Climate change to have considerable impact on Ganga's dynamics

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Synopsis

Climate change will have "considerable" impact on dynamics of Ganga, affecting major portion of north India which is directly dependent on it for its agriculture and industrial needs.

NEW DELHI: Climate change will have a "considerable" impact on the dynamics of the river Ganga, affecting a major portion of north India which is directly dependent on it for its agriculture and industrial needs, a recent study said.

In a study conducted by researchers at the Indian Institute of Science (IISc), Bangalore, on how the stream-flow in the basin would change under the changing "land use pattern" and "climate", it was found that among both the factors, the effect of climate change was much more "pronounced".

"Certain changes are because of land use and some because of climate change. Looking into the future, with respect to water management efforts, if we conclude that climate change has more implications, then our responses will be much different," said Pradeep Mujumdar, Chair Professor in the department of Civil Engineering, who led the study.

The researchers studied about one-eighth of the total catchment area called the Upper

Ganga Basin and divided the study region, that also contained the origin of the river, into three different parts depending on the topography, altitude and land use.

After studying the changes in land use through satellite imagery, the analysis of the researchers revealed that between 1973 and 2011, area under cultivation increased by more than 20 per cent.

It found that during the same period, the urban land had also expanded significantly, though it occupied a small area in the entire basin.

They also noted an appreciable drop in the area under forest cover.

"Such changes are not at all surprising because, between 2001 and 2011, the population of the region has skyrocketed by 120 per cent," a statement quoting Mujumdar said.

"Their (scientists') predictions about the future climate indicated changes in rainfall pattern and rise in average minimum and maximum temperatures," he said.

"Climatic changes introduce a large uncertainty in future water situations. Because of this, we need to bring more resilience in our water management system like use of more conservative methods. We need to base these methods on a worst-case scenario and prepare ourselves," said Mujumdar.