



1. Cyclone Vayu is an obstacle to northward progress of monsoon

- How is cyclone Vayu going to affect the monsoon?
- Arabian Sea cyclones are also relatively weak compared to those emerging in the Bay of Bengal. Why?
- What are the conditions required for the formation of cyclones ?

GS paper 1 (Important Geo physical phenomena's such as cyclones)

In this video, you can find detailed answers for all the above questions.



Daily News Analysis



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What is the context about?

- Just over a month after the powerful cyclone Fani devastated large areas of Odisha, another cyclone is headed towards India, this time towards the Gujarat coast.
- Cyclone Vayu – it is still to develop into a cyclone and is only a deep depression as of now – is currently positioned around 250 km northwest of Aminidivi island in Lakshadweep and about 750 km southwest of Mumbai, and is slated to reach the Gujarat coast in two to three days.



How is cyclone Vayu going to affect the monsoon?

- The arrival of the monsoon has already been delayed, hitting the Kerala coast on June 8 instead of June 1.
- The cyclone is expected to interfere with normal progression, by sucking all the moisture from the monsoon winds towards itself.
- Cyclones are sustained by very strong low-pressure areas at their core. Winds in surrounding areas are forced to rush towards these low-pressure areas. Similar low-pressure areas, when they develop near or over land, are instrumental in pulling the monsoon winds over the country as well.

Arabian Sea cyclones are also relatively weak compared to those emerging in the Bay of Bengal. Why?



- **Temperature difference:** The low pressure system of cyclone need continuous supply of heat energy and as the Bay of Bengal is warmer than Arabian sea, it is able to provide the heat energy needed to sustain the low pressure system.
- **Cyclones from Pacific ocean:** The low pressure system originating from the pacific ocean also travel towards left to Bay of Bengal and hit the western coast from Bay of Bengal.
- **Peninsular Landmass:** The cyclones originating from the Bay of Bengal side are not able to sustain while travelling above the peninsular landmass due to absence of energy of evaporation and weakens while reaching the Eastern coast.

What are the conditions required for the formation of cyclones ?



- ✓ Warm water temperature (27°C up to at least 50m depth) so that it may cause the overlying atmosphere to be unstable enough to sustain convection & thunderstorms.
- ✓ Rapid cooling with height so that it may cause release of the heat of condensation that powers a tropical cyclone.
- ✓ High humidity
- ✓ Low amounts of wind shear as high shear is disruptive to the storm's circulation
- ✓ **Coriolis effect:** A distance from equator is necessary at least 5° of latitude so that it allows the Coriolis effect to deflect winds blowing towards the low pressure centre & creating a circulation.