Monsoon Prediction for Central Indian Region

Why in news?

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A study by independent meteorologists has predicted a decline in rainfall over the Central Indian region.

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What is the finding?

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- Low Pressure Systems (LPS) usually bring rain to this area.
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- But there is a declining trend in the number of these Low Pressure Systems (LPS).
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- The region will witness a 45% decline in the frequency of LPS activity.
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- About 50 years from now, the monsoon over central Indian region is expected to reduce.
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- This could result in lesser rainfall in this heavily rain-fed agrarian belt.
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- This is expected to be realised during the decades spanning between 2065 and 2095.
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- The study also highlights a 10% increase in the instances of LPS forming over land.
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- This would eventually lead to extreme rainfall over the North Indian plains.
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How do LPSs work?

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- Low Pressure Systems (LPS) originate in the Bay of Bengal.
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- They travel landwards in a southeast-northwest direction.
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- It crosses Odisha, Andhra Pradesh, Telangana, Chhattisgarh, Jharkhand, Madhya Pradesh, Maharashtra and Uttar Pradesh.
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- This region is known as the **core monsoon zone**.
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- Most LPS pass by this region during the June to September monsoon season.
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- This makes it a very crucial region to understand the monsoon.
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- A new test-bed facility is being set up on the outskirts of Bhopal to study these key rain-bearing systems.
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Why is the decline?

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- One of the main reasons for decrease in rainfall could be the large-scale decrease in the moist westerly winds.
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- These winds, called monsoon circulations, travel from the Arabian Sea along India’s west coast onto the mainland.
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- In addition, these are observed to have shifted northwards from their normal track during their forward propagation.
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- Climate change effect on the monsoon, especially over the core monsoon zone, is seen as inevitable.
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- With the rise in global temperature, the atmosphere would have a much higher moisture holding capacity.
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- But at a certain point this capacity would collapse, leading to extreme rainfall events and absence of consistent rainfall.
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- Extreme rainfall events are already found to be increasing in recent years.
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Source: Indian Express

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