ZULFIQAR AHMAD SAQIB

PERSONAL PARTICULARS

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Saline Agriculture Research Centre
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RESEARCH FOCUS

- Saline Agriculture: Holistic approach for management of saline lands and water resources and designing profitable agricultural production system or other ecosystems services.
- Soil organic carbon stock inventories and management in degraded lands using geospatial techniques like GIS and Remote sensing.
- Identification of plant-based options especially resilient crops and halophytes phenotyping against salinity and other environmental stresses.

EDUCATION

2012	Post-doc, University of Western Australia, Perth, Australia
2010	Ph.D. University of Agriculture, Faisalabad, Pakistan.
2004	M.Sc. (Hons), University of Agriculture, Faisalabad, Pakistan.
2002	B.Sc. (Hons), Agriculture University of Agriculture, Faisalabad, Pakistan.

ACDEMIC APPOINTMENTS

2021 to date	***Associate Professor,*** Institute of Soil and Environmental Sciences, University of Agriculture**, Faisalabad, Pakistan**
2011 to 2021	***Assistant Professor,*** Institute of Soil and Environmental Sciences, University of Agriculture**, Faisalabad, Pakistan**
2020 to date	***Co-Chair (Soil),*** Agricultural Remote Sensing Lab (ARSL), National Centre of GIS and Space Application (**NCGSA**), Pakistan
2019	***Visiting Faculty,*** *Department of Soil Science and Nutrition, Faculty of Agriculture, Akdeniz University, Antalya****, Turkey***

2016 ***Visiting Lecturer,*** *Department of Soil Science and Nutrition, Faculty of Agriculture, Selcuk University,* ***Konya, Turkey***

2012 ***Post-doctoral Fellow*** of School of Plant Biology, University of Western Australia, Crawley WA 6009, **Perth, Australia**.

2009-2011 ***Lecturer*** in Saline Agriculture Research Centre, University of Agriculture, **Faisalabad, Pakistan**

2009 ***Visiting Fellow***, School of Plant Sciences, University of Tasmania, **Hobart, Australia**

2008-2010 ***Team member*** in **BIOSAFOR** (Agroforestry) project funded by **EU (FP6 Project),** conducted by OASE Foundation, The Netherlands on Remediation of Saline Wastelands through Production of Biosaline Biomass (for bioenergy, fodder and biomass).

2005-2006 ***Research Associate*** in the project entitled "Use of Brackish water for sustainable crop production" run by Saline Agriculture Research Centre, University of Agriculture, Faisalabad founded by HEC

PROFESSIONAL ASSIGNMENTS

1. Co-Chair (Soil) of Agricultural Remote Sensing Lab (ARSL), National Centre of GIS and Space Application (NCGSA), Pakistan
2. Member of Committee for Formulation of Punjab Agriculture Strategic Plan 2023-2033.
3. Member, Committee for Drafting 'Land Use Policy of the Punjab' Government of Punjab, Lahore.
4. Member of the working Group on redefining Agro-ecological Zones (AEZ) for Punjab Province- A joint task of FAO and Ministry of Agriculture, Punjab, Lahore, Pakistan
5. Member Departmental Doctoral Program Committee of the Centre for Geographical Information System (GIS), University of the Punjab, Lahore.

PROFESSIONAL AFFILATIONS

- FAO- International Network of Salt-Affected Soils (INSAS)
- Global Soil Partnership (GSP)
- Soil Science Society of Pakistan
- International Network for Biosaline Agriculture
- Reviewer for various plant science, soil science, plant ecology, plant physiology and forestry journals of international repute.

RESEARCH PROJECTS/ FUNDINGS

Sr. No	Project Title	Role	Funding Agency/Amount	Duration
1	Risk-based Assessments of Aquifer Vulnerability for D.G. Khan study areas - *Transforming the Indus Basin with Climate Resilient Agriculture and Water Management (GCP/PAK/146/GCF)*	Team Lead	FAO (6.864 million)	2024-25
2	Risk-based assessments of aquifer vulnerability for Sangar-Umarkot study areas - *Transforming the Indus Basin with Climate Resilient Agriculture and Water Management (GCP/PAK/146/GCF)*	Team Lead	FAO (6.867 million)	2024-25
3	Developing an Integrated Tool to Assess Soil Health in different Ecological Landscapes of Punjab	Co-PI	PAS (1.95 million)	2024-25
4	Development of Climate Resistant High Yielding and Low Prussic Acid Sorghum Variety under Various Agroecosystems of Punjab, Pakistan (PARB-22-58)	Co-PI	PARB (26.797 million)	2024-26
5	Research and Analysis of Existing Groundwater and Salinity management Practices in Khanewal, D.G. Khan and Sanghar and Umarkot Districts	Team Member	FAO (4.251 million)	2024
6	Developing innovative and low-cost biochar-based materials for filtration of arsenic from drinking water (PSF/CRP/P-UAF/Cons-313)	Principal Investigator	PSF (7.213 million)	2023-26
7	Developing nano-minerals based materials for filtration of the priority anionic contaminants (PACs) from soil and water (NRPU-15626).	Principal Investigator	HEC (3.513 million)	2023-25
8	Establishment of National Center of GIS and Space Applications (NCGSA)-Agriculture Remote Sensing Lab (ARSL)	Co-PI	Planning Commission, GoP & HEC (74.94 million)	2020-25
9	Development and Calibration of Geo-spatial Techniques for Monitoring of Soil Salinity in Agricultural Landscape of Punjab Province	Principal Investigator	HEC (4.45 million)	2018-21
10	Pak-Turk Researcher Mobility Grant Program	Co-PI	Tübitak & HEC	2019-22
11	Mitigation of abiotic stress in cereals crops…….	Co-PI	HEC	2017-20
12	Use of saline waste lands for fodder and livestock production	Co-PI	HEC (4.26 million)	2016-19
13	Upgradation of Research Laboratory for Soil and Environment Studies	Principal Investigator	HEC (1.43 million)	2015-16

14	Farmers Participatory Crop Improvement in Salt-affected Areas	Co-PI	HEC (9.38 million)	2011-14
15	Regulating N acquisition and metabolism in stressed plants with K application under saline conditions	Principal Investigator	HEC (0.5 million)	2011-13
16	BIOSAFOR: Remediation of saline wastelands through the production of bioenergy, fodder and biomass.	Team Member	EU FP6 Project	2006-10

AWARDS/HONOURS

2018 Turkish Mevlana Faculty Exchange Program Award
2016 Turkish Mevlana Faculty Exchange Program Award
2012 Australian Endeavour Research Awards
2012 Fellowship award for training by Royal Thai Government & Thailand International Development Cooperation Agency (TICA)
2012 Fellowship for training by Egyptian International Centre for Agriculture (EICA)
2008 HEC Postgraduate Research Fellowship (IRSIP)
2004 HEC Indigenous 5000 PhD Fellowship
2003 University Merit Scholarship in MSc (Hons) Agriculture

PUBLICATIONS

SELECTED PUBLICATIONS IN PEER-REVIEWED JOURNALS

1. Shoukat, A., U. Maryam, B. Pitann, M.M. Zafar, A. Nawaz, W. Hassan, M.F. Seleiman, **Z.A. Saqib** and K.H. Mühling. 2025. Efficacy of Nano and Conventional Zinc and Silicon Fertilizers for Nutrient Use Efficiency and Yield Benefits in Maize Under Saline Field Conditions. Plants 2025, 14, 673. https://doi.org/10.3390/plants14050673
2. Shoukat, A., **Z.A. Saqib**, A. Nawaz, K.Z. Amir, I. Ahmad, A. Hamza and K.H. Mühling. 2025. Nano-fertilizers Benefited Maize to Cope Oxidative Stress under Saline Environment. Plant Nano Biology. Plant Nano Biology, 11, 100141. https://doi.org/10.1016/j.plana.2025.100141
3. Sajjad, M., K. Hussain, S.A. Wajid, **Z.A. Saqib**. 2024. The Impact of Split Nitrogen Fertilizer Applications on the Productivity and Nitrogen Use Efficiency of Rice. Nitrogen 2025, 6, 1. https://doi.org/10.3390/nitrogen6010001.
4. Rehan, M., S.A. Wajid, K. Hussain, Z.A. Saqib, G. Hoogenboom. 2024. evaluating agronomic practices and radiation use efficiency in promising rice genotypes under different nitrogen levels. Journal of Xi'an Shiyou University, Natural Sciences Edition. 67 (7), 124-138, ISSN: 1673-064X. https://doi.org/10.5281/zenodo.12793946
5. Shoukat, A., **Z.A. Saqib**, J. Akhtar, Z. Aslam. 2024. Optimization and characterization of synthesized ZnO nanoparticles and conventional fertilizers for enhanced maize tolerance to salinity stress. Journal of Xi'an Shiyou University-Natural Sciences Ed. 67(8): 474-487. http://doi.org/10.5281/zenodo.13621995 Available online at https://xianshiyoudaxuexuebao.com/detail.php?id=DOI:10.5281/zenodo.13621995

6. Shoukat, A., B. Pitann, M.M. Zafar, M.A. Farooq, M. Haroon, A. Nawaz, S.W. Wahab, **Z.A. Saqib**. 2024. Nanotechnology for Climate Change Mitigation: Enhancing Plant Resilience under stress environments. Journal of Plant Nutrition and Soil Science, 1–17. https://doi.org/10.1002/jpln.202300295

7. Shoukat, A., **Z.A. Saqib**, J. Akhtar, Z. Aslam, B. Pitann, M.S. Hossain, K.H. Mühling. 2024. Zinc and Silicon Nano Fertilizers influence Ionomic and Metabolite Profiles in Maize to Overcome Salt Stress. Plants. 13(9), 1224. https://doi.org/10.3390/plants13091224

8. Shoukat, A., B. Pitann, M.S. Hossain, **Z.A. Saqib**, A. Nawaz, and K.H. Mühling. 2024. Zinc and silicon fertilizers in conventional and nano-forms: Mitigating salinity effects in maize (*Zea mays* L.). J. Plant Nutr. Soil Sci. 1–12. https://doi.org/10.1002/jpln.202300267

9. Rafique, A., M.Y.S. Dasti, B. Ullah, F.A. Awwad, E.A.A. Ismail and **Z.A. Saqib**. 2023. Snow Avalanche Hazard Mapping Using a GIS-Based AHP Approach: A Case of Glaciers in Northern Pakistan from 2012 to 2022. Remote Sens. 15(22): 5375. https://doi.org/10.3390/rs15225375

10. Ullah, S., Y. Shi, M.Y.S. Dasti, M. Wajid, **Z.A. Saqib**. 2023. Estimating Advance of Built-Up Area in Desert-Oasis Ecotone of Cholistan Desert Using Landsat. Land. 12, 1009. https://doi.org/10.3390/land12051009

11. Hussain, K., A. Ilyas, S. Ali, I. Bibi, Q. Shakil, M.U. Farid, **Z.A. Saqib**, A. Habib, E.E. Hakki. 2022. Impacts of Nitrogen Fertilizer Application and Mulching on the Morpho-Physiological and Yield-Related Traits in Cotton. Agriculture. 13, 12. https://doi.org/10.3390/agriculture13010012

12. Hussain, M.M., I. Bibi, F. Ali, **Z.A. Saqib**, M. Shahid, N.K. Niazi, K. Hussain, S.M. Shaheen, H. Wang, Q. Shakil, J. Rinklebe. 2023. The role of various ameliorants in geochemical arsenic distribution and CO_2-carbon efflux under paddy soil conditions. Environ Geochem Health. 45: 507–523. https://doi.org/10.1007/s10653-021-01196-3

13. Ramzan, M., **Z.A. Saqib**, E. Hussain, J.A. Khan, A. Nazir, M.Y.S. Dasti, S. Ali, N.K. Niazi. 2022. Remote Sensing-Based Prediction of Temporal Changes in Land Surface Temperature and Land Use-Land Cover (LULC) in Urban Environments. Land. 11(9), 1610; https://doi.org/10.3390/land11091610

14. Nazir, A., S. Ullah, **Z.A. Saqib**, A. Abbas, A., M.S. Iqbal, K. Hussain, M. Shakir, M. Shah and M.U. Butt. 2021. Estimation and Forecasting of Rice yield using phenology-based algorithm and linear regression model on Sentinel-II satellite data. Agriculture, 11(10), 1026. https://doi.org/10.3390/agriculture11101026.

15. Ashraf, M.A., R. Rasheed, S. Zafar, M. Iqbal, **Z.A. Saqib**. 2021. Menadione sodium bisulfite neutralizes chromium phytotoxic effects in okra by regulating cytosolutes lipid peroxidation, antioxidant system and metal uptake. Int. J. Phytoremediation. 23(7): 736-746.

16. Suhaib, M., A. Mujtaba, M. Munir, **Z.A. Saqib**. 2020. Alleviation of Salinity Hazards in Different Maize Genotypes Using Inorganic Ions. Biological Sciences- PJSIR, 63(2): 100-104.

17. Ahmad, N., R.N. Abbas, A. Tanveer, **Z.A. Saqib**. 2020. Comparative Efficacy of Weed Control Practices for Parthenium Weed and Sunflower Crop under Varying Tillage Systems. Phyton-Inter. J. Exp. Bot. 89(3): 727-742.

18. Iqbal, S., J. Akhtar, **Z.A. Saqib,** R. Ahmad. 2020. Genotypic and species variability in carboxylate exudation of wheat (*Triticum aestivum* L.) and maize (*Zea mays* L.) in phosphorus deficiency. Pak. J. Agri. Sci., Vol. 57(3): 665-674.

19. Ejaz, F., M.F. Nawaz, **Z.A. Saqib**, S. Gul, U. Islam, M. Waqar. 2020. Risk assessment of heavy metal and microbial contamination in commercially available salad vegetables of Faisalabad, Pakistan. Pak. J. Bot. 52(4): 1397-1404.

20. Qayyum, M.A., J. Akhtar et al. 2020. Physiological and Biochemical Characterization of Linseed Genotypes under Salinity Stress. Intern. J. Agric. Biol. 23(3): 630-636.

21. Zaman, Q., Z. Aslam, M. Rashid, A. Aslam, R.N. Abbas, A. Iqbal, M.S. Naeem, U. Riaz, S. Bashir, **Z.A. Saqib**, M. Yaseen, N. Ehsan. 2020. Zinc nutrition application augments morpho-physiological attributes, productivity, and grain zinc bioavailability of paddy rice. J. Appl. Bot. Food Qual. 93:11–19.

22. Qadeer, A., **Z.A. Saqib**, Z. Ajmal, C. Xing, S. Bashir, Y. Huang, M. Liu. 2020. Concentrations and health risk assessment of heavy metals in road dust from two urbanized cities of Pakistan: Comparing two sampling methods for heavy metals concentration. Sustainable Cities and Society. 53:101959. Online available at https://doi.org/10.1016/j.scs.2019.101959

23. Shahzad, L., A. Tahir, F. Sharif, W.U. Khan, M.A. Farooq, A. Abbas, **Z.A. Saqib**. 2019. Vulnerability, wellbeing and livelihood adaptation under changing environmental conditions: a case from mountainous region of Pakistan. Environmental Science and Pollution Research. 26: 26748–26764.

24. Javaid, T., M.A. Farooq, J. Akhtar, **Z.A. Saqib**, M.A. Ul-Haq. 2019. Silicon nutrition improves growth of salt-stressed wheat by modulating flows and partitioning of Na^+, Cl^- and mineral ions. Plant Physiology and Biochemistry. 141: 291–299.

25. Zafar, Z., J. Akhtar, M. Amjad, M.A. Ul-Haq, **Z.A. Saqib**. 2019. Trace metals accumulation and antioxidants profiling in two maize genotypes against sewage and textile wastewater treatment. CLEAN- Soil Air Water. 47(7):1800063 https://doi.org/10.1002/clen.201800063

26. Shahzad, M., H. Usman, R. Ahmad, S.A. Khan, **Z.A. Saqib**, K.H. Mühling. 2019. Sodium in the leaf apoplast does not affect growth of maize (*Zea mays L.*) under saline field conditions. J. App. Bot. Food Qual. 92: 117-122.

27. Farooq, M.A., **Z.A. Saqib**, J. Akhtar, H.F. Bakhat, R.K. Pasala and K.J. Dietz. 2019. Protective role of silicon (Si) against combined stress of salinity and boron (B) toxicity by improving antioxidant enzymes activity in rice. Silicon.11:2193–2197. https://doi.org/10.1007/s12633-015-9346-z

28. Shakoor, M.B., N.K. Niazi, I. Bibi, M. Shahid, **Z.A. Saqib**, M.F. Nawaz, S.M. Shaheen, H. Wang, D.C.W. Tsang, J. Bundschuh, Y.S. Ok, J. Rinklebe. 2019. Exploring the arsenic removal potential of various biosorbents from water. Environ. Inter. 123:567-579.

29. Hussain, S.A., M.A. Farooq, J. Akhtar, **Z.A. Saqib**. 2018. Silicon-mediated growth and yield improvement of sunflower (*Helianthus annus* L.) subjected to brackish water stress. Acta Physiologiae Plantarum. 40:180. https://doi.org/10.1007/s11738-018-2755-z

30. Choudhary, H.M., M. Ashraf, S.M. Sarwar, Q. Hamid and **Z.A. Saqib**. 2017. Geospatial Techniques for Assessment of Bank Erosion and Accretion in the Marala Alexandria Reach of the River Chenab, Pakistan. Sains Malaysian. 46(3): 413-420.

31. Zia Z., H. F. Bakhat, **Z.A Saqib**, G. M. Shah, M. R. Ashraf, H. M. Hammad, W. Naseem, M Shahid. 2017. Effect of water management and silicon on germination, growth and arsenic uptake in rice. Ecotoxcol. Environ. Safe. 144:11-18.

32. Niazi, N.K., I. Bibi, A. Fatimah, M. Shahid, M.T. Javed, H. Wang, Y.S. Ok, S. Bashir, B. Murtaza, **Z.A. Saqib** and M.B. Shakoor. 2017. Phosphate-assisted phytoremediation of arsenic by *Brassica napus* and *Brassica juncea*: Morphological and Physiological Response. Inter. J. Phytorem. 19(7): 670-678.

33. Shahzad, M., **Z.A. Saqib**, F. Hafeez, M. Bilal, S.A. Khan, S.A. Asad and J. Akhtar. 2016. Growth-related changes in wheat (*Triticum aestivum* L.) genotypes grown under salinity stress. J. Plant Nutri. 39(9): 1257-1265.

34. Ain, Q., J. Akhtar, M. Amjad, M. A. Haq and **Z.A. Saqib.** 2016. Effect of Enhanced Nickel Levels on Wheat Plant Growth and Physiology under Salt Stress. Comm. Soil Sci. Plant Anal. 47:22: 2538-2546.

35. Usman, M., A. Abbas and **Z.A. Saqib**. 2016. Conjunctive use of water and its management for increased productivity of major crops across tertiary canal irrigation system of Indus basin in Pakistan. Pak J. Agric. Sci. 53(1): 257-264.

36. Amjad, M., J. Akhtar, M.A. Ul-Haq, M.A. Riaz, **Z.A. Saqib**, B. Murtaza and M.A. Naeem. 2016. Effectiveness of potassium in mitigating the salt-induced oxidative stress in contrasting tomato genotypes, J. Plant Nutri. 39(13):1926-1935.

37. Iqbal, M.M., G. Murtaza, **Z.A. Saqib** and R. Ahmad. 2015. Growth and physiological responses of two rice varieties to applied lead in salt-affected soils. Int. J. Agric. Bio. 17: 901–910.

38. Qayyum, M.A., J. Akhtar, **Z.A. Saqib**, and S.M.A. Basra. 2015. Phenotyping of linseed genotypes for potential against NaCl stress. Soil Environ. 34(2): 200-206.

39. Farooq, M.A. **Z.A. Saqib** and J. Akhtar. 2015. Silicon-mediated oxidative stress tolerance and genetic variability in rice (*Oryza sativa* L.) grown under combined stress of salinity and boron toxicity. Turk J Agric. For. 39: 718-729.

40. Yousra, M., J. Akhtar, **Z.A. Saqib**, M. Saqib and M.A. Ul-Haq. 2013. Effect of potassium application on ammonium nutrition in maize (*Zea mays* L.) under salt stress. Pak J. Agric. Sci. 50(1): 43-48.

41. Ul-Haq, M.A., S. Akram, J. Akhtar, M. Saqib, **Z.A. Saqib**, G.H. Abbasi and M. Jan. 2013. Morpho-physiological characterization of sunflower genotypes (*Helianthus annuus* L.) under saline conditions. Pak. J. Agri. Sci. 50(1): 49-54.

42. **Saqib, Z.A**., J. Akhtar, M.A. Ul-Haq, I. Ahmad and H.F. Bakhut. 2012. Rationality of using various physiological and yield related traits in determining salt tolerance in wheat. Afr. J. Biotech. 11(15): 3558-3568.

43. **Saqib, Z.A**., J. Akhtar, M.A. Ul-Haq and I. Ahmad. 2012. Salt induced changes in leaf phenology of wheat plants are regulated by accumulation and distribution pattern of Na^+ ion. Pak J. Agric. Sci. 49(2): 141-148.

44. **Saqib, Z.A**., J. Akhtar, M, Saqib and R. Ahmad. 2011. Contrasting leaf Na^+ uptake and transport rates conferred differences in salt tolerance of wheat genotypes. Acta Agric. Scand., Sec. B-Plant Soil Sci. 61:(2) 129-135.

45. Hassan, W., **Z.A. Saqib**, A. Ghafoor, N. Manzoor and A. Qayyum. 2011. Efficiency of Ca^{2+} application for the reclamation of saline-sodic soils with different soil textures. Pak. J. Agric. Sci. 48(4): 277-281.

46. Akhtar, J., **Z.A. Saqib**, M. Sarfraz, I. Saleem and M.A. Haq. 2010. Evaluating salt tolerant cotton genotypes at different levels of NaCl stress in solution and soil culture. Pak. J. Bot. 42(4): 2857-2866.

47. Akhtar J, **Z.A. Saqib**, R.H. Qureshi, M.A. Haq, M.S. Iqbal and N.E. Marcar. 2008. The effect of spacing on the growth of *Eucalyptus camaldulensis* on salt-affected soils of the Punjab, Pakistan. Can. J. For. Res. 38(9): 2434–2444.

48. Maqsood, T., J. Akhtar, M.R. Farooq, M.A. Haq and **Z.A. Saqib**. 2008. Biochemical attributes of salt tolerant and salt sensitive maize cultivars to salinity and potassium nutrition. Pak. J. Agri. Sci., 45(1): 1-5.

49. Hussain, S.A., J. Akhtar, M. Anwar-ul-Haq, M.A. Riaz and **Z.A. Saqib**. 2008. Ionic concentration and growth response of sunflower (*Helianthus ann*uus L.) genotypes under saline and/or sodic water application. Soil & Environ. 27(2): 177-184.

50. Amjad M., K. Ziaf, Q. Iqbal, I. Ahmad, M.A. Riaz, **Z.A. Saqib**. 2007. Effect of seed priming on seed vigour and salt tolerance in hot pepper. Pak. J. Agric. Sci. 44(3): 408-413.

51. Gurmani, R.R., S.J. Khan. **Z.A. Saqib**, R. Khan, A. Shakeel and M. Ullah. 2007. Genetic evaluation of some yield and yield related traits in wheat. Pak. J. Agri. Sci. 44(1):6-11.

BOOKS/BOOK CHAPTERS/PROCEEDINGS

1. Athar, T., A. Pandey, Mohd. K. Khan, **Z.A. Saqib**, M.S. Sarwar, Aqsa, U. Farooq, M. Hamurcu, S. Geizgi. 2023. Role of Modern Technologies and Legislation Measures to Manage Biosolid Waste. In: Riaz U., S. Iqbal, M. Jamil (Eds). ***Waste Problems and Management in Developing Countries***. CRC Press/Apple Academic Press Incorporated, Boca Raton, FL, USA.

2. Athar, T., A. Pandey, Mohd. K. Khan, **Z.A. Saqib**, M. Jabeen, S. Shahid, M. Hamurcu, S. Gezgin, V.D. Rajput and M.A. Elinson. 2022. Potential Role of Beneficial Microbes for Sustainable Treatment of Sewage Sludge and Wastewater. In: Rajput, V.D., Yadav, A.N., Jatav, H.S., Singh, S.K., Minkina, T. (eds) ***Sustainable Management and Utilization of Sewage Sludge***. Springer, Cham. https://doi.org/10.1007/978-3-030-85226-9_4

3. Aslam Z., M.S. Ahmed, S. Bashir, N.K. Niazi and **Z.A. Saqib**. 2020. Herbicide Resistance in Crops and Weeds. In: Hasanuzzaman M. (eds) ***Agronomic Crops***. Springer, Singapore. https://link.springer.com/chapter/10.1007/978-981-15-0025-1_19

4. Ahmad, A., Ahmad, I., Riaz Khan, M., Shah, S.H.H., Kamran, M.A., Wajid, S.A., Amin, M., Khan, A., Arshad, M.N., Cheema, M.J.M., Saqib, Z.A., et al. 2019. ***Agro-Ecological Zones in Punjab, Pakistan***. FAO Rome. http://www.fao.org/geospatial/resources/detail/en/c/1256304/

5. Niazi, N.K., S. Bashir, I. Bibi, B. Murtaza, M. Shahid, T. Javed, M.B. Shakoor, **Z.A. Saqib,** M.F. Nawaz, Z. Aslam and H. Wang. 2016. Phytoremediation of Arsenic-Contaminated Soils Using Arsenic Hyperaccumulating Ferns. In: Ansari A., Gill S., Gill R., Lanza G., Newman L. (eds) ***Phytoremediation***. Springer, Singapore. https://link.springer.com/chapter/10.1007/978-3-319-40148-5_19

6. Bashir, S., N.K. Niazi, Z. Aslam, K. Hussain, **Z.A. Saqib**, I. Bibi. 2019. Proceedings of the International Conference on 'Surface Science: ***Innovations and Applications for Geo-environmental Challenges***' organized by institute of Soil and Environmental Science on 25-26 April 2019 at University of Agriculture. Faisalabad, Pakistan. (ISBN: 978-969-7705-46-7)
7. Bashir, S. **Z.A. Saqib**. Z. Aslam. 2017. Proceeding of the International Conference on '***Advances in Agricultural Resource Management*** (ICARM-2017) held at University of Agriculture Faisalabad, Pakistan on 5-7 April 2017.

PROCEEDING PAPERS/INTERNATIONAL CONFERENCE PRESENTATIONS

1. **Saqib Z.A**., M.H. Choudhary, Ahmad, I. 2023. Development and calibration of geo-spatial techniques for monitoring soil salinity in agricultural landscape of Punjab. In: FAO. 2023. Proceedings of the 2nd Meeting of the International Network of Salt-Affected Soils (INSAS)-Managing salt-affected soils for a sustainable future. Rome. 22–26 May 2023 https://doi.org/10.4060/cc7887en
2. **Saqib, Z.A**., J. Akhtar, R.H. Qureshi. 2022. Saline Agriculture: Potential and prospective for restoration of saline landscape and ecosystems services delivery. The 2nd International Laayoune Forum on Biosalone Agriculture (LAFOBA2-2022) held on 14-16 June 2022 in Laayoune, Morocco (Hybrid).
3. **Saqib Z.A**., Akhtar J., Qureshi R.H., Iqbal S., Barrett-Lennard E. 2021. Saline agriculture: Potential and prospective to manage saline landscape for food and ecosystems services. In: Proceedings of the Global Symposium on Salt-affected Soils-Halt soil salinization, boost soil productivity. 20–22 October 2021. Rome. https://doi.org/10.4060/cb9565en
4. **Saqib, Z.A**., J. Akhtar, R.H. Qureshi, S. Iqbal. 2021. Management of *Eucalyptus camaldulensis* plantation for bioenergy production, carbon sequestration and phytoremediation of saline landscapes of Punjab Pakistan. 1st IUSS Conference on Sodic Soil Reclamation jointly organized by the International Union of Soil Sciences (IUSS), CAS. Hosted by the Northeast Institute of Geography and Agroecology, CAS and the Salt-affected Commission of the Soil Science Society of China held in Jilin Province, China. July 30-1st Aug 2021.
5. FAO. 2021. Keep soil alive, protect soil biodiversity. Global symposium on soil biodiversity, 19–22 April 2021. Rome, Italy
6. **Saqib, Z.A.,** T. Athar, E.E. Hakki, S. Bashir, J. Akhtar, Z. Aslam. 2019. Zinc Nanoparticles Help Biofortification When Subsiding Salt Stress in Rice under Saline Soils. Proceedings of 5th International Eurasian Congress on Natural Nutrition for healthy life and sport. 2-6 October 2019, Ankara, Turkey.
7. Akhtar, J. **Z.A. Saqib**. 2019. Saline Agriculture-A viable Option for Future Agriculture and Food Security. Proceedings of 5th International Eurasian Congress on Natural Nutrition for healthy life and sport. 2-6 October 2019, Ankara, Turkey
8. Choudhary, H.M., Q. Hamid, **Z.A. Saqib,** I. Ur-Rehman, N. Samad, M.A. Mahboob. 2018. A comparative study of indices of Landsat-8 and soil salinity appraisal in Shorkot. 2018. International Conference on Clean Water, Air & Soil (CleanWAS 2017) jointly organized by International Water, Air and Soil Conservation Society and Malaya University, Universiti Kebangsaan Malaysia and University Putra Malaysia at Bangkok, Thailand held on 25-27 Aug. 2018.

9. Chaudhry, M.M., A. Ahmad, Q. Gulzar, **Z.A. Saqib**, M.J. Cheema. 2018. Multi-scale geomorphological mapping using high resolution satellite Imagery and Unmanned Aerial Vehicle Imagery. Proceedings of 39th Asian Conference on Remote Sensing 'Remote Sensing Enabling Prosperity' (ACRS 2018) jointly organized by Malaysian Remote Sensing Agency (MRSA) and Asian Association on Remote Sensing (AARS) at Kuala Lumpur, Malaysia held on 15-19, Oct. 2018.

10. **Saqib Z.A.**, J. Akhtar, H.A. Malik, A. Abbas. 2018. Mitigating Climate Change through Agroforestry for Saline Lands Rehabilitation and Carbon Sequestration. 17th International Conference on Soil Science 'Soils: ultimate solution to Food Security and Climate Change' organized by Soil Science Society of Pakistan held on 13-15 March 2018.

11. **Saqib, Z.A**., M. Hamurcu, E.E. Hakki, M.A. Paracha, J. Akhtar and Ed Barret-Lennard. 2016. Additive Effect of Salinity and Boron Toxicity on Field crops. International Symposium on Boron in Agriculture.16-18 November 2016, Ankara, Turkey.

12. Farooq, M.A., **Z.A. Saqib**, J. Akhtar, K-J. Dietz. 2014. Silicon-mediated amelioration of NaCl stress aggravated boron (B) toxicity in rice. Presented at 6th International Conference on Silicon in Agriculture held on 26-30 August 2014 at Stockholm, Sweden.

13. **Saqib, Z.A**., E.G. Barrett-Lennard, J. Akhtar. 2013. Genetic Variability in Response to Boron Toxicity in Cereal Crops. In: XVII International Plant Nutrition Colloquium and Boron Satellite Meeting Proceedings Book, pp 1113-1114, Sabanci University, Istanbul. ISBN 978-605-4348-62-6. http://www.plantnutrition.org/en/2013ipnc-b-proceedings.html

14. **Saqib, Z.A**., J. Akhtar, R. Farooq, H.M.A. Haq and I. Ahmad. 2012. Sustainable Use of Brackish Water for Better Crop Production in Different Textured Soils. ICID 21st International Congress on Irrigation and Drainage/ICID 21st Congress held in Tehran on 15-23, October 2011. pp. 65-77.

15. Akhtar, J., **Z.A. Saqib**, R.H. Qureshi and M.A. Haq. 2006. Options for Salt-affected Soils. In: Akhtar, J., Qureshi, R.H. (Eds): Proceedings of the International Conference on *Sustainable Crop Production on Salt-affected Land*. Saline Agriculture Research Centre, university of Agriculture, Faisalabad, Pakistan, Dec. 4-6, 2006.

TRAINING

1. Two-week Short Course (Online) by University of Cambridge on 'The Global Biodiversity Framework, Sustainable Development and the Law' in May 2024.
2. Training course on 'Measure for Coping with Soil Salinity' conducted by FAO Learning Academy held on October 2024.
3. Four Days Training course on Research Capacity Building Program for Grant Reviewers organized by Pak-UK Education Gateway in collaboration with Director General Research & Innovation Division, Higher Education Commission of Pakistan and British Council, held on 13-17 February 2023.
4. Global Symposium on Soils for Nutrition organized virtually by Global Soil Partnership-FAO held on 26-29 July 2022.
5. 8 weeks Massive Open Online Course on 'Introduction to Ecosystem Restoration' and 'Applying Ecosystem Restoration and Inventions' organized by UNDP and Convention for Biological Diversity from 10th October 2022 to 16th November 2022.

6. Nature Based Solutions implementation and Ecosystem Services assessment in a changing environment. Jun 23-26, 2021, in Beijing organized by Mykolas Romeris University (Lithuania) and Beijing Normal University (China), and co-organized by Geography and Sustainability (GeoSus) and IGU Commission on Geography for Future Earth: Coupled Human-Earth Systems for Sustainability (IGU-GFE).
7. Advanced Training on 'Isolation and Quarantine Response Strategies in the Event of Biological Disease Outbreak' by The Centre for Agriculture and Food Security and Preparedness, University of Tennessee, Knoxville, USA on May 22 to May 27, 2017
8. Crawford Fund Australia Training Course on 'Phenotyping of cereals in variably saline landscape of Pakistan' at University of Agriculture, Faisalabad on October 16-20, 2016
9. China-Aid Bilateral Training on 'Use of modern Agricultural Technology and Food Security' from 11th September to 8th October 2015 organized by Foreign Economic Cooperation Center (FECC), Ministry of Agriculture of the Peoples' Republic of China at Beijing, Jiangxi and Fujian Provinces, China.
10. Two weeks training Workshop on 'Remote Sensing for Monitoring Agricultural Crops and Assessing Soil Salinity' from 2-16 February 2014 organized by University of Agriculture, Faisalabad in collaboration with CSIRO, Australia and financed by Ministry of Trainings and Higher Education, Govt. of Pakistan.
11. "Intensive Training Course in Remote Sensing and Digital Imaging" jointly organized by CSIRO, Australia and University of Agriculture, Faisalabad, Pakistan.
12. AusAid-PSLP project workshop on "Introduction and overview of growth and hydrology models with relevance to use of tree for salinity management". 22-24 April 2008 held in NIAB, Faisalabad, Pakistan.

MEDIA/ NATIONAL PRESS

1. Javaid Akhtar & **Zulfiqar A. Saqib**. "A profitable way to Tackle Salinity" published in Agriculture and Technology Section of daily '**DAWN Economic and Business Review**' May 26-June 1, 2008. pp. III.

2. **Zulfiqar A. Saqib**, J. Akhtar. How can wheat production be improved in salt-affected soils? Monthly, **Nada-i-Kissan**, Lahore, Pakistan. September 2011, pp.28.

STUDENT ADVISING/SUPERVISION

Ph.D.	11
M.Sc. (Hons.) Agriculture	72
M.Sc. (Hons.) Environ. Sciences	23

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