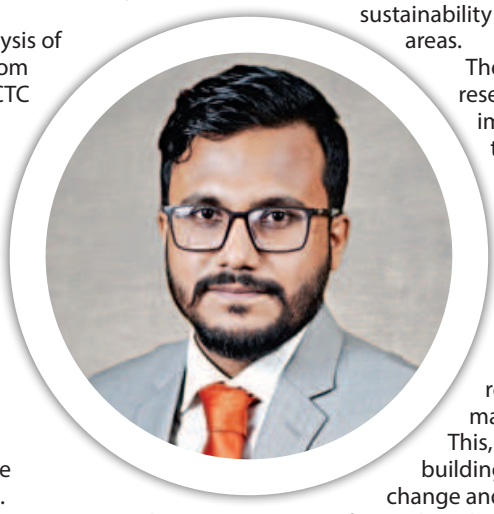
EDUCATION

Paving the way for SUSTAINABLE WATER MANAGEMENT

UCTC lecturer Hrithik Nath publishes groundbreaking research on rainfall trends in southeast Bangladesh

A collaborative effort led by a research team at the University of Creative Technology Chittagong (UCTC) is making a significant impact in the field of water resource management. Published in the prestigious journal, "Theoretical and Applied Climatology", the study, spearheaded by Hrithik Nath, Lecturer and Program Coordinator, Department of Civil Engineering, UCTC, sheds light on the long-term trends and variability of rainfall in the southeast region of Bangladesh. This insightful research offers crucial insights that pave the way for sustainable water management practices, benefiting the local community and beyond.

Through meticulous analysis of 42 years of data collected from ten weather stations, the UCTC research team, under the supervision of Prof. Dr Sajal Kumary Adhikary, Khulna University of Engineering & Technology (KUET), uncovered distinct trends in the region's rainfall patterns. Joining Nath and Prof. Adhikary in this research were co-authors Prof. Dr ARM Towfiqul Islam from Begum Rokeya University, Rangpur (BRUR) and Abdulla-Al Kafy from the University of Texas at Austin.



The study revealed an increase in annual rainfall along the coastal belt, contrasting with a decrease observed in the northern parts. This pattern mirrored the trends in monsoon rainfall, highlighting potential concerns for both regions. Further analysis identified seasonal variations, with pre-monsoon and dry season rainfall experiencing declines, while post-monsoon rainfall exhibited a significant increase. These findings paint a nuanced picture of the region's changing water landscape, presenting both opportunities and challenges.

One of the most critical implications of the study lies in its ability to inform future water management strategies. The projected increase in monsoon rainfall in the southeastern hill tracts raises concerns about exacerbated flooding events. To mitigate these risks, the research team emphasises the need for implementing improved drainage systems and developing resilient infrastructure, particularly in flood-prone areas like the Chattogram division. Conversely, the decrease in rainfall observed in the northern regions necessitates proactive measures to address potential water scarcity issues. Nath and his team suggest implementing water conservation measures and promoting climate-resilient agricultural practices to ensure the long-term sustainability of water resources in these areas.

The impact of the UCTC team's research extends beyond the immediate benefits it offers to the local community. By providing valuable insights into the complex dynamics of rainfall patterns, the study empowers policymakers and engineers across Bangladesh to make informed decisions regarding water management strategies. This, in turn, contributes to building resilience against climate change and its associated challenges, safeguarding the well-being of communities not only in Bangladesh but also in neighbouring regions sharing similar climatic vulnerabilities. Nath and his team's research stands as a testament to UCTC's unwavering commitment to impactful research that addresses real-world challenges. Their dedication to unearthing solutions for sustainable water management not only exemplifies the university's values but also underscores its vital role in shaping a brighter future for communities both locally and globally. Through continued research and collaboration, UCTC remains at the forefront of developing innovative solutions that ensure a sustainable and water-secure future for all.

ResearchGate

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