Cyclones in the East Coast - Cyclone Titli

What is the issue?

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- Cyclone Titli recently hit the Odisha-Andhra coastal zone.
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- Given the cyclone frequency in the Eastern Coast, it is essential to understand about cyclone formation and evacuation process.
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How has the cyclone trend been?

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- Titli is the third major cyclone to hit the Odisha-Andhra coastal zone in the last five years, all in October.
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- The other two are the Phailin (2013) and Hudhud (2014) cyclones.
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- Cyclones have always been frequent in the Odisha-Andhra coastal region.
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- But notably, the frequency of intense cyclones in the area has increased over the years.
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How do they form?

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- Pacific is one of the world's most active basins for typhoons, and adjacent to the northwest of this is the Bay of Bengal.
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- Notably, Bay of Bengal receives the remnants of major landfalls in the Philippines, China and South Asia.
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- From these places come low-pressure systems that develop into a monsoon depression or a cyclone.
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- This is the reason why most of the cyclones such as Titli, Phailin and Hudhud typically struck in October.
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- The reason is that wind shear i.e. the difference within wind speeds and direction at two different levels is low during this time.
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- The low wind shear, when combined with surface sea temperatures greater than 26°C, raises the likelihood of cyclones.
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- This is because, if there’s too much wind, these weather systems have trouble organizing and developing into a tropical cyclone.
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- But with little to no wind shear, the turning within the tropical system is uniform.
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- So the storm becomes vertically aligned, helping to keep it intact and, likely, strengthening.
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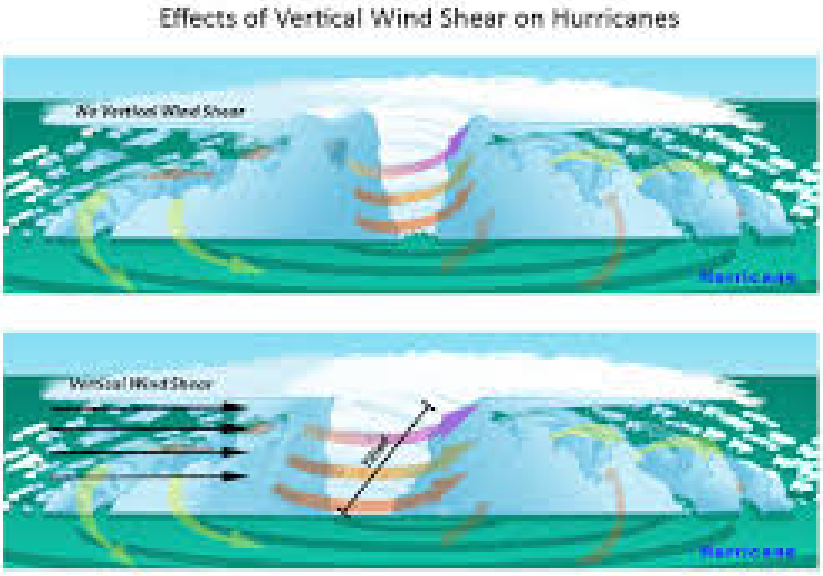

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Why is it hard to predict?

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- India acquires storm prediction models from the US and Europe but lacks

the resources to upgrade the models regularly.
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- The Odisha government was criticised for being unable to anticipate the landfall of Cyclone Titli or the very heavy rainfall.
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- But prediction is difficult here because of budgetary and meteorological factors.
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- In the Atlantic basin, the US has dedicated aircraft that fly directly into the clouds.
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- It studies moisture levels and gather various data on cyclone profile.
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- But for Indian cyclones developing over the ocean, the reliance is largely on satellite images (a top view).
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- This only reveals little data on moisture content and intensity.
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- So getting a more detailed picture is possible only when a cyclone is 300-400 km from the coast.
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- But this reduces the prediction and preparation time.
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- Specifically, Cyclone Titli was hard to read because it turned into a recurving cyclone (it changed direction).
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How is evacuation done?

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- Evacuation exercises are classified as preventive, vertical, and shelter-in-place.
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- In preventive (or horizontal) evacuation, the impact area is meant to be completely evacuated.
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- But this is a measure rarely taken in India because of poor roads and inadequate public transportation.
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- Also, poor people rarely have the resources to find alternative accommodation.
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- In vertical evacuation, people are directed to specially designed buildings within the impact area, which was largely followed during Cyclone Titli.
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- Shelter-in-place evacuation involves fortification of existing houses and community buildings, which again required financial resources.
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- **Concerns** - Reportedly, the government does not have adequate multipurpose cyclone shelters.
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- The government claimed around 3 lakh people were successfully evacuated during Cyclone Titli.
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- But widely held parameters of success in disaster management, such as number of evacuees, are “misleading”.
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- Notably, the fewer casualties during Phailin and Hudhud were because of the limited severity of these cyclones than effective disaster planning.
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Source: Indian Express

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