

# Prof. Dr. Muhammad Azhar Inam

## RESEARCH INTERESTS

I am a participatory modeler exploring the sustainability of complex systems with human and environmental components. I work directly with stakeholders, using participatory model-building techniques to foster adaptive learning about the dynamics of coupled human-natural systems, and to integrate stakeholder knowledge with environmental policy decisions. The models I build incorporate feedback and non-linear dynamics, and typically include biophysical, social, and human behavioral components. My work therefore addresses the complexity, interdisciplinarity, and engagement aspects of sustainability research as outlined in recent sustainability science publications. I work predominantly with agricultural and water systems, but the modeling tools I use may be applied in a wide range of contexts. My past and present research has addressed soil salinity, flood management, food security, game theory, climate change and water resource management.

**Research output:** I have published over 35 refereed journal papers since obtaining my PhD in 2017, as well as several conference publications and book chapters. I have given 4 keynote talks at conferences. My Hirsch Index of 13, i10 Index of 15 and total citations of ~1650 are excellent for my fields of research.

## ACHIEVEMENTS AND AWARDS

- Act as session chair for session on “Participatory and Coupled Socio-Economic and Biophysical Modelling for Water Resources and Environmental Management” in ICWRER (International Conference on Water Resource and Environmental Research) at Hohai University, Nanjing, China June 14- 18, 2019
- Certificate of merit and cash award of 1500 for securing third position in B.Sc Agricultural Engineering, UET Peshawar, annual examination.

2011	Provost’s Fellowship as graduate entrance award, Canada 2010-11 \$ 5,000
2014	Graduate Research Enhancement and Travel Award, Canada 2014-15 \$2141.57
2015	Graduate Excellence Award of NSERC, Canada 2016-17 \$ 2,500

## PROFESSIONAL RECORD

<b>Professor</b>	Bahauddin Zakariya University, Pakistan	Sept 2025-todate
<b>Associate Professor</b>	Bahauddin Zakariya University, Pakistan	2021-2025
<b>Assistant Professor</b>	Bahauddin Zakariya University, Pakistan	2019-2021
<b>Postdoctoral Associate</b>	McGill University, Canada development of Python code package Tinamit and Taqdir	2015-2019
	<ul style="list-style-type: none"><li><b>Online documentation:</b> <a href="https://tinamit.readthedocs.io/ur/latest/general/agrad.html">https://tinamit.readthedocs.io/ur/latest/general/agrad.html</a></li><li><b>Online documentation:</b> <a href="https://taqdir.readthedocs.io">2.1.3 شکر یہ — تقدیر documentation (taqdir.readthedocs.io)</a> (developed for Pakistani stakeholders that’s why in Urdu)</li><li><b>Source code:</b> <a href="https://github.com/julienmalard/Tinamit">https://github.com/julienmalard/Tinamit</a></li><li><b>Source code:</b> <a href="https://github.com/julienmalard/Taqdir">https://github.com/julienmalard/Taqdir</a> (coded in Urdu for Pakistani stakeholders)</li></ul>	
<b>Assistant Professor</b>	Bahauddin Zakariya University, Pakistan	2006-2011
<b>Lecturer</b>	Bahauddin Zakariya University, Pakistan	2004-2006
<b>Senior Engineer</b>	Techno Consulting Engineer, Karachi, Pakistan	2002-2004
<b>Junior Engineer</b>	Khyber Consulting Engineer, Peshawar, Pakistan	2000-2002

## EDUCATION

Postdoc	<b>McGill University</b> , Canada System Dynamics modeling applications in agriculture and water resources management in the face of uncertainty	2015-2019
Ph.D.	<b>McGill University</b> , Canada <i>Doctor of Philosophy in Bioresource Engineering</i> Thesis: Development of a Group Built Coupled Physical-Socio-Economic Modelling Framework for Soil Salinity Management in Agricultural Watersheds in Developing Countries Main topic: Spatial System Dynamics Model for Strategic management ( <b>McGill University, Canada</b> ) Secondary topic: Soil Salinity management of Agricultural Watersheds ( <b>HEC, Pakistan</b> )	2011-2015
M.Phil.	<b>Center of Excellence in Water Resource Management, University of Engineering and Technology</b> , Lahore, Pakistan <i>Master of Philosophy in Water Resource Management</i> Thesis: Nitrate Movement and Shallow Groudwater Contamination in Lysimeters	1998-2000
B.Sc.	<b>University of Engineering and Technology</b> , Peshawar, Pakistan <i>Bachelor of Engineering in Agricultural Engineering</i> (Honors) Thesis: Design of Drip Irrigation System.	1993-1997

## RESEARCH PUBLICATIONS

H Index (Scopus)	14 (1413 citations)
H Index (Google Scholar)	16 (2144 citations)
i10 Index	24

### Summary:

Papers published in refereed journals	35
Papers accepted in refereed journals	3
Book chapters	3
<b><u>Total</u></b>	<b><u>41</u></b>
Book reviews	2
Papers in refereed conference proceedings	11
Keynote talks at conferences	2
Invited speaker at conferences	12
Regular conference talks	25
Conference posters	15

## SELECTED PUBLICATIONS

1. **Inam A**, Adamowski J, Halbe J, Prasher S, (2015). Using Causal Loop Diagrams for the Initialization of Stakeholder Engagement in Soil Salinity Management in Agricultural Watersheds in Developing Countries: A Case Study in the Rechna Doab Watershed, Pakistan". *Journal of Environmental Management*, 152, 251-267.
2. **Inam A**, Adamowski J, Prasher S, Malard J, Albano R (2017) Coupling of a Distributed Stakeholder-Built System Dynamics Socio-Economic Model with SAHYSMOD for Sustainable Soil Salinity Management Part 1: Model Development. *Journal of Hydrology*, 551, 596-618.
3. **Inam A**, Adamowski J, Prasher S, Malard J, Albano R (2017) Coupling of a Distributed Stakeholder-Built System Dynamics Socio-Economic Model with SAHYSMOD for Sustainable Soil Salinity Management Part 2: Model Coupling and Application. *Journal of Hydrology*, 551, 278-299.
4. **Inam A**, Adamowski J, Prasher S, Albano R (2017) Parameter estimation and uncertainty analysis of the Spatial

Agro Hydro Salinity Model (SAHYSMOD) in the semi-arid climate of Rechna Doab, Pakistan. *Journal of Environmental Modelling and Softwares*, 94, 186-211

5. Malard J, **Inam A**, Elmira Hassanzadeh, Hugo Melgar-Quinonez, Jan Adamowski, Héctor Tuy (2017) Development of a software tool for rapid, reproducible, and stakeholder-friendly dynamic coupling of system dynamics and physically-based models. *Journal of Environmental modeling and software*, 96, 410-420
6. Albano R, Sole A, Adamowski J, Perrone A, **Inam A**. (2018). Using FloodRisk GIS freeware for uncertainty analysis of direct economic flood damages in Italy. *International journal of applied earth observation and geoinformation*, 73, 220-229.
7. Jean S, Gilbert L, Medema W, Keijser X, Mayer I, **Inam A**, Adamowski J. (2018). Serious Games as Planning Support Systems: Learning from Playing Maritime Spatial Planning Challenge 2050. *Water*, 10(12), 1786.
8. Barzegar R, Asghari A, Soltani S, Baomid N, Tziritis E, Adamowski J, **Inam A**. 2019. Natural and anthropogenic origins of selected trace elements in the surface waters of Tabriz area, Iran. *Environ. Earth Sci.* 78, 254. doi:10.1007/s12665-019-8250-z
9. Raffaele A, Perrone A, **Inam A**, Adamowski J, Sole A. 2019. "Using Causal Loop Diagrams for the Initialization of Stakeholder Engagement in Flood Risk Management in a River Delta Area of Basilicata Region, Italy." *Geophysical Research*. Vol. 21.
10. Barzegar R, Asghar A, Shahrokh N, **Inam A**, Adamowski J, Alizadeh R, Nassar J. 2019. "Modification of the DRASTIC Framework for Mapping Groundwater Vulnerability Zones." *Groundwater*. doi: 10.1111/gwat.12919.
11. Blöschl G, Marc F, Bierkens A, Chambel C, Georgia D, Aldo F, James W,..... **Inam A**, Jeffrey J, Hubert S, Sivapalan M. 2019. "Twenty-Three Unsolved Problems in Hydrology (UPH)—a Community Perspective." *Hydrological Sciences Journal* 64(10):1141–58.
12. Perrone A, **Inam A**, Albano R, Adamowski J, Sole A. 2020. "A Participatory System Dynamics Modeling Approach to Facilitate Collaborative Flood Risk Management: A Case Study in the Bradano River (Italy)." *Journal of Hydrology* 580:124354.
13. Xingyu P, Adamowski J, **Inam A**, Alizadeh R, Albano R. 2020. "Development of a Behaviour-Pattern Based Global Sensitivity Analysis Procedure for Coupled Socioeconomic and Environmental Models." *Journal of Hydrology* 124745.
14. Carper, J., Alizadeh, M. R., Adamowski, J., **Inam, A.**, & Malard, J. (2021). Quantifying the transient shock response of dynamic agroecosystem variables for improved socio-environmental resilience. *Ecology and Society*, 26(2).
15. Hammad, M., Shoaib, M., Salahudin, H., **Baig, M. A. I.**, Khan, M. M., & Ullah, M. K. (2021). Rainfall forecasting in upper Indus basin using various Scenario anintelligence techniques. *Stochastic Environmental Research and Risk Assessment*, 35, 2213-2235.
16. Shoaib, M., Salahudin, H., Hammad, M., Ahmad, S., Khan, A. A., Khan, M. **Inam, A** & Ullah, M. K. (2021). Performance evaluation of soft computing approaches for forecasting COVID-19 pandemic cases. *SN Computer Science*, 2, 1-13.
17. Raza, A., Shoaib, M., **Baig, M. A. I.**, Ahmad, S., Khan, M. M., Ullah, M. K., & Hashim, S. (2021). Comparative study of powerful predictive modeling techniques for modeling monthly reference evapotranspiration in various climatic regions. *Fresenius Environ Bull*, 30(6b), 7490-7513.
18. Alizadeh, M. R., Adamowski, J., & **Inam, A**. (2022). Integrated assessment of localized SSP–RCP narratives for climate change adaptation in coupled human–water systems. *Science of The Total Environment*, 823, 153660.
19. Syed, Z., Ahmad, S., Dahri, Z. H., Azmat, M., Shoaib, M., **Inam, A.**, Ahmad, S. (2022). Hydroclimatology of the Chitral River in the Indus Basin under changing climate. *Atmosphere*, 13(2), 295.
20. Carper, J. M., Alizadeh, M. R., Adamowski, J. F., & **Inam, A**. (2022). Climate variability in agroecosystems: A

quantitative assessment of stakeholder-defined policies for enhanced socio-ecological resilience. *Agricultural Systems*, 201, 103416.

21. Noor, R., **Inam, A.**, Zahra, S. M., Shoaib, M., Riaz, R., Sarwar, A., ... & Ahmad, S. (2022). A methodological framework for modeling sustainability visions: A case study of groundwater management in Faizpur distributary, Pakistan. *Agricultural Water Management*, 271, 107822.
22. Asif, M., **Inam, A.**, Adamowski, J., Shoaib, M., Tariq, H., Ahmad, S., ... & Nazeer, A. (2023). Development of methods for the simplification of complex group built causal loop diagrams: A case study of the Rechna doab. *Ecological Modelling*, 476, 110192.
23. Khan, M. T., Shoaib, M., Albano, R., **Inam, M. A.**, Salahudin, H., Hammad, M., ... & Ullah, M. K. (2023). Intercomparison and Assessment of Stand-Alone and Wavelet-Coupled Machine Learning Models for Simulating Rainfall-Runoff Process in Four Basins of Pothohar Region, Pakistan. *Atmosphere*, 14(3), 452.
24. Noor, R., Arshad, A., Shafeeque, M., Liu, J., **Baig, A.**, Ali, Elbeltagi, A. (2023). Combining APHRODITE Rain Gauges-Based Precipitation with Downscaled-TRMM Data to Translate High-Resolution Precipitation Estimates in the Indus Basin. *Remote Sensing*, 15(2), 318.
25. Salahudin, H., Shoaib, M., Albano, R., **Inam, A.**, Hammad, M., Raza, A., Akhtar, A. and Ali, M.U., (2023). Using Ensembles of Machine Learning Techniques to Predict Reference Evapotranspiration (ET<sub>0</sub>) Using Limited Meteorological Data. *Hydrology*, 10(8), p.169.
26. Noor, R., Maqsood, A., **Inam, A.**, Pande, C.B., Zahra, S.M., Saad, A., Anwar, M. and Singh, S.K., (2023). A comprehensive review on water pollution, South Asia Region: Pakistan. *Urban CliLandmate*, 48, p.101413.
27. Alizadeh, M.R., Peng, X., Adamowski, J., Albano, R., Ozga-Zielinski, B. and **Inam, A.**, (2023). Development of a behaviour pattern-based testing approach for coupled socioeconomic and environmental models. *Journal of Environmental Management*, 347, p.119088.
28. Alizadeh, Mohammad Reza, Jan Adamowski, and **Azhar Inam**. "Scenario analysis of local storylines to represent uncertainty in complex human-water systems." *Journal of Hydrology* 635 (2024): 131186.
29. Naeem, M., Farid, H. U., Madni, M. A., Albano, R., **Inam, M. A.**, Shoaib, M., Shoaib, M., Rashid, T., Dilshad, A. and Ahmad, A., (2024) GIS-Based Analytical Hierarchy Process for Identifying Groundwater Potential Zones in Punjab, Pakistan. *ISPRS International Journal of Geo-Information* 13, no. 9 (2024): 317.
30. Saleem, M.A., Shoaib, M., Hashim, S., Shoaib, M., Farid, H. U., Ismail, M., Ghaffar, M.A., Mujtaba, M., Lee, J., **Inam, M. A.**, and Ameen, A., (2025) Projecting future climate extremes in the glacier-fed upper indus basin using machine learning based downscaling of CMIP6 GCMs. *Theor Appl Climatol* 156, 567. <https://doi.org/10.1007/s00704-025-05793-5>
31. Zakariya, K.M.; Sarwar, T.; Farid, H.U.; Albano, R.; **Inam, M.A.**; Shoaib, M.; Ahmad, A.; Ahmad, M. (2025) Land Use Land Cover (LULC) Mapping for Assessment of Urbanization Impacts on Cropping Patterns and Water Availability in Multan, Pakistan. *Earth*, 6, 79. <https://doi.org/10.3390/earth6030079>
32. Saleem, Muhammad Amjad, Muhammad Shoaib, Sarfraz Hashim, Hafiz Umar Farid, Mubashir Ali Ghaffar, Muhammad Ismail, Arshad Ameen, Jinwook Lee, **Muhammad Azhar Inam**, and Changhyun Jun. (2025) "Machine learning-based streamflow projections in the upper Indus basin under CMIP6 climate scenarios." *Physics and Chemistry of the Earth, Parts A/B/C* (2025): 104035.
33. Waleed, Muhammad, **Muhammad Azhar Inam**, Raffaele Albano, Abdul Samad, Hafiz Umar Farid, Muhammad Shoaib, and Muhammad Usman Ali. (2025) "Statistical Model Development for Estimating Soil Hydraulic Conductivity Through On-Site Investigations." *Hydrology* 12, no. 3: 55.
34. Abbas, Tanweer, Muhammad Shoaib, Raffaele Albano, **Muhammad Azhar Inam Baig**, Irfan Ali, Hafiz Umar Farid, and Muhammad Usman Ali. (2025) "Artificial-Intelligence-Based Investigation on Land Use and Land Cover (LULC) Changes in Response to Population Growth in South Punjab, Pakistan." *Land* 14, no. 1: 154.

## CONFERENCE PUBLICATIONS

1. **Inam A**, Adamowski J, Prasher S, (2015) Development and Application of a Decision Support System for Optimizing Cropping Patterns under Saline Agriculture Conditions in Rechna Doab, Pakistan. ASABE Annual International Meeting. American Society of Agricultural and Biological Engineers,152189304.(doi:10.13031/aim.20152189304)
2. **Inam A**, Prasher S, Adamowski J, Zaman Q, Mann S (2014). Holistic Conceptualization of Soil Salinity Management Problems: Using a System Dynamics Approach in Rechna Doab Basin, Pakistan. American Society of Agricultural and Biological Engineers. doi: 10.13031/aim.20141899480
3. **Inam A**, Adamowski J, Malard J, Peng G, Albano R (2019) Application of a Dynamically Coupled Socio-Economic System Dynamics and Environmental Model for Sustainable Groundwater Management. International Conference on Water Resources and Environment Research (ICWRER), June 14<sup>th</sup> – 18<sup>th</sup>, Hohai University, Nanjing, China.
4. **Inam A**, Adamowski J, Malard J, Peng G, Albano R (2019) Evaluation of Climate Change impacts Using a Dynamically Coupled Socio-Economic System Dynamics and Environmental Model. International Conference on Water Resources and Environment Research June 14<sup>th</sup> – 18<sup>th</sup>, Hohai University, Nanjing, China.
5. Malard J, Adamowski J, **Inam A**, Tuy H, Peng X, Melgar-Quiñonez H (2019) Bayesian inference and participatory coupled system dynamics-physical model building for agricultural resource management in Guatemala. International Conference on Water Resources and Environment Research June 14<sup>th</sup> – 18<sup>th</sup>, Hohai University, Nanjing, China.
6. Peng X, Adamowski J, **Inam A**, Malard J (2019) Development of a behavior pattern sensitivity analysis procedure for coupled socioeconomic and environmental models. International Conference on Water Resources and Environment Research June 14<sup>th</sup> – 18<sup>th</sup>, Hohai University, Nanjing, China.
7. Mann S, Qi Z, Prasher S, **Inam A**. (2014). Exploring absorption capacity of biochar in reducing hormonal pollution from agriculture fields. In 2014 Montreal, Quebec Canada July 13–July 16, 2014 (p. 1). American Society of Agricultural and Biological Engineers. doi: 10.13031/aim.20141905873.
8. Noor R, Maqsood A, **Inam A**. (2021). Performance evaluation of various models for the assessment of reference evapotranspiration in arid and semi-arid zones of Pakistan. International Conference on Hydrology and Water Resources (ICHWR-21). March 25, 2021. Center of Excellence in Water Resources Engineering, University of Engineering and Technology, Lahore.
9. Noor R, **Inam A**, Abbas Q, Asif M. (2021). A Participatory Socioeconomic Environmental Modelling Framework for Groundwater Management. International Conference on Hydrology and Water Resources (ICHWR-21). March 25, 2021. Center of Excellence in Water Resources Engineering, University of Engineering and Technology, Lahore.
10. Asif M, **Inam A**, Abbas Q, Noor R. (2021). Participatory Environmental Socio-Economic Modelling Complexity Issues and Solution. A case study of the Rechna Doab. International Conference on Hydrology and Water Resources (ICHWR-21). March 25, 2021. Center of Excellence in Water Resources Engineering, University of Engineering and Technology, Lahore.
11. Abbas Q, **Inam A**, Noor R, Asif M. (2021). Evaluation of Low Impact Development (LIDs) Drainage Control Measures Using PCSWMM in an Urban Watershed. International Conference on Hydrology and Water Resources (ICHWR-21). March 25, 2021. Center of Excellence in Water Resources Engineering, University of Engineering and Technology, Lahore.

## ABSTRACT, PRESENTATION AND CONFERENCES

1. **Inam A**, Prasher S, Adamowski J, (2013). A Participatory System Dynamic Modeling Approach for Soil Salinity Management (Poster presentation). In ASABE Conference Westin Kanas City, Missouri, USA July 22–July 25, 2013.
2. **Inam A**, Prasher S, Adamowski J, (2013). A Stakeholder Assisted Dynamic Model to Facilitate Groundwater

Management on Watershed Scale (Oral presentation). In CSBE/SCGAB Conference Saskatoon, Saskatchewan, Canada July 8–July 11, 2013.

3. **Inam A**, Prasher S, Adamowski, J, (2014). Holistic Conceptualization of Soil Salinity Management Problems: Using a System Dynamics Approach in Rechna Doab Basin, Pakistan (Oral presentation). In ASABE Conference Montreal, Quebec, Canada July 13–July 16, 2014.
4. **Inam A**, Cerrera J, Melini L, Pineda P, Monterroso O, Melgar-Quinonez H, Adamowski J, Halbe J, Malard J, Monardes H, Galvez J, (2014) Use of Participatory Systems Dynamics Modelling to Generate User-Friendly Decision Support Systems for the Design of Management Policies for Complex Human-Environmental Systems: A Case Study from the Varied Socio-environmental Landscape of Guatemala (Poster presentation). San Francisco, California, USA, Conference: AGU 2014 Fall Meeting, Affiliation: American Geophysical Union.
5. **Inam A**, Adamowski, J, Prasher S, (2015). Development and Application of A Decision Support System for Optimizing Cropping Patterns under Saline Agriculture Conditions in Rechna Doab, Pakistan (Poster presentation). In ASABE Annual International Meeting New Orleans, Louisiana, USA July 26- July 29, 2015.
6. **Inam A**, Adamowski J, Prasher S, (2015). A Stakeholder Built System Dynamics Model for Sustainable Groundwater Management in Rechna Doab, Pakistan (Oral presentation). In Joint Assembly Montreal, Quebec, Canada May 03– May 07, 2015.
7. **Inam A**, Adamowski J, Prasher S, (2016). Application of A New Decision Support System for Assessing Soil Salinity Management Scenarios in Rechna Doab Basin, Pakistan (Oral presentation). In CSBE/SCGAB Annual General Meeting and Technical Conference Halifax, Nova Scotia, Canada July 03- July 06, 2016.
8. **Inam A**, Malard J, Hassanzadeh E, Adamowski J, Tuy H, Melgar-Quinonez H, (2016) Design of Soil Salinity Policies with Tinamit, a Flexible and Rapid Tool to Couple Stakeholder-Built System Dynamics Models with Physically-Based Models. (Poster presentation). 12/2016, Conference: AGU Fall Meeting 2016, DOI: 10.13140/RG.2.2.15715.96804.
9. Adamowski J, **Inam A**, (2017) System Thinking Approaches in Agricultural Water Management (Oral presentation). In NABEC Annual International Meeting Groton, Connecticut, USA July 30- August 02, 2017
10. **Inam A**, Adamowski J, Malard J (2018) Looking ahead to 2100: Modeling Groundwater Management Scenarios under Climate Change Using the Stakeholder-Assisted Socio-Hydrological Modeling tool Tinamit (Oral presentation). In EGU European Geophysical Union Vienna, Austria April 07- 14, 2018
11. **Inam A**, Adamowski J, Malard J (2018) Development of a Stakeholder-Assisted Socio-Hydrological Systems Dynamic Model to Facilitate Groundwater Management (Poster presentation). In EGU European Geophysical Union Vienna, Austria April 07- 14, 2018
12. **Inam A**, Adamowski J, Malard J, Peng G, Albano R (2019) Application of a Dynamically Coupled Socio-Economic System Dynamics and Environmental Model for Sustainable Groundwater Management (Oral presentation). In ICWRER International Conference on Water Resources and Environment Research Nanjing, China June 14- 18, 2019
13. **Inam A**, Adamowski J, Malard J, Peng G, Albano R (2019) Evaluation of Climate Change impacts Using a Dynamically Coupled Socio-Economic System Dynamics and Environmental Model (Oral presentation). In ICWRER International Conference on Water Resources and Environment Research Nanjing, China June 14- 18, 2019
14. **Inam A**, Adamowski J, Malard J (2019) Les questions de complexité et la solution de socio-économique l'environnement participatives modèles qualitatifs: Une illustration utilisant cas étude de Rechna Doab (Oral presentation). In ACFAS Colloque 613 Association Francophone pour le Savoir Ottawa, Canada May 27- 31, 2019

## BOOK CHAPTERS

1. Hafiz Umar Farid, Nadeem Zubair, Muhammad Shoaib, **Muhammad Azhar Inam**, Zahid Mahmood Khan, Rana Muhammad Asif Kanwar, Muhammad Naveed Anjum, Muhammad Mubeen, Aamir Shakoor, and Khurram Shahzad. "Modren Irrigation Methods" in *Innovations in Agricultural Water Management: Risks and Solutions*, pp. 37-61. Singapore: Springer Nature Switzerland, 2025. [https://doi.org/10.1007/978-3-031-91883-4\\_3](https://doi.org/10.1007/978-3-031-91883-4_3)
2. Muhammad Hammad, Muhammad Shoaib, Hamza Salahudin, **Muhammad Azhar Inam Baig**, and Muhammad Usman Ali. "Use of AI for disaster risk reduction in agriculture." In *Disaster Risk Reduction in Agriculture*, pp. 461-488. Singapore: Springer Nature Singapore, 2023.
3. Rabeea Noor, Chaitanya B. Pande, Syeda Mishal Zahra, Aarish Maqsood, **Azhar Inam**, M. Aali Misaal, Rana Shehzad Noor, Qaiser Abbas, and Mariyam Anwar. "Review of various impacts of climate change in south asia region, specifically Pakistan." In *Climate Change Impacts on Natural Resources, Ecosystems and Agricultural Systems*, pp. 269-296. Cham: Springer International Publishing, 2023.

## INVITED TALKS

1. Concordia University (CEC) (Dr. Ali Nazemi) July-2017
2. McGill University (Bioresource Engineering) (Dr. Prasher) April-2019

## PROFESSIONAL AFFILIATIONS

1. American Society of Agriculture and Biological Engineers (Membership No 1047435)
2. Canadian Society of Biological Engineers (Membership No 1047435)
3. European Geophysical Union (Membership No 387526)
4. Pakistan Engineering Council (Membership No AGRI-1919)

## SUPERVISION SKILL

1. Mohammad Reza Alizadeh, PhD student McGill University, Research: Participatory coupled model institutionalization.
2. Jordan Makena Carper, Master student McGill University, Research: Assessment of system resilience using Participatory coupled model.
3. Gabriella Peng, Master student McGill University, Research: Participatory modeling testing and uncertainty.
4. Antonio Perrone, PhD student University of Basilicata, Research: Flood risk and uncertainty analysis
5. Marcela Rojas, Master student McGill University, Research: Food security modelling framework Tikon.
6. Sumaira Yousaf, Master student McGill University, Research: IWRM.
7. Asif Ali Bhatti, Master student McGill University, Research: IWRM.
8. Muhammad Asif, Master Student BZU University, Multan
9. Muhammad Qaiser, Master Student BZU University, Multan
10. Rabia Noor, Master Student BZU University, Multan
11. Muhammad Waleed, Master Student BZU University, Multan
12. Areeeba Tariq, Master Student BZU University, Multan
13. Abubakar Amir, Master Student BZU University, Multan
14. Usama Bin Zameer, Master Student BZU University, Multan

## References:

1. Dr. Shiv O. Prasher, PhD Supervisor, James McGill Professor, Department of Bioresource Engineering, McGill University, Canada, [shiv.prasher@mcgill.ca](mailto:shiv.prasher@mcgill.ca) Tel 514-398-7774
2. Dr. Jan Adamowski, PhD Co-Supervisor, Liliane and David M. Stewart Scholar in water resources, Director, Integrated water resources management, Associate Professor, Department of Bioresource Engineering, McGill University, Canada, [jan.adamowski@mcgill.ca](mailto:jan.adamowski@mcgill.ca) Tel 514-398-7786
3. Dr. Vijaya Raghavan, Director of Academy of Science and Engineering of Royal Society of Canada, President of Canadian Society of Bioresource Engineering, James McGill Professor, Department of Bioresource Engineering, McGill University, Canada, [vijaya.raghavan@mcgill.ca](mailto:vijaya.raghavan@mcgill.ca) Tel 514-398-8731