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| **SONIA BINTE MURSHED**Assistant ProfessorInstitute of Water and Flood Management Bangladesh University of Engineering and TechnologyEmail: sonia@iwfm.buet.ac.bd, sonia.murshed@aggiemail.usu.edu |
| **EDUCATION** |
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| **Ph.D.** (2019), Civil and Environmental Engineering, *Utah State University*Dissertation title: Hydro-Climatic Changes and Corresponding Impacts on Agricultural Water Demand in The Ganges Delta of BangladeshAdvisor: Dr. Kaluarachchi, Jagath J.**M.Sc.** (2008), Water Resources Development, *Bangladesh University of Engineering and Technology* Thesis title: Management of Conflicts between Irrigation and Fisheries in Siapagla FCD (Flood Control and Drainage) Project Advisor: Dr. Khan, Shah Alam |
| **B.Sc. (**2004**),** Civil Engineering, *Bangladesh University of Engineering and Technology* Thesis title: The Effect of Sand Bed Depth on Filter Media of Slow Sand FilterAdvisor: Dr. Ahmed, Farooque |

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| **PROFESSIONAL EXPERIENCE** |
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| **Institute of Water and Flood Management (IWFM), Bangladesh University of Engineering and Technology (BUET)**Assistant Professor (October 10, 2012 to present) Lecturer (June 30, 2009 to October 09, 2012) |
| **HARB Trade International Limited**Executive Engineer (December 2005 - December 2006)  |
| **Nagar Design & Developments Ltd.**Co-ordination Engineer (January 2005 - August 2005) |

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| **AWARDS** |
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| **Travel and Data Purchase Grant** for Ph.D. work provided by the International Water Management Institute, Sri Lanka under the research project “The Gangetic Aquifer Management for Ecosystem Services,” 2014-2015 |
| **Best Paper Award for Young Professionals:** International Conference on Water Resources Policy in South Asia, December 17-20, 2008, Colombo, Sri Lanka**SAWA (South Asian Water) Fellowship**: Awarded by Crossing Boundaries (CB) Project, funded by Dutch Government., IWFM, BUET for Oct 2006- Apr 2008.**Technical Scholarship**:Awarded by BUET for 1998-2004. |

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| **RESEARCH INTERESTS** |
| Hydro-climatology, Eco-hydrology, Integrated Water Resources Management, Water Conflict Management |
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| **RESEARCH PROJECTS** |
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| 1. **Increasing the Resilience of Agricultural and Aquaculture Systems in the Coastal Areas of the Ganges Delta** [Component G4: Assessment of Impact of Anticipated External Drivers on Water Resources of Coastal Zone] (June 2011- June 2014, was involved after November 2012)

Investigators: Shah Alam Khan, AKM Saiful Islam and Sonia Binte MurshedWorked as: Co-Investigator (CI)Organization: CGIAR-CPWF 1. **Review of Warning System for Climatic Disasters in Bangladesh** (June, 2011-August, 2013)

Investigators: Sonia Binte Murshed, Shah Alam Khan and AKM Saiful Islam Worked as:   Principal Investigator (PI)Organization: Ministry of Environment and Forestry, Dhaka, Bangladesh1. **High-resolution Regional Climate Change Information for Bangladesh to inform Impacts Assessments, Vulnerability indicators and Adaptation Policies** (July 2011-December 2012)

Investigators:Akm Saiful Islam, M. Asad Hussain, Sonia Binte MurshedWorked as:    Co-Investigator (CI)Organization: IWFM, BUET, Dhaka, Bangladesh and Met Office, UK1. **Impact of Climate Change on Rainfall Intensity in Bangladesh** (November 2010-December 2012)

Investigators: AKM Saiful Islam, Sonia Binte Murshed and Shah Alam Khan Worked as: Co-Investigator (CI)Organization: IWFM, BUET, Dhaka, Bangladesh |
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| **PUBLICATION:**  |
| **Journal:** |
| Murshed, S. B., Rahman, M. R. and Kaluarachchi, J. J. (2019) “**Changes in Hydrology of the Ganges Delta of Bangladesh and Corresponding Impacts on Water Resources**,” Journal of the American Water Resources Association, JAWRA featured Collection: Climate Change Solutions. |
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| Murshed, S. B. and Kaluarachchi, J. J. (2018) “**Scarcity of Fresh Water Resources in the Ganges Delta of Bangladesh,”** Water Security, volumes 4-5, pp 8-18, Science Direct. https://doi.org/10.1016/j.wasec.2018.11.002 |
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| Nowreen S, Murshed S.B., Islam A.S, Bhaskaran B, Hasan MA (2014), “**Changes of Rainfall Extremes around the Haor Basin Areas of Bangladesh using Multi-member Ensemble RCM**,” Theoretical and Applied Climatology 119 (1-2), Springer, Pages 363-377; doi:10.1007/s00704- 014-1101-7. |
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| Nowreen,S., Murshed, S.B., Islam, A.S., Hasan, M.A. and Sarker, T.K. (2012), “**An indicator of Climate Change in the South West Region of Bangladesh”, The International Journal of Climate Change: Impacts and Responses**” Volume 4, Issue 3, Pages 47-60, 2012, (ISSN: 1835-7156). |
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| Murshed, S.B., and Khan, M.S. (2009), “**Water Use Conflict between Agriculture and Fisheries in a Selected Water Resources Development Project in Bangladesh**”. SAWAS 1 (2):159-183, 2009, Volume 1, Issue 2 |
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| **Proceedings:** |
| Murshed, S.B., Nowreen,S., Islam, A.S., Hasan, M.A. and Sarker, T.K., “**Change Of Extreme Precipitation Indices For The Eight Hydrological Regions Of Bangladesh**” Proceedings of the International Conference on Climate Change Impact and Adaptation (I3CIA-2013), Nov 14-16, 2013, DUET, Gazipur, BangladeshNowreen,S., Murshed, S.B., Islam, A.S., Bhaskaran, B., “**Change of Future Climate Extremes for the Haor Basin Area of Bangladesh**.” Proceedings of the 4th International Conference on Water and Flood Management (ICWFM 2013), 4-5 October 2013, BUET, Dhaka, Bangladesh Volume 2, pp. 545 -556, BUET, (ISBN: 978-984-33-2298-2). Murshed, S.B., Islam, A.S. and Khan, M.S. (2011) [**"Impact of Climate Change on Rainfall Intensity in Bangladesh.**"](http://teacher.buet.ac.bd/akmsaifulislam/publication/ICWFM2011_full_paper_119.pdf) Proceedings of the 3rd International Conference on Water and Flood Management (ICWFM 2011), 8-10 January 2011, Dhaka, Bangladesh, Volume 2, pp.881-890 (ISBN: 978-984-33-2298-2).Islam, A.S., Bhaskaran, B., Arifin, S., Murshed, S.B., Mukharjee, N. and Hossain, B.M.T. (2011) [**"Domain Size Experiment using PRECIS Regional Climate Model for Bangladesh**."](http://teacher.buet.ac.bd/akmsaifulislam/publication/ICWFM2011_full_paper_163.pdf) Proceedings of the 3rd International Conference on Water and Flood Management (ICWFM 2011), 8-10 January 2011, Dhaka, Bangladesh, Vol.-2, pp. 891-898 (ISBN: 978-984-33-2298-2). |
| **Presentations:** |
| Murshed, S. B. and Kaluarachchi, J. J. (2019) “**Climate impacts on Drought in the Ganges Delta in Bangladesh**”, 2019 UCOWR Annual Conference, June 11 -13, 2019, Snowbird, Salt Lake City, Utah, USA. (Oral) |
| Murshed, S. B., Kim, H. and Kaluarachchi, J. J. (2019) “**Evapotranspiration under Climate Change in the Ganges Delta of Bangladesh”**, 2019 Spring Runoff Conference: Water Challenges in the West, March 26, 2019, Utah State University, Logan, Utah, USA. (Poster) |
| Murshed, S. B. and Kaluarachchi, J. J. (2018) “**Climate Impacts on Agricultural Water Demand in the Ganges Delta of Bangladesh”**, 2018 AGU Fall Meeting, December 10 -14, 2018, Washington DC, USA. (Poster)  |
| Murshed, S. B. and Kaluarachchi, J. J. (2018) “**Linkage of Hydro-Climatological Variables to Flood and Drought in the Ganges Delta of Bangladesh,”** The Student Research Symposium April 12, 2018, Utah State University, Logan, USA. (Poster) |
| Murshed, S. B. and Kaluarachchi, J. J. (2018) “**Groundwater Sustainability in the Ganges Delta of Bangladesh**,” 2018 Spring Runoff Conference: Monitoring and Managing Water for All, March 27, 2018, Utah State University, Logan, Utah, USA. (Poster) |
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| Murshed, S. B. and Kaluarachchi, J. J. (2017) “**Scarcity of freshwater resources in the Ganges Delta of Bangladesh”**, 2017 AGU Fall Meeting, December 11 -15, 2017, New Orleans, Louisiana, USA. (Poster) |
| Murshed, S. B. and Kaluarachchi, J. J. (2017) “**Vulnerability of Fresh Water Resources in the Ganges Delta of Bangladesh”,** 2017 AWRA Summer Specialty Conference, Climate Change Solutions: Collaborative Science, Policy and Planning for Sustainable Water Management, June 25-28, 2017, Sheraton Tysons Hotel, Tysons, VA, USA. (Oral) |
| Murshed, S. B. and Kaluarachchi, J. J. (2017) “**Instream Water Availability in the Sundarbans Mangrove Ecosystem of Bangladesh”**, Spring Runoff Conference: Data-driven water management for an uncertain future, March 28-29, 2017, Utah State University, Logan, Utah, USA. (Poster) |
| Murshed, S.B., Khan, M.S.A. and Islam, A.S. (2012) “**Adaptation Strategies of Urban Drainage System in Dhaka City”** International Conference on Climate Adaptation, May 29-31, 2012, University of Arizona, Arizona, USA. (Oral)Murshed, S.B., and Khan, M.S.A. (2008), "**Water Use Conflict between Agriculture and Fisheries in a Selected Water Resources Development Project in Bangladesh**” International Conference on Water Resources Policy in South Asia, December 17-20, Colombo, Sri Lanka. (Achieved best paper award for young professionals). (Oral) |
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| **Book:** |
| Murshed, S.B., and Khan, M.S.A. (2008), **“Water Use Conflict between Agriculture and Fisheries in Bangladesh**”, LAP LAMBERT Academic Publishing, Germany, 2013, pages 148 (ISBN-13:978-3-659-43821-9). |
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| **SELECTED PROFESSIONAL WORKSHOP/ SEMINAR / TRAINING:** |
| Workshop on **Pangeo: Scalable Geoscience Tools in Python—Xarray, Dask, and Jupyter** at 2018 AGU Fall meetingDate: Dec 12, 2018Venue: Grand Hyatt, Washington DC, USA |
| Workshop on **Multitemporal Supervised Classification Using Google Earth Engine** at 2018 AGU Fall meetingDate: Dec 10, 2018Venue: Grand Hyatt, Washington DC, USA  |
| Workshop on **Satellite: Using Python and modern tools for research and analysis of satellite data products** at 2018 AGU Fall meetingDate: Dec 9, 2018 |
| Venue: Grand Hyatt, Washington DC, USA |
| Workshop on **Informed Risk Management** (Using GoldSim to Support Integrated Water Resources Management) at 2017 AWRA Summer Specialty ConferenceDate: June 25, 2017Venue: Sheraton Tysons Hotel, VA, USA |
| **XSEDE HPC Workshop on Big Data analytics** hosted by the University of Utah, USADate: November 1, 2016  |

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| Knowledge Sharing Seminar on **“Water and Waste: Excreta Does Matter”** organized by Centre for Science and Environment and Bangladesh Institute of Planners Date: September 4, 2013Venue: Planners’ Tower, Dhaka Bangladesh country level dialogue meeting on **“Transnational Policy Dialogue for Improved Water Governance of Brahmaputra River”** organized by Centre for Science and Environment and Bangladesh Institute of Planners Date: 21 August, 2013Venue: IWFM, BUET, Dhaka Training Program on **“Space Technology for Flood Hazard Mapping, Flood Forecast and Rapid Mapping in Bangladesh”** Jointly organized by Department of Disaster Management (DDM) and UN-SPIDER Beijing Office in collaboration with SPARRSO and Comprehensive Disaster Management Programme (CDMP II) Date: May 12-16, 2013Venue: Computer Lab (Level 4), SPARRSO, Agargaon, Dhaka,BangladeshTraining Workshop on **“Urban Drainage Modeling for Coastal Towns of Bangladesh Considering Climate Change”**Date: April 19-21, 2013Venue: IWFM, BUETFinal workshop on **"High-resolution Regional Climate Change Information for Bangladesh to inform Impacts Assessments, Vulnerability indicators and Adaptation Policies”**Organized by IWFM, BUET and Met office, United Kingdom with financial support from the Department for International Development (DFID) of the UKDate: January 27, 2013Venue: IWFM, BUET**Adaptation to Changing Water Resources Availability in Northern India with respect to Himalayan Glacier Retreat and Changing Monsoon Pattern**HighNoon Spring School of Collaborative project of EUOrganized by Indian Institute of Technology (IITD), Delhi, IndiaDate: April 2-6, 2012Venue: Premises of IITD**Triangulation Workshop for Selection and Prioritization of External Drivers of Change on Water Resources of the Coastal Zone**Organized by Institute of Water Modelling (IWM), Dhaka, Bangladesh and Partners of Project G4 (Assessment of the Impact of Anticipated External Drivers of Change on Water Resources of the Coastal Zone)Date: March 20, 2012Venue: BRAC Centre Inn, 75 Mohakhali, Dhaka-1212, BangladeshStakeholder Workshop on **“High-resolution Regional Climate Change Information for Bangladesh to inform Impacts Assessments, Vulnerability indicators and Adaptation Policies.”**Organized by IWFM, BUET and Met office, United Kingdom with financial support from the Department for International Development (DFID) of the UKDate: March 8, 2012Venue: IWFM, BUET**Statistical Downscaling Model (SDSM) Workshop** Jointly organized by Loughborough University, BRAC University and British CouncilDate: October 26-27, 2011Venue: BRAC University, Dhaka, Bangladesh**Space-based Information for Disaster Preparedness and Risk Assessment**Jointly organized by CDMP II, DMRD, MoFDM and ICIMODDate: April 09-13, 2011Venue: Bangladesh Computer Council, Agargaon, Dhaka **Flood Hazard Mapping and Socioeconomic Vulnerability**Organized by Institute of Water and Flood Management (IWFM) of Bangladesh University of Engineering and Technology, (BUET) and The International Centre for Integrated Mountain Development, ICIMOD in association with Southampton University, United Kingdom and Centre for Geoinformatics, Z\_GIS, University of Salzburg, Austria.Date: April 27 - May 1, 2010Venue: BRAC-CDM, Gazipur DhakaTraining Workshop on **“Regional Climate Modeling using PRECIS.”**Organized by Climate Change Study Cell (CCSC) of Bangladesh University of Engineering and Technology (BUET) and Met Office, United Kingdom with financial support from the Department for International Development (DFID) of the UKDate: February 14 -18, 2010Venue: IWFM, BUETRegional Workshop on **“Climate Change and Water Resources: IWRM as a Tool to Cope with Changing Condition of the Climate System”**Organized by CapNet South Asia in association with CapNet globalDate: January 10 -14, 2010Venue: BRAC-CDM, Gazipur Dhaka |
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