

Education

B.Sc. in Civil and Water Resources Engineering
Jan 2015 - Jan 2019
(GPA 2.92 out of 4)

Military Institute of Science and Technology
Supervisor: Dr. Md. Munsur Rahman
Thesis: *Study of the Impacts of Bank-Line Protection on the Plan form Morphology of the Jamuna River in Bangladesh*

Publications

1. **Islam, M. R.,** & Islam, A. Z. (2021). Plan form changes of the Ganges-Jamuna confluence and its relation to flood. Remote Sensing Applications: Society and Environment, Elsevier, Volume-22, 100525. <https://doi.org/10.1016/j.rsase.2021.100525>

2. **Islam, M. R.,** Khan, I., Salim, M. A., & Musfequzzaman, M. (2024). Reconstruction of avulsion history of the Brahmaputra River: Rare example of a giant braided river course alteration through multi-channel multi-avulsion processes. Evolving Earth, Elsevier, 100034. <https://doi.org/10.1016/j.eve.2024.100034>

3. Khan, I., & **Islam, M. R.** (2025). Earth Observation Data-Based Assessment of the Impacts of June 2024 Flooding in Sylhet Division of Bangladesh. Natural Hazards Research. <https://doi.org/10.1016/j.nhres.2025.01.009>

4. **Islam, M. R.,** Mohonto, S., & Noor, F. (2025). Evolution of char lands in the Padma River in Bangladesh and its impacts on planform morphology of the river. Results in Earth Sciences, Elsevier, Volume-3, 100075. <https://doi.org/10.1016/j.rines.2025.100075>

Skills

GIS: ArcGIS, ArcGIS Pro **Remote Sensing:** ERDAS Imagine, SNAP, Google Earth Engine **Water Modelling:** Mike Zero, Mike 21c, HEC-RAS

Language: Bengali (native), English (IELTS Academic overall band score 7.0, Listening: 7.5, Reading: 8.0, Writing: 6.5, Speaking 6.5)

Professional Experience

1. Position: Junior GIS Analyst	Employer: Institute of Water Modelling (IWM) Division: ICT, GIS & Remote Sensing	Duration: December 2019 – January 2021
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Institutional Profile: <https://iwmbd.org/Portfolio/RHL>

Responsibility:

- Preparation of land cover maps (settlement, exposed Land, cultivated Land, land Forest, water body, river)
- River bank erosion accretion analysis in the coastal region of Bangladesh
- Deforestation maps preparation and trend analysis
- Preparation of 4433 maps for “Department of Bangladesh Haor and Wetlands Development” (Bangladesh Wetland Maps)

Projects Involved:

1. Surface Water Hydrological Study for Selection of Potential Locations for Nuclear Power Plant in Southern Region of Bangladesh.
2. Sub-project for Interactive Geo-Database for Coastal zone. (IGDCZ)
3. Land Cover Mapping for Hill Tract (Chittagong)
4. Study of Interaction between Haor and River Ecosystem including Development of Wetland Inventory and Sustainable Wetland Management Framework.

2. Position: Junior Engineer	Employer: Institute of Water Modelling (IWM) Division: River Morphology and Engineering	Duration: January 2021 to Date
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Institutional Profile: <https://iwmbd.org/Portfolio/RHL>

Responsibility:

1. Geo-spatial data generation from satellite images and other sources, time series analysis, and two-dimensional hydrodynamic model development to find suitable locations for hydraulic structures like bridges, culverts, intake pumps, etc.
2. River bank and bar erosion - accretion and river planform analysis to understand the fluvial Processes in the river systems.
3. River bar age analysis through RS and GIS techniques and long-term stability analysis via a 2D hydrodynamic model.
4. Sediment, discharge, water level, and flow velocity data analysis for various rivers.
5. Mathematical model development for various bridge projects to provide hydro-morphological parameters for bridge design.

Projects Involved:

1. Mathematical modeling study for sustainable management of the Gorai River basin including offtake.
2. Design for Construction of Large Bridges on upazilla, Union & Village Road Project (FSB)-LBSP-2.
3. Hydrological and Morphological Study for Construction of 5.6 km Naradaha-Khaschar Link Road including Two Bridges at Naradaha and Khaschar under Pabna Road Division.
4. River Planform Analysis tasks for P-52516 (Hydrology and Morphology Study for Kulaghat Bridge over Ratnai River at 7th km of Nageswari-Kashipur-Kulaghat-Lalmonirhat Regional Highway (R561) under Lalmonirhat Road Division).
5. Hydro-Morphological Study of 180-meter-long Bridge along with approach road at Cumilla Economic Zone connecting road under Road Division Narayangonj during the year 2020-2021.
6. Hydro-Morphological Study of 120-meter-long Bridge at Meghna Economic Zone connecting road under Road Division Narayangonj during the year 2020-2021.
7. Consultancy Services for Mathematical Modelling Study for Dredging of the Padma River at the Upstream of the Padma Bridge under Dohar Upazilla.

8. Feasibility Study for the Management of the Brahmaputra and Jinjiram River Basins through Flood Control, Drainage Facility and Bank Protection in Kurigram District.
9. Morphological study for the “Detailed Feasibility Study for Char Stabilization and Livelihood Development Project in the Jamuna River (Pilot Study: Kawakhola Char)”.

Awards

Poster Presentation Competition in Civil Engineering Day 2017- 2nd Position

Organized by - Military Institute of Science and Technology (MIST).

Title of the Poster - *Study of the Plan Form Changes of the Ganges-Jamuna Confluence and its Relation to Flood*

Internship

Internship in Bangladesh Space Research and Remote Sensing Organization (SPARRSO)

Duration: 04-24 December 2017

Internship Report: *Spatio-temporal Comparison of the Extent of Surface Water Areas in the Boro Planting Season in Sunamganj District using Remote Sensing and GIS.*

Professional Training Received

Training program on “Computational Hydraulics, Hydrology and Hydraulics and Statistics for Water Management”

Conducted by: Dept. of Water Resources Engineering, Bangladesh University of Engineering and Technology

Duration: November 15, 2021, to February 3, 2022.

Training program on “MIKE 21C”

Conducted by: Institute of Water Modelling (IWM)

Duration: November 10, 2024, to November 15, 2024.

Poster Presentation

2018

Study of the Plan Form Changes of the Ganges Jamuna Confluence and its Relation to Flood

Poster Presentation Competition in CENNOVATION-2018, organized by the Islamic University of Technology (IUT).

2017

The Teesta River: Morphological Change and Availability of Water

Inter-University Poster Presentation Competition on Water Management, organized by Bangladesh University of Engineering and Technology (BUET), Dhaka.

Professional Training Imparted

1. Four training sessions were given on GIS and remote sensing technology to the professionals of the Bangladesh Water Development Board (BWDB) and Bangladesh Water Resources Planning Organization (WARPO) as part of the technology transfer of the assigned projects. (2023-2024)
2. Regular training of the IWM Junior Engineers on the GIS and Remote Sensing Technology.