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Q18

How far do you agree that the behaviour of the Indian monsoon has been changing due to humanizing landscape? Discuss.

UPSC Civil Services Mains 2015 · GS I · 12 marks · Geophysical Phenomena

Important Geophysical phenomena such as earthquakes, tsunami, volcanic activity, cyclone etc., geographical features and their location-changes in critical geographical features (including water-bodies and ice-caps) and in flora and fauna and the effects of such changes.

Core demand of the question

- Discuss how far human changes to the land have altered the behaviour of the Indian monsoon
- Agree where evidence is fair, and keep ocean and global climate in the picture

Revision summary

The monsoon is still an ocean-continent wind system at heart.

Deforestation, irrigation, cities, and aerosols change local rain, onset, and extremes.

Urban heat can mean heavier short storms; sealed soil turns them into floods.

El Niño, the Indian Ocean, and greenhouse warming remain major controls.

- **Agree in part:** humans reshape monsoon behaviour, they do not solely own it.

Flow diagram

Forest to farm city irrigation -> Local monsoon rain

Aerosols heat islands -> Local monsoon rain

ENSO IOD ocean heat -> Local monsoon rain

Global warming -> Local monsoon rain

Local monsoon rain -> More extremes variable spells

Conclusion

- Restore Ghats and catchment forests, cut aerosols, and plan cities for cloudbursts, while still watching the Pacific and Indian Oceans in the forecast.

Humanized landscapes have changed how monsoon rain falls on the ground-more bursts, more urban storms, some local drying after forest loss, and aerosol effects on clouds. That is a real but partial story. The monsoon's large behaviour still answers to oceans and a warming planet. The fair agreement is "yes, in part, and growing," not "the monsoon is now only a land-use product."

Facts & figures

Land-sea heat contrast

Basic monsoon engine: summer heating of the Asian landmass relative to the Indian Ocean.

Western Ghats orography

Hill wall that lifts monsoon winds; forest loss can alter local rainfall on that slope.

ENSO

Pacific oscillation whose El Niño phase often links to weaker Indian summer rain.

Indian Ocean Dipole

East-west Indian Ocean temperature pattern that can add or cut monsoon rainfall.

Aerosol dimming

Haze of dust and smoke that can change heating of the land and the way clouds form.

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