Ocean (Bay of Bengal and Arabian Sea)		
Туре	Wind speed in km/hr	Wind speed in knots
Low pressure area	<31	<17
Depression	31–49	17–27
Deep depression	50-61	28–33
Cyclonic storms	62–88	34-47
Severe cyclonic storm	89–118	48-63
Very severe cyclonic storm	119– 221	64–119
Super cyclone	222 or more	120 or more

Table 1.5: Indian Classification of Cyclonic Disturbances in the Northern Indian

Source: Indian Meteorological Department, 2008

suggested four names each at the start of the programme.

The names are picked in sequence, one name after the other from each country in alphabetical order. The previous cyclone was named Bijli, Dr S.R. Ramanan, Director, Area Cyclone Warning Centre, Chennai, says: "We had submitted the first set of names to WMO (World Meteorological Organisation) in 2004. Aila was the 20th on the list and we have 12 left. The next one is going to be Phyan, coined by Myanmar. The next 32 have also been decided." Phyan is to be followed by Ward (Oman), Laila (Pakistan), Bandu (Sri Lanka) and Phet (Thailand). Even common people can suggest names of cyclones, says Dr. Ramanan. They can send their suggestions to the Director General of the Indian Meteorological Department.

There are certain criteria to coin a name for a cyclone. These are:

- 1. The name should be short and readily understand when broadcast.
- The name must not be culturally sensitive.
- 3. As a storm brings death and destruction its name should not be used repeatedly.

The suggested name pertaining to India should be communicated to the Director General Meteorology, Indian Meteorological Department, Mausam Bhawan, New Delhi, for consideration.

Effects of Cyclones

Strong wind: The most common and may be best comprehended impact of cyclones is strong wind. Truth be told, these strong winds tend to influence the other dangerous operators of cyclones. Low-level winds will regularly be more grounded on the correct side of a tornado in the Northern Hemisphere, however the wind quality has a tendency to be exceedingly factor regardless of where a typhoon hits. The strong wind of tornadoes can cause harm over a zone of 25 km in littler frameworks and up to 500 km in bigger frameworks. Winds have been known to demolish littler structures and thump out power for a huge number of individuals.

The damage to the houses and other intrastructure due to cyclones seems to be very high, as large amount of water that inundated the village soaked the region and the mud and thatched houses sunk into the mud. People have also lost their land (Fig. 1.3).

Tornadoes

Tornadoes do not typically happen in the same tropical districts that violent winds normally influence; rather tornadoes for the most part originate from the tempests in waterfront areas and on islands. They might be much more typical than individuals once accepted. Violent wind generated tornadoes are regularly not revealed in districts, for example, the Caribbean, but rather some harm designs recommend that they happen every now and again. Tornadoes can achieve twist velocities of up to 480 kph and can extend in excess of 3 km. Typhoon tornadoes have a tendency to happen in the external edge of the eyewall



Fig. 1.4: Gases responsible for GHG emission

increments as the earth's air warms, yet so does the likelihood of mists and precipitation, making these the absolute most imperative criticism instruments to the nursery impact.

Carbon Dioxide (CO₂)

A minor however essential segment of the environment, carbon dioxide is discharged through normal procedures, for example, breath and fountain of liquid magma emissions and through human exercises, for example, deforestation, arrive utilize changes, and copying petroleum products. People have expanded climatic CO_2 focus by in excess of a third since the Industrial Revolution started. This is the most vital enduring "compelling" of environmental change.

Methane

A hydrocarbon gas delivered both through common sources and human exercises, including the decay of squanders in landfills, agribusiness, and particularly rice development, and additionally ruminant absorption and fertilizer administration related with local domesticated animals. On an atom for particle premise, methane is a significantly more dynamic ozone depleting substance than carbon dioxide, yet in addition one which is considerably less rich in the environment.

Nitrous Oxide

A capable ozone depleting substance created by soil development hones, particularly the utilisation of business and natural manures, non-renewable energy source ignition, nitric corrosive generation, and biomass consuming.

Chlorofluorocarbons (CFCs)

Manufactured mixes completely of mechanical beginning utilised as a part of various applications, however now to a great extent directed underway and discharge to the climate by worldwide understanding for their capacity to add to devastation of the ozone layer. They are additionally ozone depleting substances.

On earth, human exercises are changing the common nursery. In the course of the most recent century the consuming of petroleum derivatives like coal and oil has expanded the centralization of barometrical carbon dioxide (CO₂). This happens in light of the fact that the coal or oil consuming procedure consolidates carbon with oxygen noticeable all around to make CO₂. To a lesser degree, the clearing of land for farming, industry, and other human exercises has expanded groupings of ozone depleting substances.

The outcomes of changing the characteristic air nursery are hard to anticipate, however certain impacts appear to be likely: would very likely the release of massive amount of radiation and radioactive material into the environment and it would take hundred years to rot to anything close "safe" levels.

Specialised measures should be adopted to reduce the ill effect of disasters or to limit the measure of radioactivity discharged to the earth.

There are many forms of nuclear disaster. The most evident would be an emergency at a nuclear reactor plant. In spite of the fact that the plant will not detonate, the aftereffect of such a calamity would likely the arrival of gigantic measure of radiation and radioactive material into nature and it would take hundred years to rot to anything close "safe" levels.

Causes of Nuclear Disaster

Nuclear disasters are generally connected with meltdowns. At the point when an emergency happens in a reactor, the reactor "liquefies". That is, the temperature ascends in the center so much that the fuel poles really swing to fluid, similar to ice transforms into water when warmed. On the off chance that the centre keeps on warming, the reactor would get so hot that the steel dividers of the centre would likewise dissolve. In an entire reactor emergency to a great degree hot (around 2700° Celsius) liquid uranium fuel poles would dissolve through the base of the reactor and really sink around 50 feet into the earth underneath the power plant.

The liquid uranium would respond with groundwater, creating expansive blasts of radioactive steam and flotsam and jetsam that would influence close-by towns and populace focuses.

Consequences of Nuclear Disasters

Nuclear blasts create both quick and damaging impacts. Quick impacts are delivered and cause critical pulverization inside seconds or minutes of an atomic explosion. The deferred impacts (radioactive aftermath and other conceivable condition impacts) deliver harm over a stretched out period going from hours to hundreds of years, and can cause antagonistic impacts in areas extremely removed from the site of the explosion.

Nuclear disaster can create atmosphere issues in light of the fact that the high temperatures of the atomic fireball make a lot of nitrogen oxides frame from the oxygen and nitrogen in the environment (fundamentally the same as what occurs in burning motors). Every megaton of yield will create exactly 5000 tonnes of nitrogen oxides. The rising fireball of a high kiloton or megaton extend warhead will convey these nitric oxides spring up into the stratosphere, where they can achieve the ozone layer. A progression of vast barometrical blasts could fundamentally exhaust the ozone layer.

Mitigation Strategies

Measures are insufficient to totally mitigate the destructive impacts of a nuclear disaster. A nuclear debacle causes the depletion of the ozone layer which thusly prompts skin diseases. The best way to guarantee wellbeing of individuals is to manufacture powerful atomic reactors and proficient coolants. Anticipation is superior to fix.

The mitigation measures could be as far as decrease of death toll, harm to property, and consequential impact on future generations, radiation consequences for different natural types of life—on people, creatures, and plants. Any activity to anticipate utilisation of atomic weapons in wars could likewise be a part of the mitigation measures.

Suitable strategic plan, installation, activity are done in atomic reactors, there is a plausibility of little missteps. An atomic reactor is the most advanced method for warming water to extremely hot steam. It utilises the warmth vitality from an atomic splitting chain response. A few times obscure and unforeseen episodes happen like in Fukushima in Japan in 2011. Some dread additionally exists because of psychological

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- 4. A large number of huge amounts of garbage streaming out of our urban areas and towns discover their way in waterways. As chemical fertilisers and dungs are being utilised for cultivating as well, water sources are getting seriously undermined.
- 5. Decline in the water quality flowing coursing through the fields.
- 6. Social and religious ceremonies, for example, skimming dead bodies in the water, washing, littering.
- 7. The oil slicks from ships.
- 8. Acid rain.
- 9. Global warming.
- 10. Eutrophication (the consumption of oxygen in a water body, which murders amphibian creatures).

Mitigation Strategies

- Water is polluted due to soil erosion. So, if we conserve soil then can stop water pollution to some extent. The way to stop soil erosion is planting more plants or trees. We can adopt such methods of cultivation that improve the health of the soil rather than the spoil it.
- Remove nutrients, disinfect for removing pathogenic bacteria, and aeration removes hydrogen sulphide and reduce the amount of carbon dioxide and make water healthy and fit for aquatic organisms.
- Adopting the correct methods of disposal of toxic waste is also extremely important. In the beginning, we should reduce or not use such products that include harmful organic compounds.
- 4. Oil spill out of cars or machines is also one of the factors of water pollution. Cars or machines should be regularly checked to ensure that there are no oil leak.
- 5. Water requirement should be minimised by altering the techniques involved.
- 6. Water should be reused.
- 7. The quality of waste water discharge should be minimised.
- 8. Cleaning of waterways and beaches.
- 9. Stop using biologically non-degradable materials such as plastic.

Water pollution has now taken the form of an emergency. So, we need to take big steps urgently. If we want that our citizens continue to get safe drinking water and water sources remain safe for a long duration, we will have to take steps for it from today itself. The delay can prove to be fatal.

DEFORESTATION

Forests cover 31% of the land region on our planet. They give us oxygen and give homes to individuals and natural life. Huge numbers of the world's most undermined and jeopardised creatures live in woods, and about 1.6 billion individual depends livelihood nontimber forest product. However, forests around the globe are under risk from deforestation, endangering these benefits. Deforestation comes in various forms such as fires, cutting for trees, farming and unsustainable logging for timber, and degradation because of environmental change. This effects individuals' occupations and debilitates an extensively plant and animal species. We are losing 18.7 million acres of forest yearly, proportionate to 27 soccer handle each moment.

Forests play a crucial role in prevention/ mitigation of climate change since they go about as a carbon sink—soaking up carbon dioxide that would some way or another be free in the air and add to continuous changes in atmosphere. Deforestation undermines this critical carbon sink function. It is reported that 15% of greenhouse gases emission are the after-effect of deforestation.

Deforestation can happen rapidly, for example, when a fire clears through the scene or the timberland is obvious to clear a path for an oil palm estate. It can likewise happen step by step because of continuous woods debasement as temperatures ascend because of environmental change caused by human action. While deforestation has all the earmarks of being on the decrease in a few nations, it remains stunning high in others including Brazil and Indonesia—and a grave