

Rise in heavy rainfall events may hit Goa's water security

'Climate Change Affecting State'

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Panaji: Goa's mean annual rainfall has increased by 68%. While this may seem like a blessing for the environment, it is actually light and moderate rainfall that sustain biodiversity, agriculture and ecosystems.

"What further complicates the water security scenario for the state is the fact that very heavy rainfall events are projected to increase under climate change scenarios," professor Rajiv Chaturvedi of BITS Pilani K.K. Birla Goa campus said in his analysis for the Goa State Action Plan on Climate Change.

In a recent publication of the state environment ministry,

CHANGING SEASONAL PATTERN

Impact on water resources as per State Action Plan on Climate Change

- Seawater intrusion or saltwater ingress will **increase salinity of groundwater near coastal areas** rendering it unusable
- With **sea-level rise and indiscriminate use of groundwater**, problem of saltwater intrusion will be exasperated
- With increased precipitation runoff will increase, which, due to **inadequate sewerage network**

and sanitation facilities, could **mix with sewerage and other contaminants** leading to pollution of water bodies

- Due to the high water table, **soaking capacity of soil is generally poor in Goa** and increased peak rainfall incidents could **further elevate chances of landslides and mudslides.** These could impact water pipelines and sewerage networks, among others



Chaturvedi, who was a member of the climate change action plan panel, said that climate change, like in the rest of the world, has already started affecting Goa's pristine climate.

"Our analysis of more than 100 years of climate data

for the state suggests that the climate of Goa state has already changed in the last century under the influence of rising greenhouse gases in the atmosphere," Chaturvedi said.

He explained that in 2019, Goa witnessed floods that

marred over 1,300 hectare of crops, leading to estimated losses of at least Rs 10 crore, and that barely a year later, it saw one of its heaviest monsoons on record.

► 'Common', P 2

Exceptionally heavy rainfall to become common

► From P 1

Very heavy and exceptionally heavy rainfall events have increased by more than 100%. It is interesting to note that it is the moderate and light rainfall events that nourish biodiversity, agriculture, various life forms and ecosystems, whereas very heavy and exceptionally heavy rainfall events create devastation, floods and chaos to life forms as well as to different natural and production systems. Unseasonal rainfall events have also increased in the state," Chaturvedi said.

Exceptionally heavy and extreme rainfall events, which are rare today, are projected to become commonplace in future climate change scenarios for Goa, he said. "Our study concludes that increasing frequency of very heavy and exceptionally heavy rainfall events in Goa are one of the key impacts of climate change witnessed in the state. We should worry about how such events

File photo



CLIMATE CHANGE

may evolve in future and may affect the state's climate, economy and biodiversity."

The Goa State Biodiversity Board recently drafted the State Action Plan on Climate Change with the help of Nabard, and Chaturvedi carried out the long-term climate change analysis for Goa based on Nabard's request. He studied how the temperature and rainfall profile in the state has changed in the last 118 years (from 1901-2018) and how it is likely to change in future up to the year 2100 under different climate change scenarios.