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**ORIGIN AND SPREAD OF TAUKTEE CYCLONE: GEOGRAPHICAL
REVIEW OF ARABIAN SEA AND WEST COAST OF INDIA**

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ABSTRACT

Natural disasters such as earthquakes, volcanoes, tsunamis, storms, floods are constantly on the earth. Their intensity is felt more or less everywhere. Areas of natural disasters are changing in modern times. Some do not understand the seriousness of natural disasters unless they experience them. Humans live permanently in a place on earth where there is a favorable climate and the availability of all the necessities of life. Still an earthquake. Flood of rivers. Drought. He has to deal with hurricane disasters. Natural disasters also occur in river valleys, plateaus, beaches, or deserts. In countries like India, it is raining seasonally, even though everyone is aware of it. Considering the nature of environmental natural disasters, we have to study the issue of environmental determination here. Nature is more effective than human beings, it was said in this environmental issue. Although this ideology was introduced in the nineteenth century, its origins date back to AD. Found in the fifth century. During this period, according to Hippocrates, human life depended entirely on nature. The famous Roman geographer asserted that the slopes of the region, the terrain, the climate, etc., are God's work and have an effect on human life. German geographers Humboldt and Ritter studied how nature controls humans. The German geographer Kant added to the concept. Cyclone Touktee formed in the Arabian Sea and hit Kerala, Tamil Nadu, Goa, Maharashtra and Gujarat. The storm

destroyed the entire transportation system, power supply, and even people's homes. It didn't happen in just a few hours.

Keywords: Hurricanes, Cyclones, Touktee, Coast, Weather, Wind speed, Rainfall, Natural Disaster

INTRODUCTION:

Natural disasters related to winds are seen in different countries. Generally, there are different types of currents created by the winds like Lizard, Mistral, Sirocco, Bora, khamshin, Harmutton, Hurricanes, Torna, Fahayan, Nisarga and Touktee which came in 2021 this year. The experience of cyclones, cyclones, cyclones has come to more or less different countries. The tropics have the highest temperature on Earth. Geographically, the world's tropical cycle is classified into a total of six regions. Among them are the Arabian Sea and the Bay of Bengal, which cover the eastern and western coasts of India. Normally, in the northern hemisphere of the earth, the belt from the equator to the equator appears to occupy this periodic work area. There have been several cyclones in the east and west coasts of India. Earlier, the history of West Bengal and Orissa (1942), Rajputana (1943), Tamil Nadu, Andhra Pradesh and Kerala (1977), Orissa (1999), Maharashtra, Karnataka (2009) and Maharashtra (2020) showed that thousands of people had died. The houses had collapsed. Crops and orchards were damaged. The extent and effectiveness of

Touktee storms appear to be greater on the west coast of India than on Fayan and Nisarg cyclones. Hurricanes are given different names with the approval of WMO, ESCAP and PTC. Tropical cyclones are named according to regional regulations. India, Bangladesh, Myanmar, Pakistan, Oman, Maldives, Sri Lanka, Thailand, Iran, Saudi Arabia and Yemen are on the panel. Toktee is the name suggested by Myanmar and is the first cyclone in 2021. Cyclone Touktee is a hurricane that travels from Lakshadweep towards Gujarat, along the west coast of India, from parallel south to north.

Objectives:

1. To study the brief history of cyclones.
2. To study the nature and extent of cyclone Tauktee.
3. Geographical analysis of Tauktee cyclone.

Research Methodology:

Secondary materials have been used to write this research paper. It is analyzed by collecting information from news, newspapers, websites, magazines, books on various TV channels. Maps, tables have been used to analyze the information.

Study Area:

Cyclone Tauktee falls in southwest Asia. From the island of Lakshadweep in the Arabian Sea, the coast of Gujarat and some parts of Rajasthan come under the orbit of Tauktee. To the east of this hurricane is the west coast of India. The coasts of Kerala, Karnataka, Goa, Maharashtra and Gujarat are located on this coast. Trivandrum, Malapuram, Thrissur, Ernakulam, Calicut, Kannur, Mahe, Bangalore, Karwar, Gokarna, Madgaon, Vasco, Panaji, Calangute, Vengurla, Malvan, Devgad, Kunkeshwar, Vijaydurg, Harne, Dapoli, Guhagar on the west coast of India. , Alibag, Uran, Mumbai, Palghar, Silvassa, Porbandar, Veraval, Dwarka, Okha etc. cities and ports have been hit by the cyclone. Many small and large cyclones have hit these regions. Hurricane Tokte was centered in the Arabian Sea, about 200 to 250 kilometers off the coast of India. However, due to the high intensity of the storm, the winds were blowing from the coastal cities, up to 200 km from the coast. As a result, houses have collapsed and crops have been damaged.

RESULTS AND DISCUSSION:

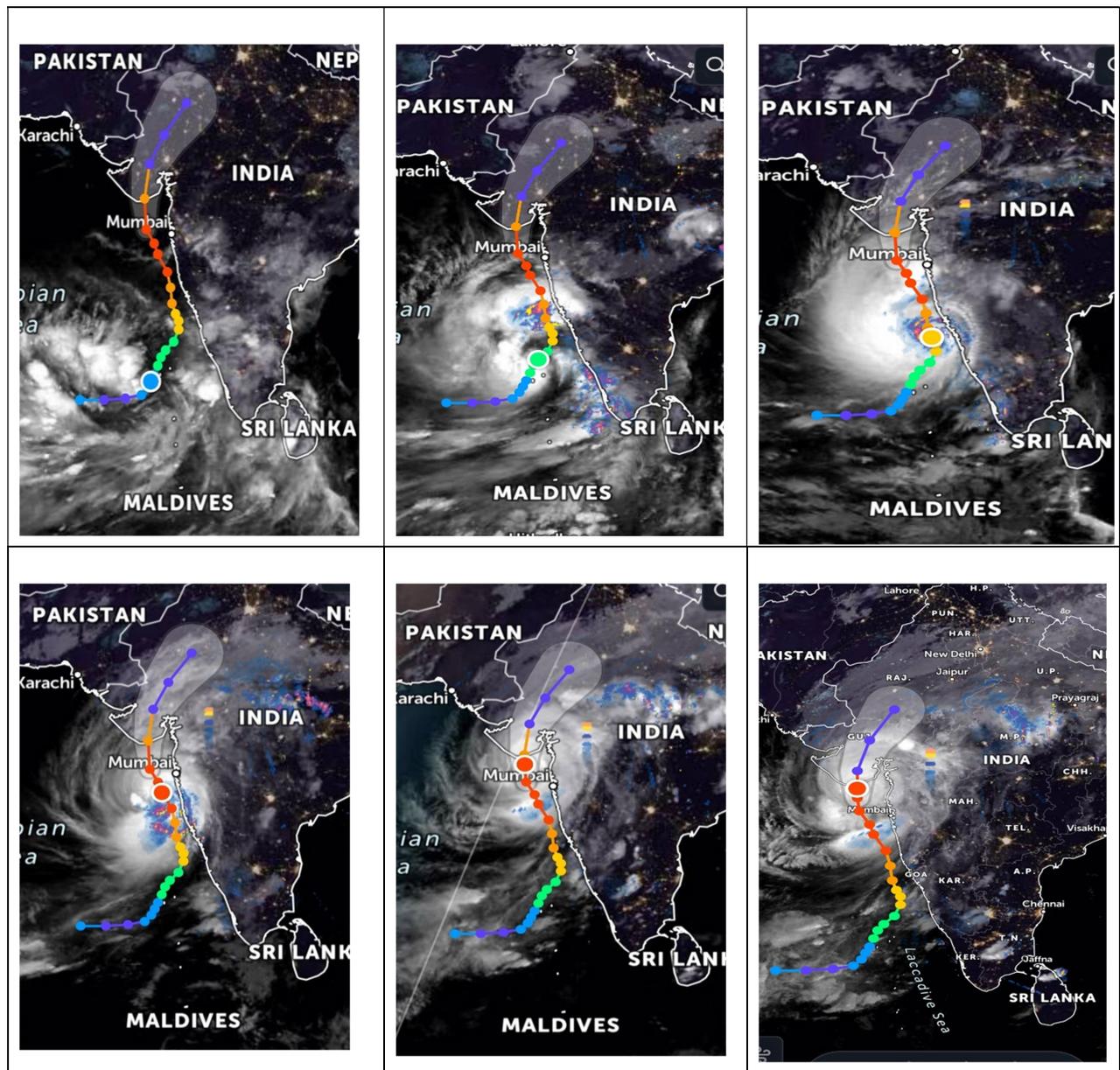
When the wind speed in a region is 74 miles per hour or more, it is called a hurricane. The storm is then called a

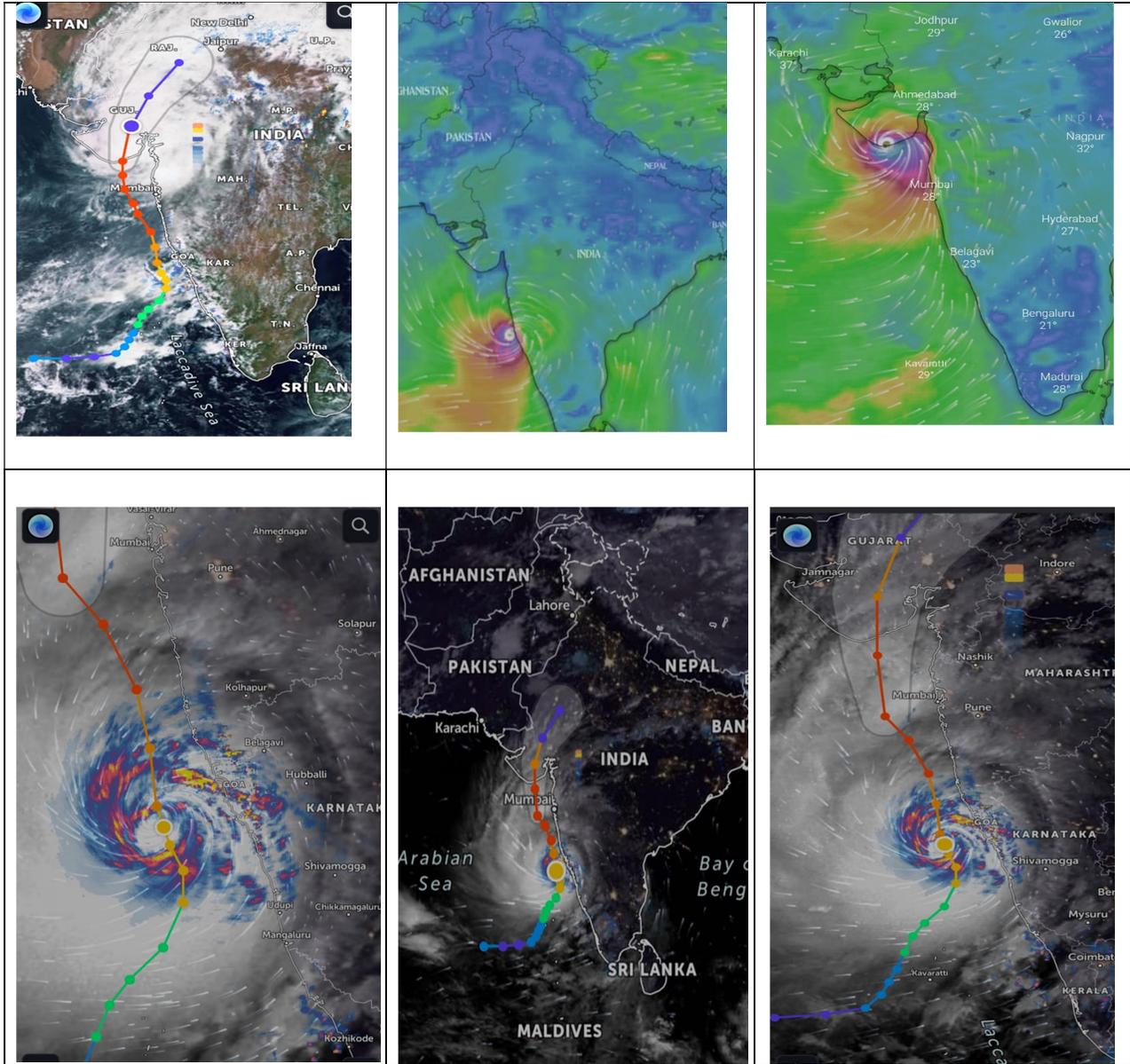
hurricane and is named after the region. On Sunday 14/05/2019, the Indian Meteorological Department declared Cyclone Tauktee as a very severe cyclone. The word hurricane is derived from the Greek word cycles. It is a wind system that rotates due to low pressure area. Due to the deterioration of the atmosphere, the daily movement of the wind changes radically, transforming it into a severe cyclone.

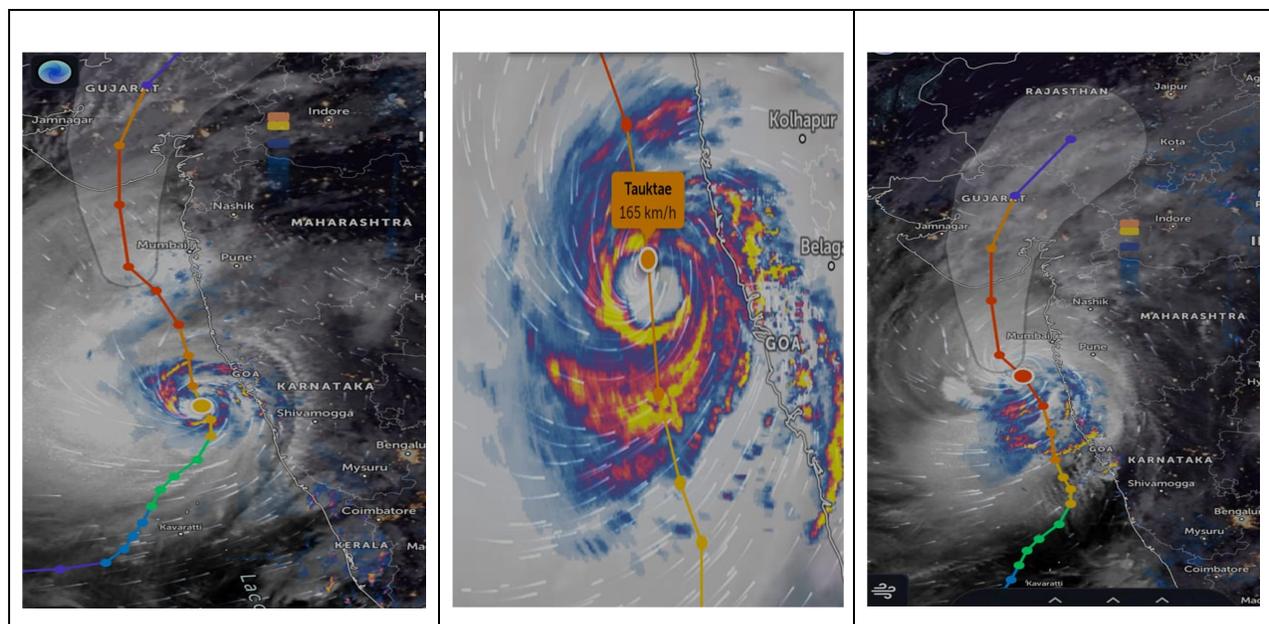
On the west coast of India was the most powerful, extremely intense, tropical cyclone in the Arabian Sea to date. The North Indian Ocean cyclone in 2021 was the first severe cyclone of the season. The hurricane intensified until May 15, 2021, and then reached the level of a hurricane that day. Tauktee started parallel access to the coasts of Kerala, Karnataka and Maharashtra. The coast of western Maharashtra has been hit by the storm. Heavy rains and strong winds also caused extensive damage. There were incidents related to bushes, damage to houses, electricity. Cyclone Tauktee brought torrential rains and heavy flooding along the Kerala coast and Lakshadweep. Heavy rains were also recorded in Goa, Karnataka and Maharashtra. Ahmedabad received 114 mm of rain in 2 hours. The storm displaced more than 200,000 people in Gujarat. The cyclone

also caused extensive damage to infrastructure and agriculture along India's west coast. More than 40 fishermen lost their lives at sea when their boats were caught in a hurricane. The storm also affected Mumbai. The airport was closed for security reasons. The loss from Tauktee is estimated at US 2.1 billion. Dadra and Nagar Haveli and Diu districts in the Union Territory of Daman and Diu recorded speeds of approximately one kilometer per hour (00 to 00 miles). A total of 55,588 houses were damaged in Gujarat. More than 1,000 pillars were uprooted. And power outages in more than 2,400 villages. The hurricane extended the Covid-inspired curfew issued in 36 cities by three days. Many residents were evacuated to high schools and madrassas to save them from the storm. In Saurashtra, coastal districts recorded storm surges of up to 00 meters (8.8 feet). Power supply was disrupted in Amreli, Gir-Somnath and Diu areas due to strong winds. More than 100 plowed ships were sent back to the high

ground for fear of storms. Junagadh, Gir-Somnath, Bhavnagar and Amreli districts received torrential rains and winds of up to 100 kmph. The effectiveness of the storm was highest in Western Maharashtra i.e. Mumbai, Thane, Palghar, Raigad. The cyclone caused 200 to 300 mm of rainfall near the coast. The rest of the place received 15 to 20 mm of rain. Heavy rains along with strong winds were recorded at Sindhudurg, Ratnagiri and Raigad from yesterday till this afternoon. Also Sangli, Satara, Kolhapur received 15 to 20 mm of rain. The cyclone damaged mango, cashew and betel nut crops in Raigad and Ratnagiri areas. Cyclone Tout formed in the Arabian Sea and hit Kerala, Tamil Nadu, Goa, Maharashtra and Gujarat. The storm destroyed the entire transportation system, power supply, and even people's homes. It didn't happen in just a few hours. The hurricane also hit the film hard. The entire set of his film was blown away by the storm.







Cyclone formation and its effects:

The earth receives heat from the sun in various ways. Similarly, the earth also emits heat in different ways, this is called geothermal balance of heat. In regions where the temperature is low, the air load is high. Also, where the temperature is high, the air load is low. As the air temperature rises, the air expands and becomes thinner, and the density decreases, so the air load decreases. Therefore, the movement of air from a high-pressure region to a low-pressure region is called wind. Different

types of winds are found depending on the geographical region. Some winds are good and some are bad. Hurricane Hade is also an intense form of wind. In the tropics, cyclones typically cover a low pressure area of 80 to 400 km in diameter. At the center of such cyclones the winds move at speeds of about 120 to 280 kmph. The epicenter was reported below the Indian Ocean floor, however; no tsunami alert was issued. Inland plateaus in the interior also experienced strong winds, drizzle, and crop damage.

Impact of Cyclone during the Takautee cyclone





Alert:

There are many types of natural disasters in many parts of the world. Natural disasters such as torrential rains, floods, earthquakes, and tsunamis are commonplace. In case of such natural calamities, the meteorological department of the place as well as the local administration always alerts the citizens, it is called alert. Also, depending on the severity of the

situation, a variety of alerts, such as Green, Yellow, Orange, and Red, are issued. Hurricane Tauktee formed in the Arabian Sea. The alert was issued from May 15 to 19, 2019 in these five-six days to alert all the citizens of Kerala, Karnataka, Goa, Maharashtra and Gujarat on the path of the cyclone. The following is a summary of this alert.

Alert types:

No.	Alert	Crisis / Natural Disaster	Warning
1	Green Alert	No Crisis	Everything is fine
2	Yellow Alert	warning is issued that climate change could lead to a crisis in the next few days.	A Daily tasks can be delayed, so a yellow alert is issued as a precaution.
3	Orange Alert	Natural disasters can occur at any moment. The Orange Alert is issued by the administration to prepare the citizens for the impending crisis.	Power outages, traffic jams can occur. Get out of the house only if there is a need and important work, the alert said.
4	Red Alert	A red alert is issued to alert citizens after a natural disaster strikes.	This alert means that people should keep themselves and others safe and not go into dangerous areas. Red alerts also have the potential to cause major damage in a natural disaster.

Cyclone Tauktee formed in the Arabian Sea on May 16 at approximately 4.00 am. Crossed the border of Goa and entered the sea of Sindhudurg district. Sunday at 4:00 p.m. The storm will enter the sea of the district at 2.00 pm. It will continue to cross the district boundary. Therefore, the District Collector appealed to the citizens to

be more vigilant between 4.00 am and 2.00 pm. Heavy to very torrential rains are expected in some places in Sindhudurg district from 15 to 16 May 2021, according to the Regional Meteorological Department, Mumbai. On 15th May 2021, due to the effects of this cyclonic storm, 50 to 70 km per hour on the coast of Maharashtra and

Goa. If fast. On 16th May 2021 at 60 to 80 kmph. The winds are blowing fast. Also the sea is going to be rough. The meteorological department warned fishermen and civilians not to go to sea during this period.

Conclusion:

In the region of Disaster, the District Disaster Management Authorities (DDMA) has appealed to the people to be more vigilant considering the strong winds, lightning and torrential rains that are blowing during the cyclone period. Awareness is very important for all society. Various authorities and local administrative gives support to the society. Following are the basic measures taken during the disaster period. When lightning strikes, computers, TVs, etc. should be turned off and disconnected from sources. And avoid the use of telephones. Do not stand under a tree if lightning strikes while it is raining. If you have to move out of the house, turn off the gas, electricity and water connections and leave. Citizens should not leave their homes while lightning strikes. Do not stop under a tall tree while the lightning is flashing and stay away from electricity poles. Avoid going out of the house if it is not necessary in torrential rains and gusty winds. And stay in a safe place and do not travel on foot or by vehicle in case of heavy rains and strong

winds. Move livestock and other pets to a safe place in advance. If people got a migration notice from the administration, follow it. Take care of living and property by following the instructions given by the Meteorological Department, District Administration.

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