

News Analysis (04 Dec, 2020)

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Provisional Report on the State of the Global Climate 2020: WMO

Why in News

According to the latest State of the Global Climate provisional report by the World Meteorological Organization (WMO), the year 2020 is set to be among the three warmest on record. Also, the decade 2011-2020 would be the warmest ever.

- The **final report** will be published in **March 2021**. The **State of the Global Climate report** is published **annually** to keep a track of global warming.
- WMO is one of the specialized agencies of the <u>United Nations (UN).</u>

Key Points

• Rise in Global Temperature:

- The global mean surface temperature for January-October 2020 was **1.2 degree Celsius higher** than the pre-industrial baseline (1850-1900).
 - There is at least a one in five chance of it **temporarily exceeding 1.5** °C by 2024.
 - The <u>Paris Agreement</u> central aim is to strengthen the global response to the threat of climate change by keeping a global temperature rise this century well below 2 degrees Celsius above pre-industrial levels and to pursue efforts to limit the temperature increase even further to 1.5 degrees Celsius.
- o 2020 will be one of the three hottest, just behind 2016 and 2019.
 - The record heat in 2020 has been despite near-<u>La Niña</u> conditions prevailing in the equatorial Pacific Ocean since August and moderate La Niña conditions prevailing since October.
 - The La Niña phase of the El Niño Southern Oscillation (ENSO) phenomenon generally has a cooling effect on many parts of the world.

• High Temperature over Ocean Surfaces:

- 80% of ocean areas have experienced at least one marine heat wave (MHW) so far in 2020.
 - **Heat wave** is a period of prolonged abnormally high surface temperatures relative to those normally expected.
 - At the time of **MHW**, the average temperature of the ocean surface (up to a depth of 300 feet or more) rises by **5-7**°**C** above normal.
 - MHWs can be **caused by** locally formed heat fluxes between the atmosphere and the ocean or due to large-scale drivers of the Earth's climate like the **ENSO**.
 - There were also much more strong MHWs (43%) over the oceans in 2020 than moderate ones (28%).
- Global sea-level rise was also similar to 2019 value. This was mainly due to the increased melting of the ice sheets in Greenland and Antarctica.
- Reasons: Scientific evidence indicates increasing temperatures are a direct result of human-led global warming which is an impact of the emission of greenhouse gases (GHG).
 - After **record GHG levels of 2019**, there has been a slight **dip this year** due to measures taken by many countries to fight the ongoing **novel coronavirus disease** (Covid-19 pandemic).
 - However, data from specific locations, including Mauna Loa (Hawaii) and Cape Grim (Tasmania) indicate that levels of Carbon dioxide (CO₂), Methane (CH₄) and Nitrogen dioxide (N₂O) continued to increase in 2020.

- Consequences of Global Warming in 2020:
 - Extreme weather events such as tropical cyclones, floods, heavy rainfall and droughts impacted many parts of the world and cases of wildfire have also increased this year.
 - Atlantic Hurricane Season: The <u>season</u> witnessed 30 named storms from June to November which is the **highest number ever** recorded.
 - Heavy Rains: There was heavy rainfall and flooding in many parts of Asia and Africa.
 - **Droughts:** South America experienced **severe droughts** with northern Argentina, Paraguay and western areas of Brazil being some of the worst affected.
 - Sea-level rise: Melting of ice resulted in sea level rise which is an existential concern for the small island nations.

A significant sea-level rise by the end of the century will mean that these countries will drown in the oceans and their respective populations will be homeless.

- Loss to Humanity:
 - **Population Movements:** The climate and weather events have triggered significant population movements and have severely affected vulnerable people on the move, including in the Pacific region and Central America.
 - Agricultural Losses: Brazil alone recorded agricultural losses of 3 billion American dollars.
 - Loss of Human lives, Property and Livelihoods: The most affected were the Sahel and Greater Horn regions of Africa and China, India, Korea and Japan regions of Asia.

Way Forward

- Environmental ethics should take precedence over other issues like national and strategic interest or economic interest.
- Oil, gas and coal production must fall six percent a year in order to limit catastrophic global warming, as per the UN's annual Production Gap assessment, which measures the difference between the Paris goals and countries' fossil fuel production plans.
- There needs an enhanced commitment from nations more than their pledged INDCs (Intended Nationally Determined Contributions) under the **Paris Agreement.**However, it must not be used to pressurize developing countries to ramp up their global warming mitigation targets.

Source:IE

Cannabis Removed from Dangerous Substances: UN

Why in News

Recently, the <u>United Nations</u> (UN) Commission on Narcotic Drugs (CND), at its **63rd session**, has taken a number of decisions, leading to **changes in the way** <u>cannabis</u> (Marijuana or Hemp) is internationally regulated, including its reclassification out of the most dangerous category of drugs.

Key Points

• Background:

 In January 2019, the <u>World Health Organisation</u> (WHO) made six recommendations related to the scheduling of cannabis in UN treaties, including the deletion of cannabis and cannabis resin from Schedule IV of the Single Convention on Narcotic Drugs, 1961.

Schedule IV is the **category of drugs** that are considered to have **"particularly dangerous properties"** in comparison to other drugs.

• The proposals were to be placed before the CND's session in March **2019**, but members **voted to postpone** the vote, requesting more time.

• Global Decision:

- Older Status: The CND decision will remove cannabis from Schedule IV, where it was listed alongside deadly, addictive opioids, including heroin.
- Current Status: Now, both cannabis and cannabis resin will remain on
 Schedule I, which includes the least dangerous category of substances.
- **Countries in Favour:** 27 of the CND's 53 Member States, including India, the USA and most European nations, voted in favour of the motion.
- **Countries not in Favour:** 25 countries, including China, Pakistan, and Russia, were not in favour and there was one abstention, Ukraine.

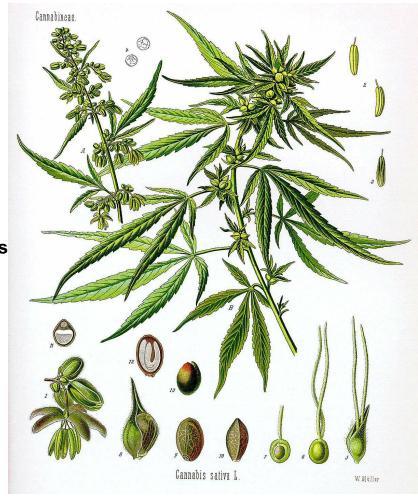
• Significance:

- Since the Convention was enforced in 1961, cannabis had been subject to the strictest control schedules, which even **discouraged its use for medical** purposes.
- The reclassification of cannabis, although significant, would not immediately change its status worldwide as long as individual countries continue with existing regulations.
- However, it will impact this process, as many **nations follow the lead of international protocols** while legislating in their respective nations.
- With this historic vote, the CND has opened the door to **recognizing the medicinal and therapeutic potential** of cannabis.

- India's Stand and Regulations:
 - **India has voted with the majority** to remove cannabis and cannabis resin from the list of most dangerous substances in the Convention.
 - Under India's Narcotic Drugs and Psychotropic Substances (NDPS)
 Act 1985, the production, manufacture, possession, sale, purchase, transport, and use of cannabis is a punishable offence.

The Act was enacted in 1985 which succeeded the **Dangerous Drugs Act 1930.**

• The <u>Narcotics Control Bureau</u> (NCB) is vested with the **power to charge** individuals in cases related to the illegal use and supply of narcotics.



Cannabis

• According to the WHO, cannabis is a generic term used to denote the **several psychoactive preparations of the plant** *Cannabis sativa*.

According to the WHO, cannabis is by far the **most widely cultivated**, **trafficked and abused** illicit drug in the world.

• The major psychoactive constituent in cannabis is **Delta9 tetrahydrocannabinol** (THC).

- The **unpollinated female plants** are called **hashish**. Cannabis oil (hashish oil) is a concentrate of **cannabinoids** (compounds which are structurally similar to THC) obtained by solvent extraction of the crude plant material or of the resin.
- According to the NDPS Act "cannabis plant" means any plant of the genus cannabis.
 - 'Charas' is the separated resin extracted from the cannabis plant. The
 NDPS Act covers separated raisin, in whatever form, whether crude or purified,
 obtained from the cannabis plant and also includes concentrated preparation
 and resin known as hashish oil or liquid hashish.
 - The Act defines 'ganja' as the flowering or fruiting tops of the cannabis plant but it clearly excludes the seeds and leaves.
 - The Act illegalises any mixture with or without any neutral material, of any of the two forms of cannabis, charas and ganja, or any drink prepared from it.
 - The legislature left seeds and leaves of the cannabis plant out of the ambit of the Act, because the serrated leaves of the plant have negligible THC content.
 - *'Bhang'*, which is commonly consumed during festivals like Holi, is a paste made out of the leaves of the cannabis plant, and is **hence not outlawed**.
 - Similarly, CBD oil, an acronym for cannabidiol derived from the leaves of the cannabis plant, would not come under the NDPS Act.
 - The NDPS Act does not permit the recreational use of cannabis in India.
 - While CBD oil manufactured with a licence under the <u>Drugs and</u>
 <u>Cosmetics Act</u>, <u>1940</u> can be <u>legally used</u>, it is not very common.

Commission on Narcotic Drugs

- It is the **UN agency** mandated to decide on the scope of control of substances by placing them in the schedules of global drug control conventions.
- It was founded in 1946 and is headquartered in Vienna.
- Global attitudes towards cannabis have changed dramatically since the commencement of the 1961 Convention, with many jurisdictions permitting cannabis use for recreation, medication or both.
- Currently, over 50 countries allow medicinal cannabis programmes, and its recreational use has been legalised in Canada, Uruguay and 15 states of the USA.

Source: IE

Minimum Support Price for Crops

Why in News

One of the major demands of **protesting farmers** has been that the government guarantee in writing the **Minimum Support Price** system, which assures them of a fixed price for their crops, **1.5 times of the cost of production.**

Farmer Unions are protesting against the newly enacted <u>three farm laws</u> and the <u>Electricity Amendment Bill 2020.</u>

Key Points

• Minimum Support Price:

- MSP is a **"minimum price"** for any crop that the government considers as remunerative for farmers and hence deserving of "support".
- It is **also the price** that government agencies pay whenever they procure the particular crop.
- The **Union Budget for 2018-19** had announced that MSP would be kept at levels of **1.5** the **cost of production**.

- MSP is given for the following crops:
 - The <u>Commission for Agricultural Costs & Prices</u> (CACP) recommends
 MSPs for <u>22 mandated crops</u> and <u>fair and remunerative price</u> (FRP) for sugarcane.

CACP is an attached office of the **Ministry of Agriculture and Farmers Welfare**, Government of India.

- It came into existence in **January 1965**.
- It is an advisory body whose recommendations are not binding on the Government.
- The mandated crops include **14 crops of the** <u>kharif season</u>, **6 rabi crops** and **2 other commercial crops**.
- In addition, the MSPs of **toria and de-husked coconut** are fixed on the basis of the MSPs of rapeseed/mustard and copra, respectively.
- The **list of crops** are as follows:
 - Cereals (7): Paddy, wheat, barley, jowar, bajra, maize and ragi,
 - **Pulses (5):** Gram, arhar/tur, moong, urad and lentil,
 - Oilseeds (8): Groundnut, rapeseed/mustard, toria, soyabean, sunflower seed, sesamum, safflower seed and niger seed,
 - Raw cotton, Raw jute, Copra, De-husked coconut, and
 - **Sugarcane** (Fair and remunerative price).
- The CACP **considered various factors** while recommending the MSP for a commodity, including **cost of cultivation.**

It also took into account the **supply and demand situation** for the commodity, **market price trends** (domestic and global) and **parity vis-à-vis other crops**, and **implications for consumers** (inflation), **environment** (soil and water use) and **terms of trade between agriculture and non-agriculture sectors.**

- Changes made by the 2018-19 budget:
 - Budget for 2018-19 announced that MSPs would henceforth be fixed at 1.5 times of the production costs for crops as a "predetermined principle".
 - CACP's job is now only to estimate production costs for a season and recommend the MSPs by applying the 1.5-times formula.

- Mechanism of arriving at Production Cost:
 - The CACP **does not do any field-based** cost estimates itself.
 - It makes projections using state-wise, crop-specific production cost estimates provided by the Directorate of Economics & Statistics in the Agriculture Ministry.

The latter are, however, generally available with a **three-year lag.**

- The CACP projects **three kinds of production cost for every crop**, both at state and all-India average levels.
 - 'A2'

Covers all paid-out costs directly incurred by the farmer in cash and kind on seeds, fertilisers, pesticides, hired labour, leased-in land, fuel, irrigation, etc.

• 'A2+FL'

Includes A2 plus an imputed value of unpaid family labour.

■ 'C2'

It is a more comprehensive cost that factors in **rentals and** interest forgone on owned land and fixed capital assets, on top of A2+FL.

- Issues with the Pricing:
 - In the 2018-19 Budget Speech, the government **did not specify the cost** on which the **1.5-times formula was to be computed.**
 - The CACP's 'Price Policy for Kharif Crops: The Marketing Season 2018-19' report stated that its MSP recommendation was based on 1.5 times the A2+FL costs.
 - Farm activists demand that the 1.5-times MSP formula originally recommended by the **National Commission for Farmers headed by agricultural scientist M S Swaminathan** should be applied on the **C2 costs.**
 - Government's Stand:
 - CACP considers all costs in a comprehensive manner which is based on the methodology recommended by Expert Committees from time to time.
 - CACP considers both A2+FL and C2 costs while recommending MSP.
 - CACP reckons only A2+FL cost for return. However, C2 costs are used by CACP primarily as benchmark reference costs.

Source: IE

Municipal Bonds

Why in News

Recently, Rs. 200-crore worth Lucknow Municipal Corporation (LMC) bonds have been listed on the Bombay Stock Exchange (BSE).

- Lucknow becomes ninth city to raise municipal bonds, incentivised by the Ministry of Housing and Urban Affairs (Mohua) under <u>Mission Amrut.</u>
- **BSE** is the oldest stock exchange in India as well as Asia.

Mission Amrut

- Atal Mission for Rejuvenation and Urban Transformation (Amrut) was launched in 2015 to:
 - Ensure that every household has access to a tap with the **assured supply of** water and a **sewerage connection**.

The Priority zone of the Mission is water supply followed by sewerage.

- **Increase the amenity value of cities** by developing greenery and well maintained open spaces (e.g. parks).
- **Reduce pollution by switching to public transport** or constructing facilities for non-motorized transport (e.g. walking and cycling).
- It is a **centrally sponsored scheme** with **80%** budgetary support from the Centre.

Key Points

- Municipal Bonds:
 - A municipal bond (muni) is a debt security issued by a state,
 municipality or county to finance its capital expenditures, including the construction of highways, bridges or schools.

Through muni bonds, a municipal corporation raises money from individuals or institutions and promises to pay a **specified amount of interest** and returns the **principal amount** on a specific maturity date.

 These are mostly exempt from federal taxes and from most state and local taxes, making them especially attractive to people in high income tax brackets.

• History of Municipal Bonds Issuance in India:

- Municipal bonds were first issued in India in 1997, five years after the 74th
 <u>Constitutional Amendment</u> decentralized urban local bodies and gave them autonomy; made them accountable to citizens, and reformed their finances enabling them to access capital markets and financial institutions.
- Between 1997 and 2010, the city corporations of Bengaluru, Ahmedabad and Nashik experimented with bond issues but barely managed to raise Rs. 1,400 crore.
- The **poor investor response** was due to the fact that **these bonds were not tradable** and **lacked regulatory clarity.**
- Securities and Exchange Board of India (SEBI)'s detailed guidelines for the issue and listing of municipal bonds in March 2015, clarified their regulatory status and rendered them safer for investors.
- In 2017, Pune Municipal Corporation had raised Rs. 200 crore through muni bonds at an interest of 7.59% to finance its 24x7 water supply project.

The plan was to raise Rs. 2,264 crore in five years in what was then the biggest municipal bonds programme in the country.

• Significance of Municipal Bonds Market:

- Municipal Bonds can help the Urban Local Bodies (ULBs) to garner revenue to complete budgetary projects as property tax is the only major source of municipal revenue.
- Growth of the municipal bond market is critical for India's large cities and towns to **upgrade their creaking infrastructure.**
- The ability of municipal bodies to be self-sustaining is also critical to the success of the Centre's pet projects **such as <u>Smart Cities</u>** and **Amrut.**

• Benefits of Municipal Bonds for Investors:

Transparency:

Municipal bonds that are issued to the public are rated by renowned agencies such as **CRISIL**, which allows investors transparency regarding the credibility of the investment option.

• Tax benefits:

In India, municipal bonds are exempted from taxation if the investor conforms to certain stipulated rules. In addition to such conformation, interest rates generated on such investment tools are also exempt from taxation policy.

• Minimal risk:

Municipal bonds are issued by municipal authorities, implying involvement of minimal risk with these securities.

Government bonds are usually viewed as low-risk investments, because the likelihood of a government defaulting on its loan payment tends to be low.

• Challenges:

- **Reduced investor trust and confidence:** Weak financial position and poor governance and management of city agencies have limited their ability to issue bonds, and reduced investor trust and confidence.
- **No authentic financial data available:** Investors have doubt over local bodies as there is no authentic financial data available.
- **Other Issues:** Low accountability and autonomy of city agencies followed by lack of an enabling environment.

Way Forward

- With the plight of the <u>Covid-19</u>, revenue generation and state finances have come to a virtual standstill, <u>hampering the funding of ULBs</u>. However, under the <u>Atmanirbhar Bharat Abhiyan</u> package, states are <u>offered an increase in</u> borrowing capacity, based on potential reform of the urban property tax regimen.
- Still, most urban local bodies do not have the institutional agency to raise funds, systemise accounting, and put up bankable projects. In order to address this, the reforms enlisted in the 15th Finance Commission (which makes it mandatory for urban local bodies to submit audited accounts by linking them to grant disbursement) must be implemented.
- Transparency within ULBs will increase their credit worthiness, thereby improving their prospects of **floating Muni bonds**, enabling them to contribute towards building resilient infrastructure under the **Atmanirbhar Bharat Abhiyan**.

Source

Export Promotion Council for Technical Textiles

Why in News

The Ministry of Textiles has invited proposals for the constitution of a dedicated **Export Promotion Council** (EPC) for Technical Textiles.

Key Points

• The constitution of an Export Promotion Council for Technical Textiles is **a part of** the <u>National Technical Textiles Mission</u>.

The Council shall abide by all directions of the Central Government in respect of promotion and development of international trade.

- National Technical Textiles Mission:
 - It was approved with a total outlay of Rs. 1480 crore in February 2020.
 - It aims to position the country as a **global leader in technical textiles** and **increase the use** of technical textiles in the **domestic market.**
 - It aims at taking domestic market size to USD 40 billion to USD 50 billion by 2024.
 - It will be implemented for **four years starting from 2020-2021** and has **four components:**
 - First component: It focuses on research, development and innovation with an outlay of Rs. 1,000 crores.
 - The research will be at both **fibre level and application-based** in geo, agro, medical, sports and mobile textiles and development of **biodegradable** technical textiles.
 - Research activities will also focus on the development of indigenous machinery and process equipment.
 - Second component: It is for the promotion and development of the market for technical textiles.
 - **Third component:** It focuses on **export promotion** so that technical textile exports from the country reach from Rs.14,000 crores to Rs. 20,000 crores by **2021-2022** and will ensure **10% average growth** every year till the Mission ends.
 - **Fourth component:** It focuses on education, training and skill development.
 - A **Mission Directorate** is operational in the **Ministry of Textiles** for implementation of the Mission.
- Data on the Indian Technical Textiles Segment:
 - It is estimated at **16 billion USD** which is approximately **6% of the 250 billion USD global technical textiles market.**
 - The penetration level of technical textiles in India varies between **5% and 10% against the level of 30% to 70%** in developed countries.

Technical Textiles

- Technical textiles are textiles materials and products manufactured primarily for technical performance and functional properties rather than aesthetic characteristics.
- Technical textiles are **functional fabrics** that have applications across various industries including automobiles, civil engineering and construction, agriculture, healthcare, industrial safety (fire proof jackets), personal protection (bullet proof jackets, high altitude combat gear), space applications etc.

- Based on usage, there are **12 technical textile segments:**Agrotech, Meditech, Buildtech, Mobiltech, Clothtech, Oekotech, Geotech, Packtech, Hometech, Protech, Indutech and Sportech.
- For example,
 - **Mobiltech** refers to **products in vehicles** such as seat belts and airbags, airplane seats.
 - **Geotech,** which is incidentally the fastest growing segment, used to **hold** back soil, etc.

Source:PIB

Malayan Giant Squirrel

Why in News

Recently, the <u>Zoological Survey of India</u> (ZSI), in a first-of-its-kind study, has projected that numbers of the **Malayan Giant Squirrel** could **decline by 90% in India by 2050**, and it could be extinct by then if urgent steps are not taken.

- Headquartered at **Kolkata**, ZSI is a subordinate organisation of the **Ministry of Environment**, **Forest and Climate Change**, established in **1916**.
- It is a **national centre for faunistic survey and exploration of the resources** leading to the advancement of knowledge on the exceptionally rich **faunal diversity** of the country.



• Scientific Name: Ratufa bicolor.

• Features:

- It is one of the **world's largest squirrel species** that has a dark upper body, pale under parts, and a long, bushy tail.
- Unlike the **nocturnal flying squirrels**, giant squirrels are **diurnal** (active during the day), but **arboreal** (tree-dwelling) and **herbivorous** like the flying squirrels.

India is home to **three giant squirrel species** and the other two are **Indian Giant Squirrel** and **Grizzled Giant Squirrel** which are found in peninsular India.

• Habitat:

- It is found mostly in **evergreen and semi-evergreen forests**, from plains to hills at elevations of 50 m to 1,500 m above sea level.
- **Globally** it is distributed through Southern China, Thailand, Laos, Vietnam, Burma, the Malayan Peninsula, Sumatra, and Java.
- **In India,** is found in the **forests of Northeast** and is currently found in parts of West Bengal, Sikkim, Assam, Arunachal Pradesh, Meghalaya, and Nagaland.

Of the roughly 1.84 lakh sq km of the squirrel's range in Asia, about **8.5%** is in India.

• Significance:

It is considered to be a **forest health indicator species.**

An indicator species provides information on the overall condition of the ecosystem and of other species in that ecosystem. They reflect the quality and changes in environmental conditions as well as aspects of community composition.

• Threats:

- According to the study, the squirrel and its habitat are under threat from
 <u>deforestation</u>, fragmentation of forests, crop cultivation and over harvesting of food, illegal trade in wildlife, and hunting for consumption.
 <u>Slash-and-burn jhum cultivation</u> in many areas of the Northeast
 contribute to destruction of its habitat.
- **Destruction of its habitat** could restrict the squirrel to only southern Sikkim and North Bengal by 2050.
 - Only 43.38% of the squirrel's original habitat in India is now favourable to it and by 2050, the favourable zone could shrink to 2.94% of the area the species was meant to inhabit.
 - The population of the squirrel in India **declined by 30%** over the last two decades.

Source: IE

India's Top 10 Police Stations for 2020

Why in News

The **Ministry of Home Affairs** has released a list of the top 10 police stations in India for the year 2020.

Key Points

- The annual ranking is done since **2015** when the Prime Minister announced such an exercise, while addressing the **Directors General of Police's Conference in Kutch, Gujarat.**
- Objective:

To rank the top 10 Police Stations out of 16,671 Police Stations in the country through **data analysis, direct observation and public feedback.**

• Performance Parameter:

- Property offences, crimes against women and weaker sections of the society etc.
- This year, the government introduced three new parameters.
 Missing persons, Unidentified found persons and Unidentified dead bodies.
- Performance of Police Stations located in **rural and remote areas has been** worth appraising.

This indicates that **while availability of resources is important**, more important is the **dedication and sincerity of police personnel** to prevent and control crime and serve the nation.

- Top 3 police station for 2020:
 - Nongpok Sekmai police station in Thoubal district of Manipur has topped the list.
 - AWPS-Suramangalam police station in Salem City of Tamil Nadu ranks second.
 - Kharsang police station in Changlang district of Arunachal Pradesh.
- Benefits of Annual Ranking:
 - To recognize the hard work and encourage and instill a sense of competitiveness in the police force.
 - It also provides a picture of the state of **physical infrastructure**, **resources** and **deficiencies** at the level of police stations.
 - The annual exercise of ranking police stations works as a **constant guide for improvements.**

Source: IE

Cyclone Burevi

Why in News

Recently **cyclone Burevi** has made a landfall on Sri Lanka's Northern and Eastern provinces, before heading towards south India.

This comes days after **Cyclone Nivar** hit the Puducherry coast.

Key Points

Named by:

Maldives

• Burevi vs Nivar:

- Cyclone Burevi would **not strengthen beyond the intensity of a cyclonic storm** because of **upwelling** caused by Nivar.
- Upwelling is the process in which **cooler waters from lower ocean** surfaces are pushed towards upper ocean surfaces.
- In the absence of warm sea surface conditions, any cyclone, in this case Burevi, will **not get enough fuel to intensify** further while at sea.
- Further, interaction with land mass has slowed its movement and intensity.

Tropical Cyclone

- A tropical cyclone is an intense circular storm that originates **over warm tropical oceans** and is characterized by low atmospheric pressure, high winds, and heavy rain.
- A characteristic feature of tropical cyclones is the **eye**, a central region of clear skies, warm temperatures, and low atmospheric pressure.
- Storms of this type **are called** hurricanes in the North Atlantic and eastern Pacific and typhoons in SouthEast Asia and China. They are called tropical cyclones in the southwest Pacific and Indian Ocean region and Willy-willies in north-western Australia.
- Storms rotate **counterclockwise in the northern hemisphere** and **clockwise in the southern hemisphere**.
- The conditions favourable for the formation and intensification of tropical storms are:
 - Large sea surface with temperature higher than 27°C.
 - Presence of the Coriolis force.
 - Small variations in the vertical wind speed.
 - A pre-existing weak low- pressure area or low-level-cyclonic circulation.
 - Upper divergence above the sea level system.

Source: TH