



2 Minutes - Series

(Foundational topics prerequisite for Civil Services)

For

25th October 2021

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Geography

What is the News ?

Climate Crisis in North East India

Why are rainfall patterns changing?

Content of the Lecture

- North Eastern rainfall-Changing Pattern. (Points for Mains)
- Additional Concept to be Learnt.
- Question of the Day.

Context

- The North East India, which normally receives heavy rainfall during the monsoon months (June-September), has changed character for the worse.
- The climate of North East India is changing: Rainfall patterns over the region in the last century have considerably changed, resulting in its overall drying up.

Rainfall in North East



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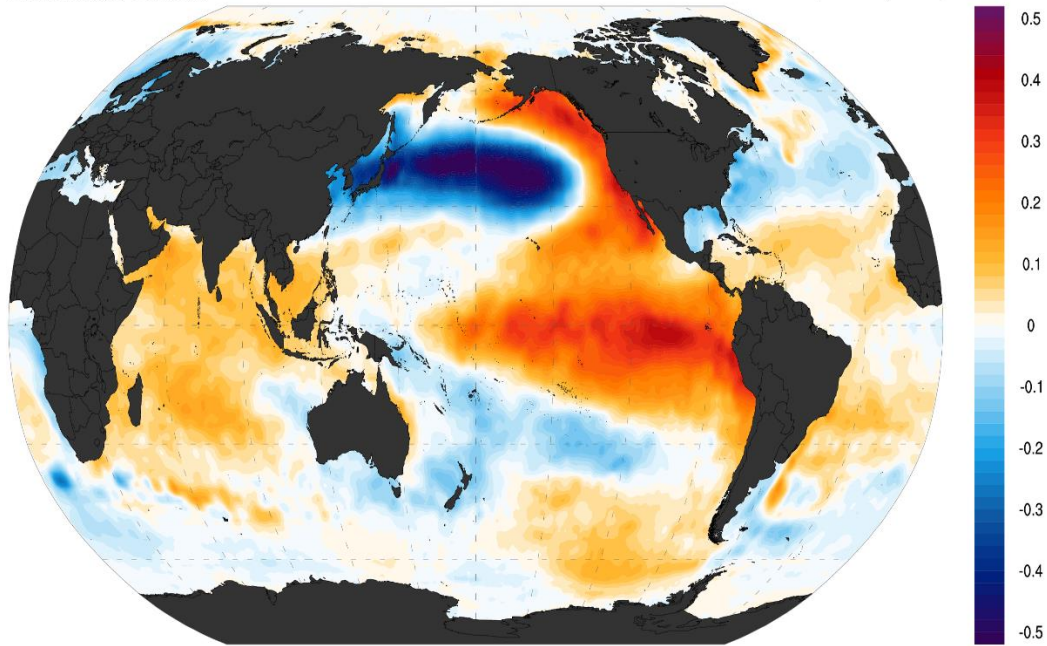
- TAILOR MADE POINTS FOR MAINS
- DIFFERENT STUDIES

What are rainfall patterns in the region changing?

- An aspect of warming that influences rainfall is drying of the land, which increases the frequency and intensity of dry periods and droughts.
- An increase in moisture and the drying up together change the rainfall patterns in unpredictable ways.
- Other climatic factors such as the increased snowfall in the Eurasian region also impact monsoon rainfall in North East India.
- Excessive snowfall in Eurasia causes cooling of the atmosphere of region, which triggers events eventually leading to a weak summer monsoon season there.
- Rainfall patterns in North East India differed significantly from one sunspot epoch to another.
- Sunspot epochs are alternating periods of increased and decreased activity on the sun's surface that influence the climate of earth.
- A Journal of Climate research paper from 2016 also found that PDO is being influenced by global warming as it decreases the difference of temperatures among the layers of the ocean. It said the peak of PDO will change from 20 to 12 years, which may have an impact on the monsoon rainfall in the North East India.

Pacific Decadal Oscillation

Temperature ($^{\circ}\text{C sd}^{-1}$)



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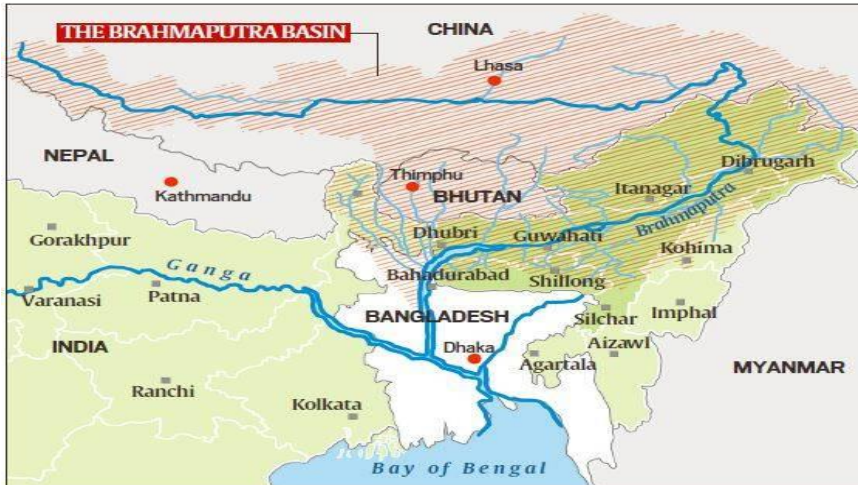
Issues

- lack of data and credible long-term research on the same. This is because there is no data collection infrastructure. The data that is collected is not of high quality, which means that no fool-proof analysis can be carried out.
- “Rainfall forecasts for the North East are almost always wrong – **Experts**”

Impact

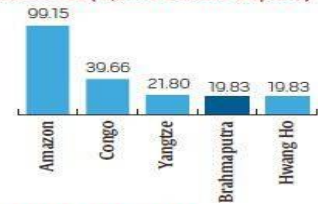
- This changing rainfall pattern, especially during the monsoon season, affects the flow of rivers, extent of snow cover and health of mountain springs, which in turn have an impact on livelihoods, especially agriculture and fishing, forest flora growth, animal and bird habitat (and behaviour) and other ecosystem aspects.
- Because of its unique topology and steep slopes suddenly giving way to plains, the region is prone to river course changing.
- But now, the frequency of these changes is increasing because of heavy rainfall and other factors.

AREA OF INFLUENCE

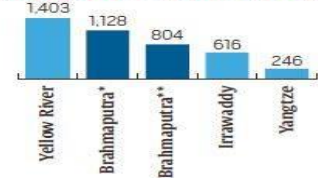


STRONGEST & SILTIEST

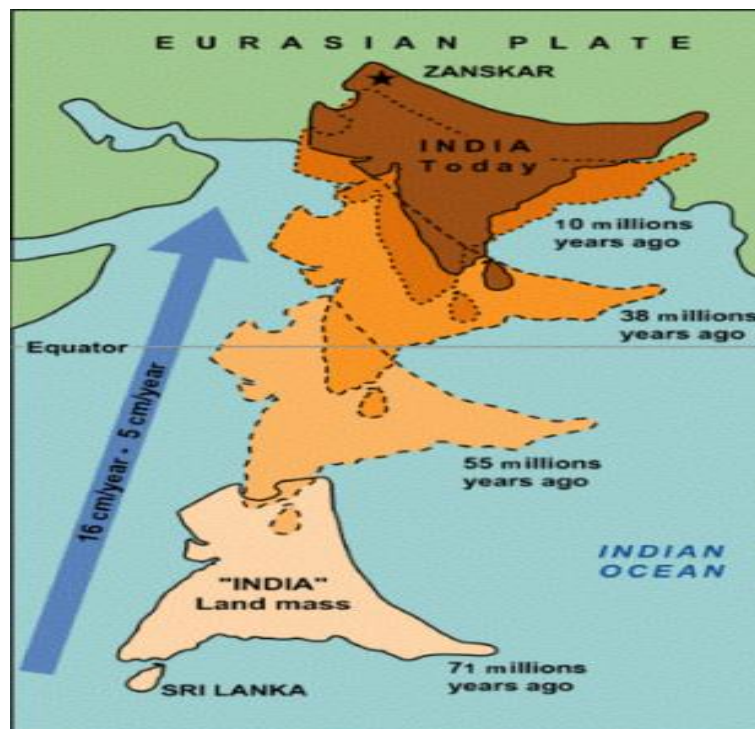
AVERAGE DISCHARGE AT MOUTH (1,000 CUBIC m/sec)



SEDIMENT YIELD (TONNES PER sq km PER YEAR)



*at Bahadurabad, Bangladesh; **at Pandu, Guwahati



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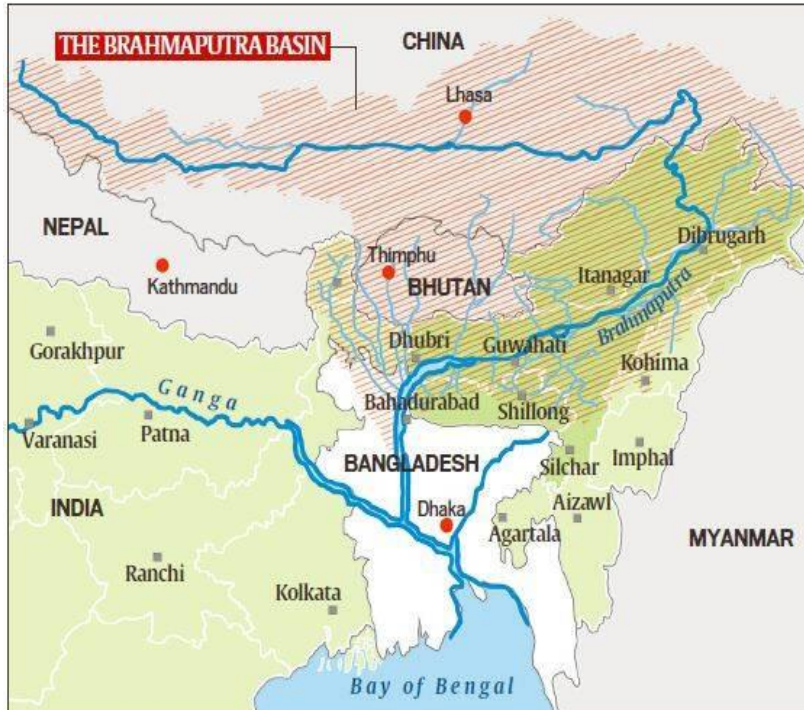
Application in Mains

- Climate Change
- Indian Monsoon
- Disaster Management
- North East Development
- Essay

Additional Points to be Learnt

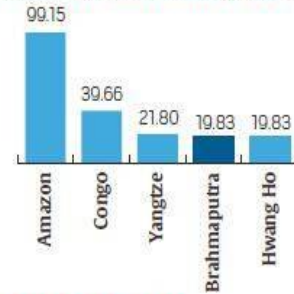
Why is Assam Prone to floods?

AREA OF INFLUENCE

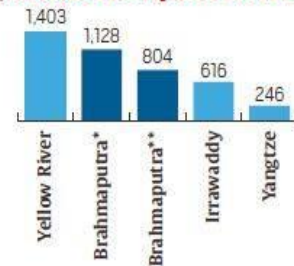


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Question of the Day

Arrange the hills from North to South :

- 1) Mishmi Hills
- 2) Mikir Hills
- 3) Mizo Hills