CURRICULUM VITAE

PERSONAL PROFILE

Engr. Dr. MUHAMMAD YASEEN

Ph.D *Water Resources Engineering*

HEC Approved Ph.D Supervisor

Father's Name	:	Muhammad Riaz Hussain
Date of Birth	:	December 10, 1986
Domicile	:	Sialkot (Punjab)
Nationality	:	Pakistani
Religion	:	Islam

Address: Assistant Professor, Centre for Integrated Mountain Research (CIMR), University of the Punjab, Quaid-e-Azam Campus, Lahore-Pakistan.
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EDUCATION

- **2003 to 2007:** B.Sc. in Agricultural Engineering from University of Agriculture, Faisalabad.
- **2007 to 2009:** M.Sc. in Water Resources Engineering from Centre of Excellence in Water Resources Engineering, University of Engineering & Technology Lahore. The title of thesis was "Effect of suspended Sediment on Flow Resistance for different conditions in an open channel".
- **2009 to 2016:** Ph.D in Water Resources Engineering from Centre of Excellence in Water Resources Engineering, University of Engineering & Technology Lahore. The title of thesis was "Climate change and its impact on streamflows in Mangla watershed using GIS based hydrological modeling".
- **2013.1 to 2013.7:** Research Fellow (six months) in Department of Water Resources, Faculty of Geo-Information Science and Earth Observation (ITC) University of Twente, The Netherlands. During my stay here I worked on Integrated Water Resources Management using remote sensing and hydrological models.

AREA OF EXPERTISE

Watershed Hydrology, Decision Support System and Watershed Modeling, Integrated Water Resources Management, Integrated Land Resources Management, Mountain Conservation and Watershed Management, Disaster Risk Management, Climate Change and Water Resources Management, Sustainable Irrigation and Drainage System Management, Groundwater Modeling and Management

PROFESSIONAL EXPERIENCE

- **2016.11 - Now:** Assistant Professor in Centre for Integrated Mountain Research, University of the Punjab, Lahore-Pakistan.
- **2014.3 – 2016.11:** Research Officer/Lecturer in Centre for Integrated Mountain Research, University of the Punjab, Lahore-Pakistan.
- **2013.10 - 2014.3:** Visiting Lecturer in Institute of Agriculture Science and Centre for Integrated Mountain Research, University of the Punjab, Lahore-Pakistan.
- **2013.1 – 2013.7:** Research Fellow (six months) in Department of Water Resources, Faculty of Geo-Information Science and Earth Observation (ITC) University of Twente, The Netherlands. During my stay here I worked on Integrated Water Resources Management using remote sensing and hydrological models.
- **2009.9 - 2013.1:** Research Associate in Centre of Excellence in Water Resources Engineering, University of Engineering and Technology, Lahore.

ADMINISTRATIVE EXPERIENCE

- ❖ Coordinator Departmental M.Sc., M.Phil and Ph.D Programs, Centre for Integrated Mountain Research, University of the Punjab, Lahore-Pakistan.
- ❖ Incharge Student Affairs, Centre for Integrated Mountain Research, University of the Punjab, Lahore-Pakistan.
- ❖ Examination Coordinator, Centre for Integrated Mountain Research, University of the Punjab, Lahore-Pakistan.
- ❖ Focal Person, Office of Research Innovation and Commercialization (ORIC), University of the Punjab, Lahore-Pakistan.
- ❖ Focal Person, Quality Enhancement Cell (QEC), University of the Punjab, Lahore-Pakistan.
- ❖ Member, Board of studies, Centre for Integrated Mountain Research, University of the Punjab, Lahore-Pakistan.
- ❖ Member, Department Doctoral Program Committee (DDPC), Centre for Integrated Mountain Research, University of the Punjab, Lahore-Pakistan.
- ❖ Coordinator, Departmental Seminar Series, Centre for Integrated Mountain Research, University of the Punjab, Lahore-Pakistan.
- ❖ Member, Purchase Committee, Centre for Integrated Mountain Research, University of the Punjab, Lahore-Pakistan.
- ❖ Incharge Hostel Affairs, Centre for Integrated Mountain Research, University of the Punjab, Lahore-Pakistan.
- ❖ Assistant Superintendent, Boys Hostel No. 08, University of the Punjab, Lahore, Pakistan.

ACTIVITIES IN EDUCATION

At the CIMR, Yaseen is responsible and coordinates modules 'Principles of Disaster Management; Hydro-meteorological Hazards; Disaster Risk and Vulnerabilities Assessment; Decision Support System and Disaster Modeling; Disaster Risk Reduction and Preparedness; Disaster Management Policies; Upland Hydrology; Integrated Watershed Management; Mountain Climate; Mountain Hazards and Disaster Management; Climate change and Disaster risk Management; Integrated Water Resources and Geo-environmental Conservation; Decision Support System and Watershed Modeling; Snow and Glacier Hydrology; Soil and Water Conservation; Sustainable Irrigation and Drainage System Management; Research Methods and Techniques.

SHORT COURCES, TRAININGS, WORKSHOPS AND SEMINARS

- 15 Days **Survey Camp** at Islamabad, Abbottabad, Swat held by Faculty of Agricultural Engineering & Technology. UAF, Faisalabad.
- Two weeks internship in **Water Management Training Institute (WMTI)** Lahore Pakistan.
- Two days International Conference on "59th International Executive Council Meeting & 20th Congress of ICID" organized by International Commission on Irrigation and Drainage and WAPDA, Lahore, Pakistan October 13-18, 2008,.
- Two days International Conference on "**Water Resources Engineering & Management**" organized by Civil Engineering Department, UET, Lahore, 7-8 March 2011.
- Two days International Conference on "**Water, Energy, and Environment and Food nexus: Solutions and adaptation under changing climate**" organized by Centre of Excellence in Water Resources Engineering, UET, Lahore, April 04-05, 2012.
- Ten week course on **"AUTOCAD**" from Pakistan Engineering Congress, Lahore. July 20-September 20, 2009
- Ten days short course on **"Remote Sensing and Geographic Information System"** from Centre of Excellence in Water Resources Engineering, UET, Lahore, July 09-18, 2012.
- Two days Professional training on "**Watershed Rehabilitation and Irrigation Technology Improvement**" from Water Resources Research Institute, NARC, Islamabad, July 02-05, 2012.
- One day seminar on **"Development of strategies for maximizing the crop production through efficient water management in Pothwar area"** from Centre of Excellence in Water Resources Engineering, UET, Lahore, January 21, 2012.
- Three days workshop on "**Climate Change Impacts on Water Resources**" organized by Centre of Excellence in Water Resources Engineering, UET, Lahore, October 03-05, 2012.
- Three week certificate course on **"Climate Change Impacts and Adaptation - Analysis and Monitoring Techniques for Climate Change"** from Water Resources department, Faculty of Geo-information Science and Earth Observation (ITC), University of Twente, The Netherlands, July 2013.

- One day stakeholder Consultative workshop on "**Water Resources Management**" organized by the Centre of Excellence in Water Resources Engineering, UET, Lahore, August 29, 2016.
- Five days training course on "**Groundwater Modelling and Management**" organized by the Centre of Excellence in Water Resources Engineering, UET, Lahore, November 29 to December 03, 2016.
- Two day International Conference on "**Hydropower: A Vital Source of Sustainable Energy for Pakistan"** organized by the Centre of Excellence in Water Resources Engineering, UET, Lahore, December 19-20, 2017.
- Four days training course on ""**Multi Sector Preparedness Training"** organized by the Pakistan Emergency and Stabilization Support Unit, International Organization for Migration, Islamabad – Pakistan with collaboration of Punjab Disaster Management Authority (PDMA), Lahore-Pakistan, November 05-08, 2018.
- Five days training course on **"Remote Sensing and Field-Based Glacier Monitoring"** organized by the International Centre for Integrated Mountain Development (ICIMOD) with collaboration of "Global Change and Impact Study Centre" (GCISC) in Islamabad, November 16-20, 2019.
- Three days training course on **"Hydrological Monitoring Technology for ASEAN"** sponsored by Changjiang Water Resources Commission of the Ministry of Water Resources of the People's Republic of China, November 17-19, 2020.
- Five day workshop/meeting on **"Development of assessment packs of the trade "Agriculture Machinery Operator"** at Pakistan Industrial Technical Assistance Center (PITAC) Lahore organized by the National Vocational and Technical Training Commission (NAVTTC), Islamabad. March 1-5, 2021
- One day seminar **"Remote sensing for irrigation water Management"** Organized by the International Water Management Institute (IWMI), Lahore-Pakistan. January 28, 2021
- One day seminar on **"Valuing water for sustainable development in Pakistan**" Organized by the International Water Management Institute (IWMI), Lahore-Pakistan. March 22, 2021.
- One day seminar on **"Challenges to Sustaining Water Storage in Indus Basin"** organized by Centre of Excellence in Water Resources Engineering, UET, Lahore, July 26, 2022.
- Two days International Conference on **"Sustainable Water Resources Management"** organized by Centre of Excellence in Water Resources Engineering, UET, Lahore, November 16-17, 2022.
- One day technical lecture on "**Sustainable Water Resources Management"** Govt Engineering Academy Punjab, Lahore, July 13, 2023.
- One day seminar on **"World Water Day- Accelerating Change to solve the Water and Sanitation Crisis"** Organized by the College of Earth & Environmental Sciences, University of the Punjab, Lahore, March 22, 2023.
- One day "**National Summit on SDGs"** Organized by the University of Lahore on February 06, 2023.

PROFESSIONAL AFFILIATION

- Member (AGRI / 2578), Pakistan Engineering Council, Islamabad.
- Pakistan Engineering Congress, Lahore-Pakistan
- Institute of Engineers Pakistan, Lahore-Pakistan

Users of Engineering Models and Packages

- HEC Geo-HMS and HEC-HMS
- HEC Geo-RAS and HEC-RAS
- CROPWAT
- SRM
- Arc GIS
- ERDAS
- SDSM
- Trend Tool
- SWAT
- MODFLOW

RESEARCH PAPERS

REFEREED RESEARCH PAPER

1. **Yaseen, M.,** Abbas, S. & Latif, Y. Evaluating the effects of soil physicochemical properties under different land use types in the arid zones of Pakistan. Environ Dev Sustain (2023). https://doi.org/10.1007/s10668-023-03662-7 ***(IF-4.9)***
2. Abbas, S.;Waseem, M.; **Yaseen, M.;** Latif, Y.; Leta, M.K.; Khan, T.H.; Muhammad, S. Spatial-Temporal Seasonal Variability of Extreme Precipitation under Warming Climate in Pakistan. Atmosphere 2023, 14, 210. https://doi.org/10.3390/atmos14020210 ***(IF-3.12)***
3. Keshtegar, B.; Piri, J.; Hussan,W.U.; Ikram, K.; **Yaseen, M.;** Kisi, O.; Adnan, R.M.; Adnan, M.; Waseem, M. Prediction of Sediment Yields Using a Data-Driven Radial M5 Tree Model. Water 2023, 15, 1437. https://doi.org/10.3390/w15071437 ***(IF-2.709)***
4. Asif. M., Yaseen. M., and Shahid. S. U., (2022). Water quality assessment using water quality index: A case study of high altitude area, Gilgit city, Gilgit Baltistan, Pakistan. Pakistan Journal of Science, 74(4), page 260-270. https://doi.org/10.57041/pjs.v74i4.769
5. Abbas, S.; **Yaseen, M.;** Latif, Y.; Waseem, M.; Muhammad, S.; Kebede Leta, M.; Sher, S.; Ali Imran, M.; Adnan, M.; Khan, T.H. Spatiotemporal Analysis of Climatic Extremes over the Upper Indus Basin, Pakistan. Water 2022, 14, 1718. https://doi.org/10.3390/w14111718 ***(IF-2.709)***
6. **Yaseen, M.;** Latif, Y.; Waseem, M.; Leta, M.K.; Abbas, S.; Bhatti, A.H. (2022). Contemporary Trends in High and Low River Flows in Upper Indus Basin, Pakistan. Water 2022, 14, 337. https://doi.org/10.3390/w14030337 ***(IF-2.709)***
7. Abbas, S., Dastgeer, G., **Yaseen, M.** and Latif, Y. (2022). Land-use changes and concerning impacts on soil and vegetation attributions in the Kanshi River Basin, Potohar Plateau, Pakistan. Land Degradation and Development, Volume33, Issue15, Pages 2649-2662 https://doi.org/10.1002/ldr.4252 ***(IF-4.37)***
8. Abbas, S., Mahmood, M.J. & **Yaseen, M.** (2021). Assessing the potential for rooftop rainwater harvesting and its physio and socioeconomic impacts, Rawal watershed,

Islamabad, Pakistan. Environment, Development and Sustainability. 23, 17942–17963 (2021). https://doi.org/10.1007/s10668-021-01422-z ***(IF-3.29)***

9. Abbas, S., Kousar, S., Shirazi, S.A., **Yaseen, M.,** Latif, Y. (2021). Illuminating Empirical Evidence of Climate Change: Impacts on Rice Production in the Punjab Regions, Pakistan. Agricultural Research, volume 11, pages 32–47. https://doi.org/10.1007/s40003-021-00548-w ***(IF-0.99)***
10. **Yaseen, M.;** Waseem, M.; Latif, Y.; Azam, M.I.; Ahmad, I.; Abbas, S.; Sarwar, M.K.; Nabi, G. (2020). "Statistical Downscaling and Hydrological Modeling-Based Runoff Simulation in Trans-Boundary Mangla Watershed Pakistan". *Water, 12(11).* ***(IF-2.709)***
11. **Yaseen, M.,** Ahmad, I., Guo, J.,Azam, M.I., and Latif,Y., (2020). "Spatiotemporal variability in the hydro-meteorological time-series over upper Indus river basin of Pakistan" Advances in Meteorology. Volume 2020, Article ID 5852760, 18 pages. https://doi.org/10.1155/2020/5852760 ***(IF-1.46)***
12. Azam, M.I., Guo, J., Shi, X., **Yaseen, M**., Tayyab, M., Hussain, Z., Dai, L., Bashir, H. and Tam, N.T.M., (2020). Spatial Climatic Variability and Impact of El Niño–Southern Oscillation on Extreme Precipitation of River Catchment. Environmental Engineering Science. Volume: 37 Issue 5, https://doi.org/10.1089/ees.2019.0440 . ***(IF-1.74)***
13. Azam, M.I., Guo, J., Shi, X., **Yaseen, M**., Mohammad, A., Lu,H., Tayyab, M., Hussain, Z., Dai, L., (2020). Evaluation of Statistical Model for Future Precipitation and Temperature in Drainage Area of Jhelum River, Pakistan., Pakistan Journal of Agricultural Sciences. 57(3), 605-613. DOI: 10.21162/PAKJAS/20.7586 ***(IF-0.63)***
14. Shah, S.I.H., Nawaz, R., Ahmad, S., Arshad, M., Nasir,r., **Yaseen, M.,** Javied, S.,Irshad, M.A., (2020): Sustainability assessment of modern urban transport and its role in the reduction of greenhouse gas emissions: A case study of Metro Bus System (MBS), Lahore. Kuwait Journal of Science. 47 (2) pp. 67-81. ***(IF-0.94)***
15. Abbas, S., Kousar, S., **Yaseen, M.,** Mayo, Z. A., Zainab, M., Mahmood, M. J., & Raza, H. (2020). Impact assessment of socioeconomic factors on dimensions of environmental degradation in Pakistan. *SN Applied Sciences*, *2*(3), 1-16. ***(IF-0.62)***
16. Abbas, S., Shirazi, S. A., Hussain, M. S., **Yaseen, M.,** Shakarullah, K., Wahla, S. S., Khurshid, M. (2020). Impact of Climate Change on Forest Cover: Implications for Carbon Stock Assessment and Sustainable Development in HKH Region-Pakistan. *Journal of Pakistan Vision, 21(1), 66-81.*
17. Shirazi, S. A., Abbas, S., Shakarullah, K., Yaseen, M., Mazhar, N., Wahla, S. S., & Khurshid, M (2020). Trends and variability of temperature time series over the kanshi catchment in the Potohar region of Punjab-Pakistan. Pakistan Journal of Science, 72(3), 241-248
18. Latif, Y., Yaoming, M., **Yaseen, M.,** Sher M., and Wazir, M.A.; (2019). "Spatial analysis of temperature time series over the Upper Indus Basin (UIB) Pakistan". Theoretical and Applied Climatology, 139, 741–758. , https://doi.org/10.1007/s00704-019-02993-8. ***(IF-3.179)***
19. Ijaz Ahmad, I., Ahmed, S.M., Mahmood, S., Afzal, M., **Yaseen, M.,** Saleem, M., and Rizwan, M.; (2019): "To develop a crop water allocation model for optimal water allocation in the warabandi irrigation system." Arabian Journal for Science and Engineering. Volume 44, Issue 10, pp 8585–8598. ***(IF-2.334)***

20. Azam, M.I., Bhatti, M.B., Xiaotao,S., Guo, J,. Afzal, M. and **Yaseen, M.** (2018). "Flood occurrence exploration for ungauged river catchment at Jhelum river basin of Pakistan". International Journal of Hydrology. 2(4):520-526

21. Shehzad, T., M. **Yaseen, M.,** Afzal, M., Khan, K., Rizwan, M.A., Ahmad, S.R., and Bhatti, H.A. (2017). "Performance evaluation of sodium bentonite material for seepage control in irrigation channels". Technical Journal, University of Engineering and Technology (UET) Taxila, Pakistan. Vol. 22 No. I., 2-7.

22. Latif, Y., Yaoming, M., and **Yaseen, M.,** (2016): "Spatial analysis of precipitation time series over the Upper Indus Basin". Theoretical and Applied Climatology. **131**, 761–775. ***(IF-3.179)***

23. Khan, K., **Yaseen, M.,** Afzal, M. and Zaman, Q. (2015): Appraisal of air bubbles discharge measurement technique for different nozzle sizes. Journal of Science International, Pakistan. 27(6), 6125-6130.

24. Afzal, M., Zakaullah, **Yaseen, M.,** S. Mahmood, M. S. and Khan, M. A. (2015). Estimation of potential rainfall recharge in the Pothwar area. Technical Journal, University of Engineering and Technology (UET) Taxila, Pakistan Vol. 20 No. II. 85-88.

25. Khan, K., **Yaseen, M.,** Latif, Y., and Nabi, G., (2015): "Detection of river flow trends and variability analysis of Upper Indus Basin, Pakistan". Journal of Science International, Pakistan. 27(2), 1261-1270.

26. Yaseen, M., Khan, K., Nabi, G., Bhatti, H. A. and Afzal, M.; (2015): "Hydrological trends and variability in the mangla watershed, Pakistan". Journal of Science International, Pakistan. 27(2),1327-1335

27. Boota, M. W., Nabi, G., Abbas, T., Hussain, F., **Yaseen, M**. (2015). "An appraisal of statistically approaches for estimation of probable maximum precipitation in highland climatic zone of Pakistan". Journal of Science International, Pakistan. 27(3), 1993-1998.

28. Faisal, M., Muzammil, M., Azam, M.I., **Yaseen, M.,** Abbas, Y., Nabi, G., (2015): "Flood Hazard Mapping And Risk Zoning Of The Nullah Deg, Pakistan Using Hydraulic Simulation Model (A Case Study)". Journal of Science International, Pakistan. 27(6), 6459-6464.

29. Yaseen, M., Rientjes, T., Nabi, G., Rehman, H. and Latif, M.; (2014): "Assessment of recent temperature trends in Mangla watershed". Journal of Himalayan Earth Sciences. Volume 47, No. 1, 2014, pp. 107-121.

30. Yaseen, M., Nabi, G., Rehman, H. and Latif, M.; (2014): "Assessment of climate change at spatiao-temporal scales and its impact on stream flows of Mangla watershed". Pakistan Journal of Engineering and Applied Sciences Volume 15, July 2014.

31. Zakaullah, Ashraf, M., Afzal, M., **Yaseen, M**. and Khan, K., (2014): "Appraisal of Sediment Load in Rainfed Areas of Pothwar Region in Pakistan". Global Journal of Researches in Engineering: Volume 14 Issue 6 Version 1.0 Online ISSN: 2249-4596 & Print ISSN: 0975-5861.

32. Yaseen, M., Khan, K and Afzal, M. (2015): "Effect of bed configuration on flow resistance under different flow regimes in an open channel". Global Journal of Researches in Engineering: Volume 15 Issue 1 Version 1.0 Online ISSN: 2249-4596 & Print ISSN: 0975-5861.

33. Bhatti, H. A., Rientjes, T., Verhoef, W., and **Yaseen, M.;** (2013): "Assessing Temporal Stability for Coarse Scale Satellite Moisture Validation in the Maqu Area, Tibet". Sensors 2013, 13, 10725-10748. ***(IF-3.85)***

RESEARCH PAPERS PRESENTATIONS IN CONFERENCES

1. Muhammad Yaseen, Fizza Afroz, Syed Umair Shahid, Yasir Latif, Sohail Abbas (2022). Identification of Potential Rainwater Harvesting Sites By Geospatial Based SCS Curve Number Technique for Farming System Development in Hilly Watersheds of Pothwar Region-Pakistan. 2nd Conference on Sustainable Water Resources Management 2022. Centre of Excellence in Water Resources Engineering: UET Lahore-Pakistan, pp. xx-xx. ISBN: 978-969-8670-06-01
2. Muhammad Yaseen, Aimen Mateen, Narmeen, Syed Umair Shahid, Yasir Latif, Sohail Abbas (2022). Identification of Shared Trans-Boundary Water Basins Along Pakistan-India/China/ Afghanistan of Upper Indus Basin, Pakistan. 2nd Conference on Sustainable Water Resources Management 2022. Centre of Excellence in Water Resources Engineering: UET Lahore-Pakistan, pp. xx-xx. ISBN: 978-969-8670-06-01
3. Muhammad Yaseen, Iqra Ramzan, Syed Umair Shahid, Yasir Latif, Sohail Abbas, Abdullah Nazir, Asadullah (2022). Evaluation of Inhomogeneities in the Climatic Data of Upper Indus Basin, Pakistan. 2nd Conference on Sustainable Water Resources Management 2022. Centre of Excellence in Water Resources Engineering: UET Lahore-Pakistan, pp. xx-xx. ISBN: 978-969-8670-06-01
4. **Yaseen, M.,** Ramzan, I., Shahid, S.U., Latif, Y., and Abbas, S. (2021): "Identification of inhomogeneities and change points in climatic data of Upper Indus River Basin, Pakistan". 3rd International Conference on Emerging Trend in Earth & Environmental Sciences, Organized by College of Earth and Environmental Sciences, University of the Punjab Lahore Pakistan; November 16-18, 2021.
5. **Yaseen, M.,** Afroz, F., Shahid, S.U., Latif, Y., and Abbas, S. (2021): "Assessment of suitable sites for rain water harvesting using geospatial techniques and SCS curve number method in Jhelum River Basin, Pakistan". 3rd International Conference on Emerging Trend in Earth & Environmental Sciences, Organized by College of Earth and Environmental Sciences, University of the Punjab Lahore Pakistan; November 16-18, 2021.
6. **Yaseen, M.,** Mateen, A., Narmeen, Shahid, S.U., Latif, Y., and Abbas, S. (2021): "Geospatial analysis for the geomorphological characterization of trans-boundary watershed of upper Indus Basin, Pakistan". 3rd International Conference on Emerging Trend in Earth & Environmental Sciences, Organized by College of Earth and Environmental Sciences, University of the Punjab Lahore Pakistan; November 16-18, 2021.
7. **Yaseen, M,** Nasir, B, Azam, M.I, Rehman, M.H., and Ahmed, I.; (2017): "Evaluation of suitable design flood frequency approaches for the mountainous watersheds (a case study of Upper Indus Basin)". International Conference on Hydropower: A Vital Source of Sustainable Energy for Pakistan. CEWRE-UET. Lahore. December 19-20, 2017.
8. **Yaseen, M.,** Naveed, M., Kaleem Sarwar, M. K., Rehman, M. H. and Azam, M. I.; (2017): "Selection of Best Diversion Facility for the Construction of Kohala Hydropower

Dam". International Conference on Hydropower: A Vital Source of Sustainable Energy for Pakistan. Organized by Centre of Excellence in Water Resources Engineering, University Of Engineering and Technology, Lahore Pakistan. December 19-20, 2017.

9. **Yaseen, M.,** Bhatti, H. A., Rientjes, T., Nabi, G., and Latif, M.; (2013): "Temporal and spatial variations in summer flows of Upper Indus Basin, Pakistan" 72th Annual session of Pakistan Engineering Congress (PEC), Organized by Pakistan Engineering Congress (PEC), Lahore. December, 2013.
10. **Yaseen, M.,** Nabi, G., and Latif, M.; (2011): "Effect of Suspended Sediment on Flow Resistance in an Open Channel". International Conference on Water Resources Engineering & Management. Organized by Civil Engineering Department, University Of Engineering and Technology, Lahore Pakistan. March 7-8 2011.

BOOK CHAPTERS

1. Latif, Y., Yaoming, M., Ma W., Sher M., and **Yaseen, M.;** (2019): "Snowmelt Runoff Simulation During Early 21st Century Using Hydrological Modelling in the Snow-Fed Terrain of Gilgit River Basin (Pakistan)". In: Chaminé H., Barbieri M., Kisi O., Chen M., Merkel B. (eds) Advances in Sustainable and Environmental Hydrology, Hydrogeology, Hydrochemistry and Water Resources. Advances in Science, Technology & Innovation (IEREK Interdisciplinary Series for Sustainable Development). Springer, Cham

SUPERVISED RESEARCH THESIS

M.Sc. Supervised Research Thesis

1. Maleeha Muzaffar, 2012-2014. Hydro-climatic variability and climate change acceleration in mountainous catchments (A case study of Upper Indus Basin)
2. Abdullah Nawaz Ahmed Khan, 2013-2015. Flood forecasting by using hydrological models for the Poonch River, Mangla Watershed.
3. Muhammad Siddique and Haji M.Mustafa, 2013-2015. An appraisal the Impact of altitudinal variability on climate and geology (A Comparative study of Saudia Arabia and Pakistan)"
4. Waqas Ahmad, 2013-2015. Spatio-temporal variability of low streamflows in Upper Indus Basin
5. Nasir Bilal Anjum, 2013-2015. Evaluation of suitable design flood frequency method using statistical approaches for the mountainous catchments (a case study of Upper Indus Basin)
6. Memoona Ghafoor, 2013-2015. Recent trends in observed temperature and precipitation extremes in the Mangla Basin, Upper Indus
7. Irshad-un-Nisa, 2013-2015. An Appraisal of Water yield for the Mountainous Catchments (A Case Study of Indus Basin)
8. Malik Adeel Jamal, 2013-2015. Evaluation and bias Correction of satellite rainfall data for flood forecasting in mountainous catchments (A case study of Pooch Basin)
9. Maaz Ahmed, 2014-2016. Estimation of snow-covered area of subbasins in Upper Indus Basin Pakistan using remote sensing and GIS techniques.

10. Ali Nawaz, 2014-2016. An appraisal of quantitative assessment of ground water: Comparative analysis in highlands and Lowlands
11. Iqra Ramzan, 2014-2016. A comparative assessment of different methods for identification of inhomogeneities and change point in climatic data of Upper Indus Basin Pakistan
12. Muhammad Ali Shahid and M. Nauman Iqbal, 2014-2016. An appraisal of recent hydrology of mountainous catchments of Upper Indus Basin, Pakistan
13. Ammara Yousaf, 2014-2016. Estimation of soil types in mountainous catchments of Upper Indus Basin, Pakistan
14. Rubab Hameed, 2014-2016. Estimation of landcovers in mountainous catchments of Upper Indus Basin, Pakistan.
15. Kanwal Ashraf, 2014-2016. Socio-economic and environmental impact assessment of development projects: a case study of bus rapid transit (BRT) project Lahore
16. Ali Raza, 2015-2017. Estimation of Kabul river watershed characteristics using Remote Sensing and GIS techniques
17. Farwah, 2015-2017. Estimation of Kunhar river watershed characteristics using Remote Sensing and GIS techniques
18. Gulistan Pari, 2015-2017. Estimation of Gilgit river watershed characteristics using Remote Sensing and GIS techniques
19. Noureen Aziz, 2015-2017. Estimation of Astore river watershed characteristics using Remote Sensing and GIS techniques
20. Saira Nazar, 2015-2017. Estimation of Hunza river watershed characteristics using remote sensing and GIS techniques
21. Hina Kulsoom, 2015-2017. Estimation of SWAT river watershed characteristics using Remote Sensing and GIS techniques
22. Naeem Gul, 2015-2017. Watershed analysis using elevation model: a case study of Quetta.
23. Mirza Ahsan Baig, 2016-2018. Estimation of geomorphological and hydro-climatic characteristics of Astore watershed using integrated approach of remote sensing and GIS.
24. Mah Jabeen Anam, 2016-2018. Estimation of geomorphological and hydro-climatic characteristics of Kunhar watershed using integrated approach of remote sensing and GIS.
25. Shaista Noreen, 2016-2018. Estimation of geomorphological and hydro-climatic characteristics of Neelum watershed using integrated approach of remote sensing and GIS.
26. Syeda Nimra Bukhari, 2016-2018. Estimation of geomorphological and hydro-climatic characteristics of Poonch watershed using integrated approach of remote sensing and GIS.
27. Salman Arshad Chaudhry, 2016-2018. Estimation of geomorphological and hydro-climatic characteristics of Kanshi watershed using integrated approach of remote sensing and GIS.
28. Halima Ibrahim, 2016-2018. Estimation of geomorphological and hydro-climatic characteristics of Shyok watershed using integrated approach of remote sensing and GIS.
29. Saba Iftikhar, 2016-2018. Estimation of geomorphological and hydro-climatic characteristics of Shigar watershed using integrated approach of remote sensing and GIS.
30. Adil Hussain, 2016-2018. Estimation of geomorphological and hydro-climatic characteristics of Gilgit watershed using integrated approach of remote sensing and GIS.

31. Noor Zadi, 2016-2018. Estimation of geomorphological and hydro-climatic characteristics of Hunza watershed using integrated approach of remote sensing and GIS.

32. Maria Abid, 2016-2018. Estimation of geomorphological and hydro-climatic characteristics of Gilgit at Alam watershed using integrated approach of remote sensing and GIS.

33. Areeba Amin, 2016-2018. Estimation of geomorphological and hydro-climatic characteristics of Gorband watershed using integrated approach of remote sensing and GIS.

34. Frasat Ali, 2016-2018. Estimation of geomorphological and hydro-climatic characteristics of Brandu watershed using integrated approach of remote sensing and GIS.

35. Muhammad Waqas, 2016-2018. Estimation of geomorphological and hydro-climatic characteristics of Siran watershed using integrated approach of remote sensing and GIS.

36. Syed Haider Abbas, 2016-2018. Estimation of geomorphological and hydro-climatic characteristics of Haro watershed using integrated approach of remote sensing and GIS.

37. Muhammad Imran, 2016-2018. Estimation of geomorphological and hydro-climatic characteristics of Soan watershed using integrated approach of remote sensing and GIS.

38. Hassan Ali, 2016-2018. Estimation of geomorphological and hydro-climatic characteristics of Chitral watershed using integrated approach of remote sensing and GIS.

39. Muhammad Salman Fahad, 2016-2018. Estimation of geomorphological and hydro-climatic characteristics of Kunar watershed using integrated approach of remote sensing and GIS.

40. Noor ul Islam, 2016-2018. Estimation of geomorphological and hydro-climatic characteristics of Panjkora watershed using integrated approach of remote sensing and GIS.

41. Zahid Jalal, 2016-2018. Estimation of geomorphological and hydro-climatic characteristics of Swat watershed using integrated approach of remote sensing and GIS.

42. Muhammad Imran Nazeer, 2016-2018. Estimation of geomorphological and hydro-climatic characteristics of Bara watershed using integrated approach of remote sensing and GIS.

43. Alamgir Nawaz Khan, 2016-2018. Estimation of geomorphological and hydro-climatic characteristics of Kabul watershed using integrated approach of remote sensing and GIS.

44. Aimen Mateen, 2017-2019. Appraisal of shared water basins characterization along Pakistan-India/ China in Upper Indus Basin using integrated remote sensing and GIS techniques

45. Asad Tayyab, 2017-2019. Evaluation the influence of DEM spatial resolutions on the estimation of the physical characteristics of watersheds

46. Humera Nazir, 2017-2019. Estimation of recent water yield for the mountainous catchments of Upper Indus Basin, Pakistan

47. Mutahar Hussain, 2017-2019. Assessment of snow cover variation under changing climate in snow covered mountainous catchments of Upper Indus Basin, Pakistan

48. Fizza Afroz, 2017-2019. Geospatial techniques for assessment of potential rainwater harvesting sites for farming system development in hilly watersheds

49. Narmeen, 2017-2019. Appraisal of Pak-Afghan shared water basins characterization using integrated remote sensing and GIS techniques

50. Rafia Munir, 2017-2019. Geospatial technique for runoff estimation of potential rainwater harvesting sites based on SCS-CN method

51. Anam Ashiq, 2017-2019. Meteorological and hydrological drought risk assessment in mountainous catchments of Pakistan

52. Muhammad Tayyab Mushtaq, 2017-2019. Detection of spatio-temporal variability in trans-boundary river flows of Pakistan

53. Muhammd Afzaal, 2017-2019. Identification of spatio-temporal variation in land cover of mountainous catchments

54. Subhan Mahmood, 2017-2019. Temporal and spatial variations of high flows regimes and timing in river flows of mountainous catchments (a case study of Upper Indus Basin).

55. Zohrah, 2017-2019. Impact of climate change on snow melt runoff in Gilgit basin.

56. Minahel Akbar, 2017-2019. Integrated land and water resources management for food security and sustainable resource management in Chakwal.

57. Faisal Zahoor, 2017-2019. Assessment of water quality of selected reach of the Soan River at spatio-temporal scale.

58. Muhammad Farman, 2018-2020. Appraisal of physical, hydro-climatic and socio-economic characteristics based on geo-spatial techniques of Soan river basin.

59. Basit Ali, 2018-2020. Appraisal of physical, hydro-climatic and socio-economic characteristics based on geo-spatial techniques of Gilgit river basin.

60. Aqsa Noor, 2018-2020. Appraisal of watershed using integrated approach of Remote Sensing and geographic Information system of Swat river basin and socioeconomic infrastructures of Swat.

61. Hafiz Muhammad Hammad, 2018-2020. Appraisal of physical, hydro-climatic and socio-economic characteristics based on geo-spatial techniques of Haro river basin.

62. Ayesha Ashraf, 2018-2020. Estimation of watershed characteristics of Neelum river basin using GIS and remote sensing technique.

63. Bilal Hassan, 2018-2020. Appraisal of physical, hydro-climatic and socio-economic characteristics based on geo-spatial techniques of Poonch river basin.

64. Sher Ahmed Khan, 2018-2020. Appraisal of physical, hydro-climatic and socio-economic characteristics based on geo-spatial techniques of Kabul river basin.

65. Shahid Azeem, 2018-2020. Appraisal of physical, hydro-climatic and socio-economic characteristics based on geo-spatial techniques of Siran river basin.

66. Hafiza Sana Sheikh, 2018-2020. Estimation of watershed characteristics of Kunhar river basin using integrated approach of Remote Sensing and Geographic Information System.

67. Muhammad Nauman, 2018-2020. Computing the characteristics of Hunza river basin using integrated approach of Remote Sensing and Geographic Information System.

68. Rubab Liaqat, 2018-2020. Estimation of Geomorphological and hydro-climatic characteristics of Shigar watershed using integrated approach of Remote Sensing and Geographic Information System.

69. Abaid ur Rehman, 2018-2020. Computing the characteristics of Pajkora river basin using integrated approach of Remote Sensing and Geographic Information System.

70. Mehwish Naseer, 2018-2020. Appraisal of characteristics of Chitral watershed by application of Remote Sensing and Geographic Information System.

71. Maryam, 2018-2020. Estimation of geomorphological, hydro-climatic and socio-economic characteristics using integrated approach of Remote Sensing and Geographic Information System of Shyok river basin.
72. Faiza Shahid, 2018-2020. Estimation of Geomorphological and hydro-climatic characteristics of Astore watershed using integrated approach of Remote Sensing and Geographic Information System.
73. Asad Ullah, 2019-2021. Assessment of flood hazards by integrated GIS based morphometric approach in Swat River Basin
74. Mansoor ali, 2019-2021. Assessment of flood hazards by integrated GIS based morphometric approach in Kunhar River Basin.
75. Shumaila, 2019-2021. Assessment of flood hazards by integrated GIS based morphometric approach in Gilgit River Basin.
76. Ali Arslan Khan, 2019-2021. Assessment of flood hazards by integrated GIS based morphometric approach in Poonch River Basin.
77. Samman, 2020-2022. Landslide hazard risk assessment and susceptibility mapping by integrated RS-GIS based morphometrical multi-criteria approach for Soan River Basin.
78. Syeda Rahat Kaleem, 2020-2022. Landslide hazard risk assessment and susceptibility mapping by integrated RS-GIS based morphometrical multi-criteria approach for Kunhar River Basin.

M.Phil Supervised Research Thesis

1. Shahid Ali, 2014-2016. Impact of climate extremes on hydrological extremes under changing climate in Upper Indus Basin, Pakistan.
2. Amna Ghakkhar, 2014-2016. Climate change and its impact on landuse and streamflow in Pothwar region, Pakistan.
3. Hina Pervaiz, 2014-2016. Cumulative impacts assessment & management of proposed Chiniot dam, Kirana Hill, Punjab-Pakistan.
4. Mamoona Saher, 2014-2016. Integrated Database Management System for Disasters along southern front of Hamalya.
5. HiraAkram, 2014-2016. Geo-spatial techniques for Disaster Risk Reduction and Management of Proposed Chiniot Dam Project, Kirana Hill, Punjab-Pakistan.
6. Amna Jahangir, 2014-2016. The spatial assessment of the hydrological indicators and their impact on the ecological perturbation of Mangla Watershed, Pakistan.
7. Saddam Zulfiqar, 2014-2016. Physicochemical analysis of soil and water for sustainable land use planning, Neelum River Basin, AJK Pakistan.
8. Muhammad Shafique, 2014-2016. Assessment spatial/temporal variability on the physico-chemical properties of soil for sustainable land use development of Nowshera district.
9. M. Mubshar Muneer, 2014-2016. Hydraulic modeling for Flood Hazard assessment and its mapping in Kabul River Pakistan.
10. Amina Rasheed, 2014-2016. An appraisal of hydrological drought under changing climate in Upper Indus Basin, Pakistan
11. Muhammad Nadeem, 2015-2017. Evaluation of morphometric parameters and their implications for hydrologic processes in mountainous catchments of Upper Indus Bain Pakistan.

12. Fiza Saleem, 2015-2017. Climate Change Impacts on Glacier and Snowmelt Runoff of Mountainous Catchment using Remote Sensing and Snow Runoff Modelling – Case Study Gilgit Baltistan.

13. Sadia Qayyum Bhatti, Monitoring and Assessment of Soil Loss in Soan River Basin by the integration approach of RS and GIS based hydrological model.

14. Ishrat Hanif, 2015-2017. Mapping and Prediction of Ground Water Potential Zones for the Sustainability of Ground Water Resources by Integrated approach RS and GIS.

15. Naveera Tahir, 2015-2017. Hazard Risk modelling of Glacial Lake Outburst under changing climate in Upper Indus Basin, Pakistan.

16. Saqiba Safdar, 2015-2017. Assessment of Potential Water Harvesting Sites by Using RS & GIS Techniques in Pothowar Region, Pakistan.

17. Muhammad Aamir Saleem, 2015-2017. Solid waste and its impacts on climate change through GHG emission and sustainable waste management in Lahore region, Punjab-Pakistan.

18. Shah Muhammad, 2020-2022. Integrated land and water resources management for food security and environmental sustainability in Quetta region Pakistan.

19. Muhammad Imran, 2020-2022 Landslide hazard risk assessment by integrated hydro-geomorphological approach for Soan River Basin of Pothwar region, Pakistan.

20. Maaz Ahmad, 2020-2022. Spatiotemporal variability detection in Snow cover under changing climate by integrated Remote Sensing and GIS based approach in snow-fed mountainous river basins of Upper Indus Basin, Pakistan.

21. Waseem Akram, 2020-2022. Geospatial techniques for multiple geo-environmental hazards susceptibility assessment in Upper Indus Basin, Pakistan.

22. Arooj Sheikh, 2020-2022. Impact evaluation of raised Mangla dam on sustainable development of Pakistan.

23. Fizza Afroz, 2020-2022. Detection of Suitable Sites for Soil Water Conservation Practices using Decision Support System for Water Prone Disaster Risk Reduction in, Pakistan.

24. Anam Ashiq, 2020-2022. Spatio-temporal variations detection and response of meteorological drought to hydrological drought in Upper Indus Basin, Pakistan.

25. Summaiya Siddique, 2020-2022. Geospatial based risk susceptibility assessment induced from earthquake in Ghizer River Basin, Gilgit Baltistan-Pakistan. *(as co-supervisor))*

26. Imtissal Hussain, 2020-2022. Strategic management and sustainability of urban growth using SWOT model of capital city of Pakistan.

27. Javeria Rasheed, 2021-23. Impact Evaluation of super flood 2022 on sustainable development of Pakistan: Mechanisms, Impacts, and Management.

28. Haidar Ali, 2021-23. Evaluation of global gridded evapotranspiration datasets across the Upper Indus Basin, Pakistan.

29. Danial Mumtaz, 2021-23. Community based approach to counter complex flood scenarios caused by hill torrents in Sulaiman range Pakistan.

30. Abdullah Nazir, 2021-23. Strategic management framework of water and food security challenges in context of climate change for the sustainable development of mountain regions of Pakistan.

31. Asad Ullah, 2021-23. Flood hazard risk assessment and mapping by integrated geospatial based hydro-geomorphological approach for the mountainous river basins of Upper Indus Pakistan.

32. Nouman Anjum, 2021-23. Integrated flood risk assessment and management framework of hill torrent floods for the Dera Ghazi Khan, Sulaiman range in prospective of flood faced during 2022.

Ph.D Supervised Research Thesis

1. Muhammad Naveed, PhD-GCSD-2015-01. Strategic flood risk management by integrated hydro-geomorphological approach for mountainous catchments in Upper Indus Basin Pakistan. (under-work)

2. Madiha Asif, PhD-GCSD-2015-04. GIS Based Structure Planning for Integrated Water Resource Management in Gilgit City. (research completed and submitted for defense)

3. Muhammad Wasim, PhD-GCSD-2015-03. Exploration of Groundwater Resources using Electric Resistivity Sounding Survey Technique for Agriculture Development in Tribal Areas of Dera Ghazi Khan. (under-work)

4. Muhammd Amir Fahim, PhD-GCSD-2015-02. Water Governance under Climate change and uncertainty in selected Himalayan towns. (under-work)

RESEARCH PROJECT

1. **Hydro-climatic variability and climate change acceleration in mountainous catchments (a case study Upper Indus Basin)**
   The Specific objectives were as follow:
   i. *To study and examine the climate change and hydro-climatic variability in Upper Indus Basin (UIB) at spatiao-temporal scale.*
   ii. *To assess aspects of acceleration of climate change and its impact on streamflows of Upper Indus Basin (UIB).*

2. **An appraisal of climate change impacts on the hydrology of the mountainous catchment, Upper Indus Basin Pakistan**
   The Specific objectives were as follow:
   i. To derive the basic watershed characteristics (basin boundary map, area, topography, drainage network, etc.)
   ii. To estimate the snow cover area from the satellite data at spatio-scale.
   iii. To assess the meteorological characteristics (mean monthly, seasonal and annual maximum, mean & maximum temperature and precipitation at individual station and basin scale; Isohyetal maps)
   iv. To assess the hydrological characteristics (mean monthly, seasonal and annual maximum, mean & maximum streamflows; flow duration curve at the outlet of each basin)
   v. To estimate the water yield of each subbasins of UIB.
   vi. To estimate design flood for different return periods for each subbasins

3. **Quantitative appraisal of mountainous catchments characteristics and their implications for hydrologic processes in Upper Indus Bain Pakistan**
   The Specific objectives were as follow:

i. *To estimate the geomorphologic characteristics i.e. linear aspect: stream order, stream number, stream length, basin length, basin area, basin perimeter, stream frequency, length of overland flow, drainage density, texture ratio, drainage texture, drainage intensity, infiltration number; aerial aspect: form factor, elongation ratio, circularity ratio, compactness coefficient; and relief aspect: basin relief and relief ratio of mountainous watersheds in Upper Indus Basin (UIB).*
ii. *To estimate the hydro-climatic characteristics (mean monthly, seasonal and annual minimum, mean & maximum temperature and precipitation at individual station and watershed scale; Isohyet maps; mean monthly, seasonal and annual minimum, mean & maximum streamflows at the outlet of each watershed)*
iii. *To determine the soil and land use classes of mountainous watersheds in UIB.*
iv. *To estimate the water yield and flood peak of mountainous watersheds in UIB.*
v. *To examine the impact/response of geomorphologic, hydro-climatic, soil and land use characteristics on the hydrological process.*

4. <u>Flood hazard risk assessment and mapping by integrated geospatial based hydro-geomorphological approach for the mountainous river basins of Upper Indus Pakistan</u>

The Specific objectives are as follow:

i. *To estimate the flood hazards risks through different approaches and examine the impact/response of geomorphologic, hydro-climatic, soil and land use characteristics on the flood risk assessment*
ii. *To propose and evaluate variant mitigation measures (best management practices) for floods.*
iii. *To develop the strategic framework (sustainable and integrated management strategy) for flood risk management.*

5. <u>Integrated flood risk assessment and management framework of hill torrent floods for the Dera Ghazi Khan, Sulaiman range in prospective of flood faced during 2022</u>

The Specific objectives are as follow:

i. *To eliminate damages to the existing properties hill torrent regions of Sulaiman Range particular in Dera Ghazi Khan in prospective of flood faced during 2022.*
ii. *To estimate the morphologic, hydro-climatic and socio-economic characteristics of hill torrent regions of Sulaiman Range.*
iii. *To estimate the water yield and flood peak of mountainous watersheds in hill torrent Sulaiman Range.*
iv. *To estimate the flood hazards risks through different approaches and examine the impact/response of geomorphologic, hydro-climatic, soil and land use characteristics on the flood risk assessment.*
v. *To propose and evaluate variant mitigation measures (best management practices) for floods.*
vi. *To develop the strategic framework (sustainable and integrated management strategy) for flood risk management.*

PROFESSIONAL/TECHNICAL PROJECT

Aside by (part time) worked as Hydrologist Expert with G3-Consultants on the project of **"<u>Feasibility study for using seepage of River Ravi to meet with drinking water needs of Lahore city</u>**".

During the project following assignments are carrying out;

i. *Update Water Availability Studies throughout the year.*
ii. *Compliance of Indus Water Treaty and Inter-Provincial Water Accord.*
iii. *Hydrological simulation, stage discharge relationship, back water curve, sediment transport simulations, flood simulation studies.*
iv. *Hydrological studies of leading channel from weir / intake structure to water treatment plant, keeping in view the economical solutions / safety against floods / maintenance in future.*