan, M., & Ahmad, F. (Eds.). Irrigation and Drainage - Recent Advances. IntechOpen. <http://doi.org/10.5772/intechopen.107153>.
5. Bakhsh, A., and **M.A. Shahid**. (2018). Book Chapter No. C003: "Water: Issues and Remedies". In: Khan, I.A., and M.S. Khan. (Eds.). Developing Sustainable Agriculture in Pakistan, published by Taylor & Francis. P: 39-60.

Conference Papers

1. Hussain, F., **Shahid, M.A.**, Majeed, M.D., Ali, S., Zamir, M.S.I. (2023). Estimation of the Crop Water Requirements and Crop Coefficients of Multiple Crops in a Semi-Arid Region by Using Lysimeters. *Environ. Sci. Proc.* 2023; 25(1): 101. <https://doi.org/10.3390/ECWS-7-14226>.
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