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## Streamflow data-sharing policy for the Ganga Basin

Hilly regions of Uttarakhand, Himachal Pradesh and Uttar Pradesh witnessed a spell of widespread torrential rainfall from 15 to 17 June 2013. India Meteorological Department (IMD) had predicted on 14 June that rainfall in Uttarakhand will exceed 100 mm/day in many mountainous areas during 16 and 17 June. This prediction was not followed up and the floods caused a huge loss of life and property. Apparently, no satisfactory early flood warning system was in place for the affected areas and no studies have been completed to set up a flood forecasting model on the catchments in the Upper Ganga Basin.

The meteorological data network in the mountain areas in India is poor. There are very few stations at altitudes greater than 2000 m. Thus we have almost no information about rainfall, snowfall, temperature, incoming and outgoing radiation, wind velocities, etc. in these regions. This is a handicap while calibrating hydrologic models for the catchments in this region and developing improved understanding of the impacts of climate change on the water resources of Himalayan rivers. To fill the data gaps in these difficult-to-access and remote locations, it is necessary to set up a dense network of automatic instruments which can sense and transmit data to a central location.

Ganga Basin is home to nearly 40% of the Indian population and every year one part or the other is under floods. Yet, a

search regarding hydrological studies on the Ganga Basin shows only a negligible number of published works. One main reason for rare publications appears to be due to the fact that stream gauge data in the Ganga Basin are maintained as classified information. In fact, the stream gauge data for many other river basins are also classified.

This secrecy does not promote researchers to obtain and analyse the streamflow data. Also, even if a researcher is able to get the data, the primary data (giving numerical values) cannot be part of the paper submitted for publication in technical journals or conference proceedings. This restriction is a hindrance in the peer-review process and critical assessment of interpretations. Therefore, reputed journals would not like to publish such papers which do not permit critical scrutiny. The end result is that, in spite of the immense importance of the Ganga Basin in India, its huge water and power potential and large technical expertise available in the country, hydrology and water resources development matters have not been studied at the desired level of detail. All this is a big disincentive for taking up any hydrological study of Ganga and other river basins in India. The need for declassifying the stream gauge data in the upper reaches of Ganga Basin (say, upstream of Varanasi) cannot be overemphasized to promote research and better understanding of the hydrology of the river basin

and improving our preparedness for facing flood-related disasters.

In the context of the recent Kedarnath disaster, the following observation (quoted by Srinivasan, J., *Curr. Sci.*, 2013, **105**, 7–8) on data situation in India is relevant: 'Prof. Dave Petley (Durham University, United Kingdom) has said "The lack of coherent information from government continues to amaze me, especially when compared with the clarity of data that is produced in similar situations in other poor countries, most notably the Philippines" (<http://blogs.agu.org/landslideblog/>)'.

The country has the scientific expertise to predict the extreme events, but it is not being put to optimum use. Mathematical models to predict floods and landslides are available. Gaps in the knowledge can be filled by commissioning special studies. It will be immensely beneficial for the country if the scientific expertise and hydrological data that are captured by spending large resources and great efforts are put to their best use.

Disclaimer: Views and opinions expressed here are those of the author's and may not necessarily reflect those of the organization to which he belongs.

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