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PRESS RELEASE

IIT (ISM) Research reveals the shrinking of Transboundary Rivers across the world due to disappearing tributaries and streams, leading to unpredictable climate & loss of agricultural productivity etc.; Research also suggests delineation of administrative boundaries of Transboundary Rivers to ensure protection of their natural boundaries.

The Transboundary River basins are shrinking as their tributaries and streams are disappearing at an unprecedented rate, causing changes in their catchment area which, in terms, are leading to unpredictable climate, floods and droughts, loss of agricultural productivity, pandemic, disaster and disruption of valuable ecosystem services etc.

Not only this, but it also leads to other adversities like groundwater depletion, soil erosion, desertification and surface run-offs.

All this, despite the fact that we need 6-8% land cover under surface water on the planet to deliver river-dependent ecosystem services.

The startling fact came to light as part of an 18 month institute-funded research worth Rs 21 lakh, titled- Morphometric Delineation of Administrative Boundaries and Classification of Threatened Categories of Watershed in Transboundary rivers, conducted by a team of IIT (ISM) researchers, led by Prof Anshumali of Department of Environmental Science and Engineering.

The research conducted with the help of projects assistants, Rahul Kumar Pandey and Rahul Kumar Gupta, besides Sanchit Kumar, a Senior Research Fellow (SRF), highlighted the need for delineation of administrative boundaries of rivers along small watersheds as it plays a vital role in interlinking Ecological and Geological Entities which are crucial for ensuring the continuous and pollution free flow of rivers.

The team which conducted the study on 53.08 KM Banki River, a tributary of The Ganga, in this regard also found decline of vegetation, water bodies and barren land of the river @13.9%, 3.6% and 1.6 % respectively in the nearby areas of river from 1991 to 2001.

The study further noted that irreversible loss in the number of streams, length of stream and drainage density resulted in the conversion of the 6th order Banki River into a 4th order river.

“The Banki Watershed showed a significant decrease in the drainage density indicating spacing between streams of different orders between 1977 to 2021” said Prof Anshumali and added that extreme morphometric changes led to the categorization of Banki into Critically endangered Category.

“The study also highlights the need for classification of such rivers into appropriate threatened categories” further said Prof Anshumali.

“The problem is not confined to any particular continent or country but almost every region is affected as approximately 40% of people in the world live in Transboundary lake and river basins shared between two or more countries that cover almost 50% of global land surface and 60% of global water flow” elaborated Prof Anshumali.

Citing some examples, he said, “ The countries situated along transboundary rivers like the Amazon, Nile, Mississippi, Yellow, Yangtze, Yenisei, Brahmaputra-Ganga, Indus etc are facing unprecedented land use and land cover (LULC) changes in their catchment areas causing unprecedented climate, urban and rural flash floods, drought, ground water depletion etc.

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