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India Decides to Ratify the Kigali Amendment

Why in News

Recently, the Union Government approved the ratification of the **Kigali Amendment to the Montreal Protocol** on phasing down climate-damaging refrigerant Hydrofluorocarbons (HFCs).

It comes close on the heels of similar decisions by the United States and China, the world's largest producers and consumers of HFCs. 122 countries had ratified the Kigali Amendment by the end of July 2021.

DEAL TO CURB USE OF HFCs

197 Parties (196 countries plus EU)
agreed to the deal in Kigali, Rwanda

WHY IT WAS NEEDED

- HFCs, climate-damaging refrigerants, are used in air-conditioning, refrigeration, foams and aerosols as replacement for many ozone-depleting substances (ODS)
- ODS are being phased out under the Montreal Protocol (MP) of 1987
- Phasing out ODS is important to protect the stratospheric ozone layer
- Stratospheric ozone layer filters out harmful ultraviolet radiation, which is associated with increased prevalence of skin cancer and cataracts
- HFC is not ODS, but its global warming potential is thousands of times that of carbon dioxide
- So, the global community wanted the use of HFCs also to be curbed under MP
- Agreement in Kigali is meant to amend the MP to bring the HFCs' phase-down within its ambit

WHAT IS AGREED

- Agreed to an amendment to include HFCs' phase-down under MP (Unlike Paris Agreement, MP is legally binding)
- It entered into force from Jan 1, 2019
- Creates three categories of countries with different schedules and timetables for reduction

- 1 Developed countries led by the US, Japan and West European nations.
- 2 Developing countries like China, South Africa, Brazil among others.
- 3 Developing countries like India, Iran, Iraq, Pakistan among others.

HFCs' PHASE DOWN SCHEDULES

Category	Baseline	Freezing	Max % reduction
1	2011-13	2019	85% by 2036
2	2020-22	2024	80% by 2045
3	2024-26	2028	85% by 2047

- Freezing year is the year when use of HFCs will peak before being rapidly scaled down and finally phased out altogether
- Baseline years are the years for which the average production/consumption quantity of HFCs is taken as the upper limit—so it serves as a level

Key Points

- **About:**

- The United States, China and India are in separate groups of countries, with different time schedules to phase out their HFCs and replace them with climate-friendly alternatives.
- India has to reduce its HFC use by 80% by the year 2047, while China and the United States have to achieve the same target by the year 2045 and 2034 respectively.
- India will complete its phasedown of HFCs in four steps from 2032 onwards with a cumulative reduction of 10% in 2032, 20% in 2037, 30% in 2042 and 80% in 2047.
- **Amendments** to the existing legislation framework, the **Ozone Depleting Substances (Regulation and Control) Rules** to allow appropriate control of the production and consumption of hydrofluorocarbons to ensure compliance with the Kigali Amendment **will be done by mid-2024**.

- **Background:**

- The **1989 Montreal Protocol** is not a climate agreement. It is instead **aimed at protecting the earth from Ozone-Depleting Substances (ODSs)** like the ChloroFluoroCarbons (CFCs), that were earlier used in the air-conditioning and refrigerant industry.
 - The widespread use of **CFCs had caused a hole in the Ozone layer of the atmosphere**, which allowed some harmful radiation to reach the earth. These radiations were considered potential health hazards.
- The Montreal Protocol **led to the replacement of CFCs with Hydrofluorocarbons (HFCs)** which do not destroy the Ozone layer.
- But they were **later found to be extremely potent in causing Global Warming**. So, the HFCs solved one problem, but were contributing in a major way to another.
- But these could not be eliminated under the original provisions of Montreal Protocol which was meant to phase-out ODSs only.
- The **Kigali Amendment enabled the Montreal Protocol to mandate the elimination of HFCs** as well.

In October 2016, with the United States' leadership, 197 countries adopted an amendment to phase down HFCs under the Montreal Protocol in Kigali, Rwanda.

- **Kigali Amendment to Montreal Protocol:**
 - The Kigali Amendment aims for the **phase-down of hydrofluorocarbons (HFCs)** by cutting their production and consumption.
 - The goal is to achieve **over 80% reduction in HFC consumption by 2047.**
 - Given their zero impact on the depletion of the ozone layer, **HFCs are currently used as replacements of hydrochlorofluorocarbons (HCFCs) and chlorofluorocarbons (CFCs)** in air conditioning, refrigeration and foam insulation, however they are powerful greenhouse gases.
 - **Under the amendment :**
 - Developed countries will reduce HFC consumption beginning in 2019.
 - Most developing countries will freeze consumption in 2024,
 - Some developing countries including India with unique circumstances will freeze consumption in 2028.
 - The plan also **provides financing to certain countries**, to help them transition to climate-friendly alternatives.
 - With the Kigali Amendment, the **Montreal Protocol has become an even more powerful instrument** against global warming.
- **Significance:**
 - This important instrument is crucial to **achieving the target of restraining the increase in global temperatures to 2 degree Celsius** from pre-industrial times. As pointed out by a recent report of the Intergovernmental Panel on Climate Change (IPCC), the average temperature of the planet has already risen by about 1.1 degree Celsius.
 - The collective action is expected to **prevent emissions of upto 105 million tonnes of carbon dioxide equivalent of greenhouse gases helping to avoid up to 0.5 degree Celsius** of global temperature rise by 2100, while continuing to protect the ozone layer.
 - Because **HFCs** were not ozone-depleting, they were not controlled substances under the Montreal Protocol. They were part of the problematic greenhouse gases whose emissions are **sought to be curtailed through climate change instruments such as the Kyoto Protocol of 1997 and the 2015 Paris Agreement.**
 - But the Montreal Protocol has been a far more effective and successful agreement than the climate change instruments. It has already resulted in the phase-out of 98.6% of ozone-depleting substances. The remaining 1.4% are the HCFCs that are in the process of being transitioned.

- **Significance for India:**

- **India became a party** to the Montreal Protocol on Substances that Deplete the Ozone Layer **in June 1992** and since then has ratified the amendments to the Montreal Protocol. India **has successfully met the phase-out targets of all the Ozone Depleting Substances** as per the Montreal Protocol Schedule.
- India is **one of the first countries in the world to launch a cooling action plan in 2019**. This comprehensive plan is aimed at reducing cooling demand, enabling refrigerant transition, enhancing energy efficiency and better technology options with a 20-year time horizon.

The signing of the Kigali Amendment is a cue for the markets to make a faster transition from HFCs to cleaner gases.

- It would **boost domestic manufacturing and employment generation goals**.
- The ratification would signify that **India is ready to compete in the market for low-Global Warming Potential GWP (climate-friendly) refrigerants**, which will spur domestic innovation and attract international investments.
- The decision would **pave the way for India to achieve its climate change mitigation goals and cooling commitments**. India is among a small group of countries on track to meet its climate commitments under the Paris Agreement.

Source: IE

Slow Pace of Criminal Justice System Reforms

Why in News

Recently, a group of experts under the **National Human Rights Commission (NHRC)** has expressed concerns over the slow pace of reforms in the criminal justice system to ensure speedy justice.

NHRC of India is **an independent statutory body** established on 12th October, 1993 as per provisions of Protection of Human Rights Act, 1993, later amended in 2006.

Key Points

- **Criminal Justice System in India:**
 - Criminal Justice System **refers to the agencies of government charged with enforcing law, adjudicating crime, and correcting criminal conduct.**
 - It is essentially **an instrument of social control.**
 - **Objective:**
 - To prevent the occurrence of crime.
 - To punish the transgressors and the criminals.
 - To rehabilitate the transgressors and the criminals.
 - To compensate the victims as far as possible.
 - To maintain law and order in the society.
 - To deter offenders from committing any criminal act in the future.
- **Legal Framework for Criminal Jurisprudence in India:**
 - The **Indian Penal Code (IPC)** is the official criminal code of India drafted in 1860 on the recommendations of the first law commission of India established in 1834 under the Charter Act of 1833 under the Chairmanship of Lord Thomas Babington Macaulay.
 - The **Code of Criminal Procedure (CrPC)** is the main legislation on procedure for administration of substantive criminal law in India. It was enacted in 1973 and came into force on 1st April 1974.
- **Issues in Criminal Justice System:**
 - **Huge Pendency of Cases:** There were about 4.4 crore pending cases in the Supreme Court, High Courts and district courts.
 - **High Number of Undertrials:** India has one of the world's largest number of undertrial prisoners. This delay in disposal of cases is leading to human rights violations of the undertrials and convicts.
 - **Delay in Police Reforms:** Despite the Supreme Court's directions on police reforms, there had been hardly any changes on the ground.
 - Corruption, huge workload and accountability of police is a major hurdle in speedy and transparent delivery of justice.
 - **Colonial Era Laws:** The codification of criminal laws in India was done during the British rule, which more or less remains the same even in the 21st century.

Suggestions

- Some provisions in IPC may be deleted and **left for redressal under the law of Torts**, as it is in England.
- **Digitisation of documents** would help in speeding up investigations and trials.
- Increasing **awareness of laws among police personnel**, increasing the number of police personnel and stations in proportion to the number of complaints in an area, and including social workers and psychologists in the criminal justice system.
- The focus also needs to be on the **victim's rights and smart policing**. There is a need to study the rate of conviction of police **officials and their non-compliance of law.**

- Implementation of **Malimath committee (2000) recommendations.**

Malimath Committee (2000) Recommendations

- **Rights of the Accused:** The Committee suggested that a Schedule to the Code be brought out in all regional languages so that the accused knows his/her rights, as well as how to enforce them and whom to approach when there is a denial of those rights.
- **Police Investigation:** The Committee suggested hiving off the investigation wing from Law and Order.
- **Court and Judges:** The report pointed out the judge-population ratio in India is 10.5 per million population as against 50 judges per million population in many parts of the world.

It suggested the increase in strength of judges and courts.

- **Witness Protection:** It suggested separate witness protection law so that safety and security of witnesses can be ensured and they can be treated with dignity.
- **Vacations of Court:** It recommended reducing the vacations of court on account of long pendency of cases.

Source: TH

G-sec Acquisition Programme 2.0

Why in News

Recently, the **Reserve Bank of India (RBI)** has announced that it will **conduct an open market purchase of government securities of Rs 25,000 crore under the G-sec Acquisition Programme (G-SAP 2.0).**

Earlier, under **G-SAP 1.0**, the first purchase of government securities for an aggregate amount of Rs. 25,000 crore was made.

Key Points

- **Government Securities Acquisition Programme (G-SAP):**
 - **About:** The G-Sec Acquisition Programme (G-SAP) is basically an **unconditional and a structured Open Market Operation (OMO)**, of a much larger scale and size.
 - RBI has called the G-SAP as an OMO with a **'distinct character'**.
 - The word 'unconditional' here connotes that RBI has committed upfront that it will buy G-Secs irrespective of the market sentiment.
 - **Objective:** To achieve a **stable and orderly evolution of the yield curve along with management of liquidity** in the economy.
 - **Significance:** The government will mainly benefit from the G-SAP.
 - By purchasing G-secs, the RBI **infuses money supply into the economy** which in turn keeps the **yield down and lower the borrowing cost of the Government**.
 - The government of India, with its massive borrowing programme (for example, **National infrastructure pipeline project**), can now breathe a sigh of relief as long-term borrowing costs come down.
 - **Issues:** Critics of the G-SAP say that the **rupee might get adversely affected**.
 - They are of the view that the G-SAP announcement has already led to **depreciation of the rupee** (a fall in the value of currency).
 - So, critics are pointing to the fact that there is a **trade-off between a tumbling rupee and lower borrowing costs/low yields**.
 - Further, too much liquidity will **drive up inflation**.
- **Open Market Operations:**
 - Open Market Operations (OMO) is one of the **quantitative (to regulate or control the total volume of money) monetary policy tools** which is employed by the central bank of a country to control the money supply in the economy.
 - OMOs are conducted by the RBI by way of **sale or purchase of government securities** (g-secs) to adjust money supply conditions.
 - The central bank **sells g-secs to remove liquidity from the system and buys back g-secs to infuse liquidity into the system**.
 - These operations are often conducted on a day-to-day basis in a manner that balances inflation while helping banks continue to lend.
 - RBI carries out the **OMO through commercial banks** and does not directly deal with the public.
 - The RBI uses OMO along with other monetary policy tools such as **repo rate, cash reserve ratio and statutory liquidity ratio** to adjust the quantum and price of money in the system.

- **Government Securities:**

- A G-Sec is a **tradable instrument** issued by the Central Government or the State Governments.
- It acknowledges the **Government's debt obligation**. Such securities are short term (usually called treasury bills, with original **maturities of less than one year**- presently issued in three tenors, namely, 91 day, 182 day and 364 day) or **long term (usually called Government bonds** or dated securities with original maturity of one year or more).
- In India, the Central Government issues **both treasury bills and bonds or dated securities** while the State Governments **issue only bonds or dated securities**, which are called the **State Development Loans (SDLs)**.
- G-Secs **carry practically no risk of default** and, hence, are called **risk-free gilt-edged instruments**.

Gilt-edged securities are **high-grade investment bonds** offered by governments and large corporations as a means of borrowing funds.

Yield Curve

- Bond yield is the **return an investor realizes on a bond**.
- The **mathematical formula** for calculating yield is the **annual coupon rate** (interest rate promised by the bond issuer) **divided by the current market price of the bond**.
- Movements in yields depend on trends in interest rates, it can result in capital gains or losses for investors.
 - A **rise in bond yields** in the market will **bring the price of the bond down**.
 - A **drop in bond yield** would benefit the investor as the **price of the bond will rise**, generating capital gains.
- A yield curve is a line that **plots yields (interest rates) of bonds having equal credit quality but differing maturity dates**.
- The slope of the yield curve gives an idea of future interest rate changes and economic activity.

Source: TH

Moplah Rebellion

Why in News

Recently, a political leader claimed that the **Moplah rebellion**, also known as the **Mappila riots, of 1921** was one of the first manifestations of the **Taliban** mindset in India.

Key Points

- **Moplahs/Mappilas:**
 - The name Mappilla (lit. son-in-law; anglicized form Moplah) is given to **Malayali-speaking Muslims who reside along the entire length of the Malabar Coast of northern Kerala.**
 - By 1921, the **Moplahs formed the largest and fastest growing community in Malabar.** With a population of one million, **32% of that of Malabar as a whole,** the Moplahs were concentrated in South Malabar.
- **Background:**
 - In the sixteenth century when Portuguese traders arrived on the Malabar coast, they noted the **Mappilas to be a mercantile community concentrated in urban centres** and fairly segregated from the local Hindu population.
 - However, with the **rise in Portuguese commercial power, the Mappilas found themselves a competitor** and increasingly started moving inland in search of new economic opportunities.
 - The **shifting of the Mappilas led to a clash of religious identities** both with the local Hindu population and the Portuguese.
- **The Revolt:**
 - **Fuelled by the fiery speeches by Muslim religious leaders and anti-british sentiments,** the Mopillahs launched a **violent rebellion.** Numerous acts of violence were reported and a series of persecutions were committed both against the British and the Hindu landlords.
 - While there are some who call it a **case of religious fanaticism,** there are others who look at it as an instance of **struggle against British authority,** and then there are others who perceive the Malabar rebellion to be a **peasant revolt against unfair practices of the landlords.**
 - While historians continue to debate on the matter, the broad consensus on the episode notes it to have started off as a **struggle against political power, which later took on a communal colour.**
 - Most of the **landlords were Namboodiri Brahmins** while most of the tenants were Mappillah Muslims.
 - The riots led to the mass **killings of over 10,000 Hindus,** raping of women, forced religious conversions, destruction or damage of nearly 300 temples, loot and arson of properties worth crores of rupees and burning of houses belonging to the Hindus.

- **Reasons:**
 - **Non-Cooperation & Khilafat Movement:**
 - The trigger of the uprising came from the **Non-Cooperation Movement** launched by the Congress in 1920 along with the **Khilafat agitation**.
 - The **anti-British sentiment fuelled by these agitations** affected the Muslim Mapillahs.
 - **New Tenancy Laws:**
 - After the death of **Tipu Sultan** in 1799 in the Fourth Anglo-Mysore War, Malabar had come under British authority as part of the Madras Presidency.
 - The **British had introduced new tenancy laws** that tremendously favoured the landlords known as Janmis and instituted a far more exploitative system for peasants than before.
 - The **new laws deprived the peasants of all guaranteed rights to the land**, share in the produce they earlier got and in effect rendered them landless.
- **Support:**

In the initial stages, the movement had the support of **Mahatma Gandhi** and other Indian nationalist leaders, but as it turned violent they distanced themselves from it.
- **Collapse:**

By the **end of 1921, the rebellion was crushed by the British** who had raised a special battalion, the Malabar Special Force for the riot.
- **Wagon Tragedy:**

In November 1921, 67 **Moplah prisoners were killed** when they were being transported in a closed freight wagon from Tirur to the Central Prison in Podanur. They **died of suffocation**. This event is called the Wagon Tragedy.

Major Pre-Independence Agrarian Revolts

Santhal Rebellion (1855-56)	The Santhals take global pride in the Santhal rebellion where over 1,000 Santhals and leaders of Sidho and Kanho Murmu rose against domination and battled against the vast East India Company (The Britishers).
Indigo Revolt (1859-60)	It was a revolt by the farmers against British planters who had forced them to grow indigo under terms that were greatly unfavourable to the farmers.
Pabna Uprisings (1872-1875)	It was a resistance movement against the oppression of the zamindars . It originated in the Yusufshahi pargana, which is now the Sirajganj district within greater Pabna, Bangladesh.

Deccan Riots (1875)	The Deccan peasants uprising was directed mainly against the excesses of the Marwari and Gujarati money lenders . The ryots suffered heavy taxation under the Ryotwari system . The land revenue was also raised by 50% in 1867.
Pagri Sambhal Movement (1907)	It was a successful farm agitation that forced the British government to repeal three laws related to agriculture. Bhagat Singh's uncle Ajit Singh was the force behind this agitation.
Peasant Movement in Oudha (1918-1922)	It was led by Baba Ramchandra , a Sanyasi, who had earlier been to Fiji as an indentured laborer. He led a peasant's movement in Awadh against Talukdars and Landlords. He demande reduction of rent, abolition of Begar and the boycott of landlords .
Champaran Movement (1917-18)	The peasantry on the indigo plantations in the Champaran district of Bihar was excessively oppressed by the European planters and compelled to grow indigo on at least 3/20th of their land and sell it at prices fixed by the planters. In 1917, Mahatma Gandhi reached Champaran and defied the orders of district officials for leaving Champaran .
Peasant Agitation in Kheda (1918)	It was chiefly directed against the Government . In 1918, the crops failed in the Kheda district of Gujarat but the government refused to remit land revenue and insisted on its full collection . Gandhiji along with Sardar Vallabhai Patel supported the peasants and advised them to withhold payment of revenues till their demand for its remission was met.
Moplah Rebellion (1921)	The Moplahs were the Muslim tenants inhabiting the Malabar region where most of the landlords were Hindus. Their grievances centred around lack of security of tenure, high rents, renewal fees and other oppressive exactions . The Moplah movement merged with the ongoing Khilafat agitation.
Bardoli Satyagraha (1928)	It was a movement in the independence struggle led by Sardar Vallabhai Patel for the farmers of Bardoli against the unjust raising of taxes .

Source: IE

Fusion Ignition

Why in News

Recently, researchers at the **Lawrence Livermore National Laboratory** (which operates the National Ignition Facility in California, US) appeared to have **demonstrated “fusion ignition”** for the first time.

This breakthrough has brought the world closer to the dream of **near-limitless clean energy through nuclear fusion**.

Key Points

- **About the Experiment:**

- They applied **laser energy** on fuel pellets to heat and pressurise them at conditions similar to that at the centre of our Sun.

This **triggered the fusion** reactions.

- These reactions **released positively charged particles called alpha particles (helium)**, which in turn heated the surrounding plasma.
- The heated plasma also released alpha particles and a **self-sustaining reaction called ignition took place**.
- Ignition helps amplify the energy output from the nuclear fusion reaction and this could help provide clean energy for the future.

- **Significance of the Experiment:** Reproducing the conditions at the centre of the Sun will allow studying:

- **Plasma**, the state of matter that has never been created in the lab before.
- Gain **insights into quantum states of matter**.
- Conditions closer and closer to the **beginning of the Big Bang**.

- **About Nuclear Fusion:**

- Nuclear fusion is defined as the **combining of several small nuclei into one large nucleus** with the subsequent release of huge amounts of energy.

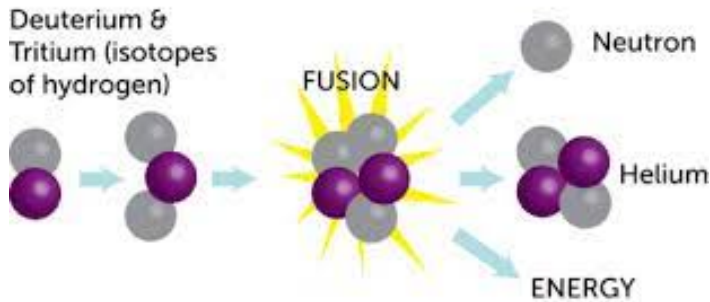
It is the **opposite reaction of fission**, where heavy isotopes are split apart.

- Harnessing fusion, **the process that powers the Sun**, could provide a limitless, clean energy source.

In the sun, the extreme pressure produced by its immense gravity creates the conditions for fusion to happen.

- Fusion reactions **take place in a state of matter called plasma**. Plasma is a hot, charged gas made of positive ions and free-moving electrons that has unique properties distinct from solids, liquids and gases.
- At high temperatures, electrons are ripped from atom's nuclei and become a plasma or an ionised state of matter. Plasma is also known as the **fourth state of matter**.

Nuclear Fusion



- **Advantages of Nuclear Fusion:**

- **Abundant energy:** Fusing atoms together in a controlled way releases nearly four million times more energy than a chemical reaction such as the burning of coal, oil or gas and four times as much as nuclear fission reactions (at equal mass).

Fusion has the potential to provide the kind of baseload energy needed to provide electricity to the cities and the industries.

- **Sustainability:** Fusion fuels are widely available and nearly inexhaustible. Deuterium can be distilled from all forms of water, while tritium will be produced during the fusion reaction as fusion neutrons interact with lithium.
- **No CO₂:** Fusion doesn't emit harmful toxins like carbon dioxide or other greenhouse gases into the atmosphere. Its major by-product is helium: an inert, non-toxic gas.
- **No long-lived radioactive waste:** Nuclear fusion reactors produce no high activity, long-lived nuclear waste.
- **Limited risk of proliferation:** Fusion doesn't employ fissile materials like uranium and plutonium (Radioactive tritium is neither a fissile nor a fissionable material).
- **No risk of meltdown:** It is difficult enough to reach and maintain the precise conditions necessary for fusion—if any disturbance occurs, the plasma cools within seconds and the reaction stops.

- **Other Related Initiatives:**

- **International Thermonuclear Experimental Reactor (ITER) Assembly:** It aims to build the world's largest tokamak to prove the feasibility of fusion as a large-scale and carbon-free source of energy. The ITER members include China, the European Union, India, Japan, South Korea, Russia and the United States.
- **China's Artificial Sun:** The Experimental Advanced Superconducting Tokamak (EAST) device designed by China replicates the nuclear fusion process carried out by the sun.

Nuclear Fusion vs Nuclear Fission		
	Fission	Fusion
<u>Definition</u>	Fission is the splitting of a large atom into two or more smaller ones.	Fusion is the fusing of two or more lighter atoms into a larger one.
<u>Occurrence</u>	Fission reaction does not normally occur in nature.	Fusion occurs in stars, such as the sun.
<u>Energy Requirement</u>	Takes little energy to split two atoms in a fission reaction.	Extremely high energy is required to bring two or more protons.
<u>Energy Released</u>	The energy released by fission is a million times greater than that released in chemical reactions, but lower than the energy released by nuclear fusion.	The Energy released by fusion is three to four times greater than the energy released by fission.
<u>Energy production</u>	Fission is used in nuclear power plants.	Fusion is an experimental technology for producing power.

Source: IE

Prevalence of Hydro-Meteorological Calamities

Why in News

Recently, the **Ministry of Home Affairs** has informed that nearly **6,800 people lost their lives** in the country (**West Bengal tops the list**) over the **past three years** due to **hydro-meteorological calamities** such as **flash floods**, **landslides** and **cyclones**.

Key Points

- **Hydro-Meteorological Calamities:**
 - **Natural hazards** are severe natural phenomena or events, broadly classified in **two categories: hydro-meteorological and geological hazards**.
 - **Tropical cyclones, heavy rainfall, severe thunderstorms, floods and drought** are hydro-meteorological hazards whereas **earthquakes and volcanic eruptions** are grouped under geological hazards.
 - **Landslides and avalanches** are caused by a combination of geological and hydro-meteorological factors.

- **India's Vulnerability:**

- The basic reason for the **high vulnerability of the country** to natural disasters is its **unique geographical and geological situations**.
- As far as the vulnerability to disaster is concerned, the four distinctive regions of the country i.e. **Himalayan region, the alluvial plains, the hilly part of the peninsula, and the coastal zone** have their own specific problems.
- While on one hand the **Himalayan region is prone to disasters like earthquakes** and landslides, the **plain is affected by floods** almost every year.
- The **desert part of the country is affected by droughts and famine** while the **coastal zone is susceptible to cyclones and storms**.
- Various **human induced activities** like increasing demographic pressure, deteriorating environmental conditions, deforestation, unscientific development, faulty agricultural practices and grazing, unplanned urbanisation, construction of large dams on river channels etc. are also responsible for accelerated impact and increase in frequency of disasters in the country .

- **Impact of Disaster:**

- **Physical and Psychological:**

- Disaster impacts individuals physically (through loss of life, injury, health, disability) as well as psychologically.
- The disaster results in **displacement of people, and displaced populations often face several challenges in new settlements**, in this process the poor become more poor.

- **Alter Natural Environment:**

Disaster can alter the natural environment, **loss of habitat to many plants and animals** and cause ecological stress that can result in **biodiversity loss**.

- **Disaster Management:**

- **National Disaster Management Authority of India (NDMA):** It was established in 2005, under the **Disaster Management (DM) Act 2005**.
- **National Disaster Management Plan (NDMP): Released in 2016**, it is the first **ever national plan** prepared in the country for disaster management.
- **State Disaster Management Authority (SDMA):** Headed by the **Chief Minister of the respective state**, SDMA lays down the policies and plans for disaster management in the state.
- **District Disaster Management Authority (DDMA): Section 25 of the DM Act** provides for the **constitution of DDMA for every district of a state**.
- Other measures include National Cyclone Risk Mitigation Project (NCRMP), National Disaster Response Reserve (NDRR), Aapda Mitra Scheme, ETC.

- **Challenges in Disaster Risk Reduction:**
 - **Poor Implementation of Monitored Activity:**

There are insufficient levels of implementation for each monitored activity. For example, Disaster risk management plans or risk sensitive building codes exist but they are not enforced because of a lack of government capacity or public awareness.
 - **Lack of Local Capacities:**

Weak capacity at the local levels undermines the implementation of Disaster preparedness plans.
 - **Climate Change:**

Absence of integration of climate change into Disaster risk management plans.
 - **Divergence in Commitments:**

There is divergence in obtaining political and economic commitments due to other competing needs and priorities such as poverty reduction, social welfare, education etc. requiring greater attention and funding.
 - **Lack of Coordination:**

Due to poor coordination between stakeholders, there is inadequate access with respect to risk assessment, monitoring, early warning, disaster response and other Disaster related activities.
 - **Insufficient Investment:**

Insufficient investment in building disaster resilient strategies, also private sector are least contributors in the share of investment.
- **Initiatives for Disaster Risk Reduction:**
 - **Sendai Framework for Disaster Risk Reduction 2015-2030:**
 - The present Framework applies to the risk of small-scale and large-scale, frequent and infrequent, sudden and slow-onset disasters caused by natural or man-made hazards, as well as related environmental, technological and biological hazards and risks.
 - It is the **successor instrument to the Hyogo Framework for Action (HFA) 2005-2015.**
 - **United Nations Office for Disaster Risk Reduction (UNDRR):**
 - UNDRR (formerly UNISDR) is the **United Nations focal point for disaster risk reduction.**
 - It **oversees the implementation of the Sendai Framework for Disaster Risk Reduction 2015-2030**, supporting countries in its implementation, monitoring and sharing what works in reducing existing risk and preventing the creation of new risk.
 - **Coalition for Disaster Resilient Infrastructure (CDRI):**

Established in 2019 under the leadership of India, it aims to **promote the resilience of new and existing infrastructure systems** to climate and disaster risks in support of sustainable development.

Way Forward

- Although the **DM Act has undoubtedly filled a huge gap** in the scheme of governmental actions towards dealing with disasters, laying down elaborate plans on paper doesn't serve the purpose unless they are translated into effective implementation.
- Civil society, private enterprises and **Non-governmental Organizations (NGOs)** can play a valuable role towards building a safer India.

Source: TH

PRASHAD Scheme

Why in News

Recently, the Prime Minister has inaugurated various projects in Somnath, Gujarat under **PRASHAD (Pilgrimage Rejuvenation and Spiritual, Heritage Augmentation Drive) scheme** at a total cost of over Rs 47 crore.

Key Points

- **About:**
 - The **Somnath Exhibition Centre**, developed on the premises of 'Tourist Facilitation Centre', displays the exhibits from dismantled parts of the old Somnath temple and its sculptures having **Nagara style Temple Architecture** of old Somnath.

This temple is **also referred to as Ahilyabai Temple** since it was built by queen Ahilyabai of Indore when she found that the old temple was in ruins.
 - **Shree Parvati Temple** is proposed to be constructed with a total outlay of Rs 30 crore. This will include temple construction in **Sompura Salats Style, development of Garbha Griha and Nritya Mandap.**

- **PRASHAD Scheme:**

- **Launch:**

- The 'National Mission on Pilgrimage Rejuvenation and Spiritual Augmentation Drive (PRASAD)' was **launched by the Ministry of Tourism in the year 2014-15** with the objective of holistic development of identified pilgrimage destinations.
- The **name of the scheme was changed** from PRASAD to "National Mission on Pilgrimage Rejuvenation and Spiritual Heritage Augmentation Drive (PRASHAD)" in October 2017.

- **Implementing Agency:**

The projects identified under this scheme shall be implemented through the identified agencies by the respective State/ Union Territory Government.

- **Objective:**

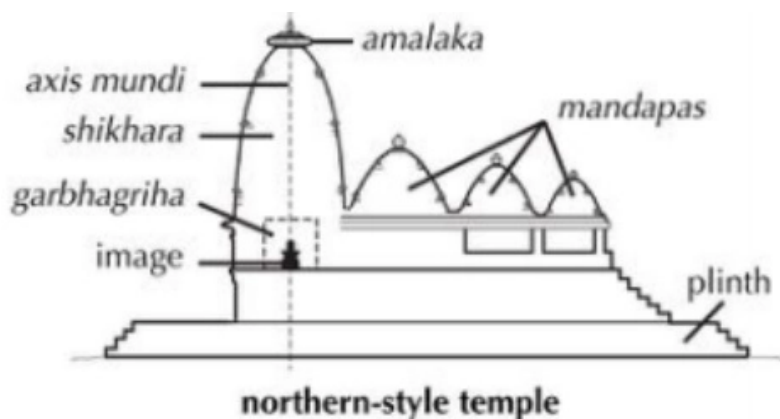
- Rejuvenation and spiritual augmentation of important national/ global pilgrimage and heritage sites.
- Follow community-based development and create awareness among the local communities.
- Integrated tourism development of heritage city, local arts, culture, handicrafts, cuisine, etc., to generate livelihood.
- Strengthen the mechanism for bridging the infrastructural gaps.

- **Funding:**

- Under it, the Ministry of Tourism provides **Central Financial Assistance (CFA) to State Governments for promoting tourism** at identified destinations.
- For components within public funding under this scheme, the Central Government will provide a 100% fund.
- For improved sustainability of the project, it also seeks to involve **Public Private Partnership (PPP)** and **Corporate Social Responsibility (CSR)** as well.

- **Nagara or North Indian Temple Style:**

- In North India it is common for **an entire temple to be built on a stone platform with steps leading up to it**. Further, unlike in South India it does not usually have elaborate boundary walls or gateways.
- While the earliest temples had just one tower, or shikhara, later temples had several. The garbhagriha is always located directly under the tallest tower.
- There are many subdivisions of nagara temples depending on the shape of the shikhara.
- There are different names for the **various parts of the temple in different parts of India**.
 - The most common name for the **simple shikhara which is square at the base and whose walls curve or slope inward to a point on top is called the 'latina'** or the rekha-prasada type of shikara.
 - The **second major type of architectural form in the nagara order is the phamsana**, which tends to be broader and shorter than latina ones.
 - The **third main sub-type of the nagara building is generally called the valabhi type**. These are rectangular buildings with a roof that rises into a vaulted chamber.



Sompura Salats (Temple Architects)

- **About:**

- The Sompuras (or Sompura Salat) are a group of people who took up artistic and masonry works as an occupation and branched off from the Sompura Brahmin community.
- They are a section of **Sompura Brahmin or Prabhas Patan which was once called Somapura** because it was supposed to have been founded by Chandra (the Moon God).

However, Sompura Brahmins do not accept them as proper Brahmins.

- They maintain the clan as a strict rule for marriage.

- **Origin:**

The Sompuras originally hailed from Patna, Gujarat, and were invited to settle in Chittorgarh.

- **Work:**
 - During the past five centuries, they have been involved in the construction and restoration of **numerous Jain temples in Gujarat and southern Rajasthan**, as well as temples built by **Jains from regions in other parts of India**.
 - Though traditions in the family call for elders to pass the learnings of the Shilpa Shastras and the art of ancient temple architecture to the next generation, the modern age calls for certain upgrades to that technique.
 - **Ram janm Bhumi Temple** is also designed by the Sompura Family.

Source: IE

Incel Movement

Why in News

Recently, the **Incel Movement** has been linked to serious violence around the world.

The movement came into the spotlight yet again in the UK's Plymouth, where a 22-year-old man shot dead five people, including a toddler.

Key Points

- **About:**
 - It is a dangerous **online subculture comprising men who identify as 'involuntary celibates'** and regularly express deeply misogynistic views about women.
 - Men who are part of this movement harbour a **deep resentment towards both women and other men who are sexually active**.
 - They **blame women for their own lack of sexual and social status**. While views tend to vary, some believe that sex is their right — something that is owed to them by virtue of them being males.
 - An extreme section of Incels even advocate violence against women.
 - However, not all members of the subculture are violent, experts say.
- **Red Pill & Black Pill Mentality:**
 - The **black pill** theory, often associated with incels, **promotes the defeatist idea that your fate is sealed at birth** and no matter what changes you try to make, **your sexual capital cannot be altered**.
 - **Red pillers**, on the other hand, believe the **world is biased toward women, and see feminism as female supremacy**. They believe there is a systemic bias in favour of women.

- **Concerns:**

- The movement has been **identified as a strand of a broader trend of young white males being radicalised online.**
- It **shares some similarities with the better known alt-right movement**, with both groups attributing society's ills to social liberalism, women and ethnic minorities.

The alt-right, an abbreviation of alternative right, is a loosely connected far-right, **white nationalist movement.**

- So far, **incel-related attacks are not perceived as as much of a terror threat** in the US when compared to violent attacks by followers of other violent far-right ideologies, according to an analysis of domestic terror attacks by the New America Foundation.

But the same analysis found that **incel terrorism is deadlier than far-left terrorism.**

Source: IE

National Bio Entrepreneurship Competition

Why in News

Recently, the **Department of Biotechnology** has launched the **fifth edition of the National Bio Entrepreneurship Competition (NBEC).**

NBEC is conducted as a part of the **Biotechnology Industry Research Assistance Council (BIRAC) Regional Entrepreneurship Centre**, established at **Centre for Cellular and Molecular Platforms (C-CAMP)** in partnership with BIRAC.

BIRAC is a **Public Sector Enterprise**, set up by the **Department of Biotechnology (DBT).**

Centre for Cellular and Molecular Platforms (C-CAMP)

- C-CAMP is **one of the centers for technology-based innovation and entrepreneurship** in the field of life sciences under the **Department of Biotechnology (DBT).**
- It intends to **develop state-of-the-art technologies** and to **provide training** on these technologies to academia and industry.

Key Points

- **About NBEC:**
 - It is **India's largest and most prestigious national competition** for bio-entrepreneurs.
 - First Launched in 2017, **NBEC has emerged as a flagship platform** for bio-entrepreneurs and innovators in India to showcase their deep science driven ideas and has created a great impact.
 - It is **held annually to identify and nurture deep science-driven business ideas** in the life sciences domain that have the **potential to break new ground** in addressing societal challenges.
- **Prize:**

It gives an **unprecedented sum of Rs 8.5 crore** in cash prizes and investment opportunities this year for winners.
- **Investment Partners:**

Over 30 industry and investment partners have **come forward to encourage and support bio-entrepreneurship** in India through this competition.
- **Achievements:**
 - NBEC in four years has created a **repository of over 1,000 carefully vetted and expert hand-picked business ideas** spanning all sub-domains of life Sciences. Special focus was given on healthcare, agriculture and environment, with a special focus on emerging areas like digital health, maternal & child health, antimicrobial resistance, water and sanitation, green chemistry, and personal care.
 - This has built a **steady pipeline of innovative technologies with demonstrated commercial viability.**

Source: DTE

New Species of Cascade Frog: Arunachal Pradesh

Why in News

Recently, a team of researchers have discovered a new species of cascade frog in Arunachal Pradesh **named Adi Cascade Frog.**

Earlier, a new frog species named **Minervarya Pentali** was discovered in the **Western Ghats.**



Key Points

- **About:**

- It is a predominantly brown colour frog, with a size ranging roughly between 4 cm to 7 cm.
- It is formally described as *Amolops adicolasp.nov.*, which is morphologically distinguished from its congeners by a suite of characters that include adult size, body colouration and markings, skin texture, snout shape, foot webbing and digit tip morphology.

- **Naming:**

It has been named **Adi Cascade Frog** (*Amolops Adicola*) after the indigenous **Adi tribe living in the Adi hills** of Arunachal Pradesh. The literal meaning of Adi is “hill” or “mountain top.”

Historically, this region was also known as **Abor hills**.

- **Cascade Frog**

- Cascade frogs are named so because of their preference of small waterfalls or cascades in flowing hill streams.
- Cascade Frogs belong to the genus *Amolops*.

The genus *Amolops* is one of the largest groups of ranid frogs (family Ranidae) with currently 73 known species that are widely distributed across Northeast and North India, Nepal, Bhutan, China, through Indochina, to the Malay Peninsula.

Adi Tribe

- The Adi tribe of Arunachal Pradesh is believed to **have come from southern China in the 16th century**.
- They are the **Tibeto-Burman language speaking population**.
- They reside in the far north inhabiting East Siang and Lower Dibang Valley districts of Arunachal Pradesh.
- The Adis are **experts at making cane and bamboo items**.

- **Solung** (harvesting festival where animal sacrifices and rituals are performed) and **Aran** (a hunting festival where all the male members of the family go for hunting) are **two major festivals of the Adi tribes.**
- It is a **Scheduled Tribe in Arunachal Pradesh.**

Source: TH
