

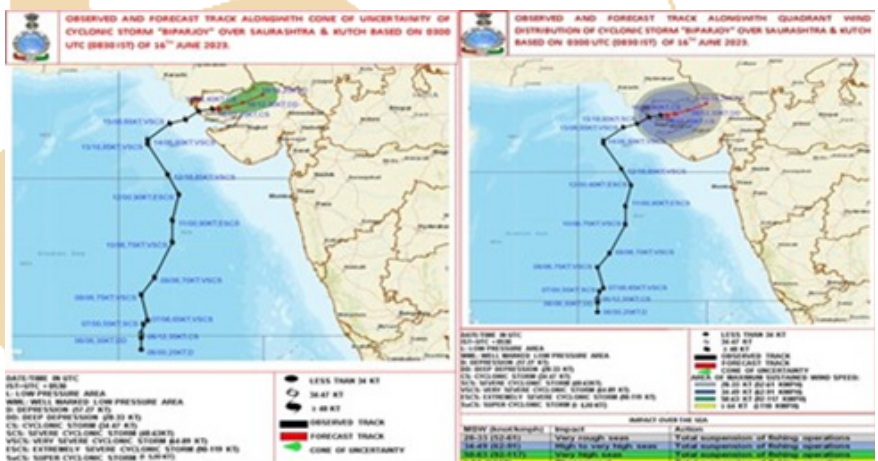
PREPAREDNESS PAYS OFF: ON CYCLONE BIPARJOY

The Hindu

Paper - III (Disaster Management)

A potent cyclonic storm, Biparjoy, swept through Gujarat and parts of Rajasthan last week and while it did cause noticeable destruction to the infrastructure, scores of injuries and cattle deaths, there have been only two reported casualties. The India Meteorological Department began issuing its first reports on the cyclone's trajectory as early as June 8, and by June 11, the agency first indicated that the storm would not bypass India, as previously estimated, but would likely sharply swing towards coastal Saurashtra, Gujarat. The storm was also categorised as falling in the 'very severe' category — average wind speeds of over 115 kmph. The four days of lead time and an estimate of its strength gave enough time for district authorities in Gujarat to begin evacuating people — nearly 1,00,000 people in the coastal regions of the States were moved to shelters and close to 30 central and State disaster relief teams were kept ready. The railways cancelled several trains and fishermen too received advance warnings of the cyclone's impact, that kept them away from the sea.

There were power outages in 1,092 villages, about 5,120 electricity poles were knocked down and an estimated 186 transformers and 2,502 feeders were damaged in the Saurashtra-Kutch region. While shops and establishments have reportedly re-opened, a full return to normalcy is still awaited. Experience from recent years shows that cyclones, whether in the Bay of Bengal or the Arabian Sea, and their expected impact can be precisely gauged only 36-60 hours ahead. While a greater lead time should in theory mean more time for preparation, the nature of coastal infrastructure, inefficient communication networks and livelihood patterns, combined with the natural fury that cyclones bring about, mean that there are limits to precautionary mea-



tures. A cyclone in 1998, that struck Gujarat, reportedly killed nearly 3,000 people, and it can be safely said that India has moved beyond that era. However, there are newer threats on the horizon. Several studies warn that the Arabian Sea, thanks to the effects of global warming, is likely to be the fountainhead of many more severe cyclones. Frequent evacuation cannot be implemented as a permanent policy intervention and efforts must be made to ensure that coastal-regulation-zone norms that prescribe the kind of structures permissible at specific distances from the shoreline must be strictly implemented. The dwellings of rural, coastal inhabitants must be strengthened and natural bulwarks such as mangroves at wetlands must be buttressed for improved resilience.

What is the “landfall” of a cyclone?

Simply put, landfall is the event of a tropical cyclone coming onto land after being over water. As per the IMD, a tropical cyclone is said to have made a landfall when the center of the storm – or its eye – moves over the coast.

A landfall should not be confused with a ‘direct hit’, which refers to a situation where the core of high winds (or eyewall) comes onshore but the centre of the storm may stay remain offshore. As per the US’s National Oceanic and Atmospheric Administration (NOAA), because the strongest winds in a tropical cyclone are not located precisely at the centre, it is possible for a cyclone’s strongest winds to be experienced over land even if landfall does not occur.

What is the damage caused by a cyclone’s landfall?

The damage caused by the landfall will depend on the severity of the cyclone – marked by the speed of its winds. For Cyclone Biparjoy, classified by the IMD as a “very severe cyclonic storm”, the impact may include extensive damage to kutchha houses, partial disruption of power and communication lines, minor disruption of rail and road traffic, potential threat from flying debris and flooding of escape routes.

How long does a landfall last?

Landfalls can last for a few hours, with their exact duration depending on the speed of the winds and the size of the storm system. Cyclone Biparjoy’s land process is expected to last around five to six hours, with the cyclone almost completely dissipating over approximately the next 24 hours.

Is it not rare for cyclones to develop in the Arabian Sea?

- ❖ There are fewer number of cyclones in the Arabian Sea than in the Bay of Bengal, but it is not uncommon.
- ❖ A cyclone is a low-pressure system that forms over warm waters. Usually, a high temperature anywhere means the existence of low-pressure air, and a low temperature means high-pressure wind.
- ❖ In fact, this is one of the main reasons why India sees a greater number of cyclones in the Bay of Bengal compared to the Arabian Sea.
- ❖ The Bay of Bengal is slightly warmer. Because of climate change, the Arabian seaside is also getting warmer, and as a result, the number of cyclones in the Arabian Sea is showing an increasing trend in the recent trend.

Expected Question

Que. With reference to Cyclone Biparjoy, consider the following statements:

1. Cyclone Biparjoy was a tropical cyclone.
2. It was named by Bangladesh.
3. Its landfall was on the border of Maharashtra and Gujarat.

How many of the above statements are correct?

- (a) Only 1
- (b) Only 2
- (c) All three
- (d) None

Answer : b

Mains Expected Question & Format

Que.: Give a brief account of the tropical cyclone Biparjoy that hit the coast of Gujarat recently. How could the huge damage caused by this cyclone be reduced comparatively? Discuss. (250 words)

Answer Format :

- ❖ At the beginning of the answer briefly discuss cyclone Biparjoy.
- ❖ In the next part of the answer, discuss the disaster management efforts of this time.
- ❖ Finally give a brief conclusion.

Note: - The question of the main examination given for practice is designed keeping in mind the upcoming UPSC mains examination. Therefore, to get an answer to this question, you can take the help of this source as well as other sources related to this topic.