

MONTHLY

EPIC!

*Supplementary reading material for MGP and Current Affairs classes of
ForumIAS Academy*

AN EXCLUSIVE CURRENT AFFAIRS MAGAZINE FOR

PRELIMS + MAINS

PREPARATION

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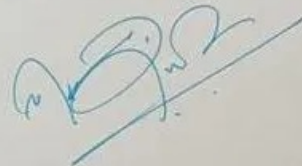
I enrolled myself in the Forum Mains Guidance Program + for GS and Essay test series. The answer writing practice and written feedback from Forum alongwith 'Best answers' and topper's copies provided helped me improve my answers and get a high score in my General Studies papers.

Ayush sir's regular articles were also fun and encouraging reads - I thank the ForumIAS team for their guidance during my two year association with them.

Shruti Sharma
AIR 1, CSE 2021

forumIAS has been an integral part of my upsc journey, right from my very first attempt. The prelims and mains test series have helped me a lot and I have referred to them in all my three attempts. One on one session with Ayush sir for interview ~~was~~ was beneficial too. Always enjoy reading his articles on the forumIAS blog.

with Best wishes,



Vikarsh Dahiya
AIR 5, CSE 2021

**5 students in Top 10 and 57 students in Top 100 Ranks List of CSE 2021 are ForumIAS Academy students.
Total 303 selections out of 685 vacancies.**

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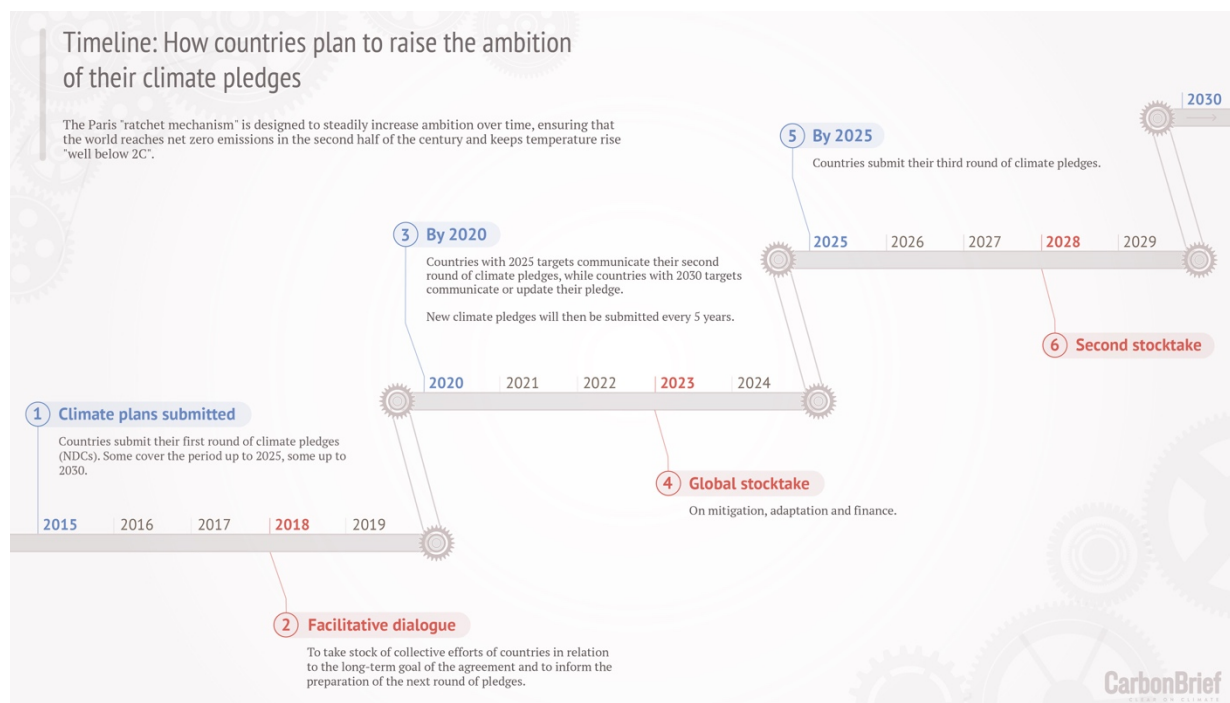
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COP27: Outcomes and Concerns

News: The 27th Conference of Parties (COP27) of the UNFCCC was held in Sharm el-Sheikh, Egypt.

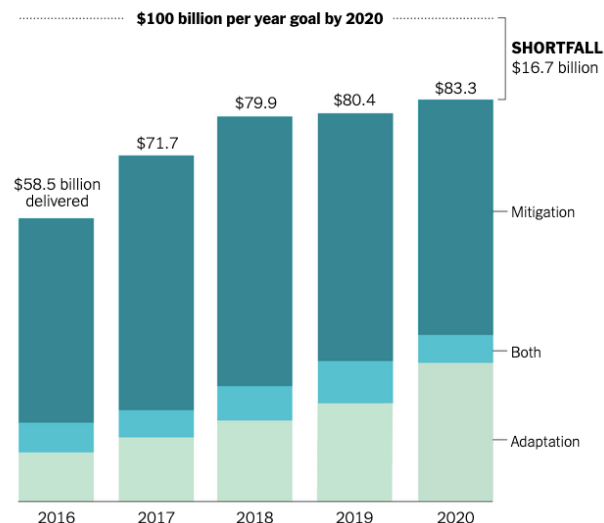
What are the Key Outcomes of COP27? – (1) **On Loss and Damage:** Countries have agreed to **set-up a Loss and Damage fund to provide financial assistance to poor nations** stricken by climate disaster. However, there is no agreement yet on the mechanism of operation of the fund or how finance should be provided and administered; (2) **On 1.5°C Temperature Limit:** At COP26 (Glasgow, 2021) countries had agreed to continue the focus on a 1.5°C limit and periodically review and upgrade their climate targets (**Ratchet Mechanism**). Some countries tried to back out of the 1.5°C goal and get rid of the ratchet at COP27. They didn't succeed, but a plan to get emissions to peak by 2025 was taken out, indicating lack of commitment towards climate action; (3) **On Fossil Fuels:** At COP26, a commitment to phase down the use of coal was agreed. At COP27, some countries, led by India, wanted to include a commitment to phase down all fossil fuels. However, it was not included in the final resolution. The final text of COP27 contained a provision to boost **“low-emissions energy”**. That could mean wind and solar farms, nuclear reactors, and coal-fired power stations fitted with carbon capture and storage. It could also be interpreted to mean gas, which has lower emissions than coal; (4) **On Food Security:** The COP27 agreed that **“safeguarding food security and ending hunger”** is a fundamental priority. Communities can better protect themselves from climate effects if water systems are protected and conserved. COP26 had made no mention of agriculture, food or water; (5) **On Technology:** COP27 saw the launch of a new 5-year work program to **promote climate technology solutions** in developing countries; (6) **On Reform in Finance Institutions:** The World Bank and other finance institutions, have **failed to provide the funding** needed to help poor countries in their climate action. The IMF has US\$ 1 trillion available to lend to countries in financial distress, but only a small fraction of this is used for climate finance. COP27 discussed reforms including recapitalization to enhance assistance to the developing world; (7) **On Adaptation:** Of the US\$ 100 billion a year promised to poor



countries, only about US\$ 20 billion goes to adaptation measures (like Building flood defences, preserving wetlands, restoring mangrove swamps and regrowing forests). In Glasgow, countries had agreed to double that proportion, but at COP27 it was reaffirmed after some countries sought to remove that commitment; **(8) On Mitigation:** A mitigation work programme has been launched aimed at urgently scaling up mitigation ambition and implementation. The work programme will start immediately following COP27 and continue until 2030; **(9) Sharm el-Sheikh Implementation Plan:** The cover decision, known as the Sharm el-Sheikh Implementation Plan, highlights that a global transformation to a low-carbon economy is expected to require investments of at least US\$ 4-6 trillion a year. Delivering such funding will require a swift and comprehensive transformation of the financial system and its structures and processes, engaging governments, central banks, commercial banks, institutional investors and other financial actors.

Climate Finance Pledges, Unmet

Rich countries promised to mobilize \$100 billion per year in public and private financing by 2020 to help poor countries mitigate and adapt to a changing climate.



What is the significance of COP27? – **(1)** Creating a specific **fund for loss and damage** marked an important point of progress. The Governments have agreed to establish a ‘transitional committee’ to make recommendations on how to operationalize the fund at COP28 next year; **(2)** Parties also agreed on the institutional arrangements to operationalize the **Santiago Network for Loss and Damage**, to catalyse technical assistance to developing countries that are particularly vulnerable to the adverse effects of climate change; **(3)** The Cover Decision also included ‘**transition to sustainable lifestyles and sustainable patterns of consumption and production**’. This is significant as India’s Prime Minister has pitched for **environmentally-friendly lifestyle** through his **Mission LiFE (lifestyle for environment)** since COP26; **(4)** Further commitments to a deal on **slashing methane emissions** were struck, indicating **increasing focus on methane emissions**. Brazil also committed to introducing a **zero-deforestation law for the Amazon** in 2023, with Congo and Indonesia also showing intent to follow suit.

Other Developments at COP27

- Countries launched a package of 25 new collaborative actions in five key areas: **Power, Road Transport, Steel, Hydrogen and Agriculture**.
- UN Secretary-General António Guterres announced a US\$ 1 billion plan to ensure everyone on the planet is protected by **early warning systems** within the next 5 years.
- The G7 and the V20 (**the Vulnerable Twenty**) launched the Global Shield against Climate Risks, with new commitments of over US\$ 200 million as initial Implementation is to start immediately in a range of pathfinder countries.
- The **Food and Agriculture for Sustainable Transformation initiative (FAST)** has been launched to increase the amount and quality of climate financing contributions to change agriculture and food systems by 2030.
- The new Indonesia Just Energy Transition Partnership, announced at the G20 Summit held in parallel with COP27, will mobilize US\$ 20 billion over the next 3-5 years to accelerate a **just energy transition**.
- Important progress has been made on forest protection with the launch of the **Forest and Climate Leaders’ Partnership**, which aims to unite action by governments, businesses and community leaders to halt forest loss and land degradation by 2030.

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What are the issues/concerns with COP27? – **(1)** COP 27 failed to include any new agreements on curbing fossil fuels or setting new targets to reduce GHG emissions; **(2)** The mitigation work programme was a key part of the Glasgow Climate Pact’s efforts to “keep 1.5°C alive”. But COP27 **did not allow the programme to check progress** against the promises made in Glasgow; **(3)** Ahead of the COP 27, new analysis from the UN Environment Programme (UNEP) warned that the **amount of adaptation finance** flowing to developing

countries is currently **5 to 10 times lower than what is needed**. Developed countries have still not delivered on the promise of providing US\$ 100 billion annually to finance both mitigation and adaptation; **(4)** The developed countries are **pushing for agriculture** to be included under climate action under The **Koronivia Joint Work on Agriculture**. It is a framework under the UNFCCC that recognizes the potential of agriculture in tackling climate change. The Koronivia decision addresses 6 interrelated topics on **soils, nutrient use, water, livestock, methods for assessing adaptation**, and the **socio-economic** and **food security** dimensions of climate change across the agricultural sector. India has held that emissions from the agricultural sectors are **not “luxury” emissions** but **“survival” emissions** of the poor. Poor and Marginal Indian farmers lack the capacity to support climate action.

What should be done going ahead? – (1) The developed countries have repeatedly failed to recognize their historical contributions and torpedoed attempts to enhance climate finance. Establishing **Loss and Damage Fund** is a promising start but a **persistent effort is required to make it operational**. Else it will remain another empty pledge like earlier promises on Green Climate Fund; **(2)** According to IPCC the only way to keep greenhouse gas emissions within a 1.5°C limit is to **take action across the entire chains**, including production, consumption and loss and waste. In this context, **circular economy** should be mainstreamed. (Refer EPIC October 2022 for Circular Economy: Meaning, Benefits and Opportunities); **(3)** Actions are the key. One pledge after another, with several such pledges per COP, are not necessarily fruitful. **Measuring progress through actions** that eventually lead to direct emissions reduction is what the developed countries ought to demonstrate to the world. In climate action, no sector, no fuel source and no gas should be singled out for action; **(4)** At COP27, India negotiated from a position of strength and ensured that **the debate moved from coal phase out to fossil phase down**. This push exposed the hypocrisy of oil and gas producers. India should continue to corner gas and oil-producing countries to ensure that the world is on track to achieve the 1.5°C target.

Climate Reparations: Loss and Damage

What is ‘Loss and Damage’? – (1)

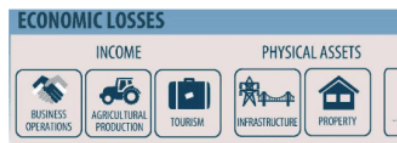
The impact of climate change on human lives and economic systems is apparent. It has increased the frequency of **extreme weather events** like floods, cyclones etc. It is also contributing to **slow onset events** like desertification, loss of biodiversity, sea level rise and ocean acidification etc.; **(2)** The events due to climate change are responsible for both **economic** and **non-economic losses**; **(3)** Economic losses can be measured in monetary terms e.g., damage to infrastructure or agriculture production (in INR or US\$). **Non-economic losses are intangible** and can't be accurately measured in monetary terms e.g., loss of human life, bio-diversity, cultural heritage or indigenous knowledge. Communities in Kosrae, Micronesia

IMPACTS OF CLIMATE CHANGE

Impacts of climate change include slow onset events* and extreme weather events which may both result in loss and damage.



have lost burial grounds due to coastal erosion caused by sea level rise. Loss of sea ice in the Arctic has affected the cultural identity and hunting practices among Inuit communities; (4) People, communities and nations can adapt to some of these events. For other events, adaptation is not possible, or there is a lack of resources to adapt; (5) There is no official definition of 'Loss and damage'. It is a general term used in climate negotiations to refer to the **consequences of climate change that go beyond what people can adapt to**; or when adaptation is possible but a community doesn't have the resources to access or utilise them. A close definition is found in the literature review commissioned by the UNFCCC.



Economic losses can be understood as the loss of resources, goods and services that are commonly traded in markets.



Non-economic losses can be understood as the remainder of items that are not commonly traded in markets.

	Loss	Damage
UNFCCC (2012)	The negative impacts in relation to which reparation or restoration is impossible , such as loss of freshwater resources.	The negative impacts in relation to which reparation or restoration is possible , such as windstorm damage to the roof of a building, or damage to a coastal mangrove forest as a result of coastal surges.

(6) The **developing countries are more vulnerable** to climate change events, both due to **frequency of events** as well as **lack of resources to adapt**. According to a study, 6 of the world's 10 most affected countries by extreme weather events were in Asia (between 1996-2015); (7) Under the Loss and Damage framework, **developing countries demand compensation from developed countries** for losses/damages suffered due to climate change events; (8) Two vital arguments in the context of Loss and Damage are '**Historic Emissions Argument**' and '**Polluter Pays Principle**'.

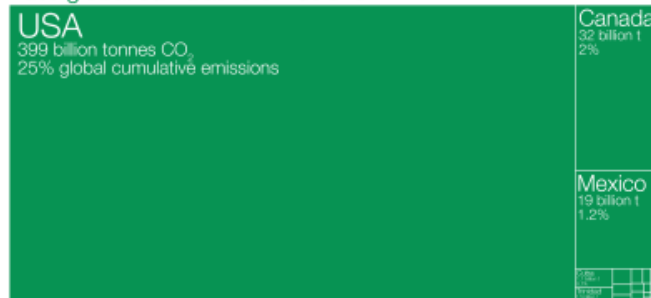
What are the arguments of 'Historical Emissions' and 'Polluter Pays Principle'? - (1) The demand of Loss and Damage is based on the universally acknowledged "Polluter Pays" principle. It **makes the polluter liable** for paying not just for the **cost of remedial action**, but also for **compensating the victims** of environmental damage caused by their actions; (2) In the climate change framework, the burden of responsibility falls on **developed countries** that have **contributed most of the greenhouse gas emissions** since 1750 (considered to be the beginning of the industrial age). The United States and the European Union, including the UK, account for ~47% of all emissions since 1750. Inclusion of Russia, Canada, Japan and Australia takes this contribution to ~60%; (3) **Historical responsibility** is important because carbon dioxide remains in the atmosphere for hundreds of years (300-1000 years according to NASA). It is the **cumulative accumulation of carbon dioxide that causes global warming**. India, currently the 3rd largest emitter, accounts for only 3% of historical emissions; (4) Developing Countries that have had negligible contributions to historical emissions and have severe limitations of resources are the ones that face the most devastating impacts of climate change. Hence, they demand climate reparations from developed countries.

Who has contributed most to global CO₂ emissions?

Cumulative carbon dioxide (CO₂) emissions over the period from 1751 to 2017. Figures are based on production-based emissions which measure CO₂ produced domestically from fossil fuel combustion and cement, and do not correct for emissions embedded in trade (i.e. consumption-based). Emissions from international travel are not included.

North America

457 billion tonnes CO₂
29% global cumulative emissions



Asia

457 billion tonnes CO₂
29% global cumulative emissions



EU-28

353 billion tonnes CO₂
22% global cumulative emissions



Europe

514 billion tonnes CO₂
33% global cumulative emissions

Africa

43 billion tonnes CO₂
3% global emissions

South America

40 billion tonnes CO₂
3% global emissions

Oceania

20 billion tonnes CO₂
1.2% global emissions

Figures for the 28 countries in the European Union have been grouped as the 'EU-28' since international targets and negotiations are typically set as a collaborative target between EU countries. Values may not sum to 100% due to rounding.

What actions have been taken to address Loss and Damage? – (1) At the drafting stage of the UNFCCC in 1991, the Alliance of Small Island States had proposed to create an insurance scheme to provide financial resources to countries impacted by rising sea levels. However, this was not adopted in the Framework Convention (1992); **(2)** Loss and damage first appeared in the negotiated outcome of the UN climate talks in 2007 as part of the **Bali Action Plan**; **(3)** In 2013, **Warsaw International Mechanism (WIM)** was formed to avert, minimise and address loss and damage. The WIM has been mandated to **share knowledge, strengthen dialogues** among stakeholders and **mobilise expertise** to enhance action and support to address loss and damage. But **neither the WIM nor any other established mechanism delivers funding** to help countries manage loss and damage; **(4)** Loss and Damage

Three Pillars of Climate Action: Mitigation, Adaptation, Loss and Damage

- Under the Paris Climate Agreement, countries recognized the importance of 'averting, minimising and addressing' loss and damage. They form **Three Pillars of Mitigation, Adaptation and Loss and Damage Fund**.
- Loss and damage can be:
 - 'Averted' by **curbing** greenhouse gas emissions (mitigation).
 - 'Minimised' by taking **preemptive action** to protect communities from the consequences of climate change (Adaptation).
 - 'Addressing' loss and damage: Helping people after they have experienced climate-related impacts.
- Climate adaptation measures include: **(a)** Protecting communities from sea level rise by helping them move to higher ground; **(b)** Preparing for extreme weather disasters by investing in **early warning systems**; **(c)** Protecting food supplies; **(d)** Adopting drought-resistant crops among others.
- Loss and damage happens **when efforts to reduce emissions are not ambitious enough** and when **adaptation efforts are unsuccessful** or impossible to implement, sometimes due to limited resources.
- The IPCC's 6th Assessment Report (WGII) observes that **as the magnitude of climate change increases, the ability to adaptation decreases**. It has defined soft and hard adaptation limits.
 - '**Soft Adaptation Limits**' are when adaptation options exist but communities don't have the financial resources needed to adopt them.
 - '**Hard Adaptation Limits**' are those when climate change becomes so extreme that no amount of resources can avert or minimize loss and damage.

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is mentioned in **Article 8 of the Paris Agreement** but without reference to provision of finance for climate reparation; **(5)** At COP26, a large coalition of climate-vulnerable countries advocated for creating a new finance facility dedicated to loss and damage. The proposal for loss and damage financing was once again rejected by developed countries; **(6)** A 2-year **Glasgow Dialogue** was established at the COP26. It will discuss possible arrangements for loss and damage funding. It was also agreed to **operationalise and fund the Santiago Network on Loss and Damage (SNLD)**; **(7)** At COP27, Countries have agreed to **set-up a Loss and Damage fund to provide financial assistance to poor nations**.

PT BOX

Santiago Network on Loss and Damage (SNLD)

The Santiago Network is a network to enable Loss and Damage fund flow from developed to developing countries. It will work towards the implementation of relevant approaches at the local, national and regional level, in developing countries that are particularly vulnerable to the adverse effects of climate change.

How much funding is needed? – **(1)** According to a recent report by the UN Office for the Coordination of Humanitarian Efforts (UNOCHA), annual funding requests related to climate-linked disasters averaged **US\$ 15.5 billion** in the 3-year period between 2019 and 2021. The economic loss from cyclone *Amphan* in India and Bangladesh in 2020 has been assessed at US\$ 15 billion; **(2)** A paper published by researchers at the Basque Centre for Climate Change (Spain) estimates that the economic costs in developing countries from damages will increase from US\$ 116–435 billion (2020) to US\$ 290–580 billion in 2030 and **US\$ 1-1.8 trillion by 2050**. The IPCC WGII Report (6th AR) mentioned that about 24% of the Green Climate Fund's approved projects refer to loss and damage. However, in the **absence of an agreed definition** it is difficult to clearly identify the amount of funding available for loss and damage at present. There is overlap with adaptation.

What should be done going ahead? – **(1)** It is necessary to agree on a **definition of Loss and Damage**. The lack of an agreed definition makes it hard to tag projects that could be considered loss and damage and obscures its relation to adaptation and mitigation; **(2)** The COP27 has agreed to create a Loss and Damage Fund. Now the focus should be finalizing the modalities regarding funding and administration. Fund should be made operational as early as possible; **(3)** Climate plans and policies should account for loss and damage alongside mitigation and adaptation. The developed countries have to acknowledge their historical contributions and provide funding for both adaption/mitigation as well as Loss and Damage measures; **(4)** To receive funding for loss and damage, it has to be established that the disaster was caused by climate change. Further advancements are necessary in climate science to assess role of climate change in extreme events. This will provide a solid scientific basis for Loss and Damage finance.

Apart from the Loss and Damage Fund, COP27 has left much to be desired. The developed countries have continued to dilute their obligations since the UNFCCC came into existence in 1992. Kyoto Protocol failed to achieve its outcome and climate finance has remained underwhelming. The short-sightedness of developed countries is evident as climate change manifests itself through rising extreme weather events. As the impacts of climate change are becoming more and more apparent, developed countries must own up their responsibility and provide immediate assistance to the suffering countries, for all the Three Pillars. There is a need to realize that window to act is closing-in fast before the irreversible changes in the climate systems. Hopefully, talks on Loss and Damage fund may change the course of climate negotiations and action. (Refer EPIC November 2021 for Climate Change, COP26, Climate Negotiations).

1. Issue of Child Marriage in India

News: Representatives of the Global Programme to End Child Marriage visited India recently and praised India's efforts and success in bringing down child marriages.

What is the current status of Child Marriage in India and the World? – As per UNICEF, child marriage is defined as a marriage of a girl or boy before the age of 18.

According to Indian laws, child marriage is defined when the bride is below the age of 18 years and the groom is below the age of 21 years. It includes both formal marriages and informal unions in which children under the age of 18 live with a partner as if married.

(A) Global: (1) About 40 million girls aged 15–19 years are currently married or in a union; (2) Each year, ~12 million more girls are expected to be married before reaching the age of 18 years. Of these, 4 million are under the age of 15 years; (3) The **Global Girlhood Report** by Save the Children observes that more girls are at risk of child marriage as a result of reported increases in all types of gender-based violence due to the COVID-19 pandemic. About 15 million girls and boys will never return to school following pandemic lockdowns and school closures. **Children who don't come back to school are at greater risk of early marriage**, child labour and recruitment into armed forces.

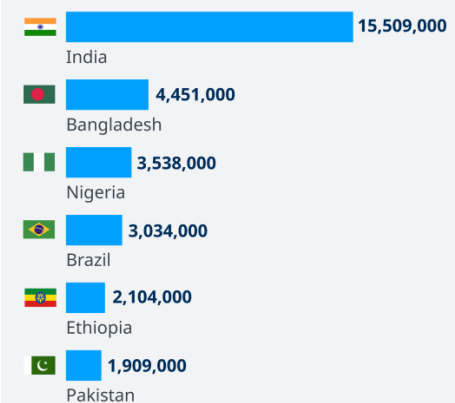
(B) India: (1) Child marriage has reduced from 47.4% in 2005–06 to 23.3% in 2020–21; (2) 8 States have a higher prevalence of child marriage than the national average: West Bengal, Bihar and Tripura top the list with more than 40% of women aged 20–24 years married below 18; (3) According to UNICEF, India accounts for ~33% of the global child brides. Nearly 16% adolescent girls aged 15–19 are currently married.

PT BOX

The Global Programme to End Child Marriage

It is a joint initiative of **United Nations Population Fund (UNFPA)** and the **United Nations International Children's Emergency Fund (UNICEF)** and it **promotes the rights of adolescents to delay marriage**.

Countries with the highest number of child marriages*

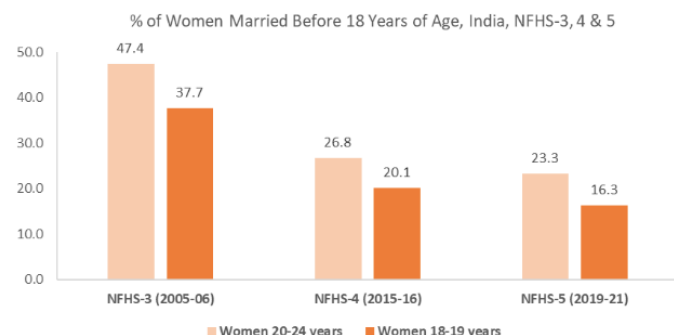


Source: Population data from United Nations |
*Women who were first married or in a union before they were 18-years-old

What are the harmful impacts of Child Marriage? – (1) Child Rights Issues: Children who are forced to get married young lose their rights including the **right to an education**, the **right to be safe from physical and mental violence**, including sexual abuse, and the **right to the best possible health** among others; (2) **Health Issues:**

(a) Stunted Growth: Children born to adolescent mothers are more susceptible to **stunted growth** as they have low weight at birth;

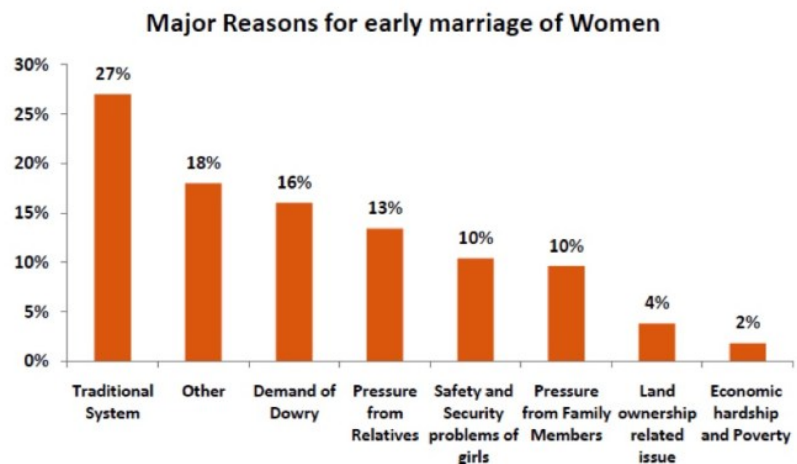
(b) Premature Pregnancy: Most young brides don't have information about contraception and lack access to reproductive health services. They get pregnant at a younger age and have children before their minds and bodies are ready; **(c) Maternal Mortality:** Girls under 15 are **five times more likely to die during childbirth or pregnancy**. The leading cause of death for girls



ages 15 to 19 around the world is **pregnancy-related deaths**; (d) **Infant Mortality**: Babies born to mothers younger than 20 have almost **75% higher death rates**; (e) **Mental health**: Abuse and violence can lead to PTSD (Post-Traumatic Stress Disorder) and depression; (f) **HIV/AIDS**: Young girls are more likely to get sexually transmitted infections (STIs) because of working of their bodies. They have less access to reproductive education and health services, and they often can't force partners to use contraceptives; (3) **Illiteracy**: Child brides are often taken out of school. Their children are also more likely to be illiterate; (4) **Intergenerational Cycle of Poverty**: Child marriage negatively affects the economy and can lead to an intergenerational cycle of poverty. Girls and boys married as children more likely **lack the skills, knowledge and job prospects needed to lift their families out of poverty**. Early marriage leads girls to have **more children over their lifetime**, increasing economic burden on the household; (5) **Teen Widows**: In a society that allows child marriages, it is not unusual to find widows and divorcees under the age of 18.

What are the reasons for prevalence of Child Marriage? – Child marriage has **strong roots in culture, economics and religion**: (1) **Poverty**: Poor Families 'sell' their children through marriage to pay off debts or to get out of the cycle of poverty. Child marriage makes families poorer because young brides won't be educated or skilled enough to do well in the workforce; (2) **"Protecting" the Girl's Sexuality and Security**: In some cultures, marrying a girl young is thought to "protect" the girl's sexuality and the family's honour. Abuse, rape, and other crimes against girls, can make parents turn to child marriage as a way to protect their daughters; (3) **Customs and Traditions**: In places where child marriage is common, delay in marriage exposes families to ridicule, disapproval, and family shame. Traditions like dowry put a lot of stress on the family. Generally, the amount of dowry rises with age of the girl; (4) **Discrimination based on gender**:

According to a UNICEF report on 'Child Marriage and the Law', "The discrimination often manifests itself in the form of domestic violence, marital rape, and deprivation of food, lack of access to information, education, healthcare, and general impediments to mobility"; (5) **Laxity in Implementation of Laws**: Laws are not implemented stringently. In many cases the ages of the bride and groom aren't checked at the time of registration of marriage. Many child marriages aren't even registered.



What steps have been taken to check Child Marriage? –

(A) **Legislative Measures**: (1) **Prohibition of Child Marriage Act (PCMA), 2006**: It replaced the Child Marriage Restraints Act, 1929. It criminalizes the acts of the person who performs, conducts, directs or abets any child marriage and provides for punishment with an imprisonment up to 2 years and fine up to INR 1 lakh; (2) Other laws that provide protection to a child bride include the **Juvenile Justice (Care and Protection of Children) Act, 2015**; the **Domestic Violence Act, 2005**; and the **Protection of Children from Sexual Offences Act, 2012**; (3) A **Parliamentary Standing Committee** is weighing the pros and cons of **raising the age of marriage for women to 21**, which has been cleared by the Union Cabinet.

(B) **Government Policy/Schemes**: (1) Under the **National Population Policy 2000** and the **National Youth Policy 2003**, contain strategies to address vulnerabilities of girls like provision of non-formal education and

vocational training, development of livelihood skills and education and awareness of sexual and reproductive health issues; (2) The Government has launched schemes like the **Beti Bachao Beti Padhao**, **Sukanya Samriddhi Yojana** etc.; (3) **State Governments** have launched various schemes as well.

(C) NGO and International

Organisation's Initiatives: (1) The Global Programme to End Child Marriage (second phase: 2020-2023, a UNFPA-UNICEF Initiative) promotes the rights of adolescents to delay marriage; (2) Prohibition of/checking child marriage is included in Sustainable Development Goal 5 to 'achieve gender equality and empower all women and girls' under Target 5.3: 'Eliminate all harmful practices, such as child, early and forced marriage and female genital mutilation'; (3) **The Knowledge Hub on Child Marriage, India:** KHub is a web-portal exclusively focused on the issue of child marriage, designed to cater to growing need for evidence-based approaches on prevention of child marriages in India.

Schemes to Address Child Marriage

- **Rajasthan:** The Health Institute for Mother and Child started the **Action Approach for the Reduction of Early Marriage and Early Pregnancy**. It is an initiative to involve young people towards the creation of **awareness on reproductive health information**. This has been done through the process of **community mobilization**.
- **West Bengal:** **Kanyashree** Scheme offers financial aid to girls wanting to pursue higher studies. Another Scheme **Rupashree**, provides a one-time payment of INR 25,000 to poor families at the time of a daughter's marriage. The girl must be above the age of 18 to be eligible for this scheme.
- States like **Uttar Pradesh** and **Bihar** have launched schemes to encourage girls to go to school and delay child marriage.

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What should be the approach going ahead? – (1) Empowering the Girl Child: The Governments should take all possible steps to improve access to education for girls e.g., the Governments can provide schools with proper sanitation facilities; (2) **Proper Implementation of Laws:** Village Panchayats must work closely with the Child Protection Committees and Child Marriage Prohibition Officers to prevent instances of child marriages; (3) **Social Change:** There is a need to sensitize the parents and society about the ills of child marriage. Rallying the wider community to stand up for girls' rights will help bring the change. Social change will be more effective to check child marriage than coercive measures and laws; (4) **Financial Upliftment:** Providing families with livelihood opportunities like microfinance loans is an effective way to prevent child marriages that occur as a result of financial stress.

The efforts of the Union and State Governments, NGOs have led to a sharp decline in the instances of child marriages. However, all stakeholders should continue their efforts till this evil practice is eliminated completely.

2. Groundwater Usage in India

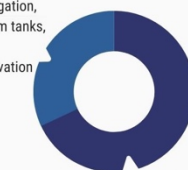
News: According to a Report by the Ministry of Jal Shakti, the groundwater extraction in India has been lowest since 2004.

What is the current status of Groundwater extraction in India? – (1) According to Ministry Report, the total annual groundwater recharge is, **437.60 billion cubic metres (BCM)**. The quantity extracted stood at **239.16 BCM** (2022 Assessment); (2). The extraction has been the **lowest since 2004**, when the extraction was 231 BCM; (3) A similar assessment in 2020 found that the annual groundwater recharge was 436

Groundwater Sources

Others

32% Canal seepage, Return flow from irrigation, Recharge from tanks, ponds and water conservation structures.



Rainfall

68% Direct ingress of Rainwater into ground.

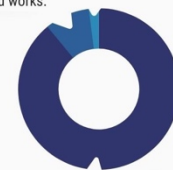
Groundwater Usage

Domestic

9% Second-highest usage for household works.

Industrial

2% Lowest share of Industrial sector.



Agriculture

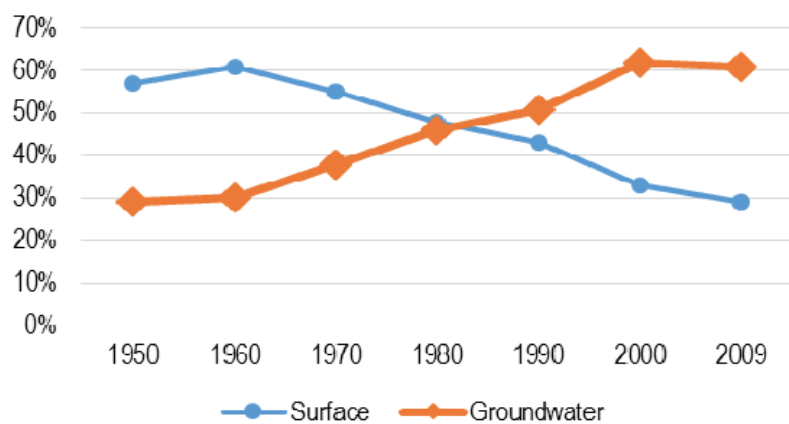
89% Highest usage for irrigation in agriculture sector.

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BCM and extraction 245 BCM. In 2017, recharge was 432 BCM and extraction 249 BCM; **(4)** The percentage of blocks where the groundwater is ‘critically’ low is ~14%. It is roughly similar to that in previous years. Regions with the most blocks with **critical groundwater levels** are in **Punjab, Haryana, Delhi** and **western Uttar Pradesh**, where indiscriminate groundwater withdrawal has depressed the water table; **(5)** Rajasthan and Gujarat have limited groundwater recharge due to arid climate; **(6)** In parts of Karnataka, Tamil Nadu, Telangana and Andhra Pradesh, groundwater availability is low due to inherent characteristics of crystalline water-storing aquifers. (Refer EPIC June 2022 for Water Crisis in India).

What are the reasons behind overexploitation of Groundwater? – (1) Cropping Pattern: Paddy based cropping pattern in Punjab and Haryana is not suitable to local agro-ecological condition. Flooded irrigation through groundwater-based tube wells has depleted water table. MSP policy is considered as the major factor behind the distorted cropping pattern; **(2) Subsidy:** Electricity subsidy has also been attributed to overuse of irrigation; **(3) Irrigation Pattern:** There has been gradual shift towards use of groundwater for irrigation, from surface water; **(4) Lack of Regulation:** There is a lack of comprehensive regulatory framework to check over-exploitation of groundwater. States have their own laws which are not implemented stringently; **(5) Rising Urbanization:** Rising urbanization has increased demand of groundwater for domestic use especially in expanding urban areas.

Increase in ground water utilization for irrigation



Sources: Agricultural Statistics at Glance 2014, Ministry of Agriculture; PRS.

What should be done going ahead? –

(1) Regulation: Central Ground Water

Authority (CGWA) under the Ministry

of Jal Shakti is responsible for

regulating ground water development

and management. It has been issuing

advisories, public notices and

guidelines to regulate groundwater.

Some State follow CGWA guidelines,

while many other States have their

own legislations and Government orders.

A comprehensive regulatory framework should be established in

consultation with the States; (2) Sustainable use in Agriculture:

Cropping pattern should be adjusted to

local agro-ecology. Sustainable agriculture practices with

water-efficient irrigation systems like

fertigation, drip-irrigation etc. can help conserve water. Treated waste-water can also be used for

irrigation; (3) Water Recharge:

Enhancing groundwater recharge through practices like rainwater

harvesting can enhance water recharge; (4) Surface Water Management:

Restoring ponds, lakes and

traditional water resources can reduce pressure on groundwater; (5) Public Participation:

A participatory

groundwater management approach through community involvement by raising awareness and providing

rights can help ensure sustainable use and check exploitation.

Major central level water institutions responsible for ground water management

Institution	Role
Central Water Commission	Initiating and coordinating schemes for the conservation and utilisation of water resources in the country in collaboration with state governments; and monitoring water quality
Central Ground Water Board	Developing and disseminating technology related to sustainable use of ground water; monitoring and implementing policies for the sustainable management of ground water resources; estimating ground water resources
Central Ground Water Authority	Constituted under Section 3(3) of the Environment (Protection) Act, 1986 to regulate and control development and management of ground water resources; can resort to penal actions and issue necessary regulatory directives
Central Pollution Control Board	Implementation of the Water (Prevention and Control of Pollution) Act, 1974 which seeks to restore water quality

Sources: Ministry of Water Resources; Lok Sabha Question 2157, March 10, 2015; PRS.

General Studies Paper II

1. Supreme Court's Judgment on EWS Reservation

News: A 5-Judge Bench of the Supreme Court has upheld the validity of the 103rd Constitutional Amendment Act. The Act had introduced 10% reservation for the EWS in education and public employment.

What are the provisions of Reservation for the EWS? – (1) The 103rd Amendment Act provides for **reservation of jobs** in the Central Government jobs as well as **Government and private educational institutions**; (2) It applies to citizens belonging to the **Economically Weaker Sections (EWS)**. This reservation is “*in addition to the existing reservations and subject to a maximum of 10% of the total seats in each category*”; (3) It fulfils the mandate of **Article 46** of the Constitution (Directive Principle); (4) **Article 15(6)** has been added to provide reservations to economically weaker sections for **admission to educational institutions** including private educational institutions, (whether aided or unaided by the State). The **minority educational institutions** have been **excluded**; (5) **Article 16(6)** has been added to provide reservations to people from economically weaker sections in **government posts**. An explanation states that “**economic weakness**” shall be decided on the basis of “**family income**” and other “**indicators of economic disadvantage**”; (6) The amendment aims to provide reservation to those **who do not fall in 15 (5) and 15(4)** (effectively, SCs, STs and OBCs)

Challenges to the 103rd Constitutional Amendment Act

The 103rd Constitution Amendment Act was challenged on the following grounds:

- It **violates the basic structure of the Constitution**. The special protections guaranteed to socially disadvantaged groups are part of the basic structure. But the Act departs from this by promising special protections on the **sole basis of economic status**.
- It violates the Supreme Court's ruling in **Indra Sawhney & Ors v Union of India (1992)**, which capped reservations at 50%. The SC held that **economic backwardness cannot be the sole criterion** for identifying a backward class.
- Private, unaided educational institutions have argued that their **fundamental right to practise a trade/ profession is violated** when the State compels them to implement its reservation policy and admit students on any criteria other than merit.

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What has been the decision of the SC regarding the Reservation for EWS? – The Act was challenged before the Supreme Court as violative of the Constitution of India in August 2020 (**Janhit Abhiyan v. Union of India**). A 5-Judge Bench of the Supreme Court, through a 3:2 verdict, has upheld its validity. The Bench held that the **Act is not violative of the basic structure of the Constitution**.

What were the questions considered by the SC in the EWS Judgment? – During the hearing, the Attorney General had drafted 4 issues for the consideration of the Bench. These were whether the 103rd Amendment Act **breaches the basic structure of the Constitution** by:

(A) Permitting the State to make special provisions, including reservation, based on economic criteria

(1) The majority of the Judges held that **poverty is an adequate marker of deprivation** that the State can address through reservations; (2) The SC in its earlier Judgments had held that “*economic criteria cannot be the sole basis for determination of backwardness*”. The Judgment in this case held that this is somewhat restricted to the reservation provided to Social and Economically Backward Classes (SEBC), and EWS is deemed a separate and distinct category; (3) The majority opinion held that while economically weaker sections (EWS) of the citizens are not declared as SEBCs for the purpose of Article 15(4) of the Constitution, **separate reservations are not barred by the Constitution** (like provisions under free and compulsory primary education). Hence, it is not violative of the basic structure.

(B) Excluding the SEBCs/OBCs/SCs/STs from the scope of EWS Reservation

(1) The SC held that there cannot be competition of claims for affirmative action based on disadvantages; (2) Reservation cannot be denied to one section (the EWS) because that segment is otherwise not suffering from other disadvantages; (3) Article 16(4) is exhaustive for reservation in favour of backward classes but the **section is not exhaustive of the concept of reservation**. The provisions of the Amendment Act have introduced another affirmative action that is separate. Hence, it is not violative of the basic structure.

(C) Breach of 50% ceiling for reservations

The SC held that the **50% ceiling is for backward classes** and it “overstretched to the reservation provided for **entirely different class**, consisting of the *economically weaker sections*”.

(D) Permitting the State to make special provisions for admission to private unaided institutions

Under Article 15(5) of the Constitution, the State has power to make reservations in private educational institutions. **Reservations in private institutions is not per se violative of the basic structure**. Reservations as a concept cannot be ruled out in private institutions where education is imparted. The view concurred with the earlier Judgment in the **Pramati & Society for Unaided Private Schools (2014)**.

Hence, the provisions of the **103rd Constitution Amendment Act do not breach the basic structure of the Constitution**.

PT BOX

Indra Sawhney vs Union of India (1991)

In the **Indra Sawhney Case (1992)**, a 9-judge Bench of the SC had upheld 27% quota for OBCs but had struck down the 10% quota based on economic criteria. The SC had further held that **reservation cannot cross 50%**, unless a special case was made out in “**extraordinary situations and peculiar conditions**”.

What is the minority view of the SC Bench? – Two Judges held a different view.

(A) On Economic Criteria: (1) Laws that give benefits based on “only economic criteria” don’t violate the right to equality on their own; (2) However, the Constitution says that **reservations can only be about the community and not about the individual**. So, while access “to public goods” such as tax breaks, subsidies can be allowed, reservation in public employment would not be permissible.

(B) On Exclusion of SCs/STs/OBCs/SEBCs: Their **exclusion is unconstitutional**. (1) Those subjected to socially questionable and outlawed practices have been excluded. They are amongst the poorest sections of society. Excluding them goes **against the idea of fraternity**; (2) The exclusion virtually confines SC/ST/OBC within their allocated reservation quotas (15% for SCs, 7.5% for STs, 27% for OBCs); (3) It denies the chance of “mobility from the reserved quota (based on past discrimination) to a reservation benefit based only on economic deprivation”; (4) It would be arbitrary to exclude socially backward classes on the ground that they already enjoy quota benefits.

(C) On Breach of 50% Limit: (1) The breach of 50% rule could “**eat up the rule of equality**” and become “**a gateway of further infractions**” which in fact would **result in compartmentalisation**; (2) The rule of equality would then be reduced to the right of reservation; (3) The minority Judges noted that in this regard the observations of Dr. Ambedkar have to be kept in mind that **reservations are to be seen as temporary and exceptional or they could eat up the rule of equality**.

The view of the bench regarding private institutions was concurrent.

What should the approach for going ahead? – (1) **Equal opportunity in education:** The Union and State Governments should take a long-term view and work to improve the education infrastructure and the **quality of education**. Equal opportunities to **quality and affordable education** will reduce the struggle among more and more communities to get classified as ‘backward’; (2) **Caste-based discrimination:** One of the Judges in his dissenting Judgment noted the remark of the Dr. Ambedkar that “reservations are to be seen as temporary and exceptional”.

The opinion of experts on the Judgment seems to be divided. Reservation remains an emotive and politically sensitive issue in India. The long-term solution lies in **empowering the socio-economically marginalized sections of the society** and **eliminating discrimination of all kinds** through social and political mobilization.

2. Challenge to the First Amendment to the Constitution

News: The Supreme Court has agreed to hear a petition challenging the changes made to the right to freedom of speech and expression by the first amendment to the Constitution.

What were the Amendments made through the First Amendment Act? – The First Amendment was passed in 1951 by the Provisional Parliament, with members of Constituent Assembly (First General Elections were held in 1952). The First Amendment was passed after two **SC Judgments** in 1950 that **restricted the power of the Government to restrict free speech**: **(1)** It sought to make several consequential changes like **(a)** Exempting land reforms from scrutiny; **(b)** Providing protections for backward classes in the Constitution; **(c)** Expanding the scope of the restrictions on the right to free speech; **(2)** Section 3(1) of the Constitution (First Amendment) Act, 1951 **substituted original clause (2) of Article 19** with two new insertions. These were: **(a)** “in the interest of public order”; **(b)** “in relation to incitement to an offense”. The expression “tends to overthrow the state” was removed through this amendment. Article 19(2) deals with restrictions on **freedom of speech**; **(3)** Section 3(2) of the Act effected validation of certain laws even if they took away or abridged the right to freedom of speech and expression; **(4)** It also introduced the qualification “**reasonable**” to the restrictions that Article 19(2) imposed. It allows the Judiciary to step in and examine the legitimacy of the restrictions imposed by the Parliament.

Supreme Court's Judgments Preceding First Amendment Act

Romesh Thapar vs State of Madras (1950)

- In 1949, the Government of Madras banned the magazine ‘Cross Roads’, for its criticism of the Government’s foreign policy.
- The petitioner challenged Section 9(1-A) of the **Madras Maintenance of Public Order Act, 1949** as unconstitutional. This provision authorized the Government to impose restrictions for the wider purpose of securing “public safety” or the “maintenance of public order”.
- The Government argued that the words “undermining the security of the State” in Article 19(2) could be equated with “public safety” and “maintenance of public order.”
- The SC disagreed and struck down the provision as unconstitutional.

Brij Bhushan vs State of Delhi (1950)

- In 1950, the Chief Commissioner of Delhi issued a “pre-censorship order” on the magazine ‘Organiser’ which was critical of the Government.
- Its publisher challenged Section 7(1)(c) of the **East Punjab Public Safety Act**, which allowed **pre-publication scrutiny** of material “prejudicial to public safety or the maintenance of public order”.
- The Supreme Court struck down the provision as unconstitutional. The SC held that the **pre-censorship** of a journal was an **unreasonable restriction** on the liberty of the press.

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What are the Petitioners Challenges? – **(1)** The two new insertions (by the first amendment act) protect the following sections of the IPC from being unconstitutional: **(a) Section 124A** (sedition); **(b) Section 153A** (promoting enmity between different groups on grounds of religion, race, place of birth, residence, language, etc.); **(c) Section 295A** (deliberate malicious acts, intended to outrage religious feelings of any class by insulting its religion or religious beliefs); **(d) Section 505** (statements conducing to public mischief). The petition noted that, “The two questionable expressions inserted unduly abridge the fundamental right under Article 19 (1)(a)... damages democracy and republicanism and supremacy of the Constitution”; **(2)** The amendment neglects national security by dropping the expression ‘tends to overthrow the State’ which raises grave concern in the context of the dangers posed to the concept of the secular democratic republic by radicalism, terrorism and religious fundamentalism; **(3)** The petitioners urged the SC to declare Sections 3 (1)(a) and 3(2) of the First Amendment “beyond the amending power of Parliament” and void since it “damage the basic or essential features of the Constitution and destroy its basic structure”.

3. Judicial Decisions and Strength of the Bench

News: A Constitution Bench of the Supreme Court has held that a judgment delivered by a larger Bench will prevail irrespective of the number of Judges constituting the majority.

What is the present practice regarding Judicial Decisions? – (1) The decision of a superior court is binding on a lower court; (2) Similarly, the decision of a larger Bench is binding on a smaller Bench of the same court; (3) A Bench of equal strength can't review or reconsider the decision of another bench (of same strength). It can only doubt its correctness; (4) In case of conflict between decisions of co-equal Benches, it is referred to the Chief Justice of India who assigns it to a larger Bench; (5) This is done to ensure that there is stability and consistency in the decisions of the court. This principle is based on the assumption that a Bench with more strength is more likely to arrive at a correct decision.

A vast majority of cases before the Supreme Court is heard and decided by a Bench of two judges (Division Bench) or three (full Bench).

What are the issues with this system? – (1) In the present system, the decision of the majority of the Judges is considered as the decision of the entire Bench; (2) It can lead to an anomalous situation where lesser number of Judges can overrule decision of greater number of Judges e.g., a 4:3 majority decision of a 7-Judge Bench can overrule a unanimous decision of a 5-Judge Bench (5:0) i.e., 4 Judges overruling 5 Judges.

What is the rationale behind SC Judgment? – The Supreme Court has held that if the number of judges is to have salience and not Bench strength, then every decision of a larger bench could be doubted and overruled by a smaller Bench through plurality of opinions. This will impact the certainty and stability of decisions.

What are the issues with the SC Judgment? – The SC has justified the binding nature of the larger Bench's view on the basis that it has been arrived at after deliberation by more judges. However, a decision considered by more Judges may not necessarily mean a correct decision. Especially it can be said that a decision arrived at by a narrow majority (say 4:3) could have been different if heard by a different set of Judges. It is natural that a **decision by a larger majority is perceived to be correct over a decision considered by a larger number.**

What should be the approach? – (1) In the US and South Africa, any review of a judgment is considered by the entire strength of the Court; (2) To review an existing decision, the larger bench should have a **quorum with a break-even or a greater majority than the lower Bench** e.g., the decision of a 5-Judge Bench should be considered by a 9-Judge Bench (instead of a 7-Judge Bench) to avoid the anomalous situation (5:0 Judgment being overruled by 4:3 Judgment).

4. Naming and Shaming of Voters

News: The Election Commission has signed MoUs with over 1,000 corporate companies. The names of employees who do not vote will be published over websites and notice boards.

What are the concerns associated with the MoUs? – (1) **Violates Fundamental Rights:** The Supreme Court (**PUCI vs Union of India, 2013, NOTA Judgment**) has held that abstention from voting and negative voting are protected under the fundamental right as freedom of expression (Article 19). It has further said that free and fair election is a basic structure of the Constitution. Therefore, an arbitrary distinction between a voter who casts and a voter who does not cast his vote is violative of Article 14; (2) **Violates Representation of**

People Act, 1951 and IPC: Section 79 D of the RPA, 1951 defines “electoral right” which says the right of a person to vote or refrain from vote at an election”. The same provision exists in the Indian Penal Code under Section 171A (b); **(3) Voter’s Identity:** It also raises issues of voters’ rights, and secrecy of voting, etc. as **protection of elector’s identity** and affording secrecy is integral to free and fair elections.

What can be the course of action? - The objective of increasing the participation of the voters in the election can be achieved through **systematic voter education**. It has already been carried out by the ECI since 2010 through the SVEEP Programme (**Systematic Voters Education for Electoral Participation**). This program motivates the youth and has also seen the involvement of school and colleges including business enterprises to create awareness amongst voters.

5. Direct Benefits Transfer (DBT): Advantages and Challenges

News: The IMF has praised the Direct Benefit Transfer Scheme (DBT), calling it a logistical marvel that has reached hundreds of millions of people.

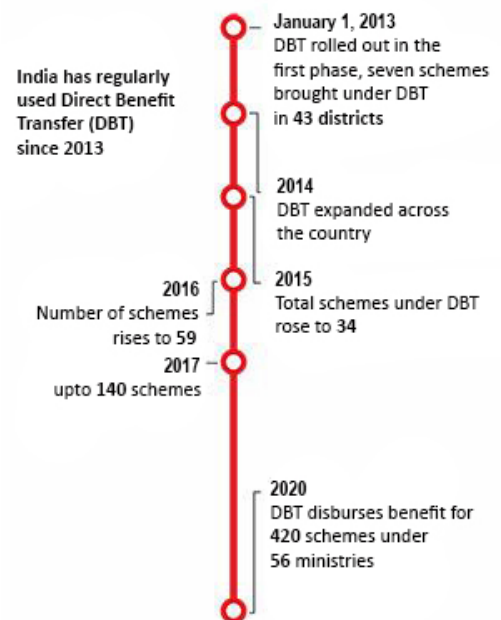
What is Direct Benefit Transfer (DBT) Programme? - (1)

The Direct Benefit Transfer (DBT) programme was launched on January 01, 2013; (2) It was initiated with the goal of **(a) Improving the delivery system** of the welfare initiatives of the Government of India; **(b) Reforming the procedures of existing social schemes;** (3) The program has aimed at **transfer of subsidies and cash benefits directly to the people through their Aadhaar seeded bank accounts;** (4) The Programme was launched with the expected outcomes to substantially **reduce leakages and delays**. The DBT removed several layers of offices through which the funds reached the beneficiaries.

What are the components and types of schemes covered under the Direct Benefit Transfer (DBT)? -

(A) Components: Primary components in the implementation of DBT schemes include: **(1) Beneficiary Account Validation system;** **(2) A robust payment and reconciliation platform** integrated with RBI, NPCI and Beneficiary Banks (Public and Private Sector Banks, Regional Rural Banks and Cooperative Banks). It includes the Core Banking Solutions of banks, Settlement Systems of RBI, Aadhaar Payment Bridge of NPCI.

(B) Types Of Schemes: **(1) Cash Transfer:** The Government directly transfers the money to the individual beneficiaries. The cash transfer is undertaken through: **(a) Direct transfer to beneficiary account by Union Government;** **(b) Transfer through State Treasury Account;** **(c) Cash transfer by implementing agency of the Government;** **(2) In-Kind benefit transfer:** The Government offers benefits to the beneficiaries in kind either directly or through their implementing agencies. The Government incurs the expense of procuring a subsidy or benefit. The Government will buy a particular product (say food grains) and offer it for public distribution; **(3) Other transfers:** The DBT Scheme also transfers funds and subsidies to several non-governmental functionaries that help implement government policies until the very end. This includes community workers, NGOs, teachers in aided schools, etc. They are not beneficiaries but are given training, wages, and incentives to serve the beneficiaries.



What are the advantages of DBT? – (1) Good Governance: (a) It has brought **transparency** and **reduced instances of pilferage** from the distribution of Central Government-sponsored funds; (b) Disbursal based on **verification of biometric identity** through Aadhar has reduced fraudulent and duplicate beneficiaries; (c) The DBT programmes have provided for **time-bound transfers** of benefits, which has helped recipients **avoid delays** in the transfer of money; **(2) Benefit to the Economy:** (a) Direct transfer has eliminated the need for intermediaries and rentals for ‘fair pricing’ shops etc. It has reduced structural expenditures; (b) Middlemen can no longer take subsidised grains and sell them in the market; (c) It is also expected that the amount of money that is being circulated will be raised, which has the potential to result in a large increase in the GDP; **(3) Digitalisation or Cashless Economy:** (a) DBT is assisting India in accelerating its transition toward a cashless economy; (b) The prospect of receiving money directly has motivated people to open bank accounts and also acting as a driver in promoting savings.

Funds transferred via DBT in FY23

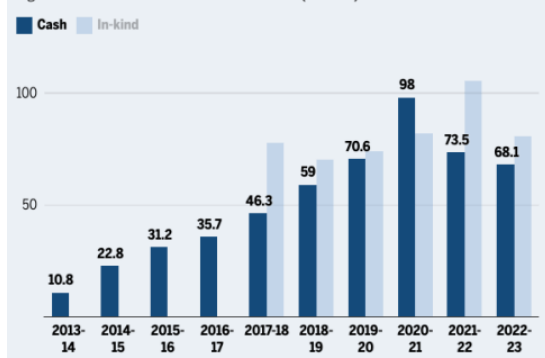
Government data for FY22-23

Scheme	Total Direct Benefit Transfer (In Rs crore)
PAHAL	3,897.19
MGNREGS	24,736.5
NSAP	1,548.76
SCHOLARSHIP SCHEME	1,692.21
PMAYG	28,947.77
PDS	100,406.0
FERTILISER	72,961.97
OTHERS	63,911.16
Grand Total	298,101.62

What steps can be taken to improve the DBT further? – (1) User Centricity: There is a need to focus more on **user-centricity**. The Government should include women, persons with disabilities, and other traditionally excluded and vulnerable groups in the design process (following the ‘**Principles of Digital Development**’). The system should address common **consumer risks**, such as **unreliable network** or service, **complex user interfaces**, and inadequate payment processes that force recipients to ask others for assistance and share personal information; **(2) Awareness:** Despite efforts by Government, there is low awareness among beneficiaries about their entitlements. Hence, they miss out on benefits. (a) Governments should adopt a **strategic approach to Awareness, Communication, and Outreach (ACO)** for G2P (Government to Person) programs; (b) The Government should have dedicated campaigns keeping in mind low level of literacy among beneficiaries; (c) Beneficiaries should be given the opportunity to provide feedback on the programme as well as the manner in which benefits are distributed. This would enable the Government to take corrective steps in case of any gaps; **(3) During times of crises (like COVID-19 pandemic), it is more beneficial to ramp up already established programmes** rather than launching new support schemes. The beneficiaries are already aware of the programme and the process. To make this more efficient, a dynamic database (updated on real-time basis) of social safety programmes that are categorised according to families and segments, such as occupation, gender, condition, and income level should be maintained; **(4) Incentivize Banking Correspondents BCs:** A survey found that ~10% DBT beneficiaries avail benefits through Banking Correspondents (BCs); (a) To ensure the efficiency of service delivery, the Union and State Governments, and financial institutions should **monitor the functioning and incentive structure of BCs** on a regular basis. Governments and Banks should ensure

Year-wise beneficiaries of India's DBT scheme

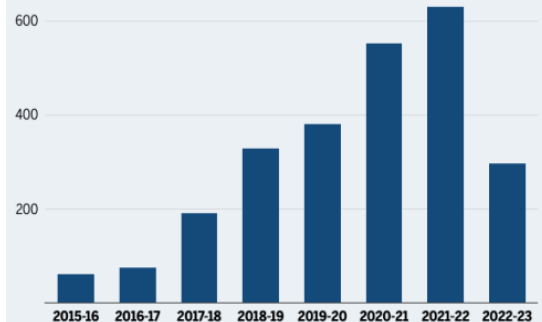
Figures include both cash and kind transfers (In crore)



adequate compensation for BCs, motivating them to improve last-mile payment delivery; **(b)** The Governments should also **allow BC agents to ‘white-label’ their services to multiple banks**, which means BCs can sell products from multiple banks to a customer. This will help in **enhancing reach and last-mile delivery**; **(5) Last-mile Delivery**: Governments should **deliver cash benefits at the doorstep** while ensuring correct targeting. Doorstep delivery of cash benefits has been instrumental in providing a safety net to those who cannot travel to access points (like the elderly, differently-abled, and women customers constrained by safety concerns or regressive social norms); **(6) Digital Payments**: Governments should create an **enabling environment and promote the use of the digital payments**. This will allow beneficiaries to use the benefit amount without visiting a withdrawal point, which would save them time and cost. The facility will help the elderly, women and differently-abled beneficiaries; **(7) Grievance Redressal**: the Government should **design a robust beneficiary-centric grievance resolution mechanism**. The current DBT architecture lacks an effective mechanism for customers to resolve grievances like non-receipt of funds or transaction failure. Between April-June 2020 ~1.47% of 830 million (i.e. ~12 million) transactions failed. Technology solutions should be developed to identify, monitor and rectify issues like transaction failure or delays. Beneficiaries should be provided with simple process to raise grievance and implementing agency responsible for the transaction failure or delays should resolve the issues immediately.

Year-wise fund transfer

The amount includes all cash and in-kind schemes of the government (In Rs '000 crore)



Amidst the COVID-19 pandemic, the Government of India has deposited more than US\$ 9.3 billion (INR 680 billion) in the bank accounts of over 420 million beneficiaries under PMGKY. This large-scale transfer ensured **timely, efficient, and convenient transfers during the pandemic**. The Government should further enhance the efficacy of the DBT programme, eliminate the loopholes like transaction failures and make the system completely fool proof.

6. Issues with the Global Hunger Index (GHI)

News: India has been ranked 107 out of 121 countries on the Global Hunger Index. While, the status of nutrition in India is concerning, there are valid questions regarding the methodology of the GHI.

What are the key findings of GHI, 2022? – **(1)** India has been ranked 107 out of 121 countries; **(2)** India's score of 29.1 places it in the **‘serious’** category. India also ranks below Sri Lanka (64), Nepal (81), Bangladesh (84), and Pakistan (99). Afghanistan (109) is the only country in South Asia that performs worse than India; **(3)** India's **child wasting rate** (low weight for height), at 19.3%, is worse than the levels recorded in 2014 (15.1%) and 2000 (17.15%); **(4) Prevalence of undernourishment** has risen from 14.6% in 2018-2020 to 16.3% in 2019-2021. This translates into 224.3 million people; **(5) Child stunting and child mortality**: Child stunting has declined from 38.7% to 35.5% between 2014 and 2022.

Food for thought

India's score of 29.1 in the 2022 Global Hunger Index falls under the "serious" category in the hunger meter. It ranked 107 out of the 121 countries analysed below Rwanda and Ethiopia

29.1				
<= 9.9 low	10-19.9 moderate	20-34.9 serious	35-49.9 alarming	>= 50 extremely alarming
Rankings	Country			
102	Rwanda		106	Sudan
103	Nigeria		107	India
104	Ethiopia		108	Zambia
105	Republic of Congo		109	Afghanistan
			110	Timor-Leste

Similarly, child mortality has also dropped from 4.6% to 3.3% in the same comparative period; **(6)** India has shown a slight worsening with its GHI score increasing from 28.2 in 2014 to 29.1 in 2022.

What are the criticisms of the GHI? – The Government and some experts have raised concerns about the methodology of the GHI: **(1)** 3 out of the 4 indicators used for the calculation of the index are related to the **health of children** and cannot be representative of the entire population. Child mortality depends on a country's disease climate and public health systems. Many child deaths are associated with conditions surrounding birth, congenital conditions, or delivery complications. These are **not necessarily markers of hunger**. Also, the relationship between stunting, wasting and hunger is not apparent. UNICEF says that poverty is not a clear cause of stunting as there are stunted children even among the wealthiest households; **(2)** The indicator of the Proportion of the Undernourished (PoU) population is based on an opinion poll conducted on a very small sample size of 3,000. The sample is small and unrepresentative of India's size; **(3)** The report ignores the food security efforts of the Government of India especially during the pandemic e.g., the Pradhan Mantri Garib Kalyan Ann Yojana (PMGKAY) and the supplementary nutrition provided to young children and the lactating mothers during the pandemic.

Global Hunger Index

- It is published annually by 'Concern Worldwide' and 'Welthungerhilfe' (German word for World Hunger Aid).
- It is a tool for measuring and tracking hunger at global, regional, and national levels.
- GHI scores are based on the values of four component indicators:
 - Undernourishment.
 - Child Stunting.
 - Child Wasting
 - Child Mortality.
- Countries are divided into five categories of hunger on the basis of their score, which are 'low', 'moderate', 'serious', 'alarming' and 'extremely alarming'.
- Based on the values of the four indicators, a GHI score is calculated on a 100-point scale reflecting the severity of hunger, where zero is the best score (no hunger) and 100 is the worst.
- The GHI is an annual report and each set of GHI scores uses data from a 5-year period. The 2022 GHI scores are calculated using data from 2017 through 2021.

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How serious is the problem of malnutrition in India? – The criticism of GHI can be justified on the basis of flaws in the methodology. At the same time, India has a problem of chronic malnutrition. UNICEF report '**Child Food Poverty: A Nutrition Crisis in Early Childhood**' points out that in 13 countries across the world, more than 2 in 5 children live in "**severe food poverty**". India is one among those 13 giving company to countries such as Chad, South Sudan, Ethiopia, Somalia, Myanmar and Afghanistan. Malnutrition is due to: **(1)** Schemes such as mid-day meal scheme and PMGKAY have **addressed only chronic hunger**. But they **do not provide balanced diet**, lack of which leads to malnutrition; **(2) Breastfeeding**: It is one of the biggest challenges in India as children are not breastfed properly. It helps the child in **acquiring antibodies** against infections, allergies and protection against several chronic conditions. The **WHO** recommends that breastfeeding should be initiated within the first hour of birth and infants should be breastfed for the **first six months**. NFHS highlights that only 42% of infants are breastfed within first hour of birth. The percentage of children breastfed rose from 55% in NFHS 4 to 64% in NFHS 5; **(4)** Unhygienic practices and lack of awareness lead to chronic infections and malnutrition.

PT Box

Hidden Hunger

According to the IFPRI, it is a form of undernutrition that occurs when **intake and absorption of vitamins and minerals** (such as zinc, iodine, and iron) are too low to sustain good health and development. Factors that contribute to micronutrient deficiencies include **poor diet, increased micronutrient needs** during certain life stages, such as pregnancy and lactation, and **health problems** such as diseases, infections, or parasites. According to the FAO, hidden hunger affects two billion people across the globe.

What are the steps required for improving the situation? – (1) Focus should be on regions vulnerable to socioeconomic and environmental crises to improve child wasting and stunting; (2) **Diversification of diet:** According to a global data repository, Indians consume 40% and 30% fewer vegetables and fruits respectively compared to global average. The consumption of millets, pulses, meats and dairy products is also low. The **diet needs to be diversified** to improve nutritional intake through awareness and availability; (3) Resources and budget allocation to schemes like ICDS and Mid-day Meal scheme must be increased to rectify the disruption that happened due to COVID pandemic.

7. Issues with Medical Education in Hindi

News: The Government is pushing for Medical Education in Hindi and vernacular languages.

What are the arguments in favour of vernacular languages? – (1) This will help reduce the **monopoly** of English in **professional education**. Countries like Germany and China have done so successfully for long; (2) It can help increase access to medical education beyond the English-knowing population; (3) Imparting education in mother tongue is considered more effective for learning.

What are the arguments against vernacular languages? – (1) The measure would entail **significant costs**. The implementation would require regulatory and administrative changes e.g., translation of educational materials, training of trainers, etc.; (2) Countries like Germany and China impart education in both English and their own language. They have sufficient primary resources (like books) in their own language. There is scarcity of resources in Hindi and vernacular languages; (3) Most medical books available in Hindi are simple transliterations, medical terminology remains the same. Such books don't address the 'issues' with English. As the field of medical science constantly evolves, the **translated books need to be constantly updated**; (4) This would erode the **competitive advantage** which Indian graduates have in the global scientific arena. English medium medical graduates can find jobs across the country and the world; (5) English is firmly entrenched in India. Therefore, vernacular medical education may fail to generate **enough demand**. This has already been witnessed in the case of engineering courses; (6) Postgraduate and other medical courses would also need to be conceived in regional languages; (7) A **considerable proportion** of medical graduates who have studied in English are employed in **allied sectors** (research, pharmaceuticals, administration etc.). Graduates in vernacular language are unlikely to be adjusted in these allied sectors; (8) The **diversity** and **multiplicity of languages** across and within states thwarts the vernacularisation of medical education. (Refer EPIC April 2022 for Hindi as Link Language: Challenges and Suggestions).

National Medical Commission (NMC) clarified that there is no plan to amend norms to allow medicine courses in languages other than English. (Refer EPIC March 2022 for Status of Medical Education in India).

What should be done going ahead? – An **incremental approach** should be adopted in providing medical education in regional languages. For example, the government can start providing **paramedical courses** in the regional language. Such paramedical workers are **often less mobile and function closer to the patients**.

8. Need for a National Security Doctrine for India

News: The US has recently released the National Security Strategy. Experts lament absence of such doctrine or strategy document in India.

What is the meaning of National Security? – (1) The concept of national security is ever-evolving and expanding; (2) Earlier it was limited only to protection against external military attacks. However, now National Security means the **ability of a country's government to protect its citizens, economy and other**

institutions; (3) It includes **non-military dimensions** like **economic, political, energy, homeland, cyber, human, food,** and **environmental security** and **counter-terrorism** etc. among others; (4) To ensure national security, governments rely on tactics, including political, economic, and military power, along with diplomacy; (5) It is generally agreed that the Executive branch is responsible for coordinating the implementation of various security measures to protect the State and its citizens in a way that advances national interests as a whole.

What is the need for National Security Doctrine for India? – (1) **Hostile Nuclear-armed Neighbours:** India has two **hostile nuclear-armed neighbours**, Pakistan and China. Both have antagonist approach towards India. Having a doctrine will be beneficial in reducing the threat posed by nuclear weapons; (2) **Consistency and Political Consensus:** The policy and **approach keeps on changing** with a change in the government. There is lack of agreement on threats from Pakistan, Maoism, insurgency, and so on. Having a National Security Doctrine will provide guiding principles that are more consistent and authoritative; (3) **Calibrating National Security and Foreign Policy:** Because of lack of a doctrine, little effort has been put into **calibrating national security initiatives with foreign policy**. For instance, there is a lack of clarity on what form of foreign policy towards Pakistan would be most effective in tackling Pakistan-sponsored Terrorism at the international level; (4) **Jointness in Tri-Services:** The Government has created the post of Chief of Defence Staff (CDS) as a first step towards jointness in the 3 services. Integrated Theatre Commands is next on the agenda of the Government. However, there are **differences among three services** regarding the joint theatres. A National Security Doctrine can act as a guiding document to achieve the jointness and avoid the inter-service conflict. (Refer EPIC October 2022 for Chief of Defence Staff (CDS): Benefits and Challenges and EPIC December 2021 for Integrated Theatre Commands); (5) **Multiple Threats:** India had long porous borders with many of its neighbours which are exploited for **arms, drugs** and **human trafficking**. India faces threat of external **state-sponsored terrorism** as well as **self-radicalized domestic terrorism**. A comprehensive doctrine will help in addressing these challenges; (6) **New Challenges:** The rising Indian economy is facing **new challenges**. **Cyberterrorism**, attacks on critical infrastructure have the ability to stall economic engine. The former CDS had talked **2.5 front war** and **hybrid warfare**. Climate Change and **climate-induced migration** can also create potential security threats. A National Security Doctrine should foresee and **anticipate these challenges** and guide the response.

What should be the constituents of the India's National Security Doctrine? – A think-tank, Takshashila Institution, has provided a possible approach to India's National Security Doctrine.

In the 21st century, India faces complex challenges that necessitate new ways of thinking about national security. In this scenario, India's national security doctrine should include “**yogakshema**” an idea pioneered in the Arthashastra, “**बलं शक्तिः | सुखं सिद्धिः | Bala Shakti, Sukh Siddhi**” or “**Strength is power. And well-being is the goal**”. The State must provide security, **kshema**, and economic opportunities, **yoga**, to all its citizens. To accomplish these goals, it is necessary to: (1) Create and defend a conducive environment for **yogakshema** (well-being, prosperity, and happiness) of all Indians. At this stage of India's development, national security is primarily focused on protecting and **promoting India's economic development**. As a champion of the global south India must seek to shape

Significance of National Security Doctrine

- It would help make **timely decisions** because they would be guided by the Doctrine's security strategy.
- The Doctrine would guide various sub-doctrines related to external and internal security. It will fill a huge void in the higher defence management of the country.
- The Doctrine would ensure a **uniform security response** taken during times of crises.
- It would help in **maintaining effective coordination among security establishments** at both the Union and State levels. It can help plug gaps in coordination among intelligence agencies.
- National Security Doctrine would help protect India's national interests that would ensure peace, growth, and development of the country.

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the world's political, economic, technological order and defend India's interconnectedness with the world; (2) Protecting the constitutional order, individual freedom, the territory, social cohesion, and national resources: (a) Securing the Republic of India and its institutions; (b) Protecting the rights of all Indians; (c) Comprehensive view of territory including land, sea, air, space, and cyberspace; (d) National strength ultimately derives from social cohesion; (e) Sustain and enhance natural, environmental, and social capital; (3) Amass and project power across all domains: (a) Develop both continental and maritime power projection capabilities; (b) Develop comprehensive deterrence across all domains; (c) Humane and effective management of internal security; (d) Develop intelligence as a credible instrument of statecraft; (4) Reimagine national security capacity: (a) Boost the fighting spirit of the armed forces; (b) "Whole of Government" approach to national security management. The Government should deploy the wide array of economic, military and diplomatic tools to counter potential threats. This includes market access, visa controls, investment deals, diplomatic support, and so on; (c) Nurture a globally competitive defence technology industry; (d) Build leadership across government that understands the prudent use of power.

What are the possible challenges in the implementation? – (1) It has been difficult to arrive to a **consensus on India's national interests** under the current political system. A multi-party democracy with representatives from across the ideological spectrum leads to differences over perceptions of national security. **Pre-occupation with electoral politics** and outcomes has led to compromise on some aspects of national security to an extent; (2) It would be difficult to bring **consensus among the various stakeholders** like the Government and the Armed Forces and within the three services.

What should be done going ahead? – (1) Armed forces need to quickly step up to the warfare in the digital age. Emerging strategic technologies like Artificial Intelligence, robotics and miniaturised wars are likely to play an increasingly important role in future warfare. Given the transformed nature of warfare, down-sizing the forces, by **substituting manpower with smart technology** and innovative tactics, has become an imperative need; (2) The 'strategic communication' aspect of national security is of utmost importance and needs to be strengthened. The construction of a command, control, and communication centre is required.

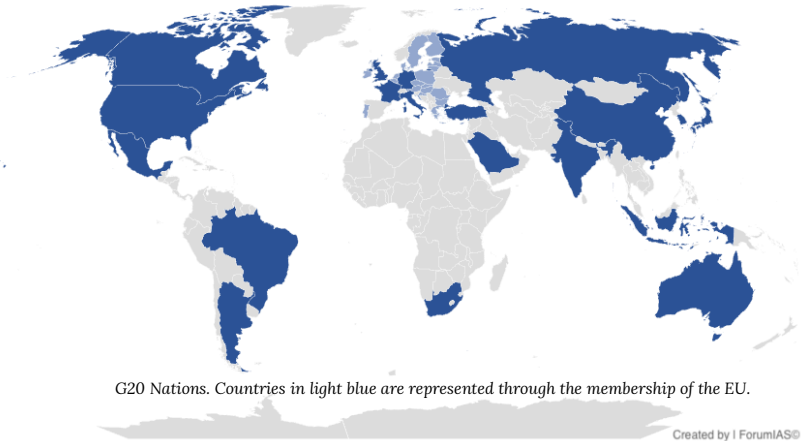
India's security is being threatened by the radicalization of its neighbours, which is quickly turning into an **arc of insecurity** due to the rise of militancy, terrorism, and social unrest. There are issues of ecology and sustainability. All these things threaten India's well-being and has the potential to hamper economic progress. Effects of all the threats need to be taken into account by every Institution and Executive body of the State. This is only possible when India has its own national security doctrine.

9. 17th G20 Summit

News: The 17th annual summit of G20 countries was held in Bali, Indonesia.

What was the agenda of the 17th G20 Summit? – (1) The motto for this G20 is **Recover Together, Recover Stronger**; (2) The Summit had 3 key priorities: (a) **Global Health Architecture**: This involves deliberations towards strengthening global health resilience and making the global health system more inclusive, equitable, and responsive to crises; (b) **Digital Transformation**: Deliberations here have centred on achieving the full potential of rapid digitalisation of the global economy by creating a new landscape of cooperation among nations; (c) **Sustainable Energy Transition**: The discussions have focussed on ways to accelerate the transition towards cleaner energy sources. In particular, since any such transition requires substantial investments, the efforts have been focused on finding a platform for such investments.

What are the Key Highlights of G20 Bali Declaration? – **(1) On Russia-Ukraine war:** (a) The declaration acknowledged differences among members on the Russia-Ukraine war but stressed that it was “essential to uphold international law and the multilateral system” as “**today’s era must not be of war**”; (b) It also said that the threat of use of nuclear weapons is inadmissible; (c) The declaration also recognised that G20 is not the forum to resolve security issues. However, it agreed that security issues can have significant consequences for the global economy; **(2) On Terrorism:** The declaration called upon the international community to “step up” efforts to **counter money laundering**, terrorism financing and proliferation financing and urged the Financial Action Task Force (FATF) and FATF Style Regional Bodies to “lead global action” to respond to these threats; **(3) Other issues covered:** The Declaration covered a range of issues from climate change to corruption, and from Covid vaccination to imparting computer skills to women.



How has India contributed to this G20 declaration? - The G20

declaration proclaimed “today’s era must not be of war”, echoing the Indian PM’s remarks before the Russian President on the side-lines of the SCO summit in September. The declaration also strongly endorsed the Indian PM’s emphasis on three key points: the threat of the **use of nuclear weapons is inadmissible, importance of diplomacy and dialogue** and **today’s era must not be of war**.

How effective has been the performance of G20 in the past? - It was formed in 1999 in the wake of the Asian financial crisis. Its major achievements include: **(1) Role in Financial crisis:** The G20 was most effective in 2008 and 2009. Its coordinated policymaking mitigated the economic fallout of the financial crisis. Further, G20 also laid the platform for subsequent agreements on sharing tax data to curb tax evasion; **(2) Expansion of G20's ambit:** Since 2008, the core goal of improving the economic policy environment has expanded to tackling climate change and terrorism, among other things.

What are the recent challenges confronting G20? - Global growth and the promise of globalisation of G20 have received a severe setback ever since the pandemic: **(1) Output losses due to Covid:** Most of the G20 constituent countries have suffered significant output losses; **(2) Russia's invasion of Ukraine** and sanctions against Russia by West have created massive geopolitical uncertainty. This has spiked global inflation due to supply chain bottlenecks; **(3) Impact of Central Bank's decision:** To control high inflation, central banks across countries have raised interest rates. This in turn has dampened economic activity with fears of global recession; **(4) Geopolitical rifts:** The West-Russia tensions have increased post Ukraine war. The relationship between US and China is also tense due to Taiwan issue. *(Refer August 2022 for Relevance of G20).*

What should be done to improve the performance of G20? – (1) Joint action: Global growth can rebound if the Russia-Ukraine war stops. So, G20 should focus on ensuring global peace. In addition, leaders should find common ground on multilateral issues like climate action, debt, taxation and pandemic preparedness, etc., **(2) G20 can be leveraged to build consensus on matters of global import like making institutions of global governance such as IMF, UN etc., more reflective of contemporary realities.**

1. Trade Settlement in Rupee

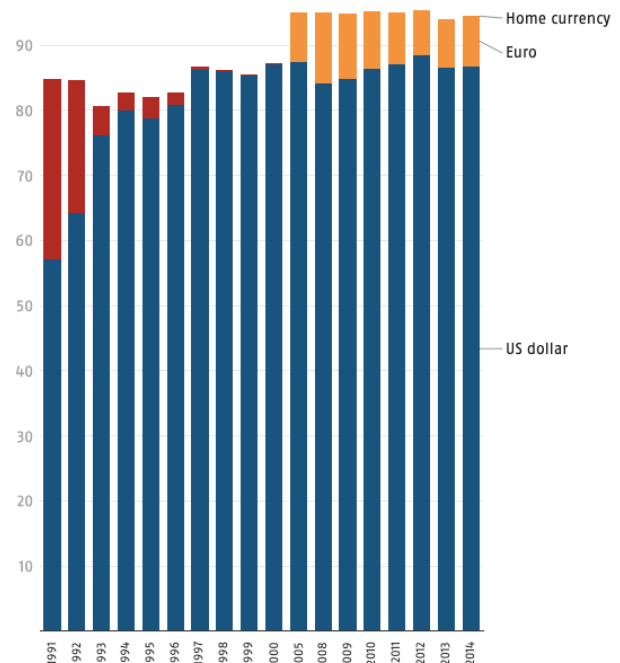
News: The RBI had allowed for international trade settlement in Rupee in July 2022. The move is expected to ease the depreciating pressure on Rupee among other benefits. However certain challenges may limit the achievement of desired outcomes.

What is the extent of dependence on US Dollar? – (1)

At present, the majority of India's trade (exports and imports) transactions are undertaken in foreign currency, primarily the US Dollar, and to an extent in Euro; (2) The share of US Dollar (US\$) in India's export transaction settlement has risen from ~57% in 1991 to ~87% in 2014, and from 59% in 1991 to 89% in 2014 in import transactions; (3) Indian traders have to pay US\$ to the import suppliers (in foreign countries), and receive US\$ from the export receivers (in foreign countries). This creates a **huge dependence of traders on US Dollar**. It also exposes them to **currency risk**; (4) With the rising interest rates in the US and increasing volatility (fluctuation) in exchange rate of the Rupee with respect to US Dollar, this risk has increased. (Refer EPIC July 2022 for Fall in the Value of Rupee: Reasons, Concerns and Solutions).

Dollar has been the main currency for India's exports

Shows export invoice share (in %)



What measures have been announced for Trade Settlement in Rupee? – (1)

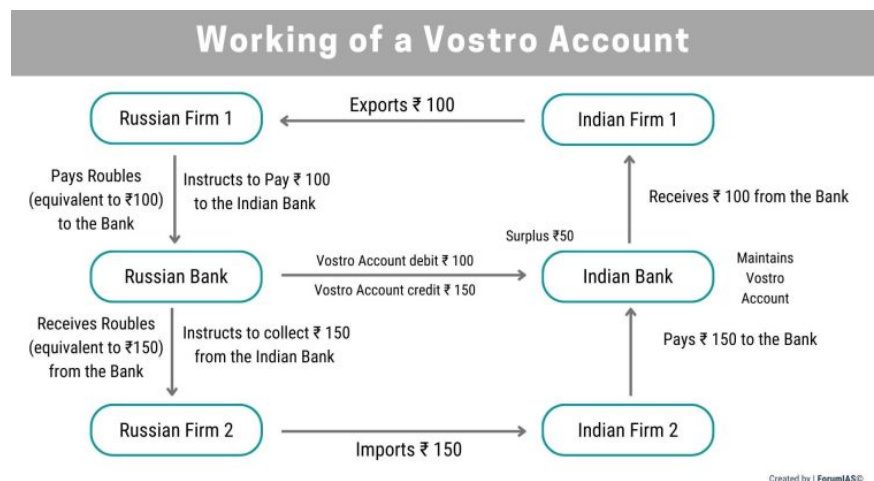
The RBI has allowed International Trade settlements in INR; (2) The new measures are based on the framework for cross border trade transactions in INR under the **Foreign Exchange Management Act, 1999 (FEMA)** and **Foreign Exchange Management (Deposit) Regulations, 2016**; (3) For the purpose of transaction in Rupee, the **exchange rate between currencies** of two trading partner countries (say Rupee and Rouble) may be **market determined**; (4) The transactions shall be settled through **Vostro accounts**. Indian banks may open Special Rupee Vostro Accounts of correspondent bank/s of the partner trading country; (5) Indian importers (undertaking imports through this mechanism) can make payment in INR which will be credited into the Special Vostro account. Indian exporters will be **paid the export proceeds in INR from the balances in the designated Special Vostro account**; (6) The Rupee surplus balance accumulated in Vostro account (in case imports from a country exceed exports to that country) may be used for **permissible capital and current account transactions**. The balance in Special Vostro Accounts can be used for: (a) Payments for projects and investments; (b) Export/Import flow management; (c) Investments in **Government Treasury Bills**, Government securities (subject to FEMA and similar statutory provisions).

What factors have necessitated Trade Settlement in Rupee? – (1) Global Capital Reallocation: The US Fed has been raising interest to combat domestic inflation in the US. This has led investors to shift their capital to the US (in search of higher returns in the US), depreciating major currencies with respect to the Dollar. This has put pressure on India's forex reserves and made imports more expensive; (2) **Russia-Ukraine Conflict:** The conflict has extended beyond 9 months. It has led to global rise in prices of commodities

including food items and energy sources (oil and gas). Russia has reduced gas supply to Europe leading to rise in global prices (supply-demand mismatch). The sanctions imposed by Western nations on Russian firms have made it difficult for India to import oil from Russia. Russian Banks and firms have been barred from accessing global financial settlement mechanisms. Hence an alternate mechanism for trade settlement is required; **(3) Widening Trade Deficit:** The Current Account Deficit (CAD) is projected to more than double to US\$ 100 billion in 2022-23. Higher value of US Dollar will increase India's imports further putting pressure on CAD and forex reserves; **(4) Imported Inflation:** Since India imports almost 85% of its annual oil needs, a weaker currency increases the risk of imported inflation in India.

What are the benefits of Trade Settlement in Rupee? – (1) Shift in Dominant Currency Paradigm: At present, the US\$ holds predominance as the source, destination and vehicle currency of international trade ('Dominant Currency Paradigm'). This makes trade of other countries susceptible to fluctuation in the value of US\$. Trade settlement in Rupee will assist lessen India's dependency on US\$ and therefore shift in this paradigm; **(2) Flexibility to Traders:** Traders can trade directly without having to convert the money or worry about the variation in the exchange rate; **(3) Circumvent Sanctions:** Circumventing the SWIFT System (system used by banks for payments in foreign currency) would help India work around the sanctions imposed on Russia and Iran and facilitate access to cheaper oil; **(4) Reduce Outflow of US Dollar:** India runs a trade deficit (imports are greater than exports), this means more dollars are paid for imports than gained through exports. Trade settlement in Rupee will save dollar outflows; **(5) Addressing the issue of US dollar Mobilisation:** Traders from several parts of Africa, South America and Asia are unable to mobilise the US dollar for invoicing. This affects trade with them. Trade invoicing in Rupee will brighten the prospects of their bilateral trade with India; **(6) Internationalise the rupee:** A transparent and efficient framework for conducting international trade transactions in Rupee is the first step towards the path of Rupee's acceptance as a global currency. At present Rupee is far from becoming a reserve currency, nevertheless, this is a small first step; **(7) Geopolitics:** The move is significant in international politics because it indicates the beginning of more coordinated efforts to settle payments in non-dollar currencies among Brazil, Russia, India, China, and South Africa (BRICS), with other nations also interested. (Refer EPIC March 2022 for De-Dollarization of the Global Economy).

What are the challenges in Trade Settlement in Rupee? – (1) Bilateral Trade Equilibrium: Vostro Account Mechanism works efficiently if there is trade equilibrium. In case of India's imports exceeding exports, there will be a surplus in the Vostro Account e.g., in 2021, India's exports to Russia were at US\$ 3.3 billion while its imports from Russia were at US\$ 8.6 billion. Russia has excess of US\$ 5.3 billion which gets locked in Indian Rupees. The amount can be invested in Government Securities which offer limited return. Moreover, Indian Rupee is not a fully convertible currency in Capital Account. Therefore, investment in government securities and bonds

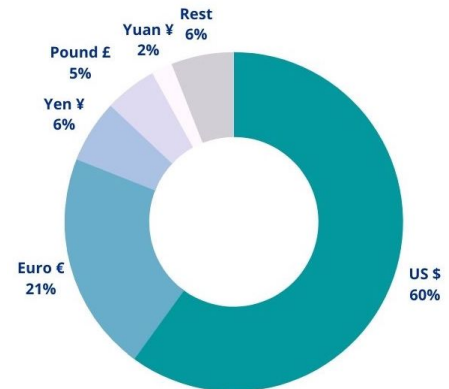


In the above simplified transaction, the Vostro Account has surplus of INR 50 as imports are worth more than exports. If there is persistent trade deficit the surplus will keep on accumulating. Due to capital restrictions, the Russian Bank will find it difficult to withdraw this surplus (hence can't reinvest and earn returns).

cannot be repatriated back to Russia. This reduces incentive for other nations to adopt this mechanism; **(2) Limited Scope:** Trade settlements in rupee so far has been limited to countries like Russia and Iran, which are facing sanctions from the West, and Sri Lanka, which is going through an economic turmoil, and a few other immediate neighbours of India. **India's share in global trade is not significant enough** and India's dependence for import of fossil fuels, edible oils, gold etc. is quite large. It is unlikely that exporting countries will consider Indian rupee as a currency of invoicing, unless it suits their interests. The **position of US\$ as international reserve and trading currency appears too strong at present**; **(3) Trade Protectionism:** In the prevailing global trade protectionism and geopolitical rivalries, each country wants to promote exports and reduce imports. Invoicing in Indian Rupee and not depending on US Dollar may upset India's relationship with the US. It may also have an indirect impact on services sector for which we are dependent on developed markets like the US and Europe.

Foreign Reserves

Share of Currencies in globally disclosed Official Foreign Reserves



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What can be done going ahead? – (1) To promote rupee for international trade settlements, India needs to **enhance its export competitiveness**. Rise of share of Indian goods in global trade will create a demand for Indian Rupee as well and make it a more tradable currency (Refer EPIC April 2022 for India's Merchandise Exports: Challenges and Opportunities and EPIC March 2022 for Adopting Services Export-led Growth Approach); **(2)** This should be supported by critical **reforms in financial markets** which include **capital account convertibility**, deepening financial markets coupled with large financial institutions other than the RBI to manage the large scale inflow and outflow of capital.

The RBI's decision to allow trade settlement in Rupee has been welcomed by economic experts. It is expected to lead to many macroeconomic benefits. However, there are still many challenges to wider acceptance of trade settlement in Rupee. That would be possible only in the long term by making Indian exports more competitive accompanied by financial sector reforms.

2. Issues Associated with Regional Rural Banks (RRBs)

News: The Regional Rural Banks (RRBs) are facing multiple challenges including bad assets and falling business and customer base.

How has been the recent performance of the RRBs? – (1)

There has been a steady decline in the number of profit-making RRBs from 75 in FY2020-11 to 34 in FY2021-22; **(2)** Only 20 RRBs have made a profit of over INR 15 crore in the past three years; **(3)** Between FY2010-11 and FY2021-22, **net NPAs have**

About RRBs

- Regional Rural Banks (RRBs) have been created under **Regional Rural Banks Act, 1976**.
- They are financial institutions established to **ensure adequate credit for agriculture and other rural sectors**.
- They were set up on the basis of the recommendations of the **Narasimham Working Group (1975)**.
- The equity of a RRBs is held by the Union Government, concerned State Government and the Sponsor Bank in the proportion of 50:15:35.

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doubled from 2.05% to 4.68%; **(4)** Agriculture sector borrows more from commercial banks than the RRBs. The **share of institutional credit** by the commercial banks for agriculture and allied activities has increased from 65% to 76% between FY2010-11 and FY2021-22. The share of RRBs in the total credit has remained constant between 11%-13%.

What are the challenges faced by RRBs? – **(1)** The RRBs have **lost customer base** and are engaged in limited business activity. RRBs have not expanded their business operations beyond farm-related activities. They haven't reached out to MSMEs located in the rural areas and offer them banking services. The RRBs have been left primarily with the government-sponsored business of servicing the official schemes involving direct benefit transfers; **(2)** RRBs are facing swelling operational costs; **(3)** RRBs lack internet banking facilities; **(4)** Many RRBs have not fully digitized their operations; **(5)** Poor operational performance has meant that they'll find it difficult to raise money from stock markets; **(6)** Most RRBs have branches concentrated in some specific states and districts; **(7)** Lack of economic infrastructure, poor marketing strategies, poor knowledge of customers, low production, low awareness about savings have created many hurdles for RRBs in their poverty alleviation measures; **(8)** They are too dependent on NABARD for their finance.

What steps have been taken by the Government to improve RRBs? – **(1)** The Government has merged some stand-alone RRBs with larger units to cut their overhead costs and scale up the business volumes. The number of RRBs has reduced from 82 to 43 in the last decade; **(2)** The Government has provided INR 4,000 crores towards recapitalization of RRBs last fiscal year; **(3)** The Government has **issued draft guidelines** setting the criteria for the **listing of RRBs** on the stock exchange. The guidelines include listing banks that have earned an operating profit of more than INR 15 crore in 3 out of the past 5 financial years, a **net worth** of INR 300 crore and a **capital adequacy ratio** above 9% in the past 3 years.

In this context, many policy and finance experts have called for further mergers with their sponsoring banks or closing them down. They have very little space to survive as stand-alone financial enterprises.

3. Issues with Extension of PM Garib Kalyan Anna Yojana (PMGKAY)

News: The Government had extended the PMGKAY till December 2022.

What are the concerns associated with extending PMGKAY? – **(1) Not an emergency situation:** The scheme has been extended due to successive waves of the pandemic, which affected economic activity. But now the economy has been opened up completely; **(2) Fiscal Burden:** The Ministry of Finance had advised against the extension of the scheme due to fiscal burden on Government exchequer. The extension will lead to an additional expenditure of INR 44,762 crore. This is expected to take the food subsidy bill to about INR 3.38 trillion, as against the Budget estimate of INR 2.07 trillion; **(3) Impact Money Markets:** High Fiscal deficit will increase Government borrowing. This will impact money market where RBI is undertaking measures to control inflation; **(4) Falling Grain Stocks:** Public stocks of Wheat and Rice are at their lowest in recent years, and almost 33% lower than a year ago. Extension will create further pressure on the stocks; **(5) Difficult to withdraw:** The extension of the scheme gives an impression that it would continue even in normal times and was not necessarily an emergency intervention.

What are the advantages of extension? – **(1)** The economy hasn't recovered completely from the impact of pandemic. The poor are still facing income and employment insecurity with low incomes; **(2)** The Ukraine

crisis has resulted in high inflation. Prices of wheat and flour are at historic high, straining the finances of the poor families. PMGKAY provides a cushion.

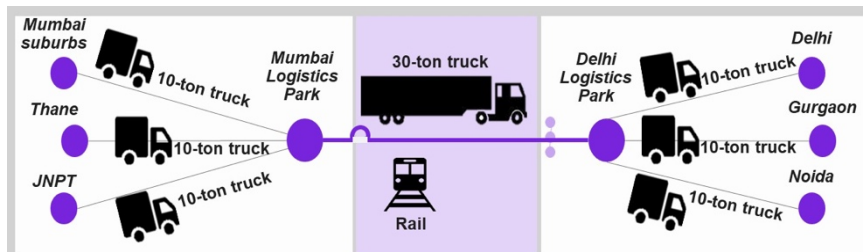
What should be done instead of extending PMGKAY? – (1) The Government should have used higher revenues at this stage to either push up capital expenditure, which would have boosted growth or reduced the fiscal deficit; (2) The global economic outlook has worsened significantly and will affect growth in the Indian economy as well. So, India should use every opportunity to move forward in fiscal consolidation. This would help create policy space to deal with another potential adverse shock; (3) The Government should be prepared for wheat imports should the stocks fall further. India's season crop will be available in March 2023.

4. Multi-Modal Logistics Parks (MMLPs)

News: The Government has proposed to set-up Multi-modal Logistics Parks.

What are challenges related to logistics in India? – (1) The movement of goods is **expensive** and **inefficient**. India's logistics cost is around 13%-14% of GDP. It is significantly higher than other countries; (2) **Modal Mix:** Transporting goods by rail costs 45% less compared to roads. But three-fourth transportation of goods is through roads. (Refer October 2022 for Logistics Sector and National Logistics Policy).

What are MMLPs? – (1) These are large land parcels with rail and rail connectivity. It is based on the **hub-and-spoke model**; (2) Freight from production zones will be shipped to nearby logistics parks, where it will be aggregated and shipped on a larger vehicle to a logistics park near the consumption zone. Goods arriving at MMLPs are seamlessly transferred to trains and other modes of transportation;



(3) **Cold-chain facilities** and **mechanised warehousing** are provided. **Value added services** like custom clearance and last stage processing facilities are also provided; (4) These parks were first mooted by the Ministry of Railways in 2009. The idea has been revived under the *Bharatmala Pariyojana*.

What process will be followed in building these MMLPs? – (1) 35 such parks are planned to be built under **PPP mode**. The first park is coming up in Chennai; (2) National Highway Logistics Management, a wholly owned special purpose vehicle of NHA is the nodal agency for these parks. It will be mandated to provide infrastructure inside these parks; (3) MMLPs will be built in the DBFOT (Design, Build, Finance, Operate, Transfer) mode of PPP. Concessionaires are required to pay a percentage in gross revenue from the 3rd year; (4) Total investment in 35 MMLPs will be INR 52,500

Development Model & Concession Period

- All the MMLPs will be developed as part of the **Design, Build Finance, Operate and Transfer (DBFOT)** model
- The concession period has been decided as **30 yrs + 30 yrs Right of First Refusal**
- **Land and external trunk infrastructure** connectivity will be provided by the Authority

Permissible Services

- **Core Logistics Services:** Warehousing, freight transportation, cargo aggregation and distribution etc)
- **Value Added Services:** Custom clearance, sorting, packaging, assembling, IT services, affixing & printing, mixing etc
- **Support Services:** Parking, recreational services, offices, O&M services for trucks

Revenue Generation and User Fee Regulation

- The concessionaire will be able to generate revenue through **user fee for warehousing, intermodal freight handling and other services**
- Concessionaires are also allowed to **sublease project assets** and bring in additional partners



crore. It will be shared equally between government and private sectors. These will be built on 7000 acres of land; (5) These parks will handle 700 million metric tonnes of cargo at its peak capacity.

What are the benefits associated with MMLPs? – (1) These parks will **reduce the logistics cost** from 14% to 10% of GDP; (2) It will lead to **improved train services**, use of modern equipment and electronic data exchange; (3) The **movement of inland goods** via containers will be facilitated; (4) It will **reduce the freight movement** on city roads leading to lower cost and lesser pollution; (5) It is **in line with the new National Logistical Policy** which aims to create the cheapest mode of transport. Warehousing charges and handling cost will be lower; (6) Economy of scale due to shared infrastructure and competition will reduce the transportation cost.

What are challenges to MMLPs? – (1) Attracting private investment will be the biggest challenge; (2) Multiplicity of Government agencies for setting up MMLPs will delay the process; (3) Delay in acquisition of land and high land prices will also pose a major challenge.

5. GM Crops in India: Issues and Challenges

News: The Genetic Engineering Appraisal Committee (GEAC) has recommended the environmental release of the Genetically Modified (GM) Mustard DMH-11. However, the Supreme Court has ordered status quo barring its planting until further decision by the SC.

What is DMH-11 or GM Mustard? – Dhara Mustard Hybrid – 11 is a genetically modified variety of mustard. It uses a system of genes from soil bacterium that makes mustard (a self-pollinating plant) better suited to hybridization than current methods. Multi-location field trials of DMH-11 have shown that its average grain yield is **2.4-3 tonnes per hectare**. While the yield for the present best grain variety *Varuna* is 1.9-2.2 tonnes and the all-India average yield is 1.2-1.3 tonnes.

GEAC has approved not just the product but also the **hybridisation platform**. GM parent lines can be shared with others, including private seed companies.

What are Genetically Modified Organisms (GMOs)? – (1) As per the World Health Organization (WHO), Genetically Modified Organisms (GMOs) are organisms (i.e. plants, animals or microorganisms) in which the genetic material (DNA) has been altered in a way that does not occur naturally by mating and/or natural recombination; (2) The technology is also called “**gene technology**”, “**recombinant DNA technology**” or “**genetic engineering**”; (3) It allows selected individual genes to be transferred from one organism into another, also between non-related species. Foods/Crops produced from or using GM organisms are often referred to as GM foods/crops; (4) Traditional Cross-breeding is done by combining genes from same or closely related plant species. GM technology allows for genes from any living organism to be incorporated into parent gene to arrive at desired traits.

What is the rationale behind introduction of GM Crops? – (1) The current challenge in agriculture is to: (a) increase productivity; (b) Fight against hunger and malnutrition; (c) Lowering environmental footprint, like reduction in the usage of groundwater; (d) Assuring long-term sustainability of agricultural operations. Low input-High output agriculture is the way forward and GM Crops can help achieve that goal; (2) India imports about 60% of its edible oil. It was valued at US\$ 19 billion last financial year. This level of **import dependency** undermines food security. For years, Indians have also been **consuming imported GM soyabean oil**. Given these factors, GM mustard can be a better alternative; (3) Genetically modified maize, soybean, cotton, tomato and canola are grown worldwide; the area currently under GM crops is about 200

m ha. GM Crops have been grown for many years in the US, Brazil, Argentina, Canada, Australia, Philippines, Pakistan, Bangladesh, and China; **(4) Australia has released GM Mustard developed in India** for general cultivation to take advantage of its high-yield potential. **GM brinjal developed in India was adopted for cultivation by Bangladesh** with good results and without any environmental or health hazards.

What the advantages of GM Crops? – (1) GM crops can: **(a)** Improve farmers' income; **(b)** Reduce pesticide load on the environment and provide pesticide- and insect-free crops to consumers; **(c)** Boost the soil conservation efforts. In case of **cotton**, farmers cite the high cost of weeding, which goes down if they grow **HT Bt cotton** (Herbicide Tolerant) and use glyphosate against weeds. Brinjal growers in Haryana have rooted for Bt brinjal as it reduces the cost of production by cutting down on the use of pesticides; **(2)** The GM technology is also being used to develop **drought tolerant** and **nutrient efficient varieties**; **(3)** It can help produce foods with **better shelf life, taste and texture**; **(4)** Crops can be engineered to be **more nutritious**, providing critical vitamins to populations that struggle to get specific nutrients needed for healthy living.

Legal Framework for GM Crops

- **Genetic Engineering Appraisal Committee (GEAC)** has been set up under the **Ministry for Environment, Forest, and Climate Change**.
- According to the 1989 rules on GMOs, the main function of the statutory body is to **regulate the use, manufacture, storage, import and export** of hazardous organisms, genetically engineered organisms and cells in India.
- In 2002, the GEAC allowed the **commercial release of Bt cotton**. Almost 94% of the country's cotton area has since then come under Bt cotton.
- Use of an unapproved GM variant can attract a jail term of 5 years and fine of Rs 1 lakh under the **Environmental Protection Act, 1986**.

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What is the situation with respect to GM crops in India? – India was an early adopter of GM crops when the regulatory body, GEAC, cleared the cultivation of Bt cotton in 2002. Bt cotton remains the only GM crop approved for cultivation in India till date. Cultivation of GM versions of other crops is banned in the country. In spite of the ban, incidences of suspected open cultivation of Bt. Brinjal have been reported in the states of Andhra Pradesh, Haryana, Maharashtra, and Punjab. The area under Bt. Cotton cultivation has increased from **less than 1%** in 2002-03 to almost **94%** in 2019-20.

What are the concerns associated with GM crops? – (1) Environmental concerns: **(a)** Since a GMO is created artificially with change in genes, its breeding with the other crops in the natural ecosystem can result in **genetic contamination**; **(b)** Ecologists argue that the Bt. crops **can harm non-target insects** thereby **affecting species diversity**. In the case of Bt. Corn, Monarch butterflies feeding on wild milkweed that grows near cornfields may be harmed; **(c)** GM technology could also allow the transfer of genes from one crop to another, creating “**super weeds**”, which might be immune to common control methods; **(2) Economic concerns:** Various claims around stress tolerance, nutrition and yields have turned out to be false, including in India with its Bt cotton experience. Cotton yield has stagnated around 460 kgs per hectare. 24 countries that are ahead of India in terms of cotton yields do not grow GM cotton; **(b)** GM Cotton has resulted in increase in usage of pesticides and herbicides like glyphosate. This has increased financial burden of farmers; **(c) Corporate control over farming** is facilitated by GM technology (along with IP Rights), giving them control over the food supply. From an economic standpoint, this poses a risk to the long-term food security by creating dependence on a single or limited number of suppliers; **(3)** GM crops are modified to **include antibiotics** to kill germs and pests. This increase threat of anti-microbial resistance and superbugs. (Refer EPIC February 2022 for Study on Superbugs and Anti-microbial Resistance); **(4) Ethical concerns:** 5 sets of ethical concerns have been raised about GM crops: **(a)** Potential harm to human health; **(b)** Potential damage to the environment; **(c)** Negative impact on traditional farming practice; **(d)** Excessive corporate dominance; **(e)** Unnaturalness of the technology

What is the way forward? – (1) Creating awareness: There is a need to create better awareness to address the concerns. Here, academia should come forward and help in guiding public perception and building confidence in the appropriate processes and products of GM technology; **(2) Government** should again take up the proposed **Biotechnology Regulatory Authority of India Bill** to ensure a robust regulatory architecture in India. This encourages entry of competitors that could check monopolistic conditions in the GMO market; **(3) Measured, tested introduction of GM crops:** Any decision on introduction of GM technologies must be taken on the basis of scientific evidence. A participatory approach should be adopted in order to bring together all stakeholders to develop regulatory protocols. This would ensure trust in the entire process.

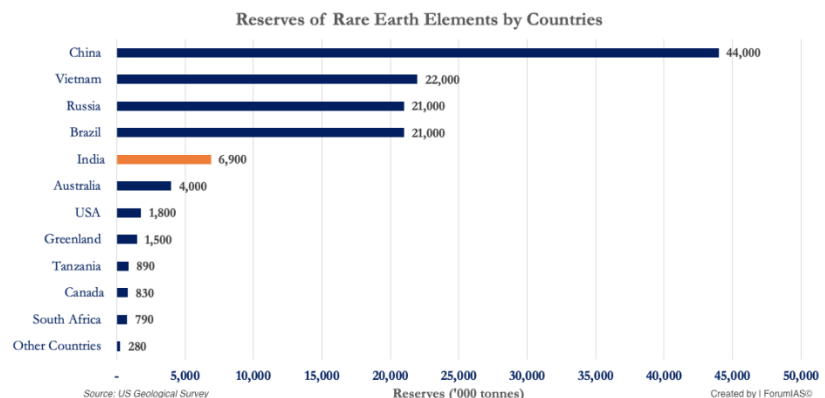
By resisting genetic engineering technologies, India risks falling behind the rest of the world where scientists are deploying gene editing tools to improve yields, disease resistance and shelf life of crops.

6. Countering China's Dominance in Electric Vehicle Supply Chains

News: India's energy transition particularly through Electric Vehicles (EVs) is at risk of being too dependent on imports.

What are the concerns related to EV Supply Chains? – According to a recent report by the International Energy Association, every part of the EV supply chain is **highly concentrated, mostly in China**. Given China's aggressive policies, dependence on China poses strategic challenges: **(1) First Stage:** EV batteries require certain key minerals like lithium, nickel, cobalt and graphite. **China has an 80% share of global mining output in graphite.** In cobalt, the politically highly unstable Democratic Republic of Congo mines ~66% of the global supply and Chinese companies control a big share of that country's mining; **(2) Second Stage:** China has **dominance in mineral processing** as well. Globally, over 60% of lithium processing, over 70% of cobalt processing, 80% of graphite processing and about 40% of nickel processing takes place in China; **(3) Third Stage:** China manufactures majority of battery/cell components. China produces ~66% of global anodes and 75% of cathodes.

The only other producing countries of note are South Korea and Japan. China also produces 70% battery cells; **(4) Fourth Stage:** In manufacturing of EVs, China has 50% share of global production. Europe is ranked 2nd with 25% share. (Refer EPIC May 2022 for Draft Battery Swapping Policy for Electric Vehicles: Provisions, Benefits and Challenges and EPIC April 2022 for PPP-Model for Scaling up Electric Vehicle Charging Infrastructure).



What is the status of investments in EVs and energy transition? – **(1)** China is the biggest spender on climate and energy transition. According to a report by Bloomberg's New Energy Fund (NEF), in 2021, total global investment in climate transition is US\$ 750 billion. China alone spent US\$ 266 billion; **(2)** The US was ranked 2nd with US\$ **114 billion**; **(3)** India was at **7th place with US\$ 14 billion**; **(4)** Almost 40% of Chinese and US spending was on EVs. In the case of India, more than 95% of India's spending is on renewable energy. In Europe, about 75-80% of the spending is on EVs. In India, despite intent, EVs have not received sufficient investment.

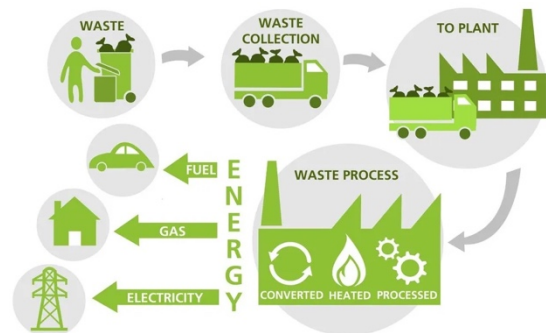
What is the way forward? - A multi-pronged strategy is needed: **(1)** India has been slow at acquiring overseas mines of these critical minerals. The government focus is upon PSUs. An alternate option is to **liberalise exploration policies** domestically, benchmark them with global best practices and invite global investors to find and mine in India; **(2)** It is important to have **supply alliances** with other countries like China has been done with Australia. There is a need for much investment in the higher end of the supply chain; **(3)** A **public-private partnership** is vital. The vibrant startup ecosystem must be leveraged because it is more likely to be innovative than legacy firms. (Refer EPIC July 2022 for Rare Earth Elements: Strategic Importance and Reducing Import Dependence).

7. Waste-to-Energy (WtE) Plants: Benefits and Concerns

News: The Union Home Minister recently inaugurated a Waste-to-Energy Plant at Tughlakabad in New Delhi. The Plant will process 2000 metric tonnes of waste per day and generate 5MW of energy.

What is the status of Municipal waste generation in India? - **(1) Per Day Waste Generation:** The total solid waste generated in the country was 150,761 tonnes per day in 2019-20. According to a World Bank report (2018), India's per capita waste generation lies at 0.57 kg/day as compared to 0.52 kg in South Asia and 0.74 kg at the global level; **(2) Compositional Characteristics of Waste:** According to the Centre for Science and Environment (CSE, 2019), organic waste is ~40%-70% of the total waste. Paper and cardboard (6%-7%), recyclable plastic (6% to 10%), non-recyclable plastic (5%-10%), metal, glass and domestic hazardous waste (1%- 3%) constitute the rest.

What are Waste to Energy Plants? - **(1)** Waste-to-energy (WtE) is the process where energy (heat and electricity) is generated **using waste as a fuel source**; **(2)** This is done through **direct combustion using waste incinerators** (burning the waste) or the **production of a combustible fuel** from a gas such as methane. The latter method is less common and requires processes such as gasification or anaerobic digestion.



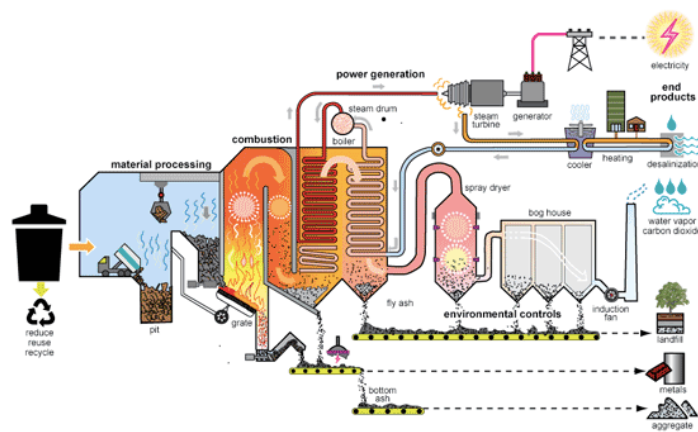
What is the status of WtE Plants in India? - **(1)** 92 plants with **aggregate capacity of ~250 MW** have been set up in India for electricity generation from urban, agricultural and industrial waste; **(2)** According to a report, "Value of Waste", by the Associated Chambers of Commerce and Industry, investors had valued WtE in India at ~US\$ 1.5 billion in 2017 and expected it to grow to about US\$ 11.7 billion by 2052; **(3)** According to the Ministry of New and Renewable Energy the total estimated energy generation potential from urban and industrial organic waste in India is approximately 5,690 MW; **(4)** A report by CSE says that plants of combined capacity of 382.7 MW are proposed in India. According to the report, the plants with a capacity of 69.2 MW are operational, and plants with 84.3 MW capacity are under construction.

What are the benefits of Waste to Energy Plants? - **(1) Better than traditional incineration:** WtE is better than traditional incineration as it utilizes energy that is otherwise wasted. (This argument holds if incineration is the only option, whereas most responsible waste management plans are now looking toward less damaging, more circular solutions that contribute less to climate change); **(2) Avoid landfilling:** Landfills cause numerous issues like production of greenhouse gases, inefficient land-use, and seepage of pollutants to ground and groundwater etc. WtE processes at specialist incineration plants can greatly reduce the

volume of waste that is landfilled; **(c) Resource Recovery:** WtE can help recover valuable resources such as metals post-incineration which can be recycled.

What are the challenges associated with Waste to Energy Plants? – (1) Sustainability: Most WtE plants do not segregate waste. This impacts the power generation by the plant and leads to pollutants. Moreover, the leftover burnt material is not suitable for brick making, which then has to be disposed-off in landfills; **(2) Feasibility:** WtE plants do not get many buyers for the power they generate due to cheaper alternatives being available. Maintenance costs are high. The electricity tariff rates are very high at more than INR 6-7 per unit. This is because of a high capital cost, high O&M expenses, low calorific value of the fuel used and the **additional fuel used to burn the waste**. The calorific value of waste in India ranges from 1,411-2,150 kcal/kg compared to 1,900-3,800 kcal/kg in Sweden, Norway, Germany and the US; **(3) Environmental and Health Impacts:** Poor quality of waste segregation leads to improper burning. Plants have to reject about 30-40% of waste into landfills because they are either inert or too poor in quality to be combustible. Because of high quantity of waste, the housekeeping is extremely challenging leading to a lot of dust and visual pollution; **(4) High CO₂ Emissions:** Almost all the carbon content in the burned waste is emitted as carbon dioxide; **(5) Potential to destroy Recoverable Materials:**

While WtE gives the opportunity to recover some resources, such as metals, it tends to destroy resources that could otherwise have been recovered, including minerals, wood, plastics, and more. This is especially true if there is not a rigid separation process for municipal solid waste ahead of incineration; **(6) WtE could Disincentivize Recycling:** WtE has the potential to disincentivize recycling or other more sustainable waste management methods. If people, organizations, or governments believe that WtE is a viable waste management technique, they are **less likely to engage** with or invest in more impactful solutions, such as reduction, reuse, or recycling. Already WtE are being classified under “renewable energy”.



A mass-burn waste-to-energy plant

Source: Adapted with permission from [Deltaway Energy](#)

The process of generating electricity in a mass-burn waste-to-energy plant has seven stages:

1. Waste is dumped from garbage trucks into a large pit.
2. A giant claw on a crane grabs waste and dumps it in a combustion chamber.
3. The waste (fuel) is burned, releasing heat.
4. The heat turns water into steam in a boiler.
5. The high-pressure steam turns the blades of a turbine generator to produce electricity.
6. An air pollution control system removes pollutants from the combustion gas before it is released through a smoke stack.
7. Ash is collected from the boiler and the air pollution control system.

What should be the approach going ahead? – (1) Sustainable Approach: Composting, biogas installation and bio-methanation, and recycling of dry and electronic waste can help reduce waste sent to landfills by 80% to 90%. WtE Plants can be installed for a cluster of a few cities or a larger area. In the long term, the Government should promote more sustainable **circular economy** (Refer EPIC October 2022 for Circular Economy: Meaning, Benefits and Opportunities); **(2) Rules and Regulations:** WtE plants with a capacity of less than 15 MW do not require prior environmental clearance. Such cases, therefore, may not require public hearing. This must be reconsidered. Provisions of **Solid Waste Management Rules, 2016** mandating use of only

segregated non-recyclable waste in WtE plants should be strictly implemented; **(3) Need to stop waste trade:** Many developed countries send their waste to developing countries for processing, often as part of a broader waste management plan that claims to **improve recycling rates**. In most cases waste is simply incinerated or used in waste-to energy facilities. It has been shown that hazardous wastes not meant for incineration are commonly shipped abroad where they are burned before being landfilled. This must be prohibited.

According to environmental experts, Waste to Energy Plants can address the problem of landfills but they by themselves are not the ideal solution. In this context, the approach towards Waste to Energy plants must be reconsidered. Experts have called them a short-term solution. In the longer term, more sustainable solutions like **Circular Economy Approach** are the best way forward.

8. India's Long-Term Low Emission Development Strategy (LT-LEDS)

News: India has submitted its Long-Term Low Emission Development Strategy (LT-LEDS) to the UNFCCC at COP 27.

What is the Long-Term Low Emission Development Strategy (LT-LEDS)? – **(1)** Under the Paris Agreement (2015), all signatory countries to the UN Climate Agreement have to submit two kinds of climate action plans: Short-term and Long-term; **(2)** The short-term climate action plans are called NDCs or **Nationally Determined Contributions**. NDCs are submitted every 5 years with specific actions over 5–10 year periods; **(3)** Member nations have to submit long-term action plans for low carbon transition (NET ZERO). Countries have to submit the long-term plans by 2022. Countries don't have to report progress on their long-term climate plans as the case with NDCs.

India's LT-LEDS: Considerations and Strategy

4 Key Considerations

- India has contributed little to global warming despite being home to ~17% of world's population.
- India has significant energy needs for development.
- India is committed to pursuing low-carbon strategies for development.
- India needs to build climate resilience.

7 Key Pillars of the Strategy

- Low-carbon electricity systems consistent with development.
- Integrated, efficient and inclusive low-carbon transport systems.
- Energy & material-efficiency in buildings.
- Decoupling growth from emissions and developing an efficient, low-emission industrial system.
- CO2 removal and related engineering solutions.
- Enhancing forest cover consistent with socioeconomic and ecological considerations.
- Increasing climate resilience in poverty eradication and employment creation.

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What are the salient features of the strategy? – India's LTS has prioritized six strategic sectors: Electricity, Transportation, Urban, Industry, Carbon-Dioxide Removal (CDR) and Forests: **(1) Transition from fossil fuels:** The transition from fossil fuels will be undertaken in a just, smooth, sustainable and all-inclusive manner. India will focus on expanding its nuclear power capacity by **at least three-fold** in the next decade along with phase-down of coal; **(2) Transportation Sector:** Increased use of biofuels, especially ethanol blending in petrol, the drive to increase electric vehicle penetration and the increased use of green hydrogen fuel is expected to drive the low carbon development of the transport sector; **(3) Sustainable Urbanization:** Future sustainable and climate-resilient urban development will be driven by smart city initiatives, integrated planning of cities, effective green building codes and rapid developments in innovative solid and liquid waste management; **(4) Industrial Sector:** India's industrial sector will continue on a strong growth path in the perspective of 'Atma Nirbhar Bharat' and 'Make in India'. The focus will be on improving energy efficiency by initiatives such as Perform, Achieve and Trade (PAT) scheme, high levels of electrification, enhancing material efficiency and recycling leading to the expansion of the **circular economy**; **(5) CDR:** Using methods such as carbon capture and storage (CCS) to remove GHGs before they enter the atmosphere; **(6) Forest Cover:** India has a strong record of enhancing forest and tree cover in the last three decades alongside high economic growth. India's forest and tree cover are a net sink absorbing

15% of CO₂ emissions in 2016. India is on track to fulfilling its NDC commitment of 2.5–3 billion tonnes of additional carbon sequestration in forest and tree cover by 2030; **(7) Transition to low-carbon development:** The transition to the low carbon development pathway will entail several costs pertaining to the development of new technologies, new infrastructure, and other transaction costs. The **provision of climate finance** by developed countries will play a very significant role in this; **(8) Changes to LiFE:** The LTS nudges people to make simple yet effective sustainable choices, industries and markets to scale these, and government policies to support them; **(9) Finance and investments:** According to a Council on Energy, Environment and Water assessment, India will need US\$ 10 trillion to achieve the 2070 net-zero target. The LTS has gauged the country's financial requirement, potential sources, the importance of mainstreaming of climate finance and international climate finance, and multilateral arrangements for climate finance flows; **(10) Invest in Research and Innovation:** The LTS notes the relevance of research and innovation, and identifies multiple technologies in the energy and industry sectors; **(11) Adaptation, Resilience and International Cooperation:**

India's 75% of districts are hotspots of extreme weather events. So, the LTS emphasises the: **(a) Need for strengthening basic infrastructures** like irrigation systems and disaster-resilient buildings, institutional infrastructure for better disaster response; **(b) Raising incomes** to bolster the capabilities of individuals and communities.

Lifestyle Changes

The IPCC Report has emphasized the role of Behavioural changes to combat Climate Change.

NEED

- 1 There is **wide disparity** in global contribution to emissions. Richest 10% population contributes 47% emissions; poorest 50% contribute only 10%.
- 2 This disparity is largely due to **different lifestyles**. Different lifestyles put **different demand burden on resources**.
- 3 So far Climate Action Policy has focused only on **supply side** like decarbonization. Demand Side initiatives that can **reduce burden on resources** have been absent.

POLICY SUPPORT

- 1 Policy Support is needed for **structural changes** which can enable people to **shift towards low carbon lifestyle**.
- 2 This includes **urban planning** for land use, reallocation of street spaces (for cycling), **mandatory product standards** that reduce the carbon footprint; **product labelling** to show the **carbon footprint** etc.

BEHAVIOURAL CHANGES

- 1 People with **high socio-economic status** have highest **potential and obligation** for emission reduction.
- 2 Behavioural changes required **towards low-carbon lifestyles**. This includes aspects like dietary habits, mobility choices etc.
- 3 People can opt for sustainable healthy dietary choices, **reducing food wastage**, shift in **mode of transport** (Cycling) etc.

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What is the way forward for LTS? – (1) India's LTS can guide the growth of Indian industry, urban planning, and infrastructure creation; **(2)** There is a need to create a **legal or institutional framework** to pursue policies based on its long-term goal; **(3)** LTS should include **carbon pricing through a domestic emissions trading scheme** as a key element of India's strategy. The government has already announced the creation of carbon markets in India (Refer EPIC August 2022 for Carbon Markets); **(4)** Provision of **climate finance** by developed countries will play a very significant role. It needs to be considerably enhanced, in the form of grants and concessional loans; **(5)** India's LT-LEDS only focuses on technology-related innovations. This should be expanded to innovation in **business models**; **(6)** India's LT-LEDS does not specify mid-term targets or goals. So, the strategy **should present a mechanism to assess progress** towards its intermediate goals and course corrections if necessary.

9. Climate Finance: Meaning, Need and Challenges

News: Nations have agreed to setup Loss and Damage Fund at the COP27. However, Climate Finance has remained much below promised levels.

What is the meaning of Climate Finance? – (1) According to UNFCCC – Climate finance refers to “**local, national or transnational** financing, drawn from **public, private and alternative sources** of financing, that seeks to **support mitigation and adaptation** actions that will **address climate change**”; **(2)** It relates to the money which needs to be spent on the activities (like renewable energy generation) that will **contribute to slowing down climate change** and help the world to **reach the target of limiting global warming** to an increase of 1.5°C above pre-industrial levels; **(3)** Under **Article 3 of the UNFCCC**, developed countries

committed to provide funding for the “**agreed full incremental costs**” of **climate change in developing countries**. Broadly this referred to costs associated with transition of economy from fossil-fuel dependent model to low carbon emission based model; (4) The UNFCCC, the Kyoto Protocol and other follow-up decisions by the Conference of the Parties (COP) have laid out some of the key principles for Climate Finance. The Copenhagen Accord committed “*developed countries to a goal of mobilising jointly US\$ 100 billion a year by 2020 to address the needs of developing countries*”; (5) This financing is intended to be **balanced between climate change mitigation and adaptation** and will come from a wide variety of sources – including public and private, bilateral and multilateral, and alternative and innovative sources of finance.

What is the need for Climate Finance? – (1) **Climate Action**: IPCC reports have pointed out the evidence of climate change and its catastrophic outcomes (like an increasing frequency of extreme weather events). Both **adaptation and mitigation measures (climate action)** are required to address the climate change and limit the rise to 1.5°C above pre-industrial levels. Climate Action involves **significant costs** (e.g., shift to Electric Vehicles requires investments in battery/charging ecosystem). Developing countries lack the resources to undertake climate action; (2) **Historic Contributions**: The climate change is due to **historic GHG emissions** contributed by the developed nations. Their societies enjoy better lifestyle today at the cost of historic emissions. Hence, they have a responsibility to provide assistance to developing nations to undertake climate action while also allowing for development of their societies; (3) **Global Impacts**: Impacts of climate change are not limited to a particular region. Developing countries are more vulnerable to impacts of climate change. Addressing climate change requires an **urgent, comprehensive and collective global response**. The longer climate action efforts are put off, the more difficult and expensive it would be to address climate change. The **New Climate Economy Report** (2018) found that bold climate action could yield a direct economic gain of US\$ 26 trillion through to 2030 compared with business-as-usual—a conservative estimate.

PT BOX

Mitigation and Adaptation

Mitigation deals with **reducing/curbing Greenhouse Gas (GHG) emissions** and is mostly identified with renewable energy and energy efficiency.

Adaptation refers to **taking pre-emptive action to protect communities** from the consequences of climate change. Adaptation includes adjustments in ecological, social, or economic systems in response to actual or expected climatic stimuli and their effects or impacts.

What are the challenges associated with Climate Finance? – (1) **Funding Biases**: There has been an inherent funding bias in **favour of climate-change mitigation activities** (more than 80%). Adaptation measures remain under-funded. This can be attributed to: (a) **Results from mitigation investment are perceptible in the short run**, e.g., returns on investments in energy efficiency or in renewable energy can be perceived through the financial cost savings. In contrast returns on adaptation measures (e.g., cyclone-resistant structures) might not be perceptible

Current Mechanisms of Climate Finance

- **United Nations Framework Convention on Climate Change (UNFCCC)**: Developed countries agreed to support climate action activities in developing countries by providing financial support.
- **Kyoto Protocol**: The Kyoto Protocol laid the groundwork for the Adaptation fund to “facilitate the development and deployment of technologies that can help increase resilience to the impacts of climate change”.
- **Paris Agreement**: In 2015, the Parties to the UNFCCC reached an agreement to accelerate and intensify the actions and investments needed for a sustainable low carbon future.
- **Global Environment Facility (GEF)**: It was established by the UNFCCC to operate the financial mechanism under the Convention on an on-going basis, subject to review every 4 years to provide funds to developing countries.
- **Special Climate Change Fund (SCCF)**: It was created in 2001 to complement other funding mechanisms to finance projects relating to: (a) Capacity-building; (b) Adaptation; (c) Technology Transfer; (d) Climate change mitigation and economic diversification for countries highly dependent on income from fossil fuels.
- **Least Developed Countries Fund (LDCF)**: It is intended to support a special work programme to assist the LDCs.

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immediately; **(b) Adaptation** projects find less traction amongst funding agencies because of the “public goods” nature of such projects. The private sector does not consider financing “public goods” as **viable investments**;

(2) Missed Target: According to an expert report prepared at the request of the UN Secretary-General, the US\$ 100 billion target is not being met (available data for 2018 is US\$ 79 billion), even though climate finance is on an “upward” trajectory. Moreover, the annual US\$ 100 billion

commitment, “is a floor and not a ceiling” for climate finance; **(3) Gap in Finance, Low Target:** The UNEP estimates that adaptation costs alone faced by developing countries will be in a range of US\$ 140–300 billion per year by 2030, and US\$ 280–500 billion annually by 2050. IPCC estimates that US\$ 1.6–3.8 trillion is required annually to avoid warming exceeding 1.5°C. In this context, the target of **US\$ 100 billion per year is very low**; **(4) Pandemic and its economic effects:** The Climate Policy Initiative (CPI), warns that the pandemic and its economic effects have put an emphasis on spending in areas such as public health (developed nations spent trillions to deal with the COVID-19 pandemic), making the **mid-to-long-term prospects of climate finance uncertain**.

What should be done going ahead? – (1) Climate Finance has to be made **predictable and assured**. The developed countries should own up their responsibility and provide enhanced funding for adaptation; **(2) Processes and mechanisms** must be developed to **ensure transparency in funding** (e.g., greenwashing) and **proper use of funds** (to prevent diversion). Proper auditing and reporting mechanisms can ensure transparency; **(3) Climate Finance** must be guided by **principle of equity**. The focus should be on providing assistance to the poor and the most vulnerable nations while ensuring development to raise living standards; **(4) Gender aspects** should be given due consideration, as women remain disproportionately affected by climate change.

Climate Finance so far has remained an unfulfilled promise. As Al Gore emphasised, it is time to realize that the window to act to address climate change is getting shortened and developed countries are “*not doing enough*”. Climate Finance is the most potent tool to mitigate and adapt to effects of climate change. The faster the consensus on climate finance is reached, the better.

10. The Issue of Stubble Burning

News: The air quality in the Delhi-NCR deteriorated to the Severe category with the onset of stubble burning in agrarian regions in North India.

What is Stubble Burning? – (1) Stubble burning refers to the practice of farmers setting fire to plant straw that remain in farms after harvest; **(2) Stubble burning** is practised predominantly by farmers in north India; **(3) Burning of stubble** is a recent practice. Earlier, farmers used to till the remaining straw back into the soil after harvesting the crops manually.

Current Mechanisms of Climate Finance

- **Clean Development Mechanism (CDM):** It allows a developed country with emission targets under the Kyoto Protocol to **implement emission-reduction projects** in the developing countries. Such projects can earn saleable **Certified Emission Reduction (CER)** credits which can be counted towards meeting Kyoto targets.
- **Adaptation Fund:** It became operational with the first commitment period of the Kyoto Protocol in 2008 to finance practical adaptation projects and programmes in developing countries and support capacity-building activities.
- **Climate Investment Fund (CIF):** It was established in 2008 by several multilateral development banks. The CIF has balanced and equitable governance with equal representation from developed and developing countries. It includes: **(a) Clean Technology Fund:** Finances transfer of low carbon technologies; **(b) Strategic Climate Fund:** Targeted programs to pilot new approaches and improvements.
- **Community Development Carbon Fund:** It provides carbon reduction financing to small scale projects in the poorer rural areas of the developing world. The Fund is a public/private initiative designed in cooperation with the International Emissions Trading Association and the UNFCCC. It became operational in March 2003.

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Why farmers resort to stubble burning? – **(1) Advent of the Green Revolution:** It resulted in increased production of rice and wheat which simultaneously increased stubble post-harvest; **(2) Mechanised harvesting:** Machines used in combined harvesting technique leave the straw/stalk behind, the stalks can be 1-ft high; **(3) Economic reason:** There is limited time period of 20-25 days between harvesting of paddy (*Kharif*) and sowing of crops (predominantly wheat) for the next season (*Rabi*). Burning of stubble offers an economical and quick solution to farmers; **(4) Legislation:** Paddy cultivation has been held responsible for rapid depletion of groundwater in Punjab. To reduce the dependence on groundwater for irrigation, the Punjab Government passed the **Punjab Preservation of Subsoil Water Act in 2009**. The Law allows paddy to be transplanted from nurseries to fields **only after a date set by the Government**. The date is typically set in mid-June, after the onset of the monsoon. This is intended to ensure that farmers could utilize rainwater instead of groundwater for irrigation. The delay in sowing of paddy delays the crop cycle. This reduces the time window between harvesting of paddy and sowing of wheat.

What are the negative impacts of Stubble Burning? – **(1) Toxic Gases:** It releases harmful gases including nitrogen oxide and carbon monoxide into the atmosphere; **(2) Air pollution:** Stubble burning creates vast smoke blankets across the Indo-Gangetic Plains. As per TERI (The Energy and Resources Institute) report, in 2019 the air pollution in New Delhi and other parts of north India was 20 times higher than the safe threshold level as prescribed by the WHO. According to a study published by the Energy Policy Institute, air pollution in Delhi can shorten life expectancy by 10 years. (*Refer EPIC June 2022 for Air Quality Life Index (AQLI) and India's Poor Air Quality*); **(3) Impact on crop production:** It degrades soil fertility and reduces yield in the long run.

What steps have been taken to control stubble burning? – **(1) Laws & Regulations:** **(a)** The Punjab Government banned the burning of stubble in 2013. However, the ban has proved to be completely ineffective; **(b)** In 2015, the National Green Tribunal imposed a ban on stubble burning in Rajasthan, Uttar Pradesh, Haryana and Punjab; **(c)** Stubble burning is an offence under Section 188 of the Indian Penal Code and the Air (Prevention and Control of Pollution) Act of 1981. However, the implementation is very lax; **(2) Technological interventions:** **(a) Microbial stubble decomposer:** It has been developed by the Indian Agricultural Research Institute (IARI). It takes 20-25 days to decompose the leftover biomass. Hence it has low adoption by farmers; **(b) Seeders and Balers:** A Seeder is a tractor-mounted machine that cuts and lifts rice straw, sow wheat into the soil, and deposits the straw over the sown area as mulch. A Baler compresses crop residue into compact bales which can be sold to biomass plants for energy generation. However, both types of machines are very expensive. They are being made available on rent as well, but the rent charged is high, making them **unviable for most small farmers**; **(c) Pelletisation:** The Union Environment Ministry announced an INR 50 crore scheme to incentivise industrialists and entrepreneurs to set up paddy straw pelletisation and torrefaction plants.

What is the way forward? – Burning of stubble is an economic issue that requires an economic solution; **(1)** The Government should take steps to correct the crop cycle and reduce paddy cultivation. Farmers should be incentivised to grow alternate crops like maize, pulses; **(2)** Stubble can be used to produce products like paper, fuel briquettes for use in thermal plants, etc. There is a need to create supply chain to collect stubble from the fields and making available to the end users. The Government of Haryana has already set up a **2G ethanol plant in Panipat** to produce alcohol from paddy and other agricultural wastes; **(3)** The Government can provide subsidy to farmers for use of machines like balers and seeders to make their use affordable.

Polity

1. 'Two-finger Test' to be treated as Misconduct: Supreme Court

News: The Supreme Court has declared that any person conducting the invasive 'two-finger' or 'three-finger' test on sexual assault survivors will be treated as guilty of misconduct.

About Two-finger Test

It is an **invasive, unscientific** and **regressive practice** where two fingers are inserted into the vagina to assess the laxity of vaginal muscles and examine the hymen. In rape cases, this test is used to gauge **whether a person is sexually active**. Legal scholars believe the two-finger test allows for "**medicalisation of consent**" where women's bodies are given precedence over their voices.

Supreme Court's Observations

The SC has declared that any person conducting the invasive 'two-finger' or 'three-finger' vaginal test on rape or sexual assault survivors will be found **guilty of misconduct**. The test has no scientific basis and **neither proves nor disproves allegations of rape**. It instead re-victimises and **re-traumatises women** who may have been sexually assaulted and is an **affront to their dignity**. It is an **invasion of privacy** and a **violation of a survivor's dignity**.

The Legislature had amended the criminal law in 2013 to introduce Section 53A in the Indian Evidence Act.

Section 53A says that the evidence of a victim's character or her **previous sexual experience with any person shall not be relevant** to the issue of consent or the quality of consent in the prosecution of sexual offences.

The SC highlighted the **guidelines issued by the Ministry of Health and Family Welfare (MoHFW)** for health providers in cases of sexual violence. These guidelines have **forbidden the application of the two-finger test**. The Guidelines were issued based on the recommendations of the **Justice Verma Committee Report**.

Directions Issued by the Supreme Court

(a) The guidelines issued by the MoHFW should be circulated to private and government hospitals; (b) Workshops should be held for health providers to prevent them from conducting the test; (c) Curriculum in medical schools should be revised; (d) The Judgment should be circulated to the health and home departments of the States. The home departments should circulate the judgment to the Director Generals of Police in the States.

In **Lillu @ Rajesh v. State of Haryana (2013)** the SC prohibited the test. But despite that, the two-finger test still remains a reality as there is a lack of awareness amongst the medical community.

2. Constitution of the 22nd Law Commission

News: The Government of India has constituted the 22nd Law Commission of India.

About the Law Commission of India

It is a **non-statutory body**. It is constituted by the Government of India from time to time. The Commission is established for a **fixed tenure**. It works as an **advisory body** to the Ministry of Law and Justice. **The recommendations of the commission are not binding** on the Government.

Functions

(a) It **identifies obsolete laws** which are no longer relevant, not in harmony with the existing climate or require change.

- (b) It suggests suitable measures for **quick redressal of citizens' grievances** in the field of law.
- (c) It examines the laws for promoting gender equality.

Establishment of Law Commission

The first Law Commission was established during the British Raj in 1834. It was established by the Charter Act of 1833 and was chaired by Lord Macaulay.

In 1955, the first Law Commission of independent India was established for a 3-year term. The 21st Law Commission of India was established in 2015.

The 22nd Law Commission of India is headed by Justice Awasthi. It would have a tenure of three years.

Mandate of the 22nd Law Commission

- (a) To identify laws which are no longer needed or relevant and can be immediately repealed.
- (b) To examine the existing laws in the light of Directive Principles of State Policy and suggest ways for improvement and reform.
- (c) Suggest legislations as might be necessary to implement the Directive Principles and to attain the objectives set out in the Preamble of the Constitution.
- (d) Revise the Central Acts of general importance so as to simplify them and remove anomalies, ambiguities and inequities.

3. Rule of Law Index, 2022

News: According to the Rule of Law Index, 2022, the rule of law has declined globally for the 5th year.

About the Rule of Law

World Justice Project defines the rule of law as a **durable system of laws, institutions, norms and community commitment** that delivers: (a) Accountability (government and private bodies); (b) Just law (the law which is clear and stable); (c) Open government (accessible); (d) Impartial justice system.

About the Rule of Law Index

It is released by the **World Justice Project (WJP)**, an international civil society organization. The index is prepared by examining these above **four principles through eight factors**: (a) Constraints on government powers; (b) Absence of corruption; (c) Open government; (d) Fundamental rights; (e) Order and security; (f) Regulatory enforcement; (g) Civil justice; (h) Criminal justice.

Key Findings of the Index

Globally: Denmark has topped the index followed by Norway, Finland, Sweden and the Netherlands. According to the index, rule of law has declined globally for the 5th consecutive year. It says that the **checks on executive power are weakening**, and respect for human rights is falling.

India: Overall, India has been **ranked 77 out of 140 countries**. On individual parameters, India ranks 94 out of 140 as far as adherence to fundamental rights is concerned, 111 out of 140 in civil justice, 89 out of 140 in criminal justice and 93 out of 140 in absence of corruption.

4. Ninth Schedule

News: The Jharkhand Assembly has passed two laws related to reservation and domicile status. The Jharkhand Government has asked the Union Government to add these laws in the Ninth Schedule.

About the Laws

The Jharkhand Assembly has cleared two Bills: **(a) Increasing reservation** in vacant government posts and services in the State to 77%; **(b) To use land records with 1932 as the cut-off year to determine domicile status** and the definition of 'local resident'.

The Bills come with the condition that they would come into force only after the Parliament carries out amendments to include these in the Ninth Schedule of the Constitution.

About the Ninth Schedule

The Ninth Schedule contains a list of Union and State laws which **cannot be challenged in court**. At present, 284 laws are shielded from judicial review.

The Schedule was added through the **First Constitutional Amendment** Act in 1951. It was created by the new Article 31B, which along with 31A was brought in by the government to **protect laws related to agrarian reform and for abolishing the Zamindari system**.

Exemption from Judicial Scrutiny

The Ninth Schedule provides the law with a **"safe harbour"** from judicial review. But the protection is not blanket.

In I R Coelho vs State of Tamil Nadu, the Supreme Court ruled that while laws placed under Ninth Schedule cannot be challenged on the grounds of violation of fundamental rights, they can be **challenged on the ground of violating the basic structure of the Constitution**.

The SC clarified that the **laws cannot escape the "basic structure" test if inserted into the Ninth Schedule after 1973**. Basic Structure Doctrine was evolved in the *Kesavananda Bharti* Judgment in 1973.

5. 'Forced Conversions Affect National Security': Supreme Court

News: The SC has observed that forced religious conversions is a 'very serious issue' that affects the security the nation, freedom of religion and conscience of citizens.

About the Case

A petition has been filed in the Supreme Court seeking directions to the Centre and States to take stringent steps to check forced conversions. The petitioner has said that there should be a special law against forced conversions or the Act should be incorporated as an offense in the Indian Penal Code.

Observations of the Supreme Court

The SC ordered the Union Government to file an affidavit detailing what actions it proposed to take to curb forced conversions. It said such conversions were reported to be found more in poor and tribal areas.

Right to Propagate Religion under Article 25

The Solicitor General representing the Union Government said that the word **Propagate** had come up for consideration in the Constituent Assembly debates. It was decided that the term **did not mean forcible conversions**.

The SG also referred to the Supreme Court's Judgment by a Constitution Bench in **Rev. Stainislaus vs State of Madhya Pradesh** (1997) which had held that the word "propagate" in **Article 25 did not give the right to convert** another person to one's own religion but to transmit or spread one's religion by an exposition of its tenets. The SC in this Judgment had also held that there was **"no fundamental right to convert another person to one's own religion"**.

The SC had also recently dealt with the Acts passed by Madhya Pradesh and Orissa against forcible conversions and had held that “**freedom of conscience of every person includes freedom not to be allowed to change his conscience and convert**”.

6. Supreme Court's Judgment on Hijab

News: The Supreme Court has delivered a split judgment on the issue of wearing of Hijab in educational institutions. Karnataka High Court had adjudicated that hijab is not an ‘essential feature’ of Islam. The HC decision was challenged in the Supreme Court.

About the SC Judgment

The Supreme Court couldn't arrive at a unanimous decision. The two-Judge Bench had differing views over the issue. The case has been referred to a larger bench.

Justice Hemant Gupta agreed with the Karnataka government and said that order of the government was only to “**promote uniformity and encourage a secular environment**” in the classroom.

Justice Dhulia invoked the verdict of the SC in the **Bijoe Emmanuel (1986) case** and emphasized that core issue is “**a matter of choice**” and a concern regarding education. He said that this case has to be seen in the perspective of the challenges faced by a girl child in reaching her school. The situation of closing gates for Muslim students' girls wearing head scarf could be a **setback for the education amongst the girls of the minority community**. (Refer EPIC March 2022 for Karnataka HC Judgment on Hijab).

Policy

1. Union Home Minister's Address at Chintan Shivir

News: The Union Home Minister addressed the inaugural session of the 2-day *Chintan Shivir* of Home Ministers of States in Surajkund, Haryana.

Key Highlights of the Home Minister's Address

States should have a **uniform law and order policy** as certain crimes such as cross-border terrorism and cybercrimes **transcend regional and international boundaries**.

By 2024, to counter terror activities, **each State would have a National Investigation Agency (NIA) office** as the NIA had been given “extra territorial jurisdiction” and additional powers to confiscate property in terror-related cases.

States should **utilize the National Intelligence Grid (NATGRID)** that is operational now. The NATGRID brings datasets of 11 agencies on a common platform.

Amendments to the Foreign Contribution Regulation Act (FCRA) in 2020 **successfully prevented the misuse of foreign funding** and effective monitoring became possible.

After Article 370 of the Constitution ceased to operate in Jammu and Kashmir in 2019, there had been a **34% reduction in terrorist incidents** and a 54% reduction in deaths amongst the security forces.

2. Unified District Information System for Education Plus (UDISE+) 2021-22

News: The Ministry of Education has released a detailed report on Unified District Information System for Education Plus (UDISE+) 2021-22 on School Education in India.

About the UDISE+

UDISE+ is an updated version of UDISE. It was developed by **Department of School Education and Literacy** in the year 2018-19. Its mandate is to **collect data** from the schools on parameters like school Infrastructure,

teachers, enrolments, examination results etc. In 2021-22, data related to digital library, peer learning, number of books available in school library, etc. have also been collected for the first time to align with the NEP 2020 initiatives.

Information collected through UDISE+ is utilized for the **planning, optimized resource allocation** and **implementation** of **various education-related programs** and assessments of progress made.

Key Findings of UDISE+ 2021-22

Enrolment: In 2021-22, the total number of students enrolled in school education (primary to higher secondary) stood at 25.57 crores (25.38 crore in 2020-21).

There were 30% fewer students entering the pre-primary classes in 2021-22 compared to the pre-COVID period.

The enrolment in primary classes (classes 1 to 5), also saw a drop for the first time—falling from 12.20 lakh in 2020-2021 to 12.18 lakh in 2021-2022.

Uttar Pradesh has witnessed the highest enrolment of students in government schools and recruitment of teachers.

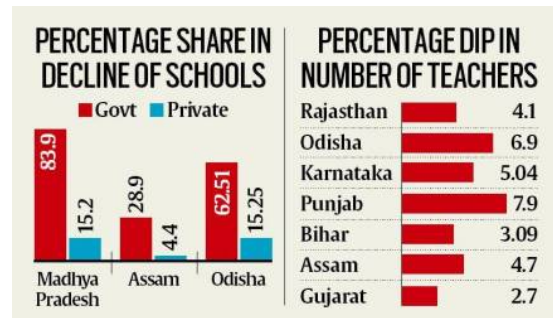
A decline in Schools: The total number of schools declined from 15.09 lakh to 14.89 lakh due to closures as well as a lack of teachers.

Computer and Internet Facilities: Computer facilities were available in 44.75% of schools. Internet access was available only in 33.9% of schools. However, their availability has improved as compared to pre-Covid when only 38.5% and 22.3% of schools had computers and Internet facilities respectively.

Gross Enrolment Ratio (GER): It compares the enrolment in a specific level of education to the population of the corresponding age group.

GER for the primary section has improved from 101.3% in 2018-2019 to 104.8% in 2021-2022. For secondary classes, it has risen to 79.6% in 2021-22 (76.9% in 2018-19). For higher secondary level, it has increased to 57.6% (from 50.14%).

Gender Parity Index (GPI) of GER which indicates the representation of girls in school with respect to their population in the corresponding age group was also found to be favourable to girls with a GPI value of 1.



3. Performance Grading Index (PGI)

News: The Department of School Education and Literacy has released the Performance Grading Index for the States/UTs for 2020-21.

About the Performance Grading Index (PGI)

Its purpose is to provide insights and data-driven mechanisms on the performance and achievements of the success of school education across all States/UTs. It aims to promote **evidence-based policymaking** and highlight course correction to ensure quality education for all.

PGI structure indicators are grouped into 2 categories: **Outcomes, Governance Management (GM)**. These categories are further divided into 5 domains, viz., **Learning Outcomes (LO), Access (A), Infrastructure & Facilities (IF), Equity (E) and Governance Process (GP)**.

Classification: PGI 2020-21 classified the States/UTs into 10 grades viz., the highest achievable Grade is Level 1, for States/UTs scoring more than 950 points (total of 1000 points). The lowest grade is Level 10 which is for scores below 551.

Key Findings of the PGI 2021-22

7 States and UTs namely Kerala, Punjab, Chandigarh, Maharashtra, Gujarat, Rajasthan and Andhra Pradesh have attained Level 2 (score 901-950) as compared to none in 2017-18 and 4 in 2019-20.

The newly formed UT Ladakh has made significant improvements in PGI from Level 8 to Level 4 in 2020-21.

Significance of PGI 2021-22

It is expected to help States and UTs to pinpoint the gaps and accordingly prioritize areas for intervention to ensure that the school education system is robust at every level.

It will also encourage states to perform better and to adopt best practices followed by performers.

4. Draft National Curriculum Framework for Foundational Stage

News: The Union Minister of Education has released the National Curriculum Framework (NCF) for the Foundational Stage Education (for children aged 3-8 years).

About the National Curriculum Framework

National Curriculum Framework serves as a guideline for syllabus, textbooks and teaching practices for the Education system in India. NCF has been revised 4 times: 1975, 1988, 2000 and 2005. NCF 2022 would be the 5th revision of the framework.

About the National Curriculum Framework 2022

NCF-2022 has 4 sections: The National Curriculum Framework for: **(a)** School Education; **(b)** Early Childhood Care and Education; **(c)** Teacher Education; **(d)** Adult Education.

The framework includes the 'panchakosha' concept for education with 5 components: **(a)** Physical development (*sharirik vikas*); **(b)** Development of life energy (*pranik vikas*); **(c)** Emotional and mental development (*manasik vikas*); **(d)** Intellectual development (*bauddhik vikas*); **(e)** Spiritual Development (*chaitisik vikas*).

Recommendations made by NCF 2022

Observations: Currently there is a learning crisis in India, as enrolled children are failing to attain basic skills such as foundational literacy and numeracy. Only 50.9% of the students admitted to Grade 1 in 2020-21 had prior preschool experience.

Recommendations: Mother tongue will be the primary medium of instruction for children up to the age of 8 because learning a new language reverses the entire learning process in the early years.

English could be one of the **second language options**. However, it avoids providing any specific timetable for introducing English.

Children in the age group of 3 to 8 should not be burdened with textbooks. For ages 6 to 8 years, simple and attractive textbooks can be considered.

Main highlights of the NCF Foundational Stage 2022

Pedagogical approach in the new curriculum framework is **play-based**. It includes stories, music, crafts, conversation and field trips.

It caters to different needs and levels of children **including children with special needs**.

Assessment is seen as an **enabler for learning and development**. It is imagined as part of everyday classroom process and largely based on **systematic and careful observation** of children.

It focuses upon building an **enabling ecosystem**. It includes empowering teachers and enabling a supportive academic and administrative support system.

It speaks directly to teachers. It focuses upon classroom practices with real-life illustrations.

5. Decentralize MGNREGS for Better Implementation: Study

News: A study commissioned by the Ministry of Rural Development has suggested for decentralization of MGNREGS for more 'flexibility' at the ground level.

About the Study

The Ministry of Rural Development has commissioned an internal study to assess the implementation of all rural development schemes, including the Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS). The study surveyed 7 states.

Problems with the MGNREGS

- (a) Fund management has been centralized, instead of paying an advance to the Gram Sabhas enabling them to decide the work they want to undertake.
- (b) **Frequent delays in fund dispersal.** The study quoted various instances to underline this chronic problem e.g., In the Lower Subansiri district of Arunachal Pradesh, the surveyors found that because of the delay in the material component the beneficiaries ended up buying the construction material themselves to complete the projects. In Himachal Pradesh and Gujarat, the delay in wages was by 3-4 months and the material component was delayed by 6 months.
- (c) **MGNREGS wages were far below the market rate** in many states defeating the purpose of acting as a safety net. At present, the minimum wage of a farm labourer in Gujarat is INR 324.20 but the MGNREGA wage is INR 229. The private contractors pay far more.

Suggestions given by the Study

- (a) **Decentralization** of the MGNREGA scheme allowing for more "flexibility" at the ground level.
- (b) **Greater diversification of permissible works** instead of listing the types of permissible works, broad categories of works may be listed out and flexibility should be given at ground level to select the type of works as per broad categories.
- (c) **Revolving funds** can be setup. This fund can be utilized whenever there is a delay in the Central funds.

6. Amendments to IT Rules, 2021

News: The Ministry of Electronics and IT (MeitY) has notified amendments to the Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021 (IT Rules, 2021).

About the IT Rules, 2021

IT Rules, 2021 aims at placing obligations on **Social Media Intermediaries (SMIs)** to ensure an open, safe and trusted internet. (Refer EPIC June 2021 for IT Rules, 2021).

Need to Amend the IT Rules, 2021

- (a) To ensure that the interests and constitutional rights of netizens are not being breached by big tech platforms; (b) To strengthen the grievance redressal framework in the rules; (c) To provide edge to early-stage Indian start-ups from these compliances.

These amendments can be broadly classified into two categories: (a) Placing **additional obligations on the SMIs** to ensure better protection of user interests; (b) Involving the institution of an **appellate mechanism for grievance redressal**. (Refer EPIC June 2022 for Proposed Amendments to the IT Rules, 2021).

Additional Obligations on the SMIs

Increased Compliances: SMIs have to ensure that their users are in compliance with the relevant rules of the platform. SMIs are required to “make reasonable efforts” to **prevent prohibited content being hosted** on its platform by the users.

Protecting Fundamental Rights: SMIs have to “respect all the rights provided to the citizens under the Constitution including in the articles 14, 19 and 21”.

Prohibited categories: SMIs have to remove information or a communication link in relation to the six prohibited categories of content within 72 hours when a complaint arises.

Accessibility: SMIs have to “take all reasonable measures to ensure accessibility of its services to users along with reasonable expectation of due diligence, privacy and transparency”.

Multiple Languages: “Rules and regulations, privacy policy and user agreement” of the platform should be made available in all languages listed in the **Eighth Schedule** of the Constitution.

These amendments have raised concerns related to increased compliance costs. Also, they will increase the power of SMIs to breach the **freedom of speech and expression**. Through their ‘reasonable efforts’ to curb prohibited content.

About the IT Rules, 2021

- The Information Technology (Intermediary Guidelines and Digital Media Ethics) Rules were enforced in February 2021.
- The rules brought in **additional compliance requirements** for **Significant Social Media Intermediaries** (SSMIs). SSMIs are platforms with over 5 million subscribers.
- These measures included **appointment of Chief Compliance Officer, Nodal Person** for coordination and **Grievance Officer**.
- The rules also required SSMIs to **trace the first originator of information** on their platform.
- The IT Rules brought in a **3-tier system for handling grievances** pertaining to streaming services and online news business.
 - **First Level:** Grievances are handled within the organisation,
 - **Second Level:** A self-regulatory body, and
 - **Third Level:** A government-run committee which can **override any decision** taken by the other two bodies.

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About the Grievance Appellate Committees (GACs)

The GAC will be a **3-member council**, one of them being a government officer (holding the post ex officio) while the other two members will be independent representatives.

The GAC is required to adopt an **online dispute resolution mechanism** which will make it more accessible to the users and users can file a complaint against the order of the grievance officer within 30 days.

This has made the in-house grievance redressal more accountable and appellate mechanism more accessible to users.

Concerns associated with GAC

(a) It is not clear whether the users have to approach the GAC before approaching the court; (b) Presence of Officer of Government can lead to biased judgment; (c) The IT Rules, 2021 do not provide any explicit power to the GAC to enforce orders; (d) Approaching both GAC and court can lead to conflicting decisions.

7. Compulsory Broadcast of Socially Relevant Content by TV Channels

News: The Union Cabinet has approved the ‘Guidelines for Up-linking and Down-linking of TV Channels’. They will ensure the ease of doing business and compliance by simplification of rules and procedures.

Key Provisions of the Guidelines

Broadcast National Importance content: All the stations holding permission would have to broadcast content on **issues of national importance** and **social relevance** for at least 30 minutes every day.

The content must be related to **(a)** Education; **(b)** Agriculture; **(c)** Health; **(d)** Science and technology; **(e)** Welfare of women; **(f)** Welfare of the weaker sections of society; **(g)** Protection of the environment and cultural heritage; **(h)** National integration.

The **guidelines exempt the channels (foreign and sports channels)**, where it would not be feasible to broadcast such content.

According to the Government, **airwaves are public property** and need to be used in the best interest of society. So, all channels (except those exempted) will have to air content for the service of the public.

Live Telecast: The requirement for seeking permission for the **live telecast of events** has been done away with; only prior registration of events to be telecast live would be necessary.

Penalty: The **penalty clauses have been rationalized** and graded penalties proposed for different types of contraventions.

Net worth: The required net worth for the first channel is **INR 20 crore** and INR 5 crores for the subsequent channels.

Other important guidelines (a) Specific timelines have been proposed for grant for permission; **(b)** Limited Liability Partnership (LLP) entities can also seek permission; **(c)** A news agency can get permission for a 5-year period as against one year at present.

Concerns

(a) Critics say it may lead to **interference by the Government**. The Guidelines say, “The Central Government may, from time to time, issue a general advisory to the channels...and the channel shall comply with the same”;

(b) There is **no clarity on compensation norms** and who will fund the bill for the public service component on TV; **(c)** The air-time devoted to this exercise can easily exceed 30 minutes. So, news channels might protest the mandatory move.

Economy

1. RBI Report on Municipal Finances

News: The RBI has released a document titled ‘Report on Municipal Finances’.

Key Observations

Municipal Corporations (MCs): The rapid growth of urbanization in India has **not been accompanied by a corresponding increase in urban infrastructure**. This is reflected in the performance of Municipal Corporations (MCs): **(a)** The size of municipal budgets in India is much smaller than peers in other countries; **(b)** The share of **MCs own revenues** (own tax and non-tax sources) **has been declining** and the **share of government transfers has been increasing**. This indicates **growing fiscal dependency** on such grants from higher levels of government; **(c)** **Municipal revenues/expenditures in India have stagnated** at around 1% of GDP for over a decade. In contrast, municipal revenues/ expenditures account for 7.4% of GDP in Brazil and 6% of GDP in South Africa; **(d)** MCs committed expenditure is rising but capital expenditure is minimal; **(e)** MCs mostly **rely on borrowings from banks and financial institutions** and loans from Centre and State Governments to finance their resource gaps in the absence of a well-developed market for municipal bonds. (Refer EPIC October 2022 for Issues with the Working of Local Governance in India).

State Finance Commissions (SFCs): State Governments have **not set up State Finance Commissions (SFCs) in a regular and timely manner** even though they are required to be set up every five years. In most of the States, SFCs **have not been effective** in ensuring rule-based devolution of funds to Local governments.

Suggestions given by the Report

(a) MCs should **adopt sound and transparent accounting practices** with proper **monitoring and documentation** of various receipts and expenditure items; (b) MCs should explore **different innovative bond and land-based financing mechanisms** to augment their resources; (c) In order to improve the buoyancy of municipal revenue, the Centre and the **States may share one-sixth (17%) of their GST revenue** with them.

2. India's Trade with China

News: India's exports to China are rising faster than imports.

India's Trade with China

The trade between the two countries has **grown 59% from about US\$ 72 billion in 2014-15 to US\$ 115.4 billion in 2021-22**.

Exports rose from US\$ 11.9 billion (2014-15) to US\$ 21.25 billion in 2021-22 (78.1% rise).

Imports rose from US\$ 60.4 (2014-15) to US\$ 94.16 billion in 2021-22 (55.8% rise).

Intermediate goods account for more than a 33% of India's imports from China while capital goods constitute another 19.3%. Major import items include electronic components, computer hardware and peripherals, telecom instruments, organic chemicals, industrial machinery for dairy, residual chemicals and allied products, electronic instruments, bulk drugs and intermediates.

Reason for India's dependence on Chinese goods

It is due to (a) **Gap between the domestic production and demand** in India; (b) China being a manufacturing hub and having **price competitiveness due to economies of scale** and subsidies provided by its government to Chinese industry.

Measures taken to limit Chinese Imports

The **production-linked incentive** schemes for different sectors **will help reduce the dependence** on such imports over time. Moreover, **technical regulations framed** for products such as toys, electronics, chemicals and fertilizers will help check substandard imports.

3. Doom Loop

News: Many Economists have warned that Europe may be headed for a doom loop.

About Doom Loop

A doom loop is the circle of vulnerability where a country's **banking system can be severely hurt by volatility (uncertainty) in the economy**. A country is at risk of a doom loop when a shock to one part of its economic system is amplified by its effect on another.

Impact of Doom Loop on the Economy

The doom loop is the circle of vulnerability where a country's banking system can be severely hurt by **volatility in the price of the sovereign bonds** they hold for reserves. This can lead to contraction in loans provided by the Bank (as **reserves decrease** due to fall in prices of bonds). The contraction in credit **slows the domestic economy**, resulting in a **further**



deterioration in the price of the sovereign's bond issues. A government under financial stress may have to **cut spending or raise taxes** when the economy is weak. That in turn can **aggravate fiscal problems**. The circle can also be activated by **external forces** such as a **slowdown in global economic activity** due to **natural recession or trade friction**.

4. Pradhan Mantri Kisan Samridhhi Kendra Scheme

News: The Government has launched the PMKSK Scheme.

About the PMKSK Scheme

It will have one-of-a-kind '**model fertilizer retail shops**' that shall offer **various facilities under a single roof**. The farmers can get fertilizers and other inputs at cheaper rates under a single roof, adopt new technologies to enhance their farm production and be able to **earn higher incomes**. These *Kendras* will also provide an **interactive platform for knowledge sharing** to create awareness among farmers on the latest and **best agriculture technology and practices**, as well as on the balanced use of fertilizers.

Training of retailers: It will be conducted every six months. Agricultural scientists and agriculture experts will also be engaged for **training retailers on various topics**.

Kendras Under the PMKSK Scheme

- **Village level:** Kendras will aid farmers with crop literature, soil fertility maps, messages from government authorities and data on the stock position of fertilizers, subsidies, marked retail prices, etc.
- **Tehsil level:** Kendras will have facilities like a help desk on new-age fertilizers and government schemes, a crop advisory, tele-consultation with experts, a common service centre, soil testing facility and sample collection unit for seed and pesticide testing, etc.
- **District-level:** Kendras will have all facilities at a larger scale, with the entire product range showcased, enlarged seating capacity, testing facilities for soil, seeds, water and pesticides, and a common service centre.

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5. World Economic Outlook Report, 2022

News: The IMF has released the World Economic Outlook Report, 2022.

Key Observations of World Economic Outlook (WEO)

Performance of India in the Previous Decades

Four countries are the best performers for 2011-21 decade: Bangladesh, China, Vietnam and India.

China and Vietnam were also featured as the top performers for the previous decade.

India recorded best ever decadal growth performance in 2001-11. But its growth was slower than all emerging markets and developing countries in that decade.

In the previous two decades, 1991-2001 and 1981-91 India performed better than the average emerging markets (EMs).

In terms of dollars, the **Indian economy grew to 3.7 times its size** in the 2001-11 decade but only to 1.7 times in the latest decade. The IMF report for four decades (1981-2021) highlights that only three countries (China, South Korea and Vietnam) did significantly better than India.

India's share in World GDP has been rising, from 2.5% in 2011 to 3.3% in 2021. It is **further expected to grow** in the future.

Growth Projections

(a) The **Indian economy is set to grow 6.8%** whereas all EMs are expected to grow only 3.7% in 2022-23;

(b) The growth for the advanced economies is **expected to slow from 2.4% to 1.1% in the next year**; (c) 4 Asian Countries including India, are the **candidates for international businesses** looking to diversify their production bases away from China by following "**China+1**" strategy.

6. Printing of Notes by the RBI

News: Call for images of deities on banknotes has brought the process of currency design into focus.

Design of Indian banknotes

Changes in the design and form of banknotes and coins are **decided by the Reserve Bank of India (RBI)** and the **Union government**. Any change in the design of a currency note has to be **approved by the RBI's Central Board and the Union government**. Changes in the design of coins are the **prerogative of the Union Government**.

Role of the RBI in Issuing Notes

Section 22 of The **Reserve Bank of India Act, 1934**, gives RBI the 'sole right' to **issue banknotes in India**.

Section 25 states that the **design, form and material of banknotes** shall be such as may be **approved by the Union Government** after consideration of the **recommendations made by the RBI's Central Board**. Within RBI, the currency is managed by the **Department of Currency Management** which recommends design to the Union Government.

Printing of Currency Notes: Two of India's currency note printing presses are in **Nasik** and **Dewas**. These are owned by the Government of India. Two other printing presses are in **Mysore** and **Salboni**. These are owned by the RBI through its wholly-owned subsidiary, **Bharatiya Reserve Bank Note Mudran Ltd. (BRBNML)**.

Minting of Coins

The **Coinage Act, 2011** gives the Union Government the power to **design and mint coins** in various denominations. In the case of coins, the **role of the RBI is limited to the distribution of coins** that are supplied by the Union Government. The Government decides on the quantity of coins to be minted on the basis of indents received from the RBI on a yearly basis. Coins are minted in 4 mints owned by the Government of India in **Mumbai, Hyderabad, Kolkata and Noida**.

Series of Bank Notes Issued

- **Ashoka Pillar Banknotes:** The first banknote issued in independent India was the Re 1 note issued in 1949. It replaced the portrait of King George with the symbol of the **Lion Capital** of the Ashoka Pillar at Sarnath in the watermark window.
- **Mahatma Gandhi (MG) Series, 1996:** All the banknotes of this series bear the portrait of Mahatma Gandhi on the front side in place of the symbol of the **Lion Capital**. Lion Capital was moved to the left, next to the watermark window.
- **Mahatma Gandhi series, 2005:** They contain some additional/new security features as compared to the 1996 MG series.
- **Mahatma Gandhi (New) Series, 2016:** These new notes highlight **India's cultural heritage and scientific achievements**. These include:
 - INR 10: Konark Sun Temple.
 - INR 20: Ellora Caves.
 - INR 50: Hampi.
 - INR 100: Rani Ki Vav.
 - INR 200: Sanchi Stupa.
 - INR 500: Red Fort.
 - INR 2000: Mangalyaan.

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7. Manufacturing Facility of C-295 Aircraft

News: The Prime Minister has laid the foundation stone for Tata Consortium's C-295 Manufacturing Facility in Vadodara (Gujarat).

Significance of the C-295 Manufacturing Facility

(a) It is a first large-scale project given directly to the private sector and will bridge a critical gap in indigenous aircraft manufacturing; (b) C-295's versatility would provide Indian Air Force with an immensely powerful tactical transport capability. In the next decade, it would become the backbone of the IAF's entire tactical transport operations; (c) The project will involve the creation of **production infrastructure with transfer of technology from Airbus**. The resulting manufacturing supply chain will spread from Tata to a

host of MSMEs. About 125 MSMEs across the country will be involved in the supply chain; **(d) The maintenance repair and overhaul (MRO) capability** will be a **boon for the private sector** with a long-term commitment to efficient and cost-effective maintenance support for IAF.

Moving Ahead

(a) India should try to get **export order and start targeting MROs of aircraft in friendly countries;** **(b)** India should **develop indigenous mission computers** and own **operational software** to support **indigenous products and R&D, and permit rapid modernisation.**

8. Millets Exports Promotion Programme

News: The Ministry of Commerce has released a comprehensive Millets Exports Promotion Programme to promote Indian millets exports across the globe.

About the Millets Exports Promotion Programme

It has been prepared by the **Agricultural and Processed Food Products Export Development Authority (APEDA)**. Its aim is to **promote exports of Indian millets** across the globe. The programme comes at the backdrop of the proposal of India that was supported by 72 countries which led to the UN General Assembly (UNGA) **declaring 2023 as the International Year of Millets (IYoM)**.

Key Features of the Programme

(a) The government will **facilitate the participation** of exporters, farmers and traders in 16 international **trade expos** and **Buyer Seller Meet (BSMs)** to promote exports of millets; **(b) Indian missions** abroad would be roped in **branding and publicity** of Indian millets; **(c)** Ambassadors of Foreign missions in India of the targeted countries would be invited to showcase various millet-based products; **(d)** APEDA will showcase millets and its value-added product at various **global platforms**; **(e)** APEDA would also **organize food sampling and tasting** at the retail level and in key local bazaars of targeted countries where individual, household consumers can gain familiarity with millet products; **(f)** The Government is also **mobilizing start-ups for export promotion** of value-added products in the **Ready to Eat (RTE)** and **Ready to Serve (RTS)** categories such as noodles, pasta, breakfast cereals mix, biscuits, cookies, snacks, sweets etc.

About Millets production in India

India is one of the **leading producers of millets in the world** with an estimated share of around **41% in global production**. India's top 5 millet-producing states are **Rajasthan, Maharashtra, Karnataka, Gujarat and Madhya Pradesh**.

Exports of Millets: The share of export of millets is nearly 1% of the total millet production. The varieties of millets exported by India include **Bajra, Ragi, Canary, Jawar, and Buckwheat**.

Millets Market: It is estimated that the millets market is set to grow from its current market value of more than US\$ 9 billion to over US\$ 12 billion by 2025.

Applications of C-295 Aircraft

The aircraft is contemporary in design, technology and systems.

- **Military Applications:** It is capable of multiple roles like
 - Airborne Early Warning and Control (AEW&C).
 - Electronic Intelligence (ELINT).
 - Maritime Patrol, Search and Rescue (SAR) and Aerial Refuelling.
 - It has a load capacity of up to 9 tonnes, it can carry up to 71 passengers or 44 paratroopers or 24 stretchers for medical evacuations.
- **Civilian applications:** The aircraft's unique capability to connect destinations which are **tough to service** or reachable only through **semi-prepared surfaces and Short Take-off and Landing (STOL) runways**. This can help in both **passenger and load-carrying tasks**. It can undertake **casualty or medical evacuation operations, and disaster response activities**.

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International Relations

1. UNSC 1267 Committee

News: China placed a 'hold' on a joint India-US proposal to designate Lashkar-e-Taiba commander Shahid Mehmood under the UNSC's 1267 Committee list of terrorists affiliated to Al Qaeda and ISIS.

About the UNSC's 1267 Committee

It was set up in 1999 (updated in 2011, 2015). It maintains the list of terrorists affiliated to Al-Qaeda and ISS. Any UN member state can propose the name of a terrorist or a group to be added to the consolidated list.

'Placing a Hold'

The rules of 1267 Committee state that names of the terrorists can only be added according to the **no objection procedure**. If any member of UNSC places a hold on the listing of the name then that name cannot be added to the consolidated list of terror groups. China has **repeatedly misused its veto power** to prevent addition of names proposed by India.

If any country places a hold on the proposed name, then 1267 committee is bound to **resolve such issues within six months**. The holding country has to decide whether to accept the listing or **place a permanent objection to it**.

Reasons behind Placing a Hold by China

The most important reason is **China-Pakistan bilateral relationship**. China has blocked the listing proposals for Masood Azhar in 2009, 2010 and 2016-18. It claimed it had **inadequate information**. China withdrew its hold in 2019. According to the Chinese ambassador, China places a hold because it **needs time to study these specific cases**.

India's Permanent Representative to the UN Ruchira Khamboj has asked to end the practice of placing holds and blocks on listing requests. (Refer EPIC October 2022 for Reforms in the United Nations Security Council).

Other Efforts by India

India has consistently tried to **build international consensus** on cross-border terrorism. Its effort was seen when Pakistan was **placed on grey list under the Financial Action Task Force** due to its inability to curb terror financing and money laundering from 2012-2015 and 2018-2022.

India and the U.S. have built their own **separate list of most wanted terrorists** with a view to eventually receiving global cooperation on banning them.

2. Pakistan Taken-off from FATF's Grey List

News: Pakistan has been taken off from the 'Grey List' of the Financial Action Task Force (FATF) after 4 years.

About the FATF

It is an **inter-governmental body** which has been established to promote effective implementation of legal and regulatory measures for **combating money laundering, terrorist financing** and other related threats to the integrity of the **international financial system**. It is a policy-making body which works to generate the necessary political will to bring about **national legislative and regulatory reforms** in these areas.

Role of FATF in Combating Terrorism Financing

(a) **Set standards:** For combating money laundering, terrorist financing and the financing of proliferation of weapons of mass destruction (WMD).

- (b) **Protection:** Protect the **integrity of the financial system**, and enhance its transparency.
- (c) **Studies:** The FATF **conducts and publishes expert operational and strategic studies** on risks, trends, and methods. It also develops and sets **global policies, standards, best practice, and guidance**.
- (d) **Evaluation:** It **evaluates FATF member countries** and oversees in close cooperation with the FATF-style regional bodies.
- (e) **Coordination:** The Standards developed by the FATF form the **basis for a co-ordinated response** to the threats to the integrity of the financial system and **help ensure a level playing field**.
- (f) **Monitoring:** The FATF monitors the progress of its members in implementing necessary measures, reviews money laundering and terrorist financing techniques and counter-measures.

About the FATF Grey List

FATF maintains a 'grey list' of countries monitored closely by it. These are countries that have, in the assessment of the FATF, **failed to prevent international money laundering and terrorist financing**. They are, therefore, on a **global watchlist for bad behaviour**.

Countries on the list are The Philippines, Syria, Yemen, the United Arab Emirates, Uganda, Morocco, Jamaica, Cambodia, Burkina Faso, and South Sudan, and the **tax havens** of Barbados, Cayman Islands, and Panama.

Countries on the Grey List

FATF calls Grey List countries as '**jurisdictions under increased monitoring**'. These countries have to comply with **certain conditions laid down by the FATF**, failing which they run the risk of being '**blacklisted**' (or the '**High-Risk Jurisdictions subject to a Call for Action**'). Their compliance is periodically reviewed. FATF has said that Pakistan had completed two action plans comprising a 34-point task list in the period since 2018. Based on this progress, FATF has taken Pakistan off the Grey list.

3. UN Security Council Counter Terrorism Committee (UNSC CTC)

News: India hosted a special meeting of the UN Security Council's Counter Terrorism Committee.

About the Counter-Terrorism Committee (CTC)

The Counter-Terrorism Committee (CTC) was established by the UN Security Council **Resolution 1373** (2001). It was adopted unanimously in September 2001 in the **wake of the September 2001 terrorist attacks** in the US.

The Committee comprising all 15 UNSC members were tasked with monitoring the implementation of resolution 1373 (2001) which requested countries to implement a number of measures intended to **enhance their legal and institutional ability to counterterrorist activities** at home, in their regions and around the world. The resolution also calls on States to become parties, as soon as possible, to the **relevant international counter-terrorism legal instruments**.

The Permanent Representative of India to the UN currently serves as the Chair of the CTC for 2022.

Purpose of the UNSC CTC Meeting in India

The CTC discussed the overarching theme of "**Countering the use of new and emerging technologies for terrorist purposes**". The panel also discussed **terror financing through crypto-currency** and the **use of drones in new-age terrorism**. The focus was also on **online radicalization and terror recruitment**. The deliberations led to the "**Delhi Declaration** on countering the use of new and emerging technologies for terrorist purposes".

This was the first meeting of the UNSC-CTC in India since its establishment in 2001.

Challenges Related to Terrorism

There is lack of **global cooperation** in fight against terrorism. Lack of international cooperation was evident in **bringing justice to victims of the 26/11 Mumbai attack**. Pakistan has **not prosecuted the perpetrators of the attack**. The **US has refused to extradite terror suspects** to India. **China continues to block designating LeT leaders** on the UNSC 1267 terror list.

4. Dirty Bomb

News: Russia has delivered a letter to the UN claiming that Ukraine is preparing to detonate a dirty bomb in its territory.

About Dirty Bomb

A dirty bomb (radiological dispersal device) is a weapon that **combines conventional explosives** like the **dynamite** and **radioactive material** such as uranium. The primary objective of a dirty bomb is to **create panic, confusion and anxiety** by hurling **radioactive dust and smoke** into the atmosphere. It has been long feared as a **potential weapon of terrorists**.

A dirty bomb **doesn't contain highly refined radioactive material**, as is used in a nuclear bomb. Instead, it uses **radioactive materials from hospitals, nuclear power stations or research laboratories**. This makes them much **cheaper and quicker to make** than nuclear weapons.

Difference between Dirty Bomb and Nuclear Bomb

A **dirty bomb is not a nuclear bomb** but a **psychological weapon**. A nuclear bomb creates an explosion that is millions of times more powerful than a dirty bomb. A dirty bomb rather than being a **“weapon of mass destruction”** is a **“weapon of mass disruption”** where **contamination and anxiety** are the major objectives.

5. Scorched Earth Tactics

News: The German Chancellor has said that the Russia President is using 'scorched earth' tactics to win the war against Ukraine.

About the Scorched Earth Tactics

Scorched earth tactics form **part of a military strategy** which seeks to **destroy anything that could be of use to the enemy**, including **energy supplies, bridges, provision stores, agricultural fields, road and railway links** etc.

The destruction could be carried out by **the enemy or by the retreating army of a country** which does not want invaders to use its resources.

Harming civilians as part of this strategy has been banned under the **1977 Geneva Convention**.

Examples of Scorched Earth Tactics

Globally: During the **American Civil War in 1864**, Union General William Tecumseh Sherman and his soldiers burnt everything in sight as they marched through Confederate areas. The campaign, known as the **March to the Sea** played a major role in breaking the will of the Confederacy and hastened the end of the Civil war.

Russia has employed these tactics during **Napoleon's Invasion of Russia** in 1812 and during the World War II against **Nazi Attack on Russia** (1941-42).

Retreating Iraqi forces used it during the **Gulf War** (1991) by setting Kuwaiti oil wells on fire.

India: The armies of Maratha leader **Chhatrapati Shivaji** were known for their scorched earth tactics. Some historians have said that while the Maratha leaders **looted and burnt enemy towns, they were under orders to not harm civilians or desecrate religious sites.**

6. Black Sea Grain Initiative

News: Russia had said that it'll withdraw from the Black Sea Grain Initiative before changing its decision. Russian withdrawal might have exacerbated the global food crisis.

About the Black Sea Grain Initiative

Ukraine is among the **largest exporters** of wheat, maize, rapeseed, sunflower seeds and sunflower oil, globally. Ukraine supplies **~45 million tonnes of grain to the global market every year.**

Exports from Ukraine were hampered due to **Russia-Ukraine war**. Ships were unable to secure safe passage from the Ukrainian ports. This has resulted in a **spike in global prices of staple foods.**

To overcome this, in July 2022 the UN, Russian Federation, Turkey and Ukraine agreed to the **Black Sea Grain Initiative**. The initiative can help avert the chances of the **global food crisis spiralling further.**

Significance of the Initiative

The deal allowed exports of grain, other foodstuffs, and fertilizers from Ukraine to resume through a **safe maritime humanitarian corridor** from **3 Ukrainian ports.**

According to the UN Office for Coordination of Humanitarian Affairs, **~10.1 million tonnes of grains have been shipped** since the initiative commenced. The deal has made a huge difference to the global cost of living crisis. To implement the deal, a **Joint Coordination Centre (JCC)** has been established in Istanbul, Turkey, comprising senior representatives from the Russian Federation, Turkey, Ukraine and the United Nations.



7. 19th India-ASEAN Summit

News: The Vice President led India's delegation at the 19th ASEAN-India Summit in Phnom Penh, Cambodia.

Key Highlights from the 19th ASEAN-India Summit

(a) ASEAN and India adopted a joint statement announcing the elevation of the existing **Strategic Partnership to Comprehensive Strategic Partnership.**

(b) Both sides **reaffirmed the importance** of maintaining and promoting **peace, stability, maritime safety and security, freedom of navigation and overflight** in the **Indo-Pacific region**.

(c) They agreed to **enhance cooperation** in the space sector through the establishment of **Tracking, Data reception and Processing Stations** in Vietnam and Indonesia.

India-ASEAN Relationship Timeline

India's focused engagement with ASEAN started in **1992** when India launched its **Look East policy** and became a **sectoral dialogue partner of ASEAN**.

In 1996, India became a **dialogue partner** and subsequently a **summit level partner** in 2002.

At the 20th Commemorative Summit held in New Delhi in 2012, India-ASEAN relations were **elevated to a Strategic Partnership**.

In 2014, India revamped the Look East policy as the **Act East policy** to add strategic focus to engagements with ASEAN.

2022 marks the **30th anniversary of ASEAN-India relationship** and is being celebrated as the **ASEAN-India Friendship Year**.

Science and Technology

1. LVM3 M2/OneWeb India- 1 Mission Rocket of ISRO

News: ISRO has successfully completed the LVM3 M2/OneWeb India-1 Mission, placing 36 satellites into the intended orbit.

About the LVM3 M2/OneWeb India-1 Mission

LVM3-M2 is the dedicated commercial satellite mission of **NewSpace India Limited (NSIL)**. This mission is being undertaken as part of the **commercial arrangement entered into between NSIL and OneWeb Ltd.**

As part of this mission 36 OneWeb Gen-1 satellites meant for **global connectivity needs** have been launched into Low Earth Orbit.

Significance of the Mission

This was LVM3's **maiden commercial mission** and also NSIL's first with the LVM3 vehicle. The mission also has the **heaviest payload with 36 satellites of OneWeb**, becoming the first Indian rocket with a payload of 5,796 kg.

Vehicle Specifications

Height	: 43.5 m
Vehicle Diameter	: 4.0 m
Heat Shield (Payload Fairing) Diameter	: 5.0 m
Number of Stages	: 3
Lift Off Mass	: 640 tonnes

Technical Specification

Payload to GTO: 4,000 kg

GSLV Mk III will be capable of placing the 4 tonne class satellites of the GSAT series into Geosynchronous Transfer Orbits.

Payload to LEO (Low Earth Orbit) : 8,000 kg

The powerful cryogenic stage of GSLV Mk III enables it to place heavy payloads into Low Earth Orbits of 600 km altitude.



About LVM3 Rocket

The **Launch Vehicle Mark-3 (LVM 3)**, (**Geosynchronous Satellite Launch Vehicle Mark III (GSLV Mk3)**), is a **three-stage** medium-lift launch vehicle developed by ISRO. It has been designed to primarily launch **communication satellites into geostationary orbit**. It is also due to launch **Gaganyaan**, the first **crewed mission** under the **Indian Human Spaceflight Programme**. It has 2 solid propellants S200 strap-ons on its sides and a core stage comprising the **L110 liquid stage and C25 cryogenic stage**.

It has a higher payload capacity than its predecessor, **GSLV Mk II**.

India's Rockets

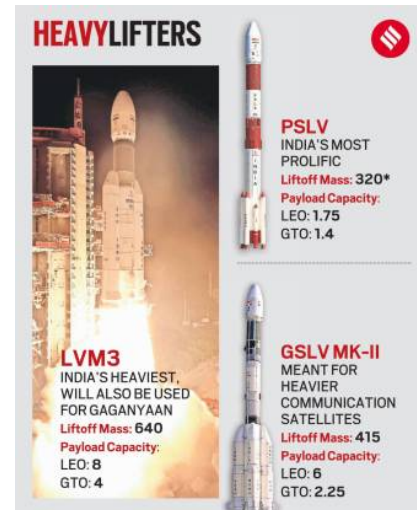
India currently has three operational launch vehicles:

Polar Satellite Launch Vehicle (PSLV): It has been the most commonly used having carried as many as **53 successful missions since 1993**. Only 2 flights of PSLV failed.

Geosynchronous Satellite Launch Vehicle or GSLV Mk-II: It has been used in 14 missions, of which **4 have ended in failures**, most recently in 2021.

Launch Vehicle Mark-3 or LVM3: It has been flown 5 times, including the Chandrayaan 2 mission.

In addition, ISRO has been working on a **reusable launch vehicle (RLV)**. Unlike other rockets, the RLV **would not end up in space as waste**. Instead, it can be brought back and refurbished for use multiple times.



Constraints of Launch Vehicles

The size of a launch vehicle is dictated by: **(a)** The destination in space; **(b)** Type of fuel mix (solid, liquid, cryogenic); **(c)** Size of the payload.

The choice of any two of these variables places **severe restrictions on the flexibility** of the third, which is popularly referred to as the **“tyranny of the rocket equation”**.

Gravity till LEO: Most of a rocket's energy is burnt in **travelling to the lower earth orbit** because the **force of gravity is the strongest** here.

The gravity of the destination: If a space mission is headed towards any celestial body, more energy would be expended compared to simply attaining a space orbit.

2. Carbon Dating Methods

News: The Varanasi District Court rejected the plea to conduct carbon dating inside the Gyanvapi Mosque.

About Carbon Dating

Carbon dating is a widely-used method to **establish the age of organic materials**, things that were once living. It can be estimated by **measuring the amount of radioactive Carbon-14 isotope** present in the object.

Working Principle of Carbon Dating Method

Plants and animals get their carbon from the atmosphere. They acquire C-12 and C-14 in roughly the same proportion as is available in the atmosphere. Plants get their carbon through photosynthesis; animals get it mainly through food.

When they die, their **interactions with the atmosphere stops**. While C-12 is stable, the radioactive C-14 reduces to one-half of itself in about 5,730 years (known as its **‘half-life’**). The **changing ratio of C-12 to C-14 in the remains of a plant or animal after it dies** can be measured and can be used to deduce the approximate time when the organism died.

Limitations of Carbon Dating Method

The Carbon Dating method **cannot be used to determine the age of non-living things** like rocks. Also, the age of things that are more than 40,000-50,000 years old cannot be arrived at through carbon dating. This

is because, after 8-10 cycles of half-lives, the **amount of C-14 becomes very small** and is almost undetectable.

Other types of Dating Methods

Radiometric Dating Methods: In this method, decays of other radioactive elements that might be present in the material become the basis for the dating method. Two commonly employed methods for dating rocks are:

(a) Potassium-Argon Dating: The radioactive isotope of potassium decays into argon and their ratios can give a clue about the age of rocks.

(b) Uranium-Thorium-Lead Dating: Uranium and Thorium have several radioactive isotopes, and all of them decay into the stable lead atom. The ratios of these elements present in the material can be measured and used to make estimates about age.

3. Viral Spillover

News: According to new research there is an increased risk of 'viral spillover' in some regions that can cause new pandemics.

About Viral Spillover

Viruses need to **infect a host's cell** in order to replicate.

According to the research, these virus-host relationships seem **relatively stable within super kingdoms**, the major groupings of organisms. However, below this rank, viruses **may infect a new host from a reservoir host** (in which it usually resides) by being able to transmit sustainably in a novel host – a process defined as '**viral spillover**'.

Many viruses in recent years such as **Influenza A, Ebola, and SARS-CoV-2 (COVID-19) spilled over to humans** and caused significant diseases.

Viral Spillover and New Pandemics

Researchers collected samples from **Lake Hazen in Canada**. Based on the study, they concluded that climate change is melting glaciers and this could **create a possibility of the emergence of new viruses trapped in the ice for years**. The hosts (humans or animals) can move to **previously inhabitable regions** and can come in contact with such pathogens which could cause viral spillover.

4. Autonomous Vehicles

News: Autonomous Vehicle manufacturers like Tesla face several challenges including lawsuits over fatal accidents associated with these vehicles.

About Autonomous Vehicles

An autonomous vehicle (**driverless vehicle**) is able to operate itself and perform necessary functions **without any human intervention** through the ability to sense its surroundings and algorithm driven software.

Autonomous vehicles have **several advantages like cutting transportation costs, reduce emissions, reduce accidents** due to **human error and reduce human stress**.

Ethical issues with Autonomous Vehicles

Giving Control to the Driver: Tesla vehicles require the driver to be **ready to take over control from the autonomous mode** at any time. If an accident occurs, there is a **question of who is responsible** for accident and the resulting losses: Driver or Car?

Accountability: In case of accident, **who will be held accountable**, the car owner or the manufacturer.

Decision Makers: Generally, the ethics of self-driving cars are determined by the **engineers who work on the car's technology**. What they deem right or wrong determines how the car will act in certain situations like accidents. There is argument **whether Engineers should be given this responsibility or should the Government set the ethical standards**.

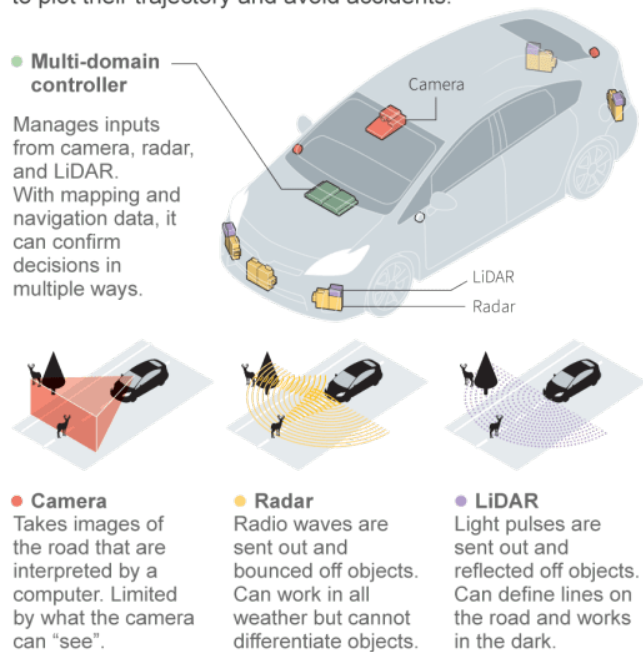
Program the Car to Make an Impartial Decision: The best way for a self-driving car is to make an **impartial decision** in case of accidents. They must not discriminate between humans based on age, gender, or other parameters. They should always make a decision that causes the least impact.

Loss of jobs due to automation: Job loss to drivers without compensatory skill development and job creation. It is believed that in the coming future automation will kill 69% of jobs.

Hacking dilemma: There is always a risk of a **cyber-criminals hacking into the car's system** to gain access to sensitive data or to carry out a misdeed.

How self-driving cars see the road

Autonomous vehicles rely on a host of sensors to plot their trajectory and avoid accidents.



Source: Delphi

5. Oral Rehydration Therapy

News: Dr Dilip Mahalanabis, the pioneer of Oral Rehydration Therapy died recently.

About the Oral Rehydration Therapy (ORT)

It involves providing drinking water with **modest amounts of sugar and salts**, specifically sodium and potassium. It **treats dehydration due to fluid losses** from diarrhoea.

Earlier fluids were administered through an **intravenous route** for the management of cholera. This required trained medical staff for administration of fluids. Only sips of water without food were provided. It **worsened the underlying malnutrition problems**.

Dr Dilip Mahalanabis developed the **Oral Rehydration Solution (ORS)**. He mixed salt and sugar solution in drums and administered it to the cholera patients. This was a **much simpler treatment and didn't require specialist medical workers**. ORS **reduced mortality due to cholera or acute diarrhoeal diseases** from 40% to 5%.

Impact of ORT

An estimated 54 million diarrhoeal deaths were averted by ORT alone between 1978 and 2000. A Lancet editorial in 1978 termed it as potentially the most important medical advance in India. A Current Science article in 2019 noted, "**ORT remains the greatest contribution from the Indian subcontinent towards achieving Sustainable Development Goals**".

Environment

1. Put Forest Conservation Rules, 2022 on Hold: National Commission for Scheduled Tribes

News: The National Commission for Scheduled Tribes (NCST) has asked the Ministry of Environment, Forest and Climate Change (MoEFCC) to put Forest Conservation Rules, 2022 on hold.

About the Forest Conservation Rules, 2022

Forest Conservation Rules 2022, were issued by the Environment Ministry under the Forest Conservation Act. The Forest Conservation Rules deal with the implementation of the **Forest Conservation Act (FCA), 1980**. They prescribe the procedure to be followed for **diversion of forest land for non-forestry uses** such as **road construction, highway development, railway lines, and mining**.

The broad aims of the Forest Conservation Act are to **protect forest and wildlife**, act **as a check on the State Governments'** attempts to **divert forest land for commercial projects** and strive to **increase the area under forests**.

At the same time, the **Forest Rights Act, 2006** requires the Governments to seek **free, prior, and informed consent of forest dwellers** before allowing a project on their traditional lands.

Forest Conservation Rules, 2022 **shifted the responsibility of the Union Government** to take the consent of Adivasis (before the approval of a project) onto the **State Governments**. It means that the burden to ensure the rights of Scheduled Tribes to their traditional forestlands is now with the State Governments.

The new rules **allow the Union Government to permit the clearing of a forest before consulting its inhabitants**.

NCST's Response to the Rules

NCST formed a **6-member working group** to look into whether the rules **violated any provisions in the Forest Rights Act (FRA)** and if they infringed upon the rights of tribal people.

Based on the conclusion of the working group, NCST has asked the Ministry of Environment to put on hold the Forest Conservation Rules, 2022. The removal of requirement of consent of local tribes would amount to **infringing upon the land rights** of tribal people under the Forest Rights Act.

It has also asked the Government to focus on **implementing the rules framed in 2017** and put on hold the new rules.

2. Emissions Gap Report, 2022

News: The Emissions Gap Report, 2022 has been released by the UN Environment Programme (UNEP).

About the Emissions Gap Report, 2022

The Report has been released by the **UN Environment Programme (UNEP)**. Its aim is to provide an overview of the difference between the projected greenhouse gas (GHG) emissions in 2030 and where they should be to avert the worst impacts of climate change. The 2022 Report is the 13th edition in the annual series.

Key Findings of the Report

(a) The **world is falling short of the goals** set forth in the Paris Climate Agreement adopted in 2015.

(b) **No credible pathway** is currently in place to restrict global warming to under 1.5°Celsius above pre-industrial levels.

(c) The **top 7 emitters** (China, the EU27, India, Indonesia, Brazil, the Russian Federation and the United States of America) plus **international transport** accounted for **55%** of global GHG emissions in 2020. These seven countries' GHG emissions have **rebounded in 2021 exceeding pre-pandemic 2019 levels**.

- (d) G20 members are responsible for **75% of global GHG emissions**.
(e) The global average per capita GHG emissions was **6.3 tonnes of CO₂ equivalent (t CO₂e) in 2020**.

Recommendations given by the Emissions Gap Report 2022

The world needs to reduce greenhouse gases by unprecedented levels over the next 8 years. There is a **need for alternative technologies in heavy industry, to reverse the rise in the carbon intensity of global steel production**.

Urgent transformation is needed to deliver the enormous cuts needed to limit GHG emissions by 2030.

3. Adaptation Gap Report, 2022

News: The UNEP has released the Adaptation Gap Report, 2022 titled “Too Little Too Slow: Climate Adaptation Failure puts World at Risk”.

Key Findings of the Report

Climate impacts are increasing across the globe.

(a) A multi-year drought in the Horn of Africa, unprecedented flooding in South Asia and severe summer heat and record-breaking droughts across multiple regions of the Northern Hemisphere among others point to **mounting and ever-increasing climate risks**. Ambitious, accelerated action to adapt to climate change is therefore paramount together with strong mitigation efforts; (b) Global efforts in adaptation planning, financing and implementation continue to make incremental progress but **fail to keep pace with increasing climate risks**; (c) ~33% of the 197 parties to the United Nations Framework Convention on Climate Change (UNFCCC) have **incorporated quantified and time-bound targets for adaptation**. And 90% of them have considered **gender and disadvantaged groups**; (d) International adaptation **finance flows are 5-10 times lower than required** and this gap continues to grow. Finance for adaptation increased to US\$ 29 billion in 2020, only 4% increase over 2019. This is when developing countries estimated annual adaptation needs are \$160-\$340 billion by 2030 and \$315-\$565 billion by 2050.

Recommendations given by the Report

The adaptation gap must be addressed in four critical ways: (a) **Increase financing** for adaptation; (b) The world urgently **needs a new business model** for turning adaptation priorities into investable projects; (c) Availability of **climate risk data and information**. It is an issue for **adaptation planning** in many developing countries; (d) Implementation and **operationalisation** of **early warning systems** against extreme weather events and **slow onset changes such as sea level rise**.

4. ‘A Natural Disaster Every Day in India’: CSE Report

News: According to a report by the Centre for Science and Environment (CSE), India saw natural disaster every day in the first 9 months of 2022.

Key Findings of the Report

India recorded **extreme weather events on 242 of the 273 days from January 1 through September 30, 2022**. These include heatwaves, cold waves, cyclones, lightning, heavy rainfall, floods and landslides.

Worst Hit: Madhya Pradesh was the worst hit, with **one event every second day**.

Loss and Damage: The **number of deaths** due to these events was the **highest in Himachal Pradesh**. Assam reported the highest number of damaged houses and animal deaths.

Region-wise: Central and north-western India reported the highest number of days with extreme weather events.

The United Nations Framework Convention on Climate Change (UNFCCC) in its working **definition of loss and damage** says that it is “negative effects of climate variability and climate change that people have not been able to cope with or adapt to”.

5. The State of Global Climate Report, 2022

News: The State of Global Climate Report, 2022 has been released by the World Meteorological Organization (WMO).

Key Findings of the Report

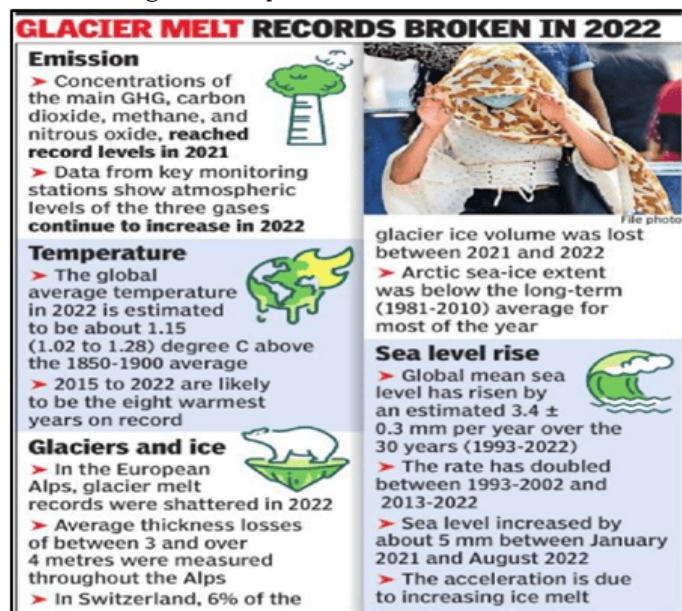
Global Mean Temperature: The global mean temperature in 2022 is estimated to be about **1.15°C above the pre-industrial level (1850-1900 average)**. This makes it **difficult to meet the goal of keeping warming within the 1.5°C goal** by the end of the century.

Eight warmest years on record: Ever-rising **greenhouse gas concentrations** and the **accumulated heat** have made the past 8 years (2015-22) the **8 warmest on record**. The warmest year on record so far has been 2016, with recorded global mean temperatures about 1.28°C higher than pre-industrial times.

Impact of rise in temperature: The impact of rise in temperature can be seen in: (a) **Record breaking rain** in July and August that led to flooding in Pakistan; (b) **Repeated heat waves** in Europe; (c) The UK saw a **new national record in July, when the temperature topped more than 40°C** for the first time.

Vulnerable population most affected: Intense heat waves due to global warming is **life-threatening to the poor and vulnerable populations**.

Sea Level rise: The rate of sea level rise has doubled since 1993. It has **risen by 10 mm since January 2020** to a new record high this year. The past two and a half years alone account for 10% of the overall rise in sea level.



6. e-Waste Management Rules, 2022

News: The Ministry of Environment, Forest and Climate Change has published the e-Waste Management Rules, 2022. The Rules will come into force on April 01, 2023.

Key Provisions of e-Waste (Management) Rules, 2022

Applicability of rules: The rules are applicable to every manufacturer, producer, re-furbisher, dismantler and recycler involved in the manufacturing, sale, transfer, purchase, refurbishing, dismantling, recycling and processing of e-waste or electrical and electronic equipment.

However, these rules **do not apply to waste batteries, packaging plastics, micro-enterprises and radioactive waste** as they are already covered under the other provisions of the law.

Reduce the use of Hazardous substances: The rules mandate to reduce use of **lead, mercury, and cadmium** among others in the manufacturing of electronic equipment that has an **adverse impact on human health and the environment**.

Recycle products: It is the responsibility of the manufacturer to **collect e-waste generated during manufacture** and to ensure its recycling or disposal. Manufacturers shall use the technology or methods so as to **make the end product recyclable**. Further, they shall ensure that components or parts made by different manufacturers are **compatible with each other** so as to reduce the quantity of e-waste.

Role of CPCB: The Central Pollution Control Board shall **conduct random sampling** of electrical and electronic equipment placed on the market to monitor and **verify the compliance of reduction of hazardous substances provisions**.

Imports or placement in the market for new electrical and electronic equipment shall be permitted only for those which are compliant with provisions laid down by the Government. If a product does not comply with the rules, the **manufacturer will have to withdraw all samples** from the market. (Refer EPIC October 2022 for Circular Economy: Meaning, Benefits and Opportunities).

7. Mangrove Alliance for Climate (MAC)

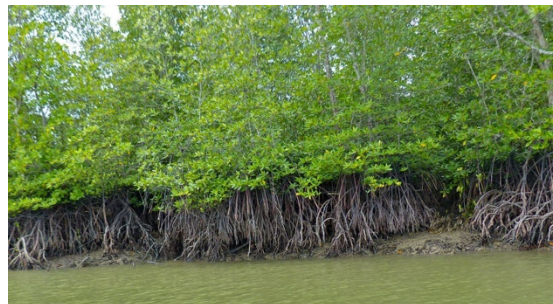
News: India has joined the Mangrove Alliance for Climate launched during the COP27 in Egypt.

About the Mangrove Alliance for Climate (MAC)

It has been created with the efforts of the UAE and Indonesia. Its aim is to **educate and spread awareness** on the **role of mangroves in curbing global warming** and its potential as a solution for climate change.

Its members include the UAE, Indonesia, India, Sri Lanka, Australia, Japan and Spain.

The alliance works on **voluntary basis** which means that there are **no checks to hold members accountable**. The parties will decide their own commitments and deadlines regarding the planting and restoring mangroves. The members will also **share expertise** and support each other in **researching, managing and protecting coastal areas**.

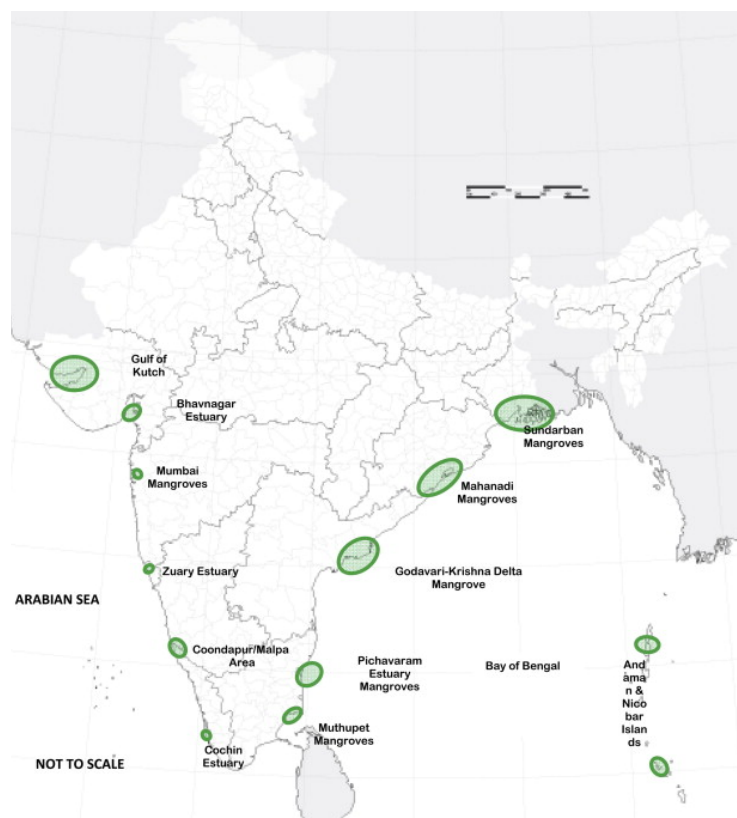


About Mangroves

A mangrove is a shrub or a small tree that **grows along the coastlines** and has roots in salty sediments, often underwater.

They also **grow in swamps**. Mangrove forests **can survive extreme weather conditions** and require low oxygen levels to survive. Mangroves are distributed in the **tropical and subtropical regions** of the world in 123 countries.

Mangroves are among the **most carbon-rich forests** in the tropics. They account for **3% of carbon sequestered** by the world's tropical forests.



Mangrove forests act as **natural barriers against rising tides and storms**. Each year, **they prevent property damages of over US\$ 65 billion**.

UNESCO celebrates **July 26 as the International Day for the Conservation of the Mangrove Ecosystem** to **raise awareness about mangrove ecosystems** and to **promote their conservation**.

About the Status of Mangrove Cover

Asia has the maximum share of mangrove area in the world. According to the India State of Forest Report, 2021, total **mangrove cover in India is 4,992 sq km**. Mangroves are spread across West Bengal, Gujarat, Maharashtra, Odisha, Andhra Pradesh, A&N Islands and Tamil Nadu among others.

Mangrove area in India has recorded an **increase of 7.07% in 2021**. Moderately dense mangrove forests have reduced by 10.68% between 2011 and 2021. Very dense Mangrove forests and Open Mangrove forests have recorded a marginal increase of 5.13% and 27.14% respectively.

West Bengal has the highest forest cover under mangroves among the 9 States and 3 UTs.

Infrastructure projects, industrial expansion, and natural processes like **shifting coastlines, coastal erosion** and storms, have resulted in a significant decrease in mangrove habitats.

According to the Global Mangrove Alliance 2022 report, between 2010 and 2020, around 600 sq km of mangroves were lost of which **more than 62% was due to direct human impacts**.

History, Art and Culture

1. National Maritime Heritage Complex at Lothal Gujarat

News: The National Maritime Heritage Complex is planned to be built in Lothal, Gujarat.

About the National Maritime Heritage Complex (NHMC)

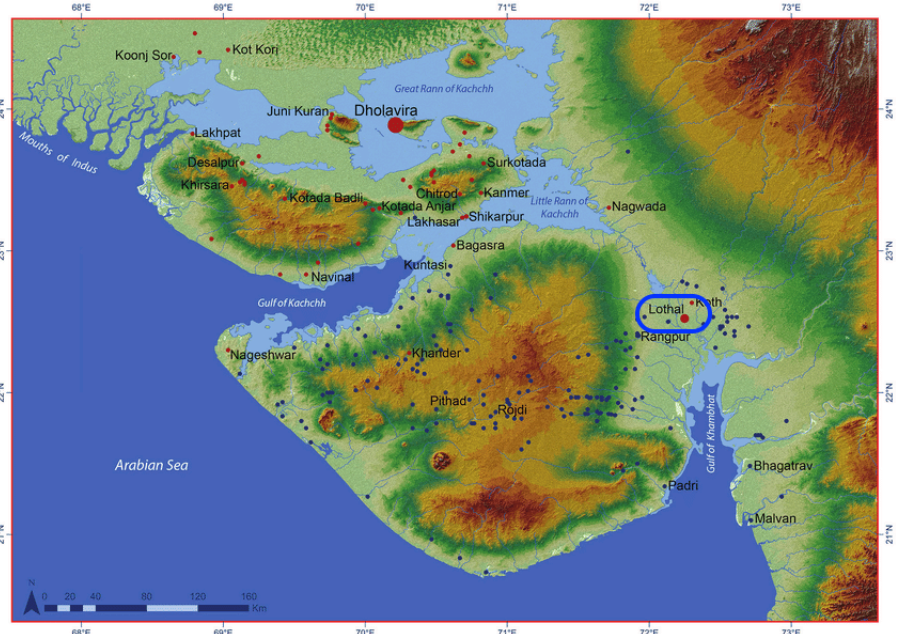
It will be developed in Lothal region of Gujarat. It would be developed as an international tourist destination, showcasing the maritime heritage of India from ancient to modern times.

The idea is to create an **edutainment (education with entertainment) approach** for this destination. It will cover an area of 400 acres, with structures such as Heritage Theme Park, National Maritime Heritage Museum, Lighthouse Museum, Maritime Institute, eco-resorts, and more. There will also be many pavilions where all coastal States and UTs can showcase their artifacts and maritime heritage.

About Lothal

Lothal was one of the **prominent cities of the Indus Valley Civilization (IVC)**. It was one of the southernmost sites of the IVC located in the Bhāl region of the present-day Gujarat. The port city is believed to have been built in 2,200 BC. The meaning of Lothal (a combination of Loth and (s) thal) in Gujarati is **“the mound of the dead”**.

The site is known for the discovery of the **oldest man-made dockyard** which was connected to an old course of the



Sabarmati River. Other features include the acropolis, the lower town, the bead factory, the warehouses, and the drainage system.

Lothal was a **thriving trade centre** in ancient times with its trade of beads, gems and ornaments reaching West Asia and Africa.

The site has been **nominated to be enlisted as a UNESCO World Heritage Site**.

2. Coins with Images of Deities

News: The tradition of having images of deities on coins dates to ancient times.

Evolution of the Coinage System in India

Indus Valley Civilization: The Indus valley civilization dates back between 2500 BC and 1750 BC. However, there is **no consensus** on whether the **seals** excavated from the sites were in fact **coins**.

'Punched Marked' Coins: The first documented coinage is deemed to start with 'Punch Marked' coins issued between the 7th-6th century BC and 1st century AD. These coins are called 'punch-marked' coins because of their manufacturing technique. They were mostly made of silver and bore symbols punched on the coin. They are broadly classified into two periods: **(a)** The first period is attributed to the **Janapadas**; **(b)** The second period is attributed to the **Imperial Mauryan period**. The motifs found on these coins were mostly **drawn from nature like the sun**, various animal motifs, trees, hills etc.

Dynastic Coins: The earliest of these coins relate to those of the Indo-Greeks, the Saka-Pahlavas and the Kushans. These coins are generally placed between the 2nd century BC and the 2nd century AD.

Indo-Greeks: Hellenistic traditions characterize the silver coins of the Indo-Greeks, with **Greek gods and goddesses** figuring prominently, apart from the portraits of the issuers.

Sakas: The Saka coinage of the Western Kshatrapas are the earliest dated coins, associated with the Saka era which commences in AD 78. The Saka era represents the official calendar of the Indian Republic.

Kushans: Kushans hailed from the Central Asian region and were the **first to use the image of Goddess Lakshmi** on their coins, along with **Ardochsho**, the Iranic Goddess of wealth. They also depicted **Oesho** (Shiva), moon deity **Miro** and **Buddha** in their coinage.

Satavahana: Their coins were predominantly of copper and lead however, silver issues are also known. These coins carried the motifs of fauna like elephants, lions, bulls, horses, etc. often juxtaposed against motifs from nature like hills, trees, etc. The silver coins of the Satavahanas carried portraits and bilingual legends, which were inspired by the Kshatrapa types.

Gupta: Gupta coinage (4th-6th centuries AD) followed the tradition of the *Kushans*, **depicting the king on the obverse** and a **deity on the reverse**; the deities were Indian, and the legends were in **Brahmi**. The earliest Gupta coins are attributed to Samudragupta, Chandragupta II and Kumaragupta and their coins often commemorate dynastic succession as well as significant socio-political events, like marriage alliances, the horse sacrifice or for that matter artistic and personal accomplishments of royal members.

South India Coinage: The symbols and motifs on South Indian coin issues were confined to dynastic crests such as the boar (*Chalukya*), bull (*Pallava*), tiger (*Chola*), fish (*Pandya* and *Alupas*), bow and arrow (*Cheras*) and lion (*Hoysala*) etc.

Vijayanagara: Vijayanagara kings used **coinage with Hindu idols**. Harihara -II (1377-1404) introduced coins that had *Brahma-Saraswati*, *Vishnu-Lakshmi* and *Shiva-Parvati*.

British India: The British East India Co. at **Madras Presidency** minted coins labelled as the **Three Swamy Pagoda**, which depicts **Lord Balaji** flanked by **Sridevi** and **Bhudevi** on either side.

3. Kalanamak Rice

News: Indian Agriculture Research Institute (IARI) has successfully developed two dwarf varieties of Kalanamak rice, named Pusa Narendra Kalanamak 1638 and Pusa Narendra Kalanamak 1652.

About Kalanamak Rice

Kalanamak is a traditional type of rice with a **black husk** and a powerful fragrance.

The rice is considered a **gift from Lord Buddha to the people of the Sravasti** when he visited the region **after enlightenment**. It is currently grown in 11 districts of the **Terai region** of North-eastern **Uttar Pradesh** and in Nepal (specifically Kapilvastu).

This rice is **rich in micronutrients** such as **iron and zinc** and can **help prevent Alzheimer's**. It also contains 11% protein which is almost double of common rice varieties.

This rice has been awarded the **Geographical Indication (GI) tag** in 2013 which recognised **Siddharthnagar** and the adjacent districts for the tag.

Under the **One District One Product (ODOP) Scheme**, it has earned the Prime Minister's award for Excellence in Public Administration 2021. It was also featured in the book '**Speciality Rice of the World**' by the Food and Agriculture Organization (FAO).



Problems faced by Kalanamak Rice

Kalanamak has been **prone to 'lodging'** which is one of the reasons for its low yield. Lodging is a condition in which the top of the plant becomes heavy because of grain formation, the stem becomes weak, and the plant falls to the ground.

New Varieties

Indian Agriculture Research Institute (IARI) has successfully developed two dwarf varieties of Kalanamak rice named **Pusa Narendra Kalanamak 1638 and Pusa Narendra Kalanamak 1652**.

The traditional Kalanamak paddy's yield is barely two to 2.5 tonnes per hectare. The yield of these new varieties is double that of the traditional variety.

4. Anthropological Survey of India Showcases Heritage of Tribal Communities

News: Anthropological Survey of India has showcased the heritage of tribal communities by recreating the huts of several communities at its different regional centres.

About Tribal Communities Showcased by the Anthropological Survey of India (AnSI)

Jarawas are indigenous people of the **Andaman Islands** in India. They live in parts of South Andaman and Middle Andaman Islands. The traditional Jarawa hut is called a **chadda**.

Shompen (Shom Pen): They are the indigenous people of the interior of **Great Nicobar Island**, part of the Andaman and Nicobar Islands.

Both the Jarawa and Shompen communities are **Particularly Vulnerable Tribal Group (PVTGs)** living in the Andaman and Nicobar Islands. While the population of Shompen people is said to be less than 300, there are about 500 members of the Jarawa tribe.

Khasis: Khasi people are an ethnic group of **Meghalaya** with a significant population in the bordering state of Assam and in certain parts of Bangladesh. The Khasi people form Meghalaya's largest community. They are

among the few **Austroasiatic-speaking** peoples in South Asia. A cultural tradition of the Khasi people is that they follow the **matrilineal system**.

Dorla also called **Dora** are a tribal people community found mainly in the **Bastar region of central India**. They are mainly found in Dantewada and Bijapur districts of present-day Chhattisgarh.

Betta Kuruba (Betta meaning 'Hill', Kuruba meaning 'shepherd') tribe lives in the **hilly regions of Karnataka** and is one of the few indigenous communities of the Nilgiris.



About the Anthropological Survey of India (AnSI)

Anthropological Survey of India is the only research organization to pursue anthropological research in a Governmental setup.

Its genesis was from the Zoological and Anthropological section of the Indian Museum which became the Zoological Survey of India in 1916.

In 1945, the Anthropology section of the Zoological Survey was carved out to eventually become the Anthropological Survey of India. Its headquarters are located in Kolkata, West Bengal.

5. Self-Employed Women's Association (SEWA)

News: Ela Bhatt, a noted Gandhian, and founder of the Self-Employed Women's Association (SEWA) has passed away.

About the Self-Employed Women's Association (SEWA)

SEWA is the **single largest Central trade union** registered in 1972 with a base of over 2.1 million members from India and in neighbouring nations. It grew out of the **Textile Labour Association (TLA)** — founded by Anasuya Sarabhai and Mahatma Gandhi in 1920.

It was founded on the principle “*poor do not need charity they need an enabling mechanism to come out of the vicious circle of poverty and vulnerability*”.

It has twin goals: **(a) Full employment:** Achieve **work security, food security and social security**; **(b) Self-reliance:** At individual and community levels in terms of economic as well as **decision making abilities**.

SEWA allows anyone (women) who is **self-employed to become a member**.

Importance and Achievements of SEWA

It has helped rehabilitate women in **personal, and even political or social crises** by empowering them through skilling and training.

In 1974, **SEWA Bank** was established to provide **small loans to poor women** which was recognised by the International Labour Organisation as a **microfinance movement**.

The Unorganised Workers Social Security Act (2008), the National Rural Livelihoods Mission (2011), and the Street Vendors Act (2014) are seen as **successes of SEWA's struggle**.

The PM Street Vendor's AtmaNirbhar Nidhi (PM-SVANidhi) scheme is seen as being **inspired by SEWA's microfinance model**.

During the pandemic, SEWA launched **Anubandh**, an e-commerce platform to connect sellers with buyers, to provide vital support during the lockdown.

6. Mother Tongue Survey of India

News: The Ministry of Home Affairs (MHA) has completed the Mother Tongue Survey of India (MTSI) with field videography of the country's 576 languages.

About the Mother Tongue Survey of India

Its aim is to **preserve and analyse the original flavour** of each **indigenous mother tongue**. National Informatics Centre (NIC) and the National Film Development Corporation (NFDC) will be **documenting and preserving the linguistic data** of the surveyed mother tongues in audio-video files.

As part of this survey, **field videography of 576 mother tongues was done**. The video-graphed speech data of these languages and dialects will be uploaded to the National Informatics Centre (NIC) server for archiving purposes.

About 'Mother Tongues' in India

According to an analysis of 2011 linguistic census data, **more than 19,500 languages or dialects are spoken in India as mother tongues**.

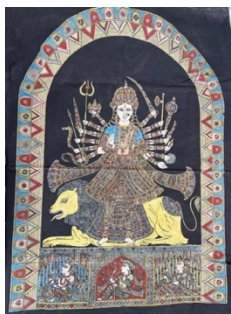
The category "mother tongue" is a designation provided by the respondent during census, but it need not be identical with the actual linguistic medium. Hence, after subjecting these languages to linguistic scrutiny, they were grouped into **121 mother tongues**. Hindi is the most widely spoken mother tongue, with 52.8 crore people or 43.6% of the population declaring it as the mother tongue. The next highest is Bengali spoken by around 8% of the population.

7. Gifts for G20 Leaders

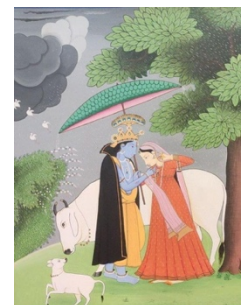
News: The Prime Minister presented exquisite gifts to the G20 Leaders at the 17th Summit in Bali.

Gifts Presented by the Prime Minister

The US: The US President was presented **Kangra miniature paintings** from Himachal Pradesh. The paintings depict 'Shringar Rasa' (Love) on a natural, organic backdrop. The style reached its zenith during the reign of **Maharaja Sansar Chand Katoch** who was a great patron of Kangra art. These paintings are made today by master painters from Himachal Pradesh using natural colours.



The UK: The UK Prime Minister Rishi Sunak received **Mata Ni Pachedi**, a **handmade textile** piece crafted by the nomadic community of **Waghri** in **Gujarat**. It is meant to be an **offering in temples** that house the Mother Goddess, as homage to the various incarnations of the Goddess. The deity forms the central figure in the design, while being flanked by other story elements.



Italy: The Italian Prime Minister Giorgia Meloni was presented a **Patan Patola** (a scarf), a colourful *dupatta*. The scarf has been woven by the **Salvi family** in the Patan area of Northern Gujarat. The complex motifs placed in this exquisite dupatta (scarf) are inspired from the '**Rani ki Vav**', a stepwell in Patan, built in 11th century AD. It is well-crafted that its front and reverse are indistinguishable. The scarf is packed in a decorative '*Sadeli*' box.



Australia: The Australian Prime Minister Anthony Albanese was gifted a **Pithora wall-painting** made by the **Rathwa artisans from Chhota Udaipur in Gujarat**. These paintings are depictions of the **cave paintings** that the tribe used to make, reflecting the social, cultural and mythological life and beliefs of those tribals. The paintings bear a striking **resemblance to the Aboriginal dot paintings** of the indigenous communities of Australia.



Spain: The Spanish Prime Minister Pedro Sanchez was gifted a **Kanal brass set** from **Himachal's Mandi and Kullu districts**. The Kanal brass set is a large, straight brass trumpet, over a metre long, played in parts of Himalayan India. It is used on **ceremonial occasions**, such as the processions of village deities. These are made in Mandi and Kullu districts of Himachal Pradesh by skilled metal craftspeople.

Indonesia: A **Kinnauri shawl** was presented to Indonesian President Joko Widodo. The design of this specific piece shows influences from Central Asia and Tibet. He was also gifted with a **silver bowl** from Surat. The silver bowl is a centuries-old craft perfected by the traditional and highly skilled metalsmiths of Surat.



France, Germany, Singapore: Leaders of France, Germany and Singapore received Kutch's '**Agate Bowl**'. The semi-precious stone, formed of **chalcedonic-silica**, is found in underground mines of Rajpipla and Ratanpur in riverbeds, and extracted to produce a variety of ornamental objects. The craft has been passed down through generations of artisans since the **Indus Valley civilization** and is currently practised by artisans of Khambat. Agate can be seen in various contemporary designs as home decor objects as well as fashion jewellery. The healing powers attributed to agate stones have sustained the use of agate over centuries.

Miscellaneous

1. Impact of Cold Ocean Currents on Galápagos Islands

News: According to a study, Cold Ocean currents have sheltered the Galápagos Islands from the impacts of global warming.

About Galápagos Islands

The Galápagos Islands are a part of Ecuador. These are located in the **Pacific Ocean** around 1,000 km away from the South American continent.

The islands became **UNESCO's first World Heritage Site** in 1978. It is described by the UNESCO World Heritage Convention as a "**living museum and showcase of evolution**".

The islands contain aquatic species such as **manta rays** and **sharks** which have been endangered by commercial fishing. The Islands are also home to the **critically endangered Galápagos penguin**, **Galápagos fur seal** and **Galápagos sea lion**.

Role of Cold Currents

The Galápagos islands are protected from an otherwise warming the Pacific Ocean by a cold, eastward **equatorial ocean current**.

The equatorial undercurrent in the Pacific Ocean is **bound to the equator** by the force of the planet's rotation. Under the ocean's surface, a swift circulation of cold, nutrient-rich water flows from west to east.

Some of this **water is forced to the surface when it reaches the Galápagos Islands**. The nutrient-rich water triggers photosynthesis and leads to an explosion of food for a wide variety of animals.



2. 'Early Warning for All' Initiative

News: The UN Secretary General has launched the Executive Action Plan for the Early Warnings for All Initiative.

About the Executive Action Plan for the Early Warnings for All Initiative

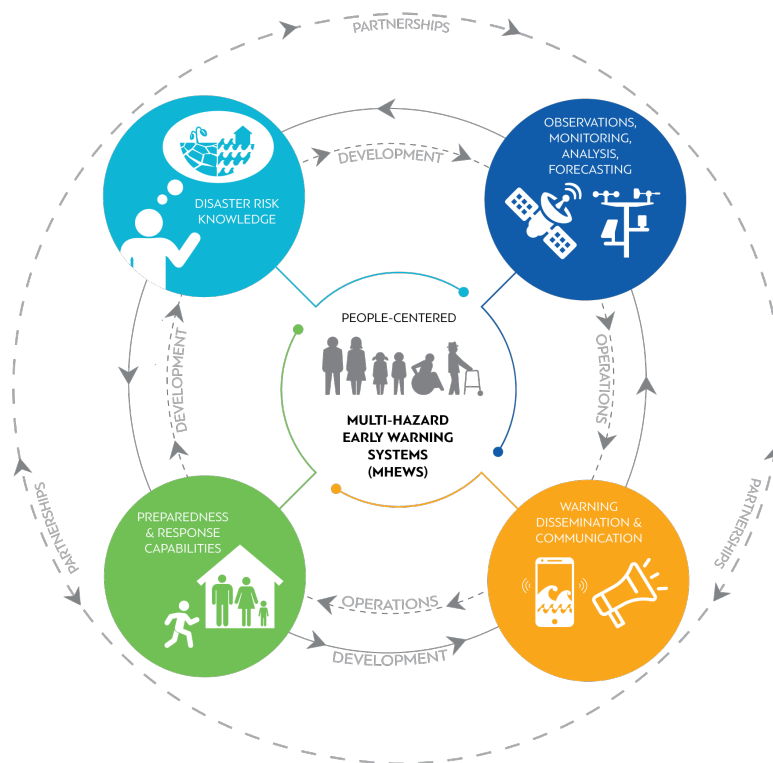
It has been prepared by the World Meteorological Organisation (WMO). It is a 5-year programme to **set up early warning systems across the world** to save lives and minimize destruction from the growing number of climate disasters. The plan envisages an investment of US\$ 3.1 billion between now and 2027 to create the infrastructure and build capacities in early warning systems. Nearly half the countries in the world, most of them least developed (LDCs) and Small Island States (SIDS), do not have any early warning systems.

About Early Warning Systems

Early warning system is an **adaptive measure for climate change**, using integrated communication systems to help communities prepare for hazardous climate-related events.

It is a proven, effective and feasible climate adaptation measure that saves lives and provides a tenfold return on investment e.g., a 24 hours-notice of an impending hazardous event can cut the ensuing damage by 30%.

The **Global Commission on Adaptation** had found that spending about US\$ 800 million on early warning systems could avoid losses of up to US\$ 3-16 billion every year.



3. Legal Right to Non-Humans

News: A Report titled ‘Law in the Emerging Bio-Age’ has proposed giving legal rights to plants, animals and non-living entities for building meaningful human-environment relationships.

Need to Give Legal Rights to Non-humans

Ethical conduct in the emerging Bio Age: Increased Integration of biotechnology in human life will bring in the **Bio-age**. This era will require legal intervention to **hold researchers accountable** for the impact of their work on the environment. The granting of legal rights and protection to non-human systems – flora, fauna, rivers, ecosystems and landscapes – would recalibrate human-environment relationships and bring ethical conduct to the field.

Legal Rights to Non-Humans at a Global Level

Ecuador: It is the first country in the world to **recognise the rights of nature**. In 2008, Ecuador approved a constitution that grants tropical forests, islands, rivers and air, legal rights to “**exist, flourish and evolve**”. In 2022, Ecuador became the **first country to grant legal rights to individual wild animals**.

Bolivia: Bolivia granted all nature rights equal to that of humans in 2011. It established the Law of the Rights of Mother Earth which redefined Mother Earth as an **indivisible community of all living systems and living organisms, interrelated, interdependent and complementary**, which share a common destiny.

New Zealand: Whanganui River was the **first in the world** to be given legal status.

Status of Legal Rights to Non-humans in India

Article 51-A(g): It is the fundamental duty of every citizen to protect wildlife and have compassion for all living creatures.

Uttarakhand High Court Judgment (2017): It granted the rivers **Ganga and Yamuna the legal right** to be **protected** and not be harmed. However, **SC stayed it due to various legal and administrative issues** and said it was unsustainable.

The Wildlife Protection Act (1972) and **the Cruelty to Animals Act (1960)** do not recognize animals as individual living entities.

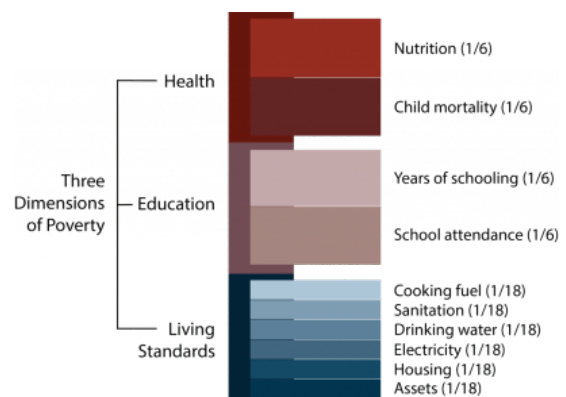
4. Global Multidimensional Poverty Index (MPI), 2022

News: The Global Multidimensional Poverty Index (MPI) 2022 has been released.

About the Multidimensional Poverty Index (MPI)

It is jointly released by the **United Nations Development Programme (UNDP)** and the **Oxford Poverty and Human Development Initiative (OPHI)**.

It **measures acute multidimensional poverty** across more than 100 developing countries. MPI constructs a **deprivation profile** of each household through 10 indicators spanning **health, education and standard of living**. All indicators are equally weighted within each dimension. The global MPI identifies people as **multidimensionally poor if their deprivation score is 1/3 or higher**.



Key Findings of the MPI 2022

Globally: Out of the total 610 crore people (in 111 developing countries), **19.1% or 120 crores live in multidimensional poverty**. Nearly **half of them live in severe poverty**.

India: The incidence of poverty fell from 55.1% in 2005-06 to 16.4% in 2019-21. ~41.5 crore people exited poverty in India during this period, (~67% exited in the first 10 years, ~33% in the next five years).

Bihar, the poorest State in 2015-2016 saw the **fastest reduction in MPI value in absolute terms**. The incidence of poverty there fell from 77.4% in 2005-2006 to 34.7% in 2019-2021.

However, still India has by far the **largest number of poor people worldwide at 22.8 crores**.

5. Global Dashboard for Vaccine Equity

News: The Global Dashboard for Vaccine Equity has been released.

About the Global Dashboard for Vaccine Equity

It is a joint effort of the **United Nations Development Programme (UNDP)**, the **World Health Organization (WHO)** and the **University of Oxford** with cooperation across the UN system. It combines the latest data on the global roll-out of COVID-19 vaccines with the most recent socio-economic information. The purpose is to illustrate criticality of vaccine equity in saving lives and ensuring faster recovery from the pandemic.

About Vaccine Equity

Vaccine equity means that vaccines should be allocated across all countries based on needs and regardless of their economic status. Access to and allocation of vaccines should be based on principles grounded in the **right of every human to enjoy the highest attainable standard of health without distinction of race, religion, political belief, economic or any other social condition**.

Key Findings from the Global Dashboard for Vaccine Equity

Accessibility of vaccines: Only 1 in 4 people (25%) have been vaccinated with at least one dose of the COVID-19 vaccine in low and middle-income countries. In comparison, in high-income countries, 3 in 4 (75%) people have got at least one dose of the vaccine.

Affordability of vaccines: High-income countries have to increase their healthcare spending by 0.8% on average to cover the cost of vaccinating 70% of the population. Low-income countries have to increase their healthcare spending by 30-60% on average to cover the cost of vaccinating 70% of the population.

6. Global Vaccine Market Report, 2022

News: The World Health Organization (WHO) has released the Global Vaccine Market Report, 2022.

Key Findings of the Report

The **vaccine supply base remains highly concentrated** as 10 manufacturers alone provide 70% of vaccine doses (excluding the COVID vaccine).

Lack of equitable vaccine distribution: African Region received just 3% of all COVID-19 vaccine doses.

Affordability is an obstacle to vaccine access.

Free market dynamics is depriving some of the world's poorest and most vulnerable people of their right to health. Therefore, changes are much needed in the global vaccine market to save lives, prevent disease and prepare for future crises.

Recommendations given by the Report

Government: (a) Frame clear immunization plans and more aggressive investment and stronger oversight of vaccine development; (b) Emphasize on regional research and manufacturing hubs; (c) Pre-agreeing rules for government collaboration in times of scarcity on issues such as vaccine distribution.

Industry: (a) Focus research efforts on WHO priority pathogens; (b) Ensure transparency; (c) Facilitate technology transfer and commit to specific equity-driven allocation measures.

International Organizations and Partners: (a) Prioritize Immunization Agenda 2030 goals; (b) Support country-driven initiatives; (c) Push for the application of resolutions on market transparency.

7. Peripheralization

News: According to a report by the Centre for Policy Research, recent resettlements of Delhi have set a new standard of peripheralization in its history.

About Peripheralization

Peripheria is an old Greek term that is used to describe the outside. In geographical terms, the periphery is referred to in the contexts of cities and regions. The periphery is usually the **lesser developed part of a town or region**, that is **usually located at the edge of the cities/regions** and far away from the developed, more “sophisticated” and often beautiful city or the regional centre. In the social sense, “peripheralization” describes the production of peripheries through social relations and their spatial implications.

Examples of Peripheralization

India: It has been observed that new settlements in Delhi (2010, displacement due to Commonwealth games and others) suffer from a new standard of peripheralization. These include poor access to basic services like water, healthcare, etc; inadequate housing provisions; located outside the ambit of ‘planned colonies’.

Globally: “The West” is the centre and (parts of) Africa, Latin America and Asia are the periphery.

8. Government Alert on Illegal Migrants

News: The Government of India has issued an alert on the illegal stay of Bangladeshi nationals in India.

About Illegal Migrants

Foreign nationals who **enter into the country without valid travel documents** are treated as illegal immigrants. All foreign nationals (including those who overstay beyond the validity of their visa period) are governed by the provisions contained in **The Foreigners Act, 1946; The Registration of Foreigners Act, 1939; The Passport (Entry into India) Act, 1920; and The Citizenship Act, 1955.**

Steps taken by the Government to tackle Illegal Migrants

(a) The Union Government has adopted a multi-pronged approach to **ensure effective surveillance** and domination of land borders to check the infiltration of illegal migrants.

(b) **Physical infrastructure** in the form of **border fencing, floodlighting, construction of border roads and establishment of border outposts** have been created.

(c) Vulnerable border outposts are regularly reviewed and strengthened by deploying additional manpower, **special surveillance equipment** and other **force multipliers**.

(d) A technological solution in the form of a **Comprehensive Integrated Border Management System (CIBMS)** has been implemented in some vulnerable border areas.

(e) Border guarding forces also conduct **regular patrolling**, lay nakas and establish observation posts and carry out **anti-tunnelling exercises** to stop illegal infiltration.

1. **Mauna Loa Volcano**

Mauna Loa means "long mountain" in Hawaiian. It is the **largest active volcano in the world**. It covers 5,271 sq. km., and is one of a chain of five volcanoes which form **Hawaii's Big Island**. It is the southernmost island in the Hawaiian archipelago. Mauna Loa's summit is 4,170m above sea level, but its **base is on the sea floor**. The total height is 30,085ft (9,170m), making it taller than Mount Everest. Mauna Loa has erupted after a period of almost 40 years. It does not produce explosive eruptions. Instead, the lava flows at a fairly slow pace down the volcano's side.



2. **Conference on Interaction and Confidence Building Measures in Asia (CICA)**

It is a multinational forum for strengthening cooperation towards promoting peace, security and stability in Asia. It was founded by Kazakhstan in 1992. The First summit was held in 2002. India is one of the founding members of CICA. Its Secretariat is located in Almaty (Kazakhstan). The CICA Summit is convened every 4 years. The CICA has 27 member countries, 9 observer states, and 5 international organizations.

3. **India-Africa Defence Dialogue (IADD)**

The 2nd India-Africa Defence Dialogue (IADD) was held on the side-lines of DefExpo 2022 in Gandhinagar, Gujarat. 1st Dialogue was held in Lucknow at DefExpo 2020. India's approach towards Africa is guided by the **Kampala Principles** enunciated by the Prime Minister of India in 2018. **Gandhinagar Declaration** was adopted at the Dialogue. It charted out new areas for enhancing the India-Africa defence and security partnership.

4. **IBSAMAR Exercise**

The 7th edition of IBSAMAR (IBSAMAR VII) was held at Port Gqeberha (Port Elizabeth), South Africa. It is a joint multinational **maritime exercise**, among the **Indian, Brazilian and South African Navies**.

5. **IMT TRILAT**

It is a trilateral maritime exercise among the Navies of India, Mozambique and Tanzania. The first edition of the exercise was conducted at Dar Es Salaam, Tanzania.

6. **Exercise Sea Vigil**

It is a **Coastal Defence Exercise** conceptualized in 2018 to validate various measures that have been instituted towards enhancing maritime security since November 2008 Terrorist Attacks. The exercise will be undertaken along the entire 7,516 km coastline and Exclusive Economic Zone of India. All the Coastal States and Union territories along with other maritime stakeholders will participate.

7. **No Money for Terror Conference**

The 3rd Ministerial Conference on No Money for Terror (Countering Financing of Terrorism) was held in New Delhi. Its aim is to make progress on the discussions on combating terrorist financing

held by the international community in the previous two conferences in Paris (in 2018) and Melbourne (in 2019).

8. AD-1 Missile

The AD-1 (Air Defence) is a **long-range interceptor missile** designed for both **low exo-atmospheric** and **endo-atmospheric interception** of long-range **ballistic missiles** as well as aircraft. The missile is capable of striking down incoming adversary missiles and aircraft. It has been developed under the Phase II of the Ballistic Missile Defence programme. It is propelled by a two-stage solid motor and equipped with an indigenously-developed advanced control system, navigation and guidance algorithm to precisely **guide the missile to the target**.

9. Kamikaze Drones

They are small unmanned aircraft that are packed with explosives that can be flown directly at a tank or another target that are destroyed when it hits the target and explodes. They are called Switchblade because their bladelike wings spring out on launch. At present Russia, China, Israel, Iran and Turkey are expected to possess this technology.

10. Mission DefSpace

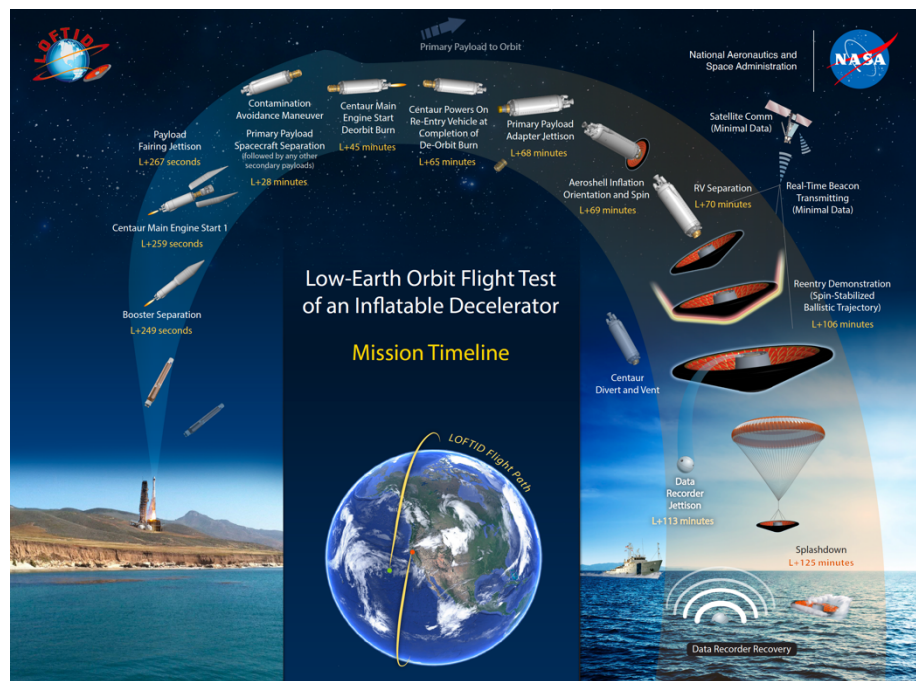
The Prime Minister has launched 'Mission DefSpace' at the DefExpo. Its aim is to develop innovative solutions for the three Services (Indian Airforce, Navy and Army) in the domain of space through the Indian industry and start-ups. It also aims to develop a range of **military applications for space warfare** and to enable the private industries to offer solutions to the armed forces for future offensive and defensive requirements.

11. DefExpo 2022

It was held in Gandhinagar, Gujarat. It was the 12th edition of DefExpo. DefExpo is a flagship **biennial event** of the Ministry of Defence showcasing the land, naval, air and homeland security systems.

12. LOFTID Mission by NASA

NASA has completed the technology demonstration of its **Low-Earth Orbit Flight Test of an Inflatable Decelerator (LOFTID)** mission. The Mission is to demonstrate a **Hypersonic Inflatable Aerodynamic Decelerator (HIAD)** or aeroshell technology that could one day **help land humans on Mars**. A HIAD device will have an inflatable structure that is capable of holding its shape against drag forces. It will also have a protective flexible thermal protection system that will



protect it from the heat generated during re-entry.

13. Next-Gen Launch Vehicle (NGLV) of ISRO

It is a cost-efficient, three-stage to-orbit, a **reusable heavy-lift vehicle** with a payload capability of **ten tonnes to Geostationary Transfer Orbit (GTO)**. NGLV will have **semi-cryogenic propulsion** (refined kerosene as fuel with liquid oxygen (LOX) as oxidiser) for the booster stages which is cheaper and more efficient. The uses of NGLVs will be in the areas of launching **communication satellites, deep space missions, future human spaceflight and cargo missions**.

14. Falcon Heavy Rocket

It has been developed by SpaceX. SpaceX calls it the **most powerful rocket in the world**. It uses 27 Merlin engines. Merlin is a family of rocket engines also developed by SpaceX. Falcon has lift-off capability of around **64 metric tonnes into Low-Earth Orbit (LEO) and 27 metric tonnes into Geostationary Transfer Orbit (GTO)**. It is ~70 m high and weighs ~1420 tonnes. It has been operational since 2018.



15. Vikram-S Rocket

It is India's **first privately manufactured rocket** developed by Skyroot Aerospace. Skyroot Aerospace is a Hyderabad-based start-up. It is a single-stage **sub-orbital launch vehicle**. In Sub-orbital flights, vehicles travel slower than the **orbital velocity**. It means they are fast enough to **reach outer space but not fast enough to stay in an orbit around the Earth**. Skyroot is designing three Vikram rockets that will use various solid and cryogenic fuels to carry between 290 kg and 560 kg payloads to sun-synchronous polar orbits. Vikram rocket can be assembled and launched within 24 hours from any launch site.

16. RISAT-2

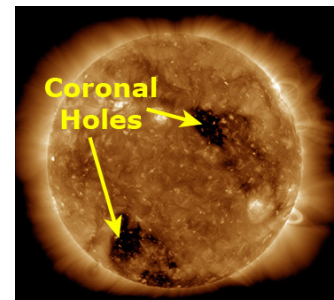
ISRO's Radar Imaging Satellite-2 satellite has made an uncontrolled re-entry into the Earth's atmosphere. It was launched in 2009. It was **India's first dedicated reconnaissance satellite** possessing day-night as well as all-weather monitoring capability. It was also used to track hostile ships at sea that were deemed a military threat. It had a designed life of 4 years but with the proper maintenance it was able to work for 13 years.

17. Sampurnanand Telescope

It is a 104-cm Telescope is located at ARIES (Aryabhata Research Institute of Observational Sciences), Manora Peak, Nainital (Uttarakhand). It was established in 1972. The telescope has been extensively used for optical observations of comets, occultation by planets and asteroids, star-forming regions and star clusters, variable stars, transients, and active galactic nuclei among others. It has completed 50 years of operations.

18. Coronal Holes

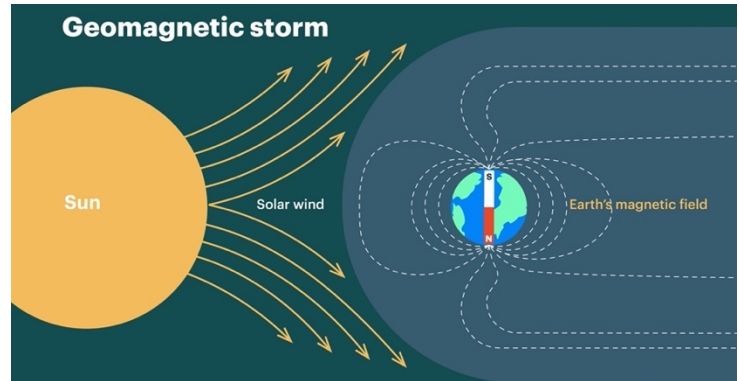
Coronal Holes are regions on the Sun's surface from where fast **solar wind** gushes out into space. They contain little solar material and they have **lower temperatures**. Thus they **appear much darker** than their surroundings. The holes are not a unique phenomenon, appearing



throughout the **Sun's approximately 11-year solar cycle**. Coronal holes can last between a few weeks to months.

19. Geomagnetic Storm

A geomagnetic storm is a **major disturbance of Earth's magnetosphere** that occurs when there is a very efficient exchange of energy from the **solar wind** into the space environment surrounding Earth. They are associated with **solar Coronal Mass Ejections (CMEs)** where a billion tons or so of **plasma** from the Sun, with its embedded magnetic field, arrives at Earth. Geomagnetic storms can **cause changes in the ionosphere**. **Radio and GPS signals** travel through this layer of the atmosphere and so **communications can get disrupted**.



20. Cordy Gold Nanoparticles (Cor-AuNPs)

They are derived from the synthesis of the extracts of **Cordyceps militaris** and Gold Salts. The use of these nanoparticles **in medicines could make drug delivery in the human body faster** and more accurate. Cordyceps militaris is a high value **parasitic fungus**. It is also called a **super mushroom** because of its tremendous medicinal properties. Wild Cordyceps mushroom is found in the **eastern Himalayan belt**.

21. Glyphosate

It is a **herbicide**. It is widely used in tea plantations. Health impacts of glyphosate range from **cancer, reproductive and developmental toxicity to neurotoxicity and immunotoxicity**. ~35 countries have banned or restricted the use of glyphosate. In India, glyphosate had been approved for use only in tea plantations and non-plantation areas accompanying the tea crop. The Ministry of Agriculture and Farmers Welfare has **restricted the use of glyphosate**. From now on, glyphosate will be applied only through **Pest Control Operators (PCOs)**. PCOs are licensed to use deadly chemicals for treating pests such as rodents.

22. Kyasanur Forest Disease (KFD)

It is caused by Kyasanur Forest disease virus (KFDV), a member of the virus family *Flaviviridae*. KFDV was identified in 1957 when it was isolated from a sick monkey from the **Kyasanur Forest in Karnataka**. Since then, between 400–500 humans cases per year have been reported. It is a deadly disease but it severely impacts only 5–10% of affected people. It mainly affects forest and agriculture workers. There is no specific treatment for it. Rodents, shrews, and monkeys are common hosts for KFDV after being bitten by an infected tick.

23. Sukapaika River

It is one of the several tributaries of the **Mahanadi river** in Odisha. It originated from Mahanadi river near Ayatpur village in Cuttack. It flowed 27.50 km before meeting the Mahanadi again at Bankala. In the 1950s, the Odisha government closed the Sukapaika river mouth enabling the

development of the **Taladanda Canal System**, a major canal of the State. This led the river to dry up. Now the river is set to be rejuvenated as the Odisha government has started working on its revival plan.

24. Blue Flag Certification for Thundi and Kadmat Beaches

Blue Flag Certification has been accorded to two new Indian beaches: Minicoy Thundi Beach and Kadmat Beach. Both the beaches are in Lakshadweep. Now, the number the number of beaches from India certified under the Blue Flag certification has risen to 12 (twelve).

25. Blue Flag Certification

It can be obtained by a beach, marina, or sustainable boating tourism operator, and serves as an eco-label. It is awarded by the **Denmark-based non-profit Foundation for Environmental Education**. The Certification is accorded based on 33 stringent criteria under four major heads: **(a)** Environmental education and information; **(b)** Bathing water quality; **(c)** Safety and services at the beaches; **(d)** Environment management and conservation. There are now total of 12 sites under Blue Flag Certification. These are **Shivrajpur** – Gujarat, **Ghoghla** – Diu, **Kasarkod** and **Padubidri** – Karnataka, **Kappad** – Kerala, **Rushikonda** – Andhra Pradesh, **Golden** – Odisha, **Radhanagar** – Andaman and Nicobar, **Kovalam** – Tamil Nadu, **Eden Beach** in Puducherry, **Thundi** and **Kadmat** in Lakshadweep.

26. Mathura-Vrindavan Aims to Achieve Net Zero by 2041

The Government of Uttar Pradesh has announced that Mathura-Vrindavan is aiming to become a 'Net Zero Carbon Emission' tourist destination by 2041. This will be the first such carbon neutral master plan for a tourist destination in India. Under the Plan, tourist vehicles will be banned from the entire Braj region. **Only electric vehicles used as public transport** will be allowed into the area. All 252 water bodies and 24 forests in the area will also be revived.

27. Great Nicobar Development Project

The Government has granted an in-principle clearance for the diversion of 130 sq. km of forest in Great Nicobar Island for the mega project. The Mega Project in Great Nicobar Island includes a **transshipment port**, an **airport**, a **power plant** and a **greenfield township**. The project is being implemented by **Andaman and Nicobar Islands Integrated Development Corporation** under a vision plan conceived by the NITI Aayog. A key condition for the clearance of the project is the submission of a detailed scheme for compensatory afforestation which is to be done on "non-notified forest land" in Haryana. The area of the project is nearly 15% of the thickly evergreen tropical forested Great Nicobar Island which is spread over 900 sq. km. These include the **leatherback sea turtles**, **Nicobar megapode** (a flightless bird endemic to the Nicobar islands), **Nicobar Macaque** and **saltwater crocodiles**.



28. Methane Alert and Response System (MARS)

It has been launched at the COP27 in Sharm El-Sheikh, Egypt. It is the first publicly available global system capable of transparently connecting methane detection to notification processes. It has

been set up as part of the UNEP International Methane Emissions Observatory (IMEO) strategy to get **policy-relevant data for emissions mitigation**. It will use data from global mapping satellites to identify very large methane plumes and methane hot spots. It will attribute the emissions to a specific source. UNEP will then notify governments and companies about the emissions.

29. Methane as Greenhouse Gas (GHG)

Methane is the 2nd-most common of the 6 major greenhouse gases. It accounts for about 17% of the current global GHG emissions. Its global warming potential is about 80 times that of CO₂. It is also blamed for having caused at least 25-30% of temperature rise since the pre-industrial times. However, Methane has fewer sources of emission compared to CO₂.

30. SECURE Himalaya Project

It is a part of the 'Global Partnership on Wildlife Conservation and Crime Prevention for Sustainable Development' (Global Wildlife Program) funded by the **Global Environment Facility (GEF)**. It is being implemented by the Ministry of Environment along with UNDP. It is aimed at the **conservation of snow leopard** and its habitat. It also addresses key issues of habitat degradation, threatened livelihoods and illegal trade in wildlife.

31. World Green City Award, 2022

Hyderabad has won the overall 'World Green City Award 2022' and 'Living Green for Economic Recovery and Inclusive Growth' award. The Green City Award was instituted by the **International Association of Horticulture Producers (AIPH)**. The award recognises the role of city authorities in **promoting and supporting greater inclusion of nature and plants in urban environments**. Hyderabad was awarded for its large-scale tree-planting program known as "**Telangana Ku Haritha Haram**". The program aims to increase the tree cover of the state by about 33%.

32. LeadIT Summit

India and Sweden hosted the LeadIT Summit on the side lines of COP27. **Leadership Group for Industry Transition (LeadIT)** was launched by Sweden and India at the UN Climate Action Summit in September 2019 and is supported by the World Economic Forum. LeadIT members subscribe to the notion that **energy-intensive industries** can and must progress on low-carbon pathways, aiming to achieve net-zero carbon emissions. It is hosted by Stockholm Environment Institute (SEI), Sweden.

33. 'In Our LiFetime' Campaign

The **National Museum of Natural History (NMNH)** under the Ministry of Environment (Government of India) and the **UNDP** has launched the 'In Our LiFetime' campaign on the side lines of COP27. Its aim is to **encourage youth between the age of 18 to 23 years to become message-bearers of sustainable lifestyles**. It encourages youth to submit their climate actions that contribute to lifestyles for the environment within their capacity. These practices should be sustainable and scalable.

34. Global Offshore Wind Alliance (GOWA)

Nine countries including Britain, Germany, the US and Japan have joined the GOWA. It has been set up by the **International Renewable Energy Agency (IRENA)**, Denmark and the **Global Wind Energy Council**. The alliance brings together governments, the private sector, international

organizations and other stakeholders to accelerate the deployment of offshore wind power. Its **target** is to achieve total global offshore wind capacity of a minimum of **380 GW by 2030**.

35. Infrastructure Resilience Accelerator Fund (IRAF)

The **Coalition for Disaster Resilient Infrastructure** (CDRI) has announced the launch of IRAF at COP27. IRAF is a **multi-donor trust fund** launched by CDRI with the support of the UNDP and the **United Nations Office for Disaster Risk Reduction** (UNDRR). Its purpose is to support **global action on disaster resilience of infrastructure systems**, especially in developing countries and Small Island Developing States (SIDS). It is supported by the Governments of India, the United Kingdom, Australia and the EU.

36. PM2.5 and Anaemia

According to a study, long-term **exposure to PM2.5 pollutants may increase the prevalence of anaemia among women of reproductive age** through systemic inflammation. For every 10 microgram/cubic metre of air increase in ambient PM2.5 exposure, the average anaemia prevalence among women increases by 7.23%. Among PM 2.5 sources, sulphate and black carbon are more associated with anaemia than organics and dust. The study says that anaemia prevalence will fall from 53% to 39.5% if India meets its recent clean-air targets.

37. National Bio Energy Programme (NBEP)

The **Ministry of New & Renewable Energy** renewed the National Bio Energy Programme till 2025-26. Its aim is to aid the use of huge surplus biomass, cattle dung, and industrial and urban biowaste available in the country for energy recovery. It has 3 sub-schemes: **(a) Waste to Energy Programme**: Support the setting up of large Biogas, BioCNG and Power plants (excluding MSW (municipal solid waste) to power projects); **(b) Biomass Programme**: Support setting up of pellets and briquettes for use in power generation and non-bagasse based power generation projects; **(c) Biogas Programme**: Support the setting up of family and medium size Biogas in rural areas.

38. HARIT Aaykar Initiative

The Income Tax Department has launched the HARIT Aaykar (Hariyali Achievement Resolution by Income Tax) Initiative. Under this initiative, the Income Tax Department resolves to increase the green cover by planting trees and **creating micro-forests** in and around the IT Department's buildings and other public areas.

39. Cauvery South Wildlife Sanctuary

The Government of Tamil Nadu has notified the Cauvery South Wildlife Sanctuary as the State's 17th wildlife sanctuary. It will connect **Cauvery North Wildlife Sanctuary** of Tamil Nadu with the **Cauvery Wildlife Sanctuary** in Karnataka. Two elephant corridors, the **Nandimangalam-Ulibanda Corridor** and the **Kovaipallam-Anebiddahalla Corridor** fall in this area. The sanctuary is home to 35 species of mammals, and 238 species of birds. **Leith's softshell turtles, smooth-coated otters, marsh crocodiles** and **four-horned antelopes** are some of the species found here.

ABOUT THE SANCTUARY



JUMBO SIGHTING: Elephants at the new sanctuary

<p>Location Between Cauvery North Wildlife Sanctuary in TN and Cauvery Wildlife Sanctuary in Karnataka</p> <p>In pipeline Wildlife authorities to write an integrated management plan for the sanctuary</p> <p>Tiger movements As tiger sightings have been reported in Cauvery Wildlife Sanctuary,</p>	<p>chances are the animals may enter the newly notified sanctuary</p> <p>Important elephant habitat A sizeable population of elephants is reported</p> <p>Formation Ten reserved forests in Krishnagiri and six in Dharmapuri have been clubbed to form the sanctuary</p>
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40. *Senna Spectabilis*

It is an **invasive tree species** and has taken over between 800 and 1,200 hectares of the buffer zones of the Mudumalai Tiger Reserve (MTR). It was introduced in India as an ornamental species and for use as firewood from South and Central America. The plant has become an invasive alien species in parts of Africa, India and other countries. It arrests the growth of other indigenous tree and grass species. It also adversely affects the germination and growth of native species.



41. Tokhü Emong Bird Count (TEBC)

It is Nagaland's first bird documentation event to celebrate the birds of the state. This exercise aims to go beyond the documentation of Amur falcons. It is being organized by Wokha Forest Division, Nagaland Forest Management Project (NFMP) and Bird Count India. The event has been timed with the post-harvest **Tokhü Emong festival of the Lotha Nagas** to spread awareness about the State's avian diversity. The event falls within the **Salim Ali Bird Count**, a nationwide event conducted by the **Bombay Natural History Society**.

42. Indian Skimmer

Indian skimmer or Indian scissors-bill (*Rynchops albicollis*) belongs to the skimmer genus *Rynchops* in the family Laridae. Its **IUCN status is endangered**. It is found in the coastal estuaries of western and eastern India. About 20% of the total population of Indian Skimmer nests along river Chambal. Villagers here call it **Pancheraa**, that which tears water. It is threatened by the degradation of wetland and riverine habitats. In 2020, the Bombay Natural History Society (BNHS) initiated a '**Guardians of the Skimmer**' programme, which is a community-based conservation initiative. Recently, Indian skimmer was seen in huge flocks during winter in Coringa wildlife sanctuary (Kakinada).



43. Panamaram Heronry

It is the largest breeding ground of different species of herons in the Malabar region, Kerala. It was formed on a sandbank on the Panamaram river. It is covered with vegetation, primarily *bamboo* groves. Panamaram River is a tributary of the Kabani River along with Mananthavady, Babali, Noolpuzha and Nugu Rivers.

44. Great Indian Bustard

It is one of the heaviest flying birds (weighing up to 15kgs). It inhabits dry grasslands and scrublands on the Indian subcontinent. It is the **State bird of Rajasthan**. Its population is about 150 in Rajasthan which accounts for 95% of its total world population. It is a **Critically Endangered** species with less than 150 birds left in the wild. It is classified under **Appendix I of CITES** and **Schedule I of the Wildlife Protection Act, 1972**. The recent sighting of three Great Indian



Bustards (GIBs) deep in **Pakistan's Cholistan desert** has given rise to speculation that the GIB might have flown across the international border from India's Desert National Park.

45. Indian Bison

Sri Lanka has asked India to translocate 6 Indian Bisons (Gaurs) to reintroduce them in the island from where they became extinct by the end of 17th century. Indian Gaur or Bison is the **largest species among the wild cattle** and the Bovidae. There are about 13,000 to 30,000 gaurs in the world with ~ 85% of the population present in India. It is also found in Burma and Thailand. They are mostly found in the hilly parts of the Western Ghats region such as Bandipur, Wayanad and Mudumalai. **Gaur is the state animal of Goa and Bihar**. Its IUCN status is Vulnerable and it falls under Schedule I of the **Wildlife Protection Act, 1972**.



46. Himalayan Gray Langur

Himalayan Gray Langur or the Chamba Sacred Langur (*Semnopithecus ajax*) is a **colobine**, meaning **leaf-eating monkey**. It was once considered a subspecies of the *Semnopithecus entellus*, commonly known as the Bengal Sacred Langur or *Hanuman* Langur, but it was separated as a species in 2005. It is considered an **endangered species** globally (population < 1,500 mature individuals). They inhabit areas between **2,200-4,000 metres above mean sea level in the subtropical, tropical moist temperate, alpine, coniferous and broadleaved forests and scrublands**. In the Indian Subcontinent, their distribution is reported from Himachal Pradesh, Jammu and Kashmir and from Pakistan and Nepal.



47. Exotic Animals

The police in southern Assam have seized seven exotic primates. Exotic live species are animal or plant species moved from their original range (location) to a new one. According to the Government of India advisory, the phrase "exotic live species" includes "**animals named under the Appendices I, II and III of the CITES**" and "**does not include species from the Schedules of the Wildlife (Protection) Act 1972**".

48. Anthropomorphic Sites and Megaliths

Anthropomorphic sites are those marked by a representation of human form above the **megalithic burials**. Tirupati district in Andhra Pradesh is said to have the largest collection of anthropomorphic burial sites. Most of these sites are in a state of neglect. Megalithic Culture is a large prehistoric stone culture that lasted from the Neolithic Stone Age to the early Historical Period across the world. A **Megalith** is a large stone that has been used to construct a prehistoric structure or monument. Types of Megaliths include **Dolmen, Cairn, Cist, Menhir, Stone Circle** etc.



49. Khangkhui Cave

It is a natural limestone cave about 15 km from Ukhrul, Manipur. Excavations carried out by Manipur's archaeologists had revealed the cave was home to Stone Age communities. The cave was also used as a shelter by the local people during World War 2 after the Japanese forces advanced to Manipur and the adjoining Nagaland. According to a study by researchers, a colony of bats were evicted from the cave to make it tourist-friendly.

50. Raskhan and Taj Bibi

The Tourism Department of Uttar Pradesh has redeveloped the tombs of Raskhan and Taj Bibi as a tourist complex. Raskhan (Syed Ibrahim Khan) was a **16th-century Sufi Muslim poet** born either in **Amroha** or **Hardoi** in Uttar Pradesh. He became a follower of Lord Krishna and spent his life in Vrindavan. His poetry is in the form of **Doha**, **Padawali** and **Savayya**. Taj Bibi, also known as the '**Mughal Mirabai**' was the daughter of a Muslim nobleman named Padma Khan. Taj Bibi was **married to Emperor Akbar** and was appointed by the Mughals to protect the Gokul area. She wrote poetry during the Mughal time when the ruling class belonged to the Muslim religion.

51. Bhoota Kola

It is an annual folk ritual of **Tulu-speaking people** in **Dakshina Kannada**, **Uttara Kannada** and **Udupi** in Karnataka where local spirits or deities are worshiped. It is performed by a trained person who is believed to have temporarily become a god himself. The performer displays an aggressive outlook, dances fiercely and performs multiple rituals. Drums and music give company to the dancing and pooja rituals. *Panjurli*, *Bobbarya*, *Pilipoota*, *Kalkuda*, *Kalburti*, *Pilichamundi*, *Koti Chennaya* are some of the popular gods (Bhootas) worshipped as part of Bhoota Kola. It is said to have some influence from **Yakshagana**.

52. Nadaprabhu Kempegowda

He was a 16th-century chieftain of the **Vijayanagara empire**. He belonged to the **Vokkaliga community** in south Karnataka. He is credited as the **founder of Bengaluru City**. He is known to have developed around 1,000 lakes in the city to cater to drinking and agricultural needs. The Prime Minister has unveiled a 108-feet-long bronze statue of Nadaprabhu Kempegowda in Bengaluru. The statue has been named as the **Statue of Prosperity**.

53. Beypore Uru

Beypore is an ancient port town located on the banks of the **Chaliyar River** in Kerala. An uru is a **wooden dhow** (ship) mainly made of **Malabar teak** in Beypore. It is probably the biggest handicraft in the world. Uru making in Beypore is a **centuries-old tradition** that was established since India began its **maritime trade with Mesopotamia**. Beypore urus are made of wood, without using any modern techniques. The **Khalasis** are the traditional artisans responsible for the manufacture of the Uru.



54. Shabd Shala Initiative

It is a website to invite suggestions for the translation of words that are recent additions to the English language and are used widely in India. People can provide translations in any language (and not limited to Eighth Schedule) like Bhojpuri and Nagamese. 'Selfie', 'drones', 'metaverse', and 'Artificial Intelligence' are among the new "technical" English words that become a part of common usage but have no formal translations into Indian languages.

55. Commission for Scientific and Technical Terminology (CSTT)

It was established in 1961 by the Government of India under **Article 344(4) of Indian Constitution**. Its mandate is to **evolve technical terminology** in all Indian Languages, propagate its use and distribute it widely. It functions under the Department of Higher Education, **Ministry of Education**.

56. Mangarh Massacre

On November 17, 1913, the British killed more than 1,500 tribals in Mangarh (Banswada, Rajasthan). It is called as **Adivasi Jallianwala**. **Govind Guru**, a tribal Bhil leader, had mobilized the Bhils against the atrocities of the British including bonded labour. On this day, the British fired indiscriminately at the Bhil protestors.

57. Pasumpon Thevar

Pasumpon Muthuramalinga Thevar was born on 30th October 1908 in Pasumpon in the Ramanathapuram district of Tamil Nadu. He was a freedom-fighter cum spiritual leader and was seen as a deity among the Mukulathor community. Thevar became a full-time member of the Congress party and attended the 1927 Congress session at Madras as a volunteer when he was just 19. He became a close aide of Netaji Subhas Chandra Bose. In 1939, he assisted activist A. Vaidyanatha Iyer to take Dalits to the Meenakshi Temple in Madurai. He was instrumental in getting the Criminal Tribes Act (CTA) repealed in 1946.

58. Janaki Ammal

The 125th birth anniversary of Janaki Ammal was observed on November 04, 2022. She was born in 1897. She was the **first Indian woman to be awarded a PhD in the botanical sciences**. She is known widely for her contributions in the fields of genetics, cytology, evolution and more. Her work played a significant role in creating sugarcane hybrids that yielded sweeter sugar. She served as the head of the Central Botanical Laboratory in Allahabad. She was also associated with the **Save the Silent Valley movement**.

59. Addition to Scheduled Tribe List

The National Commission for Scheduled Tribes (NCST) has approved the inclusion of the 'Pahari' ethnic group in the Scheduled Tribes list of the Union Territory of Jammu and Kashmir. NCST has also called for the inclusion of the "Paddari", "Koli" and "Gadda Brahman" communities to be included in the ST list of J&K.

60. Nihonshu/Japanese Sake

The Embassy of Japan, New Delhi has filed an application **seeking a GI tag for Nihonshu/Japanese Sake**, an alcoholic beverage. This is the first time a product from Japan has filed for a tag at the Geographical Indication Registry in India. Nihonshu is an alcoholic beverage. People drink it on

daily basis as well as on special occasions. It consists of 3 main ingredients, rice, koji-kin (a type of fungal spore) and water.

61. *Niveshak Didi*

India Post Payments Bank has conducted India's First Floating Financial Literacy Camp with an initiative called '*Niveshak Didi*'. It has been launched in collaboration with **Investor Education and Protection Fund** Authority (IEPFA) under the aegis of the **Ministry of Corporate Affairs**. Its aim is to promote Financial Literacy through "**By the women, for the women**" concept. The initiative has adopted this ideology **women in rural areas feel more comfortable to share their queries with a female itself**.

62. *WISER Programme*

The Women Involvement in Science and Engineering Research (WISER) Programme was launched in 2021 by the **Indo-German Science & Technology Centre (IGSTC)**. It is a programme to **promote women in the field of R&D through lateral entry**. The program will support women scientists holding regular/long-term research positions in academia or research institutes/industry. IGSTC supports the awardees with a maximum amounting to INR 39 Lakh from the Indian side & €48000 from the German side. The WISER program offers 20 awards per year.

63. *Aibawk Cluster Under RURBAN Mission*

Aibawk cluster in the Aizawl district of Mizoram has become the first cluster to be completed under the Shyama Prasad Mukherji Rurban Mission. Rurban Mission was launched in 2016 by the Ministry of Rural Development. Its objective is to stimulate local economic development, enhance basic services, and create well-planned Rurban clusters. Its target is to develop 300 clusters in the country.

64. *Rythu Bharosa Kendras (RBKs)*

The RBKs are unique seeds-to-sales, single-window service centres for farmers that have been set up across Andhra Pradesh. They are a one-stop solution to all farmers' needs and grievances. At RBKs, farmers can get quality seeds, fertilizers, hire farm equipment, sell their produce, soil testing and advisory on crops, fertilizer use etc. Farmers are also paid crop insurance through RBKs.

65. *Indian Biological Data Centre (IBDC)*

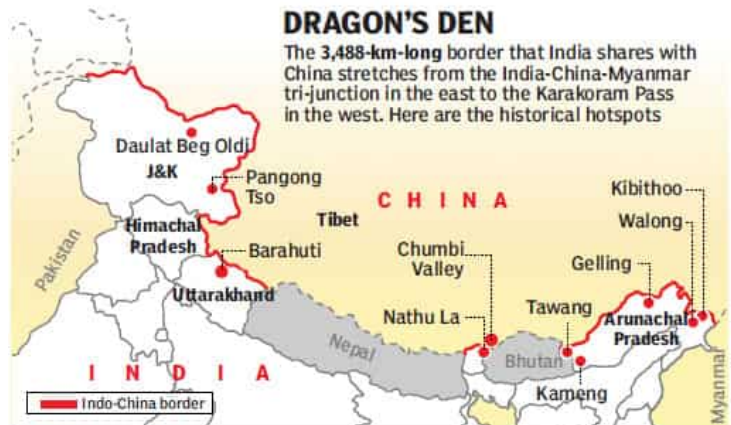
The Union Minister of Science and Technology has inaugurated the IBDC at **Faridabad, Haryana**. It is the first **national repository for life science data** in India. Its purpose is to archive all life science data generated from publicly funded research in India. The data center is supported by the Department of Biotechnology (DBT). IBDC has a data storage capacity of about 4 petabytes and houses the '**Brahm**' **High Performance Computing (HPC) facility**.

66. *Narrative Terrorism*

It is a part of a criminal conspiracy to **spread terrorism by creating false narratives**. These narratives can be seditious write-ups, intended to create unrest, and abet the gullible youth to take the path of violence. These narratives can **support the claim of secession** of a part of the country's territory, **challenge sovereignty and territorial integrity**, glorify violence, and advocate and abet the commission of terrorist acts. They can be booked under provisions of the Indian Penal Code and the Unlawful Activities (Prevention) Act.

67. Battle of Walong

Walong is **one of India's eastern-most villages in Arunachal Pradesh**. In the 1962 India-China War, the Indian Army defended against China in all sectors except one - Walong. The **Battle of Walong was the only counterattack India** could manage in the war. The Indian Army held back the Chinese troops for 27 days, which forced the Chinese to deploy its reserve division from Tawang to Walong.



NOTE: With effect from 1st February 2022, the monthly ForumIAS Epic Magazine, for the month will provide wholistic coverage for the said month up to 20th of the month. This ensures that issues / stories that occur after 21st of the month are allowed to fully develop and are covered wholistically in the next month.