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Education

2013- 2017	PhD (Engineering) Water Resources Management Center for Development Research (ZEF) Rheinische Friedrich-Wilhelms-Universität Bonn, Germany
2009-2011	M.Sc. (Agr. Science and Resource Management in (Sub)Tropics –ARTS) Land & Water Management Rheinische Friedrich-Wilhelms-Universität Bonn, Germany
2002-2006	B.Sc. (Agri. Engineering) Faculty of Agri. Engineering and Technology, University of Agriculture, Faisalabad, Pakistan

Experience

Feb 2022-Present	Senior Researcher Center for Development Research (ZEF), Rheinische Friedrich-Wilhelms-Universität, Bonn, Germany
Dec 2020-Jan 2022	SDG Fellow/Senior Researcher Center for Development Research (ZEF), Rheinische Friedrich-Wilhelms-Universität, Bonn, Germany
Jul 2018-Jan 2020	Infrastructure Expert Office of the Chief Advisor to the President of the I. R. of Afghanistan, Presidential Palace, ARG, Kabul
Sep 2013 - Jun 2018	Junior Researcher Center for Development Research (ZEF), Rheinische Friedrich-Wilhelms-Universität Bonn, Germany
Apr 2013 – Oct 2013	Water Resources Expert Food and Agriculture Organization of the United Nations (UNFAO), Kabul, Afghanistan
May 2012 – Apr 2013	Scholarship Management Coordinator Central for International Migration and Development (CIM), Ministry of Higher Education, Kabul, Afghanistan
Jun 2008-30 May 2009	Provincial Governance Advisor Local Governance and Community Development Development Alternatives Incorporated (DAI), Paktya Province Afghanistan
Jun 2007 - Jan 2008	Project Officer United States Agency for International Development (USAID)

Directorate of Water and Sanitation (WatSan)
 Ministry of Rural Rehabilitation and Development (MRRD), Afghanistan

Dec 2006 - Jun 2007 Irrigation Engineer
 Deutsche Welthungerhilfe (DWHH)
 Kunduz, Afghanistan

Awards/Honors and recognition

Postdoctoral fellowship (Philipp Schwartz-Initiative), Alexander von Humboldt-Stiftung, (Feb 2022-Present)

SDG Fellowship by the University of Bonn (Dec. 2020 – Jan 2021)

Grant winner, by **Agrinatura (the European Alliance on Agricultural Knowledge for Development, Prague Czech Republic)** for research paper) “Estimation of actual evapotranspiration using remote sensing-based surface energy balance system at the data scarce Kabul River Basin of Afghanistan” presentation at Tropentag Conference on “Solidarity in a competing world – fair use of resources”, 18-20 September 2017, Vienna, Austria

DAAD scholarship for PhD Studies at the Center for Development Research (ZEF), Rheinische Friedrich-Wilhelms-Universität Bonn, Germany (Sep 2013- July 2017)

DAAD scholarship for M.Sc. Studies at ARTS (Land & Water Management), University of Bonn, Germany (2009-2011)

Guest Research Fellowship by the Centre for Development Research (ZEF), Bonn International Graduate School for Development Research (BIGS-DR), Rheinische Friedrich-Wilhelms-Universität Bonn, Germany (Jan 2008 to Mar 2008)

Linguistic proficiency

Mother Tongue: **Pashto**

	English	German	Dari/Persian	Urdu
Reading Skills	Excellent	Very Good	Excellent	Excellent
Writing Skills	Excellent	Good	Very Good	Excellent
Verbal Skills	Excellent	Good	Excellent	Excellent

General computer skills

Microsoft Windows and Office (installation and troubleshooting)
 General Software and hardware installation and troubleshooting
 Technical and Administrative Management Information System (TAMIS)

Computer simulation models

SWAT (Soil and Water Assessment Tool)
 AquaCrop Model (Crop-water productivity model of FAO)
 CropWat Model (Crop-water requirements’ calculation model)
 Hydrus-1D (A Microsoft Windows-based model for the analysis of water flow and solute transport in variably saturated porous media)
 ET₀ Calculator (Reference evapotranspiration calculator)
 UPFLOW (For upward water movement calculation from a shallow water table)
 ArcGIS
 ERDAS IMAGINE
 R Studio

Reviewer in Peer-Reviewed Journals

N	Journal Name	N	Journal Name
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1	Journal of Water Resources Management	7	Journal of Agriculture
2	Journal of Natural Resources and Development	8	Journal of Environment
3	Journal of Mountain Science	9	Journal of Agronomy
4	Journal of Science of the Total Environment	10	Journal of World Water Policy
5	Journal of Water	11	Journal of Agricultural Water Management
6	Journal of Remote Sensing		

Peer-reviewed journal publications

Akhtar, F. (2022). Berit Bliesemann de Guevara/Morten Bøås (eds): Doing Fieldwork in Areas of International Intervention: A Guide to Research in Violent and Closed Contexts. *International Quarterly for Asian Studies*, 53(4), 615-617.

Akhtar, F., & Shah, U. (2023). The Spectre of Climate Change-Induced Migration in Afghanistan. In *Environment, Climate Change and Migration in South Asia* (pp. 31-48). Routledge India.

Akhtar, F., Azizi, A. H., Shah, U., Borgemeister, C., Tischbein, B., & Awan, U. K. (2023). The Application of Remote Sensing for Water Resources Management in Data-Scarce Watersheds in the Hindu Kush Himalaya Region: A Case of Kabul River Basin. In *Handbook of Himalayan Ecosystems and Sustainability, Volume 2* (pp. 205-222). CRC Press.

Azzam, A., Zhang, W., **Akhtar, F.,** Shaheen, Z., & Elbeltagi, A. (2022). Estimation of green and blue water evapotranspiration using machine learning algorithms with limited meteorological data: A case study in Amu Darya River Basin, Central Asia. *Computers and Electronics in Agriculture*, 202, 107403.

Akhtar, F., Borgemeister, C., Tischbein, B., & Awan, U. K. (2022). Metrics Assessment and Streamflow Modeling under Changing Climate in a Data-Scarce Heterogeneous Region: A Case Study of the Kabul River Basin. *Water*, 14(11), 1697.

Akhtar, F., Nawaz, R. A., Hafeez, M., Awan, U. K., Borgemeister, C., & Tischbein, B. (2022). Evaluation of GRACE derived groundwater storage changes in different agro-ecological zones of the Indus Basin. *Journal of Hydrology*, 605, 127369.

Akhtar, F., Awan, U. K., Borgemeister, C., & Tischbein, B. (2021). Coupling Remote Sensing and Hydrological Model for Evaluating the Impacts of Climate Change on Streamflow in Data-Scarce Environment. *Sustainability*, 13(24), 14025.

Azizi, A. H., & **Akhtar, F.** (2021). Analysis of Spatiotemporal Variation in the Snow Cover in Western Hindukush-Himalaya Region. *Geocarto International*, 1-17.

Jalil, A., **Akhtar, F.,** & Awan, U. K. (2020). Evaluation of the AquaCrop model for winter wheat under different irrigation optimization strategies at the downstream Kabul River Basin of Afghanistan. *Agricultural Water Management*, 240, 106321.

Akhtar, F.; Awan, U.K.; Tischbein, B.; Liaqat, U.W. (2018). Assessment of Irrigation Performance in Large River Basins under Data Scarce Environment—A Case of Kabul River Basin, Afghanistan. *Journal of Remote Sensing*, 10 (6), 972.

Akhtar, F., Awan, U.K., Tischbein, B., Liaqat, U.W. (2017). A phenology based geo-informatics approach to map land use and land cover by spatial segregation of large heterogenic river basin., *Journal of Applied Geography*, 88: 48-61.

Akhtar, F., Tischbein, B., Awan, U.K. (2013). Optimizing deficit irrigation scheduling under shallow groundwater conditions in lower reaches of Amu Darya River Basin., *Journal of Water Resources Management*, 27:3165–3178.

Peer-reviewed publications as book/ book chapter

Shah, U. and **Akhtar**, F. (In press). The Spectre of Climate Change-induced Migration in Afghanistan. In “Environmental Migrants in South Asia” (A. Ranjan, R. Kharat and P. Deka). Routledge, India.

Akhtar, F., Azizi, A. H., Shah, U., Borgemeister, C., Tischbein, B., & Awan, U. K. (In press). The Application of Remote Sensing for Water Resources Management in Data-Scarce Watersheds in the Hindu Kush Himalaya Region: A Case of Kabul River Basin. In *Handbook of Himalayan Ecosystems and Sustainability*, Volume 2 (pp. 205-222). CRC Press.

Tischbein, B., Bekchanov, M., Lamers, J. P. A., Kumar, N., Schwärzel, K., Zhang, L., Avellán, T., Awan, U. K., **Akhtar**, F., Bhaduri, A., Bogardi, J. J., Wang, Y., Yu, P., Bui, A., Amell, M. N., Tesch, L., Pedrosa, L. L. B., Mariano, R., Balachandran, S., and Brüggemann, K. (2021). Examples of Water and Land Use Management. In *Handbook of Water Resources Management: Discourses, Concepts and Examples* (pp. 565-617). Springer, Switzerland. URL: https://link.springer.com/chapter/10.1007/978-3-030-60147-8_19

Akhtar F., Shah U. (2020) Emerging Water Scarcity Issues and Challenges in Afghanistan. In: Ranjan A. (eds) *Water Issues in Himalayan South Asia*. Palgrave Macmillan, Singapore. URL: https://link.springer.com/chapter/10.1007/978-981-32-9614-5_1

Akhtar, F., 2017. Water availability and demand analysis in the Kabul River Basin, Afghanistan (Ph.D. Dissertation). Ecology and Development Series - No. 101. Zentrum für Entwicklungsforschung, Bonn. URL: <https://bonndoc.ulb.uni-bonn.de/xmlui/handle/20.500.11811/7031>

Tischbein, B., Awan, U.K., **Akhtar**, F., Kamalov, P., Manschadi, A M. (2014). Improving irrigation efficiency in the lower reaches of the Amu Darya River. In: Lamers JPA, Khamzina A, Rudenko I, Vlek PLG (eds): *Restructuring land allocation, water use and agricultural value chains. Technologies, policies and practices for the lower Amudarya region*. V&R unipress, Bonn University Press, 91-108, URL: <https://www.vr-elibrary.de/doi/abs/10.14220/9783737002974.91#.XgB9d0czbIU>

Educational articles

Akhtar, F. and Tischbein, B. (2017), Hydrological modeling under data-scarce conditions in Afghanistan: How to cope?. ZEF News No. 36, Center for Development Research (ZEF), University of Bonn. Article available at: https://www.zef.de/uploads/tx_zefnews/Fazlullah_Tischbein_ZEF-news-36.pdf

Conference contributions/papers (presented)

Akhtar, F. (Presentation). “Emerging Water Scarcity Issues and Challenges in Afghanistan” presented at Lincoln Learning Center, Organized by the Public Affairs Section of the US Embassy Kabul Afghanistan. 12 April, 2021.

- Akhtar, F.** (Presentation). “Simulating Surface Water Supplies by SWAT Model in Kabul River Basin”. Webinar on Technological Innovations for Water Management in 21st Century, March 29th, 2021. International Water Management Institute (IWMI) Lahore, Pakistan
- Jalil, Atiqurrahman and **Akhtar, F.** (2018). Performance Evaluation of the Irrigation System in Lower Kabul River Basin, Afghanistan. In: Proceedings of Tropentag, September 17-19, 2016, Ghent, Belgium “Global food security and food safety: The role of universities”
- Akhtar, F.**, Tischbein, B., Awan, U. K., & Liaqat, U. W. (2016). Estimation of actual evapotranspiration using remote sensing-based surface energy balance system at the data-scarce Kabul River Basin of Afghanistan. In: Proceedings of Tropentag, September 18-21, 2016, Vienna, Austria “Solidarity in a competing world—fair use of resources”
- Abdullaeva, F., Jumaniyazova, Y., **Akhtar, F.** (2016). “Prediction of winter wheat yield utilizing AquaCrop model under water deficit condition”, In Proceedings of conference “Future utilization of cereal crops and herbs to improve soil ameliorative conditions”, May 13-14, 2016, Khiva, Mamun academy-Republic of Uzbekistan
- Akhtar, F.** (2015). (Oral presentation), Irrigated agriculture in Uzbekistan-a case study. Presented at the international workshop on “Improving Water Productivity in Agricultural Systems” from May 3-21, 2015 (ICARDA) - Amman, Jordan.
- Akhtar, F.**, B. Tischbein and U. K. Awan (2013). Irrigation Application Efficiency in the Lower Reaches of the Amu Darya Basin. Tropentag (Agricultural development within the rural-urban continuum), September 17 - 19, 2013 Stuttgart-Hohenheim, <http://www.tropentag.de/abstract.php?code=pxvJHkQu>.
- Akhtar, F.**, Tischbein, B., Awan, U.K. (2012). Maize Yield Response to Deficit Irrigation using the Aquacrop Model under Shallow Groundwater Conditions in Uzbekistan. In: Proceedings of Tropentag, September 19-21, 2012, Göttingen -Kassel/Witzenhausen “Resilience of agricultural systems against crises”. Abstract available at: http://www.tropentag.de/2012/abstracts/links/Akhtar_dMyHaFzV.pdf.
- Akhtar, F.**, Tischbein, B., Awan, U.K. (2011). Using the AquaCrop Model to Optimize Deficit Irrigation Scheduling of Cotton in Uzbekistan. In: Proceedings of Tropentag 2011, 5–7 October, Bonn, Germany “Development on the margin”. Abstract available at: <http://www.tropentag.de/2011/abstract.php?code=jgraBvKO> and poster available at: <http://www.tropentag.de/2011/abstracts/posters/436.pdf>.
- Akhtar, F.**, (2008). (Oral presentation), The Deutsche Welthungerhilfe’s assistance in the improvement of agricultural production in Kunduz River basin, Presented at the workshop “Social Water Management in Afghanistan: A slippery business”, Feb 15, 2008, Rheinische Friedrich-Wilhelms-Universität Bonn, Germany