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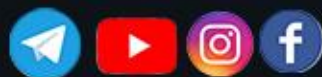
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INTERNATIONAL RELATIONS

EU'S HISTORIC NATURE RESTORATION LAW

Why is it in the news?

After the European Parliament accepted a **key nature restoration law**, a backlash is expected against plans to protect vast swaths of threatened nature.

Background

- I) The law, which has passed through the EU Parliament but is subject to final approval, comes after the European Commission concluded that the member states have not yet succeeded in stopping the extinction of species. A further failure to achieve the common goals of restoring destroyed ecosystems caused the Commission to call for “more decisive action.”
- II) As agreed in the European Council in June, EU member states will “**put in place restoration measures that bring at least 30% of habitats in terrestrial, coastal, freshwater and marine ecosystems that are not in good condition, into good condition by 2030.**”
- III) The bill is a key part of the **European Green Deal, which seeks to implement some of world’s most ambitious climate and biodiversity targets.**

Farmers protests

- I) Farmers and conservative lawmakers in the European Union strongly opposed the landmark nature legislation that bolsters the bloc’s green transition and prevents vital ecosystems and species from being wiped out due to climate change.
- II) The Nature Restoration Law was first introduced

by the European Commission in June 2022 and met political resistance over plans to restore drained peatlands.

The bill allows for 30% of all former peatlands currently exploited for agriculture to be restored and partially shifted to other use by the end of the decade, a figure rising to 70% by 2050.

- III) But farmers’ associations say they fear the widespread loss of valuable agricultural land. Supporters, meanwhile, see the new rules as crucial to meeting the EU’s climate goals because peatlands help slow planetary heating.

Peatlands absorb more carbon than forests

- I) Peatland, which is a type of wetland, forms over thousands of years from the remains of dead plants, storing more carbon than any other ecosystem.
- II) Globally, peatlands take up some 3% of the planet’s land area — and yet, they absorb nearly twice as much carbon dioxide as all the Earth’s forests combined. But when damp peatlands are drained and used for other purposes, like agriculture or fertilizer, they go from being a CO2 sink to yet another potent source of greenhouse gas.
- III) Across Europe, 7% of the continent’s greenhouse gas emissions are the result of drained peatlands and wetlands. That’s nearly as much CO2 as the emissions produced by the EU’s entire industrial output.

More than half of Europe’s peatlands lost

- I) European peatlands, full of nutrients and especially important for biodiversity, make up a patch



of land roughly the size of Germany. More than half have suffered permanent damage. In Germany, the amount of degraded peatlands is estimated to be as high as 90%.

- II) Former peatlands in Scandinavia and the Baltic states are mainly used for forestry. But in the Netherlands, Poland and Germany, large swathes of these drained areas are now farmland. Former peatlands account for about 7% of Germany's agricultural land, and now generate 37% of all greenhouse gas emissions from agriculture.
- III) According to experts, when it comes to agriculture, the continent needs a "paradigm shift" to meet the Paris climate goals. This means moving away from farming on drained peatlands and investing in **paludiculture — agriculture on rewetted peat soil**. The latter would stop carbon emissions while improving soil and water quality.
- IV) In the EU's proposed legislation, rewetting has been planned for half the former peatlands across Europe. For the other half, less effective measures would be used.

Profitable agriculture, green solutions can coexist

- I) Backers of the ambitious legislation have pointed out that profitable agriculture and the restoration of wetlands need not be at odds with each other. The European Commission has calculated that every euro invested in restoring natural resources would result in at least eight times the economic return over the long term.
- II) While rewetted land wouldn't be able to support monocultures like grains or corn, it could support the growth of other crops.
- III) Rehabilitated land could also be used to grow timber, or plant grasses and reeds that could serve as insulation material for the construc-

tion sector or as raw material for organic plastic substitutes. And instead of cows, revitalized areas could one day become grazing grounds for water buffalo.

THE U.S. SUPREME COURT BAN ON RACE-BASED ADMISSIONS

Why is it in the news?

- I) Recently, the U.S. Supreme Court struck down race-conscious student admissions at the University of North Carolina (UNC) and Harvard College, calling such affirmative action policies unlawful.
- II) The justices voted 6-3 and 6-2 in favour of Students for Fair Admissions, an organisation against race-based admissions in colleges.
- III) The case argued whether admissions systems used by Harvard College and UNC are lawful under the **Equal Protection Clause of the Fourteenth Amendment**.

What is affirmative action?

- I) Affirmative action is a policy that **aims to ensure equal opportunities for historically underrepresented demographics or minorities in educational or professional sectors**.
- II) In 1961, **President John F. Kennedy** became the first leader to link the term with racial equality. President Kennedy signed an executive order, instructing the government contractors to take "affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, creed, colour, or national origin".
- III) In 1969, **President Richard Nixon** signed yet another executive order, directing the U.S. government "to provide equal opportunity in federal



employment for all persons, to prohibit discrimination in employment because of race, colour, religion, sex, national origin, handicap, or age, and to promote the full realisation of equal employment opportunity through a continuing affirmative program in each executive department and agency”.

- IV) A landmark ruling in the matter came in 1978, in the **Regents of the University of California versus Bakke case** when the Supreme Court ruled that schools could not use affirmative action to rectify historical racial discrimination, but that they could weigh race as one of the many factors in admissions.

What does the judgment say?

- I) The recent judgment of the U.S. Supreme Court says that admission programmes of both Harvard College as well as the UNC lack measurable objectives that would validate the use of race as a criterion.
- II) The court judgment also added that both these admission programmes “unavoidably” use race in a negative manner, and hence do not serve the guarantees of the Equal Protection Clause of the Fourteenth Amendment of the U.S. Constitution.

What is the Equal Protection Clause?

- I) The Fourteenth Amendment of the U.S. Constitution addresses citizenship issues and the rights of citizens.
- II) The Equal Protection Clause, under the Fourteenth Amendment, requires the government to accord equality to all citizens and avoid denial of protection enjoyed by other people or demographics. The Equal Protection clause is considered **crucial to the protection of citizens’ civil rights**.

Was race a factor for college admissions?

- I) According to Harvard, around 40% of U.S. colleges and universities consider race in some fashion.
- II) The current judgment states that admissions applications at Harvard College are assigned a numerical score in six categories — academic, extracurricular, athletic, school support, personal and overall — during its initial screening. “Overall” is composite of five other ratings and can include the applicant’s race as a factor.
- III) UNC also has a similar process — the admissions office assigns a numerical rating to the applicant based on several categories, and race is considered a factor in the review.

What will be the impact of the decision?

- I) This is not the first time that affirmative action has been declared unlawful for U.S. colleges. For instance, the State of California banned affirmative action in 1996 in public universities. Acting as amicus curiae in the recent case, the President and Chancellors of the University of California (UC) informed the Supreme Court that despite their extensive efforts, they have struggled to enrol a racially diverse student body into its programmes. The amicus curiae also said that since 1996, “freshmen enrollees from underrepresented minority groups dropped precipitously at UC, and dropped by 50% or more at UC’s most selective campuses”.
- II) A study published in 2020 analysed long-run changes in the racial and ethnic composition of selected universities, including those in California, Washington, Florida, Arizona, Michigan, Nebraska, New Hampshire and Oklahoma after affirmative action was banned in these states.



The study found that the ban led to steady declines in the share of underrepresented minorities among students in flagship universities in these states.

CHINA LIMITS EXPORT OF RAW MATERIALS

Why is it in the news?

- I) Recently, in what is being seen as the country's retaliatory move in the '**chip war**', the Chinese Ministry of Commerce announced that it would implement export controls on items related to gallium and germanium. It said that the controls were being imposed in order to safeguard national security interests.
- II) The announcement led to a spike in the prices of essential raw materials with companies rushing to secure their supplies. The regulations will be enforced from August 1.

What are the curbs announced by China?

- I) The Chinese Ministry of Commerce, in a bid to restrict the export of the two raw materials, ordered that export operators would now have to acquire a specific licence.
- II) The primary contention lies with the application process that requires operators to list the importers, end-users and end use. They would also have to produce the export contract in the original.
- III) Exporting without permission would constitute a violation — calling for administrative penalties. It would also be deemed a crime with the exporter being held "criminally responsible".

Why is it a matter of concern?

- I) **Gallium** is used to make gallium arsenide which forms the core substrate for semiconductors. They are used to manufacture semiconductor

wafers utilised in integrated circuits, mobile and satellite communications (in chipsets), and LEDs (in displays). It also used in automotives and lighting, and for sensors in avionic, space and defence systems. According to the European industry body, **Critical Raw Materials Alliance (CRMA)**, 80% of gallium production takes place in China.

- II) China also commands 60% of the total production of **germanium**. The element is used in fibre-optic cables, infrared imaging devices (used by enforcement agencies for surveillance, target acquisition and reconnaissance, particularly in the dark) and optical devices (to improve the ability to operate weapon systems in harsh conditions). They are also used in solar cells for their ability to withstand heat and higher energy conversion efficiency.
- III) The European Commission, whose import dependency on China stands at 71% and 45% for gallium and germanium respectively, has recognised it as a '**critical raw material**'. In India, the Ministry of Mines identified the two elements to be crucial for the country's economic development and national security.

How have countries responded?

- I) The U.S. "firmly" opposed the export controls. The U.S. will engage with its allies and partners to address the issue and build resilience in critical supply chains.
- II) The European Commission has expressed concerns about the development, and doubts that the move was related to security.

What is the geopolitical backdrop?

- I) In October 2022, the U.S. Department of Commerce had implemented a series of export control measures to protect its "national security



and foreign policy interests". China has used the same reasoning for its latest order. Directed primarily at semiconductor manufacturing items, the U.S. measures were announced to restrict China's ability to obtain advanced computing chips, develop and maintain supercomputers, and manufacture advanced semiconductors.

It said that Beijing was using the items and capabilities to produce advanced military systems including weapons of mass destruction, improving the speed and accuracy of its military decision making, planning and logistics alongside committing human rights abuses.

- II) Japan and the Netherlands followed suit this year. The Netherlands, home to the world's most important chip-making equipment manufacturer ASML, also held that the measure was necessary on "national security grounds".

Will it impact India?

- I) According to experts, the Chinese export controls are expected to have a short-term impact on India and its industries due to the disruption in immediate supply chains. The increased prices resulting from the export control order would affect the cost and availability of chips, potentially impacting India's chip-making plans.
- II) However, the long-term consequences for India's chip-making plans and industries will depend on several factors, including alternative supply sources, domestic semiconductor production capabilities, and strategic partnerships like the India-U.S. **Initiative on Critical and Emerging Technology (iCET)**.

Way Forward

- I) The scenario provides an opportunity for India, which is totally import-dependent for germanium and gallium. Pointing to the presence of the two

critical minerals as **by-products in the processing of zinc and alumina**, efforts should be made to focus on waste recovery from zinc and alumina production.

- II) Additionally, moving attention towards available substitutes as **indium and silicon** could also be considered.

INDIA-RUSSIA TRADE PAYMENTS IN CRISIS

Why is it in the news?

- I) As India continues to import oil from Russia, it is getting tougher for the country to pay for it.
- II) On the one hand, it faces repercussions of breaching the oil price cap of \$60 a barrel put in place by the U.S. and European nations as Russia offers lower discounts on its crude. On the other hand, using currencies like the Chinese yuan for payments, which India has already started doing, has its own geopolitical ramifications amid strained ties with Beijing.

Where do oil imports from Russia stand?

- I) Until a year ago, most of India's oil imports came from West Asia, the U.S., and West Africa but today, a bulk of crude unloading at India's ports is likely to be coming from Russia.
- II) In February 2023, **Russia surpassed Saudi Arabia to become the second biggest exporter of crude oil to India in FY23**. Since the start of Russian **special military operation in Ukraine on February 24, 2022**, Moscow has been hit by Western banking and economic sanctions. Against this backdrop, it found a ready market for its goods, especially crude oil, in India and offered steep discounts. India, meanwhile, unlike the West, chose to not join the list of countries formally imposing sanctions on Moscow.



As a result, India's imports of crude oil from Russia increased nearly 13 times in 2022-23 to over \$31 billion from less than \$2.5 billion in 2021-22.

- III) Russia is now the largest supplier of oil to India, displacing traditional players such as Iraq, Saudi Arabia, and UAE. In the four-month period between November 2022 and February 2023, Russia took over the top spot from Iraq.

Which currency is being used for payments?

- I) As part of war-induced sanctions on Moscow, the U.S., the EU, and the U.K. have blocked multiple Russian banks from accessing the **Society for Worldwide Interbank Financial Telecommunication (SWIFT)**, a global secure interbank system.

An estimated \$500 million is pending for goods already shipped by Indian exporters to Russia and it is now not possible to get the payments through the SWIFT channel.

- II) Thus, in an effort to economically strain Russia, the West targeted one of its biggest traded goods — energy — for which transactions have traditionally been dollar-dependent. Besides an oil ban jointly agreed between multiple countries last year, it was also decided to cap the price to a maximum of \$60 per barrel of Russian oil transported through waterways.
- III) While India is not a formal signatory, it has tacitly agreed to maintain the price cap as much as possible. Besides, banks and traders may not want to get involved in transactions that breach the oil cap over fears of repercussions for their funds.
- IV) Until recently, the blends of oil India was importing from Russia were largely below the price cap fixed by G-7 countries and India was able to

pay for the oil using dollars. However, Russia has lowered its discounts due to high demand from China and lower-grade oil is now in short supply.

What about the rupee-rouble mechanism?

- I) Notably, India was in negotiations with Russia to reactivate the rupee-rouble trade arrangement, which is an alternative payment mechanism to settle dues in rupees instead of dollars or euros.
- II) However, the rupee-rouble payment mechanism could not take off. Some of the reasons include:
- a) There is scepticism on the rupee-rouble convertibility as the rouble's value is kept up by capital controls and not determined by the market, as in the case of reserved currencies. On the flip side, Russia has also pointed out that it finds the rupee to be "volatile".
- b) Lastly, and more significantly, the unforeseen surge in oil trade between India and Russia in one year alone has led to a massively ballooning trade deficit. India's trade deficit with Russia touched \$43 billion in 2022-23 as it imported goods worth \$49.35 billion while its exports were at \$3.14 billion. This has led to staggering amounts of Indian rupees in Russian banks that cannot be used by Russia in its war efforts.

Is de-dollarisation being attempted?

- I) Since the dollar is largely considered the global reserve currency, many countries have seen the U.S. sanctions as a way for America to weaponize the dollar.
- II) This has given rise to countries looking at de-dollarisation, which means the replacement of the U.S. dollar with other currencies as the global reserve currency.



Is India's growing reliance on Russian supplies a long-term risk?

- I) India too, has recently released a roadmap for the internationalisation of the Indian rupee to create broader acceptance. However, the value and the acceptability of any currency depend mainly on its purchasing power, that is, the number of goods and services that can be bought using it and right now, the daily average share for the rupee in the global foreign exchange market is ~1.6%, while India's share of global goods trade is ~2%.
- II) Meanwhile, Indian refiners have also settled some non-dollar payments for Russian oil in the **Chinese yuan and the UAE dirham.**

What next?

- I) While India could use the yuan for payments, there are concerns about how that would appear geopolitically as it continues to have strained ties with Beijing since the border stand-off.
- II) Besides, another solution could be to counter the deficit with Russia by getting it to make investments in energy projects in India or to invest in government bonds.

THE PROVISIONS OF THE HIGH SEAS TREATY

Why is it in the news?

- I) Recently, the UN adopted the **Marine Biodiversity of Areas Beyond National Jurisdiction (BBNJ) or the High Seas Treaty.**
- II) It became the third agreement to be approved under **United Nations Convention on the Law of the Sea (UNCLOS)**, after the 1994 and 1995 treaties, which established the **International Seabed Authority and the Fish Stocks agreement.**

When did the process start?

- I) The idea of protecting the marine environment emerged in 2002. By 2008, the need for implementing an agreement was recognised, which led to the UNGA resolution in 2015 to form a Preparatory Committee to create the treaty.
- II) The Committee recommended the holding of **intergovernmental conferences (IGC)** and after five prolonged IGC negotiations, the treaty was adopted in 2023.
- III) The treaty's objective is to implement international regulations to protect life in oceans beyond national jurisdiction through international cooperation.

What does the treaty entail?

- I) The treaty aims to **address critical issues such as the increasing sea surface temperatures, overexploitation of marine biodiversity, overfishing, coastal pollution, and unsustainable practices beyond national jurisdiction.**
- II) Establishes marine protected areas to protect oceans from human activities through a **three-quarterly majority vote, which prevents the decision from getting blocked by one or two parties.**
- III) The treaty mandates **sharing of scientific information and monetary benefits through installing a clear house mechanism.** Through the mechanism, information on marine protected areas, marine genetic resources, and area-based management tools will be open to access for all parties. This is to bring transparency and boost cooperation.
- IV) The last pillar of the treaty is capacity building and marine technology. The **Scientific and Technical Body** will also play a significant role in environmental impact assessment. The body will



be creating standards and guidelines for assessment procedures, and helping countries with less capacity in carrying out assessments. This will facilitate the conference of parties to trace future impacts, identify data gaps, and bring out research priorities.

Why did it take so long to sign?

I) Issue of the marine genetic resources:

This was the most contended element. The parties to the treaty must share and exchange information on marine protected areas and technical, scientific and area-based management tools to ensure open access of knowledge.

The negotiations on the subject were prolonged due to the absence of a provision to monitor information sharing. In IGC-2, small island states supported the idea of having a licensing scheme for monitoring, but was opposed by the likes of the U.S., and Russia, stating its notification system would hinder “**bioprospecting research.**”

II) Debate over definition:

The use of the phrases “**Promote or Ensure**” in different parts of the treaty, especially with respect to the sharing of benefits from marine genetic resources, was heavily debated over.

III) Debate over the adjacency issue:

This was **specifically applicable to coastal states** whose national jurisdictions over the seas may vary. This meant it required special provisions where it can exercise sovereign rights over seabed and subsoil in the jurisdiction beyond.

It prolonged the decision-making as it affects the interests of landlocked and distant states.

Who opposed the treaty?

- I) Many developed countries opposed the treaty as they stand by private entities which are at the forefront of advanced research and development in marine technology (patents relating to marine genetic resources are held by a small group of private companies).
- II) Russia and China also are not in favour of the treaty. Russia withdrew from the last stage of reaching a consensus in IGC-5, arguing that the treaty does not balance conservation and sustainability.

JAPAN INDIA MARITIME EXERCISE (JIMEX 23)

Why is it in the news?

The seventh edition of the **bilateral Japan-India Maritime Exercise 2023 (JIMEX 23)** being hosted by the Indian Navy.

More about the news

- I) This edition marks the **11th anniversary of JIMEX, since its inception in 2012.**
- II) It is being conducted between **Japan Maritime Self Defence Force (JMSDF) and the Indian Navy** for maritime security cooperation.
- III) The exercise is to be conducted over six days in two phases.
- IV) JIMEX 23 will witness the participation of INS Delhi (India’s first indigenously built Guided Missile Destroyer), INS Kamorta (Anti-Submarine Warfare Corvette), fleet tanker INS Shakti, maritime patrol aircraft P8I and Dornier, ship-borne helicopters and fighter aircraft.

Other exercises between India and Japan

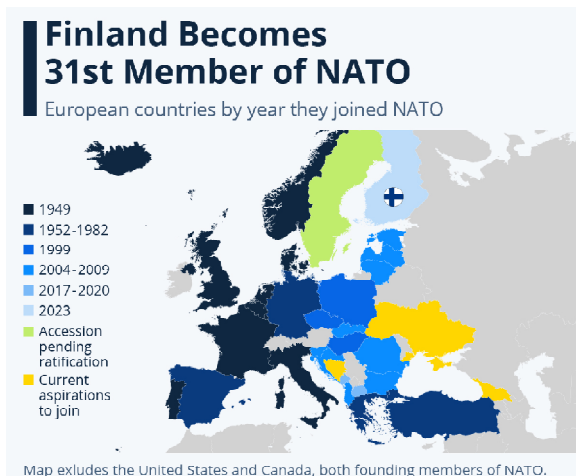
- I) Dharma Guardian: Military Exercise.
- II) Veer Guardian: Air Exercise.
- III) Malabar Exercise: Multilateral Exercise between India, Japan, USA and Australia.



SWEDEN'S NATO MEMBERSHIP

Why is it in the news?

- I) Recently, the US President has re-affirmed his support for Sweden's demand for NATO membership.
- II) The quest for Sweden's NATO membership has been on for a while now, with roadblocks from NATO members **Turkey and Hungary**.



What is NATO?

- I) The **North Atlantic Treaty Organisation (NATO)** is a 31-member security alliance comprising countries on both sides of the Atlantic Ocean, led by the United States. It was formed in 1949, in the wake of the second World War. This was a period when the rise of these two countries accompanied the relative decline of erstwhile European powers such as the UK, France and Germany. However, they were in ideological opposition to one another, with the US favouring a capitalistic, liberal democratic model and the USSR moving towards socialism and State control over the economy.
The War having led to severe devastation, and the accompanying advent of the nuclear bomb, meant such a rivalry could not escalate into a

full-blown war. This led to the 'Cold' War, where the battle for dominance manifested itself in the Space race, arms race, and shoring up as many allies as possible.

- II) NATO was thus formed on April 9, 1949. Its centrepiece was the **'the principle of collective defence'** – the idea that an attack against one or several of its members is considered as an attack against all. So far, **Article 5 has been invoked once – in response to the 9/11 terrorist attacks in the United States in 2001.**
- III) Its members include countries such as the UK, France, Germany, Italy, Greece and Turkey. The latest member to join it was Finland, in April this year.

Why does Sweden want to join NATO?

- I) In May 2022, after the Russian invasion of Ukraine earlier that year, Nordic neighbours Sweden and Finland applied to join NATO. This was a change in their long-held policies of not participating in a formal military alliance.
- II) According to Sweden, it is the Government's assessment that NATO membership is the best way for Sweden to protect its security in light of the fundamentally changed security environment following Russia's invasion of Ukraine.

What's the process for a country to join NATO?

- I) According to NATO, countries interested in joining NATO must adhere to certain basic political and military standards, such as having **"a functioning democratic political system based on a market economy" and the "ability and willingness to make a military contribution to NATO operations."**
- II) Then, formalities for accession take place, where a major step is all the governments of NATO member states ratifying the **'accession protocols.'** This is where Sweden faces a problem.



What are Turkey and Hungary's objections to Sweden joining NATO?

I) In May 2022, Turkey blocked an early attempt by NATO to fast-track the applications, saying their membership would make the alliance “a place where representatives of terrorist organisations are concentrated.”

Turkey has accused Sweden of being home to what it categorises as terror organisations or existential threats, from the banned **Kurdistan Workers Party (PKK)**. Turkey wanted Stockholm and Helsinki to take a tougher line against the PKK and another group it blames for a 2016 coup attempt in Turkey. Sweden denies Turkey's accusations of harbouring Kurdish terrorists and actively supporting the PKK.

II) During a NATO summit in June 2022, along with Sweden and Finland, it reached a tri-lateral agreement on how to proceed. Finland and Sweden agreed to work harder to fight terrorism by intensifying work on the extradition and deportation of suspected militants, and Turkey lifted its veto and said the country would seek the extradition of 33 alleged Kurdish fighters and coup plot suspects from both the Nordic countries.

III) In late 2022, the Supreme Court in Sweden blocked the extradition of an exiled Turkish journalist, whom Turkey accuses of being involved in the coup attempt to topple Turkey President. The tensions between Sweden and Turkey began to increase in January after an effigy of Turkey President was hung upside down from a lamp-post in Stockholm during a pro-Kurdish demonstration. The talks were suspended following protests on January 21, in which leader of a far-right Swedish party Hard Line, burned the Quran in front of the Turkish embassy in Sweden.

IV) Meanwhile, Hungarian Prime Minister has spoken against the two countries spreading “outright lies” about the health of democracy and the rule of law in Hungary.

IRAN'S INDUCTION IN THE SHANGHAI COOPERATION ORGANISATION

(Pls go through previous article on SCO to get a comprehensive view)

Why is it in the news?

As Iran joins the **Shanghai Cooperation Organisation (SCO)** as its ninth member, leaders of the SCO at a virtual summit chaired by Indian Prime Minister Narendra Modi stressed that the formation of a **more representative and multipolar world order is in the global interest.**

What is the SCO?

I) The SCO was built on the ‘**Shanghai Five**’ grouping of Russia, China, Kazakhstan, Kyrgyzstan and Tajikistan, which had come together in the post-Soviet era in 1996, in order to work on **regional security, reduction of border troops, and terrorism.**

II) In 2001, the Shanghai Five inducted Uzbekistan into the group and named it the SCO.

III) The organisation has **two permanent bodies — the SCO Secretariat based in Beijing and the Executive Committee of the Regional Anti-Terrorist Structure in Tashkent.**

What are the main goals of the SCO?

I) **The SCO describes its main goals as:**

- Strengthening mutual trust and neighbourliness among the member states;
- Promoting their effective cooperation in politics, trade, economy, research and tech-



nology and culture as well as in education, energy, transport, tourism, environmental protection, and other areas;

- c) Making joint efforts to maintain and ensure peace, security and stability in the region; and
- d) Moving towards the establishment of a democratic, fair and rational new international political and economic order.

II) The statement which calls to build a “new international political and economic order” did not sit well with the U.S. and Europe, and has led to the SCO being dubbed as “**anti-NATO**” for proposing military cooperation.

This concern was further heightened when heavy sanctions were placed on Russia for its actions in Crimea and China came to its aid, signing a \$400 billion gas pipeline agreement.

III) Since then, through the personal bond between Russian President Vladimir Putin and Chinese President Xi Jinping, the SCO has become a platform for Eurasian cooperation in a region rich with energy resources.

Has SCO dealt with bilateral issues?

- I) **India and Pakistan joined the SCO as observers in 2005, and were admitted as full members in 2017.**
- II) Since 2014, India and Pakistan have cut all ties, talks and trade with each other. However, both countries have consistently attended all meetings of the **SCO’s three councils — the Heads of State, Heads of Government, Council of Foreign Ministers.**
- III) Despite the fact that India accuses Pakistan of perpetrating cross-border terrorism at every other forum, at the SCO, Indian and Pakistani armed forces take part in military and anti-ter-

rorism exercises together, as part of the SCO-Regional Anti-Terrorist Structure.

- IV) Not only Pakistan, the SCO has also facilitated talks between India and China on the **Line of Actual Control (LAC) border issue.**

Why is Iran’s induction significant?

- I) While the SCO’s original goals focused more on stability and security, recent declarations have put the focus squarely on connectivity in the region.

For India, that has built its connectivity strategy through **Iran’s Chabahar port**, where it operates a terminal and through the **International North South Transport Corridor that goes through Iran and Central Asia to Russia**, the entrance of Iran in the SCO is an important milestone. Iran’s presence ensures support for New Delhi’s moves to circumvent land-based trade through Pakistan, which has blocked transit trade for India.

- II) According to Uzbekistan President, Central Asian states that are double land-locked will seek to build a multimodal trade route via Afghanistan to ports in both Pakistan and Iran. It also allows India to conduct trade with the region while staying out of China’s Belt and Road Initiative.
- III) Further, the induction of Iran, a historically close partner of India that has also suffered from terrorism emanating from Pakistan and Afghanistan will bolster India’s push for an end to terror safe havens.

Way Ahead

- I) Mostly, the governments may find some unease in a more vocal support for Iran is in the fact that the SCO is increasingly seen as an “**anti-West**” forum, and Iran, like Russia is under severe sanctions.
- II) In addition, the U.S. has accused Iran of supply-



ing weapons to Russia, and the expected induction of Belarus next year will only strengthen this image of the SCO, even as India strengthens ties with the Quad, making the Indian balancing act more difficult.

THE U.S. STUDENT LOAN CRISIS AND JOE BIDEN'S NEW CANCELLATION PLAN

Why is it in the news?

- I) Recently, the United States President Joe Biden has released a new plan to cancel billions in student loan debt after the conservative majority **Supreme Court of the U.S. (SCOTUS)** blocked his ambitious plan to cancel \$430 billion in debt.
- II) Although Mr. Biden has said the alternative plan is consistent with the Supreme Court ruling, it could still face a legal challenge, while the fate of millions of American borrowers — who may have to start repaying their loans once a pause on repayment lifts — hangs in the balance.

How big is the U.S. student loan debt?

- I) As per the latest Federal Reserve figures, more than 45 million Americans owe a total of \$1.77 trillion in student debt to the U.S. government. As per the Congressional Research Service (CRS), approximately 63% of the U.S. population over the age of 25 has at some time enrolled in some level of higher education and roughly 17% of the country's population aged 18 or above has federal student loans. Meanwhile, the median student loan debt is just above \$17,000.
- II) Research by the nonprofit College Board suggests that over the past three decades, the cost of higher education has risen sharply in the U.S., doubling at private four-year colleges and universities and

rising even further at public four-year schools. Between 2006 and 2019, the outstanding balance of student loans has nearly quadrupled.

- III) In the U.S., the federal government is the primary source of student loans, running several loan programmes to help students and their families finance higher education. These loans are authorised under **Title IV of the Higher Education Act of 1965 (HEA)**.
- IV) Under primary loan programmes, the U.S. government makes loans using federal capital, meaning funds from the U.S. Treasury Department, after which the outstanding loans become assets of the federal government.

What are repayment options for borrowers?

- I) Once a student borrows a federal loan, they enter into a contractual obligation to repay the loan with interest. They can sign up for specific repayment plans, with repayment periods spanning a decade or more. Under a standard 10-year repayment plan, a borrower has to make 120 equal payments of principal and interest spread over a decade.
- II) Then there are **Income-driven repayment (IDR) plans**, the kind that President Biden wanted to alter in order to cancel student debt. Such plans cap the monthly payment installments at a share of the borrower's discretionary income, say 10%-15%; extend the repayment period over a span of 20 or 25 years, and forgive or write off any unpaid principal and interest remaining after that period.

What was Mr. Biden's original student debt cancellation plan?

- I) The plan, announced in August 2022, was supposed to cancel \$10,000 in federal student loan debt for those making less than \$125,000 a year



or households making less than \$250,000. The recipients of the **government's Pell Grant**, who usually need more financial assistance, were to get an additional \$10,000 worth of their debt forgiven.

- II) College students qualified if their loans were disbursed before July 1. The plan made 43 million borrowers eligible for some debt forgiveness, with 20 million possibly having their debt erased entirely, according to the Biden administration.
- III) The White House said 26 million people had applied for debt relief, and 16 million people already had their relief approved. As per the Congressional Budget Office, the program would cost about \$400 billion over the next three decades.
- IV) The Education Department also proposed to improve the existing income-driven plan mentioned above, capping monthly payments for undergraduate loans at 5% of a borrower's discretionary income, down from the current 10%. The administration claimed that the plan would mean lowering of the average annual student loan payment by more than \$1,000 for both current and future borrowers.

Why did the plan run into trouble?

There were two legal challenges to the plan which landed in the Supreme Court—one involving six Republican-led States and the other filed by two students.

- I) In the case filed by the students, they argued, among other things, that the Biden administration didn't go through the proper process in enacting the plan. According to Texas-based U.S. District Judge Mr. Biden overstepped his authority. To cancel the debt, the Biden government relied on the **Higher Education Relief Opportunities for Students Act**, commonly known as the

HEROES Act, which was enacted in the aftermath of the 9/11 attack and allows the Secretary of Education to waive or modify terms of federal student loans during times of war or national emergency. The White House cited the COVID-19 pandemic as a national emergency.

The ruling, however, argued that the HEROES Act did not accord the Secretary the authority for mass debt cancellation. The judge said it only granted flexibility during national emergencies, adding that it was unclear whether debt cancellation was a necessary response to the COVID-19 pandemic, which Mr. Biden had by then declared as over.

- II) As for the suit by the six States— Arkansas, Iowa, Kansas, Missouri, Nebraska and South Carolina— a lower court dismissed it, ruling that the States could not challenge the programme as they were unable to show that they were harmed by it.
- III) Recently, SCOTUS held that the administration needs Congress' endorsement before undertaking such a costly programme. The majority rejected arguments that the bipartisan 2003 HEROES Act gave Mr. Biden the power he claimed.

What is the Biden administration's new plan and what's next for borrowers?

- I) The president announced that the Education Secretary had initiated a new rulemaking process for the alternative plan, this time using the Secretary's authority under the Higher Education Act, 1965, the law governing most federal student loan programmes.
- II) While the President contends the new path is consistent with the Court's opinion, legal scrutiny could be expected.
- III) Instead of the current **Revised Pay as You Earn**



(REPAYE) plan, the income-driven plan Mr. Biden's original programme sought to alter, the administration has proposed the new **Saving on a Valuable Education (SAVE)** plan. This income-driven repayment plan will cut borrowers' monthly payments in half, allow many borrowers to make \$0 monthly payments, and save all other borrowers at least \$1,000 per year.

- IV) The specifics remain the same— requiring borrowers to pay half the current share of discretionary income at 5%. Instead of forgiving loan balances after 20 years of annual payments, this plan also forgives outstanding principal after 10 years. Additionally, the plan seeks to raise the amount of income that is considered non-discretionary and therefore is protected from repayment. As for borrowers currently facing uncertainty, the President says they will be able to enroll for SAVE later this summer, before any monthly payments are due. Borrowers who sign up or are already signed up for the REPAYE plan will be automatically enrolled.
- V) Mr. Biden also announced an alternative to the pause on student loan repayments scheduled to restart at the end of the summer: a temporary 12-month “on-ramp” for repayment, from October 1, 2023 to September 30, 2024, during which missed loan payments will not harm borrowers' credit and the threat of default will be temporarily removed.

REFORMS TO IMMIGRATION LAW FOR SKILLED WORKERS IN GERMANY

Why is it in the news?

Recently, Germany approved a new law to attract skilled workers from outside of the **European Union (EU)** to come to Germany for work.

What are the changes to Germany's current law?

- I) The new law expands the ambit of Germany's immigration laws for skilled workers and makes it easier for them to enter the country. Anyone who has **two years of professional experience and a professional qualification recognised in their home country** will be eligible to immigrate as a worker. Previously, the qualifications had to be recognised in Germany.
- II) The reforms also introduce an “**opportunity card**” — a job-hunting provision based on a points system to ease immigration into Germany. The selection criteria for the opportunity card include qualifications, knowledge of German and English, work experience, connection to Germany, age, etc.
- III) The points system can be considered somewhat similar to **Canada's Comprehensive Ranking System** which assigns points to eligible candidates based on categories like skills, education, language ability, work experience, and other factors for immigration to the country. Germany's opportunity card will provide options for probationary or part-time employment, with potential conversion to a residence permit for employment or education.

Why there is a Labour shortage in Germany?

- I) Germany and the EU at large are seeing an ageing and shrinking population, which also affects the labour pool. According to research by the **Foundation for Political Science and Politics (SWP) of the German Institute for International and Security Affairs**, there is a keen shortage of skilled workers, especially in social and education sectors, health and care, construction and skilled crafts, information technology and jobs in **science, technology, engineering and mathematics**





(STEM).

Other European countries, Germany's primary source of skilled labour, are also plagued by similarly ageing and shrinking populations.

- II) The **Institute for Employment Research of the German Federal Employment Agency** predicts that the current labour volume can only be maintained with annual net immigration of 400,000 workers until 2035.
- III) Similar research by the **Nuremberg Institute for Labour Market and Vocational Research** noted almost two million vacancies at the end of 2022— greater than ever before. This lack of skilled workers can be detrimental to Germany's economic growth.

What does this mean for Indian immigrants?

- I) According to the German interior ministry, over 200,000 Indian nationals are currently living in Germany, with the majority holding a regular residence permit. However, there are also more than 5,000 Indian nationals staying in Germany illegally. At 34,000, Indians are also the **second-largest group of foreign students in Germany**.
- II) According to a 2022 analysis by the German Economic Institute, the number of people with Indian citizenship in Germany rose from 48,000 to 151,000 between 2010 and 2020, and their share in the total foreign population increased from 0.7% to 1.6%. India's share of the world population between the ages 25 and 34 was placed at 44.8 million, while its share of the world population between ages 15 and 24 was placed at 20.5%, making it a strong demographic to provide skilled labour to Germany.

What next?

An ordinance related to the law is expected to be discussed in the German Parliament on July 7, 2023. It is

believed that some provisions of law may come into force by November 2023.

WHAT IS CHINA'S NEW LAW ON FOREIGN RELATIONS?

Why is it in the news?

- I) Recently, China's National People's Congress, the Communist Party-controlled legislature, adopted a **new Law on Foreign Relations of the People's Republic of China**, which came into effect on July 1.
- II) The law will tighten **President Xi Jinping's control over foreign policy**, which has, since his taking office in 2012, become increasingly centralised.

What is the new law?

- I) The law involves foreign affairs, and according to its first article, it was drafted to **"safeguard China's sovereignty, national security and development interests"**.
- II) **Need for the law:** The legal system concerning foreign affairs has some shortcomings and gaps exist in laws safeguarding national sovereignty, security and development interests. Hence, speeding up the building of the legal system concerning foreign affairs will help China more effectively deal with risks and challenges.
- III) **The Broader Aim:** Aimed at giving a legal stamp to many of the key objectives of Chinese foreign policy under Mr. Xi, and to make it a punishable offence if individuals or organisations were deemed to act against those objectives. In a similar vein, a border law was adopted in October 2021 that warned against any act that undermines territorial sovereignty and land boundaries.

What will be the impact on foreign policy?

- I) The centralisation of Chinese foreign policy under Mr. Xi now has a legal stamp, and challenging it may be deemed as a violation of Chinese laws.
- II) The law specifically mentions several key initiatives championed by Mr. Xi, such as the **Belt and Road Initiative (BRI), the Global Development Initiative (GDI) and the Global Security Initiative (GSI)**.
- III) The law also emphasises sovereignty and security as being at the heart of Chinese foreign policy. The new law coincides with a broader political shift in China which for the first time in the reform era, prioritised security over development and opening up — a key change that will likely have long-term political and economic ramifications.
For instance, the law says China **“has the right to take measures to counter or take restrictive measures against acts that endanger its sovereignty, national security and development interests in violation of international law or fundamental norms governing international relations.”** It also says **“the state shall take measures as necessary in accordance with the law to protect the safety, security, and legitimate rights and interests of Chinese citizens and organizations overseas and safeguard China’s overseas interests against any threat or infringement.”**
- IV) According to Chinese officials, **one of the objectives was a legal response to Western sanctions aimed at China.**
The law will **reinforce the Law on Countering Sanctions** and will essentially make it illegal for Western companies operating within China to comply with sanctions aimed at the country.

- V) Besides sanctions, another section of the law appears to be a response to criticisms of China’s foreign lending which has come under scrutiny amid debt crises in several of its partners. According to Article 19 of the new law, in providing aid Beijing would respect the sovereignty of recipient countries and not interfere in their internal affairs or attach any political conditions to its aid.

What does the new law mean for India?

- I) As with the Border Law adopted in 2021, the emphasis of security, sovereignty and territorial integrity as key tenets of Chinese foreign policy coincide with the border dispute returning to the centre of India-China relations.
Indian experts saw the Border Law as essentially looking to formalise China’s moves along the **Line of Actual Control (LAC)**, with the transgressions of April 2020 upending both bilateral relations and decades-old mechanisms aimed at carefully managing the boundary dispute.
The two laws also coincide with territorial disputes being framed by Beijing as matters of national sovereignty rather than issues to be negotiated by two sides — framing that may narrow the scope for resolution.
- II) According to Article 6 of the new law, state institutions, armed forces, political parties, people’s organisations, enterprises, public institutions, other social organisations, and citizens have the responsibility and obligation to safeguard China’s sovereignty, national security, dignity, honour and interests in the course of international exchanges and cooperation.
- III) Article 31 may have a potential bearing on the signing of agreements to resolve disputes, as it declares that implementation and application



of treaties and agreements shall not undermine the sovereignty of the State, national security and public interests.

- IV) According to Article 17, the main aim of the conduct of foreign relations is to uphold its system of socialism with Chinese characteristics, safeguard its sovereignty, unification and territorial integrity, and promote its economic and social development.

The law also says China will at the same time grow relations with its neighbouring countries in accordance with the principle of amity, sincerity, mutual benefit and inclusiveness and the policy of enhancing friendship and partnership with its neighbours.

- V) Another article that will be scrutinised, particularly by Indian and foreign companies operating within China, is Article 8, which declares that any organisation or individual who commits acts that are detrimental to China's national interests in violation of this Law and other applicable laws in the course of engaging in international exchanges shall be held accountable by law. According to the Article 33, the government has the right to take, as called for, measures to counter or take restrictive measures against acts that endanger its sovereignty, national security and development interests in violation of international law or fundamental norms governing international relations.

THE CALM AFTER THE STORM FOR PAKISTAN

Why is it in the news?

- I) Over the last 15 months, Pakistan faced a myriad of challenges, including confrontations between the government and the opposition, disagree-

ments between the Parliament and the judiciary, instability in Punjab, clashes between the **Pakistan Tehreek-e-Insaf (PTI) party and the Establishment (Pakistan army)**, an economic meltdown, and the devastating impact of the 2022 floods.

- II) Even by Pakistan's standards, the situation was tumultuous, with fears of a debt default and a military takeover looming on the horizon. However, a few developments recently across political, military and economic sectors suggest a semblance of normalcy returning to Pakistan.

What was the legislative development?

- I) During the last week of June, the Parliament passed the **Elections (Amendment) Act 2023**, providing the **Election Commission of Pakistan (ECP)** the sole responsibility of deciding when to conduct elections. Now the ECP decides the next election date, instead of the President as was previously the case.

In March 2023, the President, who was appointed by former Pakistan Prime Minister and PTI chief Imran Khan, announced the election date for the Punjab provincial assembly without consulting the Parliament. The Supreme Court supported this decision, which created a conflict between the court and the Parliament, leading to political instability.

- II) However, the new legislation would inevitably result in the ECP announcing the election dates for the national and provincial assemblies at a later date during 2023. This aligns with the ruling Pakistan Democratic Movement (PDM) coalition.
- III) The new legislation also means that self-exiled former Pakistan Prime Minister Nawaz Sharif can return and contest the forthcoming elections.



What has the military done?

- I) After the violence on May 9, where following the arrest of Mr. Khan on charges of corruption, protests by his supporters and party members quickly turned into out-of-control riots, the Establishment had come down heavily on Mr. Khan and the PTI.
- II) Since the violence, the Establishment has taken direct action besides covert pressure. The formation of military courts to punish the perpetrators of the May 9 incident has been one part of the story. The other part is the systematic covert targeting of the PTI; leaders who were a part of Imran Khan's close circuit and his cabinet ended up getting arrested repeatedly during May, ultimately yielding to the pressure from the Establishment. Thus, the Establishment successfully built a new narrative that the perpetrators behind the May 9 violence were the worst enemies of Pakistan.

Has the IMF agreed to help?

- I) When June began, Pakistan was facing an economic meltdown and a threat of default, facing severe inflation and a foreign reserve that could sustain only for a few more months. Despite multiple review meetings with the **International Monetary Fund (IMF)**, there was no sign of a deal. An earlier IMF programme under the **Extended Fund Facility (EFF)** was to end by June 30.
- II) Despite numerous political bravados and expectations of "friendly countries" helping Pakistan to meet the economic crisis, Pakistan had to go back to the IMF with new estimates. On June 24, Pakistan's Finance Minister, announced new measures that would generate new taxes and cut

government spending. The revised estimates of June aimed at lowering the original fiscal deficit target by 6.5% of the budget.

- III) A series of high-level meetings (between the Pakistan Prime Minister and the IMF Managing Director) in June, and importantly, IMF conditions-mandated budget revisions have resolved the differences. According to the IMF, the new **Stand-By-Arrangement (SBA)** for \$3 billion would provide a policy anchor and a framework for financial support from multilateral and bilateral partners in the period ahead. This would mean the IMF deal would open other donor opportunities for Pakistan.

Is the crisis over for Pakistan?

- I) Not yet. On the political front, the fall of the PTI chairman may provide temporary relief to the ruling PDM. But the reasons behind his fall show the larger political problems plaguing Pakistan. The political instability has come to an end, not through a dialogue between political actors, but by the brutal downsizing of one party, by an extra-political institution. This has been Pakistan's problem for the last seven decades.
- II) On the economic front, Pakistan has succeeded in getting IMF aid. But the larger issues remain such as the need for macro-economic reforms, the prevailing narrow tax base etc. While Pakistan has been forced by the IMF to make adjustments, the change has to come from within.
- III) Though, Pakistan has received temporary relief in both economic and political aspects, but only the symptoms have been addressed and the underlying causes remain unresolved.



THE U.S. SUPREME COURT'S RULING ON AFFIRMATIVE ACTION FOR COLLEGES

Why is it in the news?

The U.S. Supreme Court recently **struck down race-conscious policies in college admissions**, ending decades of precedent that had allowed schools nationwide to use such programs to increase the diversity of their student bodies.

What is affirmative action?

- I) In the context of higher education, affirmative action typically refers to admissions policies aimed at **increasing the number of Black, Hispanic and other minority students on campus.**
- II) Colleges and universities that take race into consideration have said they do so as part of a holistic approach that reviews every aspect of an application, including grades, test scores and extracurricular activities.
- III) The goal of race-conscious admissions policies is to increase student diversity in order to enhance the educational experience for all students.
- IV) Schools also employ recruitment programs and scholarship opportunities intended to boost diversity, but the Supreme Court litigation was focused on admissions.

Which U.S. schools consider race?

- I) While many schools do not disclose details about their admissions processes, taking race into account is more common among selective schools that turn down most of their applicants.
- II) According to 2019 survey, about a quarter of schools said race had a “considerable” or “moderate” influence on admissions, while more than half reported that race played no role whatsoever.

- III) Nine States have banned the use of race in admissions policies at public colleges and universities: Arizona, California, Florida, Idaho, Michigan, Nebraska, New Hampshire, Oklahoma and Washington.

What is the current litigation about?

- I) The Supreme Court decided two cases brought by Students for Fair Admissions, a group headed by **Edward Blum, a conservative legal strategist who has spent years fighting affirmative action.**
- II) One case contended that Harvard’s admissions policy unlawfully discriminates against Asian American applicants. The other asserted that the University of North Carolina unlawfully discriminates against white and Asian American applicants. However, the schools rejected the claims, saying race is determinative in only a small number of cases and that barring the practice would result in a significant drop in the number of minority students on campus.

How has the U.S. Supreme Court ruled in the past?

- I) The Court had largely upheld race-conscious admissions for decades, though not without limits.
- II) A divided Supreme Court took up the issue in the landmark 1978 case, **Regents of the University of California v. Bakke**, after schools began using affirmative action in response to the Civil Rights era to correct the effects of racial segregation. The swing vote, Justice Lewis Powell, ruled that schools could not use affirmative action to rectify past racial discrimination and struck down the university’s practice of setting aside a certain number of spots for minorities. Nevertheless, Mr. Powell found that increasing



campus diversity was a “compelling interest” because students of all races — not just minorities — would receive a better education if exposed to different viewpoints. Mr. Powell ruled that schools could weigh race in admissions as long as it remained only one factor among many.

- III) In 2003, the Court struck down the University of Michigan’s use of a system that awarded “points” to minority applicants as going too far but affirmed Bakke’s central finding that schools could use race as one of several admission factors.
- IV) The Court in 2016 again upheld race-conscious admissions in a challenge backed by Blum to the University of Texas policies. But the Court has moved sharply to the right since then, with six conservative justices now and only three liberals.

What will colleges do in response?

- I) The decision will force elite colleges and universities to revamp their policies and search for new ways to ensure diversity in their student populations.
- II) Many schools have said other measures would not be as effective, resulting in fewer minority students on campuses.
- III) In briefs filed with the Supreme Court, the University of California and the University of Michigan — top public college systems from States that have outlawed race-conscious admissions — said they have spent hundreds of millions of dollars on alternative programs intended to improve diversity, but that those efforts have fallen far short of goals.

U.S. TECH FIRMS DIGITAL TRADE WITH INDIA

Why is it in the news?

Recently, the **Washington D.C.-headquartered Computer & Communications Industry Association (CCIA), with members like Amazon, Google, Meta, Intel, and Yahoo**, flagged 20 policy barriers to trading with India in a note titled “**Key threats to digital trade 2023**”.

What is the current status of India-U.S. technology trade?

- I) Notably, in FY2023, the U.S. emerged as India’s biggest overall trading partner with a 7.65% increase in bilateral trade to \$128.55 billion in 2022-23. However, digital or technology services did not emerge as one of the sectors at the forefront of bilateral trade.

The CCIA points out in its report that “despite the strength of the U.S. digital services export sector and enormous growth potential of the online services market in India, the U.S. ran a \$27 billion deficit in trade in digital services with India in 2020”.

- II) In the recent past, however, the two countries have been ramping up their tech partnership through moves like the **Initiative on Critical and Emerging Technology (iCET)** under which India and the U.S. agreed to cooperate on critical and emerging technologies in areas including artificial intelligence, quantum computing, semiconductors and wireless telecommunication. Additionally, under the iCET, India and the U.S. also established a **Strategic Trade Dialogue** with a focus on addressing regulatory barriers and aligning export controls for smoother trade and “deeper cooperation” in critical areas.
- III) Recently, the ambitious MoU was signed between



the two states on the **Semiconductor Supply Chain and Innovation Partnership**, which includes a combined investment valued at \$2.75 billion. On the telecommunications front, two Joint Task Forces was launched to focus on the Open RAN network and research and development in 5G/6G technologies.

- IV) Besides, the two countries are bullish on future tech such as AI and Quantum Computing, having put in place the **Quantum Coordination Mechanism and a joint fund for the commercialization of Artificial Intelligence**.

What are the concerns of U.S. tech firms?

- I) The CCIA, has flagged in its note, the **significant imbalance and misalignment** in the U.S.-India economic relationship. The U.S.'s extension of market access, trade and openness to Indian companies to operate and succeed in the U.S. has not been reciprocated by the Indian side, adding that the Indian government has deployed a range of **"tools to champion their protectionist industrial policy"**, tilting the playing field away from U.S. digital service providers in favour of domestic players".
- II) To describe these **"discriminatory regulation and policies"**, it cites the example of **India's guidelines on the sharing of geospatial data**, which it accuses of providing preferential treatment to Indian companies.

What taxation measures has the CCIA raised concerns about?

- I) One of the taxation tools that U.S. tech firms have long taken exception to is the expanded version of the **"equalisation levy"** that India charges on digital services. India in 2016, with the goal of "equalising the playing field" between resident service suppliers and non-resident suppliers of

digital services imposed a unilateral measure to **levy a 6% tax** on specific services received or receivable by a non-resident not having a permanent establishment in India, from a resident in India who carries out business.

- II) In 2020, the Centre came out with the **'Equalisation Levy 2.0'**, which imposes a **2% tax** on gross revenues received by a non-resident "e-commerce operator" from the provision of 'e-commerce supply or service' to Indian residents or non-resident companies having a permanent establishment in India.
- III) The CCIA argues that the government decided to put the levies in place and continue their imposition unilaterally even as 135 other countries await clarity on an **Organisation of Economic Cooperation and Development (OECD)** agreement to overhaul the global tax system. This deal would ask countries to remove all digital services tax and other similar measures and to commit to not introduce such measures in the future.

What about India's IT Rules 2021?

- I) The **Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021**, has been flagged by the consortium of foreign tech firms under the some of the most "problematic policies". The IT Rules place compliance burden on social media intermediaries (SMIs) and platforms with five million registered users or more, which means several U.S. firms end up falling under the ambit.
- II) Some points of concern raised are the **"impractical compliance deadlines and content take-down" protocols** — the IT Rules require intermediaries to take down content within 24 hours

upon receiving a government or court order. The platforms are also required to appoint a local compliance officer.

Moreover, with the amendments made to the Rules late last year, SMIs are now obligated to remove, within 72 hours, information or a communication link in relation to the six stipulated prohibited categories of content as and when a complaint arises.

- III) There is also major criticism against the government's institution of the **three-member Grievance Appellate Committees (GAC)**, which will hear user complaints about the decisions of SMIs regarding their content-related issues and have the power to reverse those decisions. Additionally, in January this year, the Ministry of Electronics and IT (MeitY) added another layer of compliance, requiring platforms to make reasonable efforts to prevent the publication of content fact-checked as fake or false by the **Press Information Bureau (PIB)**.

What are the criticisms of the new draft of the data protection law?

- I) India, with more than 759 million active internet users representing more than 50% of its population is a gold mine for data. The country is also planning to become a hub for data processing, wanting to host data centres and cloud service providers. This means that India's policy on the flow of data across borders will impact the same on a global level, as was seen with the **European Union's landmark General Data Protection Regulation (GDPR)**.
- II) While there are various arguments in favour of data localisation requirements by governments, such requirements also tend to significantly in-

crease operating costs of companies and can be seen as discriminatory by foreign companies.

- III) Foreign tech companies like Meta or Amazon operating in India find it convenient to store their data, say in the U.S. or wherever they have their servers. This means that such data has to leave Indian borders.

The new draft has only one line about cross-border data flows — Section 17 of the Act says that cross-border flow of data will only be allowed for a list of countries notified by the Centre. On what basis will these countries be notified and what will the terms for such transfers be is not mentioned in the draft.

- IV) Besides, the previous version of the Bill, which imposed data localisation requirements on data fiduciaries (companies or entities who decide the purpose and means of processing personal data) for specified types of personal data, drew criticism from companies and foreign governments alike. Firms now argue that the new draft instead leaves grey areas by dropping the provisions on localisation, leaving room for speculation whether this could mean de facto localisation.

What have firms said about the draft Telecom bill?

- I) The CCIA contends that the **draft Telecommunications Bill, 2022**, has a sweeping regulatory ambit in that it "would redefine telecommunication services to include a wide range of internet-enabled services that bear little resemblance to the telephony and broadband services previously governed by this regulatory regime".
- II) The current draft of the Bill puts both **Telecom Service Providers (TSPs) and Over-the-top (OTT) communication services** under the definition of



“telecommunication services”.

OTT communication services include messaging platforms such as Whatsapp, Telegram, Signal, Google Meet etc., which use the network infrastructure of TSPs like Airtel and Jio to provide features that compete with telecommunication services such as voice calls and SMS services.

- III) The CCIA contends in its note that the proposed law if passed in its current form, would subject a number of platforms to onerous obligations including licensing requirements; government access to data; encryption requirements, internet shutdowns, seizure of infrastructure, and possibly monetary obligations for the sector.

What are the other policy barriers to digital trade with India?

- I) Last year, the Parliamentary Committee on Finance, in order to address anti-competitive practices by big tech companies, proposed the adoption of a “**Digital Competition Act**”. This, the CCIA says would include estimated taxes for big or significant digital intermediaries, arguing that the proposal appeared “to be largely targeted at U.S. tech companies”.
- II) Moreover, the body, which has Google as a prominent member, also expressed discontent about the Competition Commission of India’s two successive fines of ₹ 936.44 crore and ₹ 1,337.76 crore, respectively, on Google last year, for “anti-competitive practices” in its Play Store policies and for abusing its dominant position in multiple markets in the Android mobile operating system domain. The body went on to categorise this as part of India’s attempt “**to use antitrust laws as a smokescreen for protectionist industrial policy**”.

AUSTRALIA’S REFERENDUM TO INCLUDE AN INDIGENOUS ‘VOICE’ IN ITS CONSTITUTION

Why is it in the news?

- I) Recently, a bill passed by the Australian Parliament has set the stage for a historic referendum on **constitutional recognition for the Indigenous people, who account for 3.2% of the country’s nearly 26 million population.**
- II) The Senate approved the **Constitution Alteration (Aboriginal and Torres Strait Islander Voice) 2023**, which proposes a change in the Constitution to establish a representative body that will advise Parliament and the government on matters related to Indigenous people.

Who are the Indigenous people of Australia?

- I) The Australian government defines Indigenous people as those who “**are of Aboriginal or Torres Strait Islander descent; identify as being of Aboriginal or Torres Strait Islander origin; and are accepted as such in the communities in which they live or have lived.**” **The Torres Strait Islands are now part of the Australian state of Queensland.**
- II) Aboriginal Australians are believed to have inhabited the continent for tens of thousands of years, long before British colonisation of Australia in the 18th century. Aboriginal people are known to have occupied mainland Australia for at least 65,000 years. It is widely accepted that this predates the modern human settlement of Europe and the Americas.
- III) Communities include hundreds of groups with distinct languages, cultural practices and traditions. Also, about 250 such language groups are spread throughout the continent.



How did the referendum come about?

I) The British colonisation of Australia was catastrophic for the Aboriginal and Torres Strait Islander people. It had a devastating impact on Indigenous society and economy and its effects are still felt today.

II) In the late 18th century, Lieutenant James Cook was instructed to take possession of new territories in the southern hemisphere “with the consent of the natives.” But that didn’t happen. Despite opposition from inhabitants, Cook and his crew declared possession, for they considered Australia to be **terra nullius, Latin for nobody’s land.**

The ‘First Fleet’ of 11 ships with over a thousand prisoners arrived in Australia in 1787, establishing the first European settlements on the continent. Over 1.5 lakh convicts were transported to Australia by the end of 1868.

III) The years that followed were devastating for Aboriginal people. It is estimated that the Indigenous population reduced by 90% between 1788 and 1900 due to a combination of factors. These included epidemic diseases, displacement from traditional lands, violent conflict with colonisers and slave-like work conditions.

According to the Report of National Inquiry into Racist Violence in Australia of 1991, approximately 20,000 Aboriginal people were killed due to colonial violence as they resisted the infringement of their land rights and its impact on their cultures and communities.

IV) Aboriginal women also experienced high levels of sexual abuse during the period. Aboriginal children were taken away from their families and communities and brought up in a ‘white’ culture, further destroying the fabric of Indigenous

society. These children came to be known as the **‘stolen generation’.**

V) The marginalisation of Aboriginal and Torres Strait Islander people continued for years. A referendum later empowered the government to make laws for Indigenous people and they were included in the Census more than 60 years after Australian independence in 1901. Voting rights were granted in 1962. It took the government 200 years to formally apologise to the stolen generation.

VI) Indigenous people have experienced widespread socio-economic disadvantage, inequality and discrimination for years. They earn lower average incomes than non-Indigenous Australians, and their life expectancy is about eight years lower than the national average. Suicide rates are twice as high. They are over-represented in prisons and custodial deaths. Indigenous women experience family violence at rates higher than other women in the country.

VII) In 2008, the government committed to “close the gap” to achieve better health and life expectancy outcomes for Indigenous peoples affected by intergenerational trauma.

VIII) About 250 representatives came together and made the **‘Uluru Statement from the Heart’ in 2017, which called for a ‘First Nations Voice’ enshrined in the Constitution.** While the then government rejected the call, it was back in the spotlight when Labor’s Anthony Albanese took over. He announced in 2022 that Australians will have their say in a referendum to include the Voice in parliament.

Why is a referendum needed?

I) Changing the Constitution is a complex procedure in Australia. Parliament is not empowered



to alter the document on its own even though a few provisions that use phrases such as ‘until the Parliament otherwise provides’ allow modification and alterations in the initial provision. In case of an alteration, however, a majority vote from the Commonwealth’s electors and electors in the majority of the States in a referendum is required. One of the two Houses has to first introduce a proposal. The Bill should pass in both Houses with an absolute majority after which the government clears it. Once passed, the legislation is taken to the public for a national vote.

- II) Australia has seen 44 proposals for constitutional change in 19 referendums since independence in 1901, and only eight of these have been approved. The recent proposal follows growing support for Indigenous representation in government policy to remove inequities.
- III) In March this year, the Australian government introduced the Constitution Alteration (Aboriginal and Torres Strait Islander Voice) 2023 in the House of Representatives. Parliament passed the draft law on June 19. It will now be sent to the Governor General, who will issue a writ for a referendum after which the government will announce a date for the referendum.

What is the proposal?

- I) The wording of the referendum question is: “A Proposed Law: to alter the Constitution to recognise the First Peoples of Australia by establishing an Aboriginal and Torres Strait Islander Voice.”
- II) The law proposes to add a new chapter on the recognition of Aboriginal and Torres Strait Islander peoples in the Constitution. It includes provisions to set up a body called **Aboriginal and Torres Strait Islander Voice** that will advise Par-

liament and the government on matters affecting Indigenous peoples.

The Voice will be selected by Indigenous communities and not the government. Notably, the Voice will not have veto power, thus, its advice will be non-binding.

- III) The Australian government has launched a public information campaign to provide details about the referendum process and proposal.

When will Australia vote?

- I) The 2023 referendum will be the first since 1999 when Australians rejected the establishment of a republic. As per constitutional provisions, voting must happen within a timeframe not less than two or more than six months after its passage in Parliament.
- II) The vote is likely to take place between October and December. In Australia, voting is compulsory for citizens aged 18 years and above.

UNDERSTANDING THE WAGNER MUTINY

Why is it in the news?

- I) **Yevgeny Prigozhin, the chief of Russia’s Wagner Private Military Company**, staged a short-lived mutiny against the country’s defence establishment on June 24, pushing Vladimir Putin’s Russia into an unprecedented internal security crisis.
- II) Mr. Prigozhin said he was not staging a coup and stayed away from directly attacking the Kremlin. But he demanded the ouster of Russia’s top defence brass and launched a “**march of justice**”, with a convoy of armed men and armoured vehicles, towards Moscow.
- III) Mr. Putin opted to resolve the situation through talks but the fact that a feud between his Minis-



try of Defence (MoD) and a favourite, powerful warlord came to the brink of an open civil war speaks more of chaos rather than order in Moscow.

What happened on June 24th?

- I) The crisis erupted on June 23 night when Mr. Prigozhin released a video on Telegram, accusing the defence leadership of ordering strikes on Wagner and killing many of his forces. Hours later, he released another video claiming that his forces have taken over Russia's Southern Military District headquarters in **Rostov-on-Don, the largest city in southern Russia** that sits just 100 kms from the Ukrainian border.

Short videos of Wagner troops and tanks on the streets of Rostov flooded the Internet. Mr. Prigozhin said Wagner would start a "march of justice" towards Moscow.

- II) Immediately, a convoy of his forces started moving along the main highway connecting Rostov to Moscow. During the "march", Wagner forces shot down six Russian helicopters and a command centre plane, killing 13 servicemen, according to local reports. Roads and bridges were damaged when the Russian troops tried to stop Wagner. A jet fuel depot in the city of Voronezh, north of Rostov, caught fire when it was hit. As the whole world was warily watching the situation in Russia, the Belarus government announced that Mr. Prigozhin would turn back. By that time, the convoy had crossed Yelets in Lipetsk Oblast, some 200 km south of Moscow. Mr. Prigozhin released another video confirming what the Belarus government said. "It's over," he stated.

Why did Prigozhin launch the mutiny?

- I) The crisis between the Wagner chief and Russia's MoD has been brewing for quite some time. Mr.

Prigozhin, a former Kremlin contractor and a close ally of Mr. Putin, accused the MoD leadership of corruption and incompetence.

The earliest signs of the feud were visible in February, weeks after Wagner captured **Soledar, a small salt-mining town in Donetsk**, when Mr. Prigozhin said the Ministry had limited the supply of arms and ammunitions for Wagner whose forces were on the frontlines in Bakhmut. Wagner took Bakhmut in late May, after one of the bloodiest battles of the 21st Century. According to Mr. Prigozhin, Wagner lost some 20,000 men in the battle, "five times more guys than had been supposed to have died".

- II) He appeared in a video from the captured city and said the MoD leadership "should be held responsible for their actions". The capture of Bakhmut seemed to have strengthened Mr. Prigozhin's standing. It also intensified the feud between the MoD and Wagner.

Mr. Prigozhin said his forces came under fire while retreating from Bakhmut. And Wagner arrested one Russian regular serviceman and filmed him. The crisis came into the open on June 10 when Mr. Shoigu issued an order asking all armed volunteers to sign contracts with the MoD before July 1. It was an attempt to bring Wagner's remaining 25,000 forces under the Defence Ministry's command for which Mr. Prigozhin protested.

- III) President Putin continued to remain silent, at least publicly, allowing Mr. Shoigu to go ahead with his plan. It threatened to take Mr. Prigozhin's base away from him. And then on June 23- 24, Mr. Prigozhin launched his rebellion.



What was Putin's response?

- I) While the crisis was unfolding, Mr. Putin appeared on state TV, addressing the nation, in which he called the mutiny a “**betrayal**” and a “**stab in the back**”.
- II) Mr. Prigozhin was a former close ally to Putin. He built Wagner with Mr. Putin's blessings. And Wagner has turned out to be an important security tool for the Kremlin in recent years. The company has established a deep presence in Africa's lawless regions providing security to governments, mines, corporations, etc. It allowed the Kremlin to expand its influence in the region without sending the regular Russian troops.
- III) Wagner also proved to be ruthlessly effective in the Ukraine war. Russia suffered humiliating retreats last year from Kharkiv and Kherson after its initial thrust into Ukraine made limited territorial gains. Since last summer, Russia has taken only two major battlefield victories — Soledar in January and Bakhmut in May — and both were led by Wagner. Wagner's battlefield victories as well as Mr. Prigozhin's repeated attack on corruption in the establishment has rendered the mercenaries popular at least among the nationalist sections of Russia.
- IV) The dilemma Mr. Putin faced was whether he should crush them, risking an all-out civil war, or find a face-saving exit. The realist in Mr. Putin chose the latter. He turned to Alexander Lukashenko, a long-time ally and the President of Belarus, who negotiated with Mr. Prigozhin. Then, they had a deal. Mr. Prigozhin agreed to turn back, and an immediate security crisis was averted.

What was the deal?

- I) When he launched his mutiny, Mr. Prigozhin had demanded the ouster of the MoD top brass, mainly Defence Minister Shoigu and Gen. Gerasimov. Russia's Federal Security Service (FSB) had slapped a criminal case against Mr. Prigozhin.
- II) According to the Kremlin, as part of the deal, Mr. Prigozhin would relocate to Belarus and those Wagner members who did not join the mutiny would be allowed to sign contracts with the MoD. The case against Mr. Prigozhin would be dropped.

THE ARTEMIS ACCORDS

Why is it in the news?

- ★ Recently, India's Ambassador to the U.S., has signed the document confirming **India's acceptance of the Artemis Accords**.

Background

- I) The Artemis Accords are a set of **non-binding guidelines** that underpin the Artemis programme, **an ambitious U.S.-led project to return humans to the Moon, this time permanently**. The project plan includes a base on the lunar surface, multiple spacecraft to ferry humans and cargo, a small orbiting space station called the ‘**Lunar Gateway**’, and a constellation of satellites to help with navigation and communication.
- II) Artemis mirrors a Chinese-Russian plan for an ‘**International Lunar Research Station**’ (ILRS). With Russia financially constrained and reeling under sanctions, China has taken the lead on ILRS, outlining similar plans for a permanent base and a lunar satellite constellation.

What are Artemis Accords?

- I) The Artemis Accords establish a **practical set of**



principles to guide space exploration cooperation among nations, including those participating in **NASA's Artemis program**.

- II) NASA, in coordination with the U.S. Department of State, established the Artemis Accords in **2020** together with seven other founding member nations.
- III) 26 countries have partnered in the Artemis Accord, with **Australia, Canada, Italy, Japan, Luxembourg, UAE, UK, and USA being the founders**.
- IV) Out of 22 European nations, only eight — Luxembourg, Italy, UK, Romania, Poland, France, Czech Republic, and Spain — have signed the accords.
- V) These principles are **non-binding multilateral arrangements** between the US government and other governments.
- VI) The Artemis Accords reinforce and implement **key obligations in the 1967 Outer Space Treaty**.
- VII) These apply to civil space activities — which may take place on the moon, Mars, comets, asteroids, including their surfaces and sub surfaces, as well as in orbit of the Moon or Mars.

What is Artemis Programme?

- I) NASA's Artemis program is an effort to place **astronauts on the lunar surface and develop an ongoing presence there**. Through the Artemis program, NASA will land the **first woman and first person of colour on the Moon**.
- II) The program's name is derived from Artemis, the **Greek goddess of the moon and twin sister to Apollo**.
- III) The most ambitious of the Artemis mission's objectives involves using the **moon as a stepping stone for a mission to Mars**. NASA aims to send astronauts there by the 2030s.

IV) For crewed Artemis missions, the rocket will launch the Orion spacecraft to the moon. Orion is a space capsule larger than the Apollo command modules that are designed to carry four astronauts on missions to the moon.

V) **Artemis 1 (2022)**: The first mission was uncrewed to **test the safety of the SLS rocket, and the Orion capsule's ability** to reach the moon, perform in lunar orbit and return to Earth for an ocean splashdown. The mission was completed successfully.

VI) **Artemis 2 (2024)**: Carrying the first four Artemis astronauts, the Orion capsule will take the crew farther from Earth than humans have ever travelled before. Over the approximately 10-day mission, the crew will complete a lunar flyby and return to Earth, evaluating the spacecraft's systems while carrying humans.

VII) **Artemis 3 (2025)**: This will see the next man and first woman step onto the lunar surface. With previous missions have been successful, the astronauts will shoot towards the moon, using the lunar lander to lower two people to the moon's south polar region. They will remain on the moon for around a week.

Significance for India

- I) **Collaboration between ISRO and NASA**: NASA will provide advanced training to **Indian Space Research Organization (ISRO)** astronauts with the goal of launching a joint effort to the International Space Station in 2024.
- II) **Vision of Global Space Power**: This agreement holds significant importance for India to establish itself as a global space power. India signing the accords would benefit space exploration ambitions under the new space policy mainly through international collaboration as all sig-

natories to the accords commit to the open sharing of scientific data and assist each other in the efforts.

III) **Technology Transfer:** Signing of the Artemis Accords could possibly liberalise some of those technology transfer hurdles that are there between the US and India.

IV) India's decision to join the Artemis Accords highlights its **dedication to global space cooperation** and a keen interest in participating in lunar exploration missions. By becoming a signatory, **India can collaborate with other nations**, including the United States, in future Moon missions.

This collaboration enables the sharing of knowledge and expertise, contributing to the advancement of scientific research, technological development, and the expansion of humanity's presence in space.

V) **International Cooperation:** Now India will be much more open to international collaborations and open to exploring uncharted territories. There have been several restrictions in the past with Indian companies unable to do business in the European region. But now, this will be much more open and collaborations will be much more accessible. It also opens up markets for Indian companies with all the other signatories of the Artemis Accord.

THE CHINA-PAKISTAN NUCLEAR DEAL

Why is it in the news?

I) Recently, **the China and Pakistan signed an agreement for a 1,200 MW nuclear power plant in the Chashma nuclear complex in Pakistan.** The deal, reported to be worth \$4.8 billion, comes amid

Pakistan facing a dual energy and economic crisis.

II) The latest nuclear deal between China and Pakistan has implications not only for the crisis-hit country but also for the global governance of nuclear commerce, with Beijing proceeding with the recent deal without seeking necessary waivers from the **Nuclear Suppliers Group (NSG).**

What is the latest deal?

I) Pakistan's Prime Minister witnessed the signing of the agreement for the construction of a 1,200 MW nuclear plant. This is the **fifth reactor at the Chashma nuclear complex (C-5).**

II) C-5 will be the biggest reactor at Chashma, where China has already constructed four phases of the complex, with four reactors of around 325 MW each. It will use China's Hualong One reactor, which has also been installed in two plants in Karachi.

How many other nuclear plants has China built for Pakistan?

I) Pakistan is currently operating six China-built nuclear plants, four smaller reactors at the Chashma complex and two at the **Karachi Nuclear Power Plant (KANUPP).**

II) Pakistan's oldest reactor, the Canada-built KANUPP-1, is now decommissioned, while KANUPP-2 and KANUPP-3 both use 1,100 MW Chinese Hualong One reactors. KANUPP-3, with a \$2.7 billion investment, went fully online in the past year and was hailed as helping ease Pakistan's energy crisis.

III) An agreement for KANUPP-3 was signed in 2013, the year Chinese President Xi Jinping launched his **Belt and Road Initiative (BRI)**, and became a flagship energy project as part of the **China Pakistan Economic Corridor (CPEC) of the BRI.**



- IV) According to Pakistan's Ministry of Energy, faced with a continuing energy deficit, financial crisis and rising import bills, the country needs to urgently increase the share of renewables and nuclear energy. The energy sector is heavily dependent on imported fuel including oil and LNG and will continue to rely on its imports because of the low domestic capacity. Higher oil prices in the global market and massive depreciation of the Pakistani rupee is making oil imports more expensive, triggering external sector pressure and widening trade deficit of the country.
- V) The **Alternative and Renewable Energy Policy** rolled out in 2019 envisages increasing the share of renewables to 30% by 2030. Currently, thermal sources account for 61% of the energy mix, while hydropower accounts for 24%, nuclear 12%, and wind and solar only 3%. On the nuclear side, gross capacity of nuclear plants had increased by 39% annually to 3,530 MW.
- II) Chinese analysts have now justified the continuing nuclear commerce, despite Beijing's NSG commitments, by pointing to the India-U.S. nuclear deal. There are, however, significant differences. For one, India and the U.S. had to seek a waiver from the NSG for their civilian nuclear deal, which was granted in 2008, paving the way for India to enter the tent of global nuclear commerce. That was, however, only granted after India undertook a number of commitments such as placing facilities under **International Atomic Energy Agency (IAEA)** safeguards, separating civilian and military nuclear programmes and a continued moratorium on testing.
- III) Neither has China sought any such waiver from the NSG nor has Pakistan undertaken similar commitments. China has suggested that the reactors being under IAEA safeguards would suffice.

What are the broader implications?

- I) China's civilian nuclear projects with Pakistan have come under scrutiny because the Nuclear Suppliers Group (NSG), which describes itself as a group of nuclear supplier countries "that seeks to contribute to the non-proliferation of nuclear weapons through the implementation of two sets of Guidelines for nuclear exports and nuclear-related exports", explicitly prohibits the transfer of nuclear technology by its members to countries that have not signed the **nuclear Non-Proliferation Treaty (NPT)**. China joined the **48-member grouping** in 2004, and argued subsequently that the Chashma 3 and Chashma 4 reactors were "grandfathered" under its earlier Chashma deals with Pakistan that pre-dated its joining of the NSG.
- IV) While China had explained its C-4 and C-5 deals as being part of an earlier agreement, the KANUPP-2 and KANUPP-3 plants were agreed to in 2013, a decade into its NSG membership.
- V) Meanwhile, long-running negotiations to include India as a full-fledged NSG member have run into a Chinese wall. A years-long effort, which included talks with China, appeared to run aground in 2015 when Beijing started to link India's aspirations for NSG membership with that of Pakistan's. Experts fear the latest deals have only further eroded the global rules governing nuclear commerce, and also raised questions about both the continuing relevance and future of the NSG and governance of global nuclear commerce.



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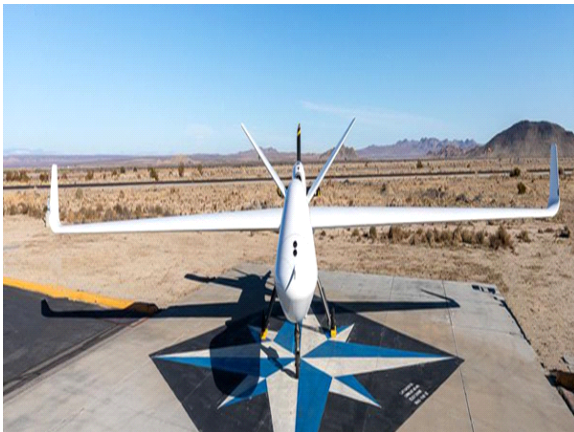
THE INDIA-U.S. DEAL FOR 31 MQ-9B DRONES

Why is it in the news?

- ★ Recently, the U.S President Joe Biden and Prime Minister Narendra Modi welcomed India's plans to procure **General Atomics MQ-9B High Altitude Long Endurance (HALE) Unmanned Aerial vehicles (UAV)**. This sets the stage for the **acquisition of 31 of these armed UAVs, 15 SeaGuardians for the Indian Navy and 16 SkyGuardians — eight each for the Indian Army and Air Force.**

What do the UAV's bring in terms of capability?

- I) The MQ-9B has two variants — the SkyGuardian and the SeaGuardian, its maritime variant. The MQ-9B is designed to fly over the horizon via satellite for up to 40 hours, depending on configuration, in all types of weather and safely integrate into civil airspace.
For instance, the SeaGuardian configuration can include a 360-degree surface-search maritime radar, automatic identification system, sonobuoy monitoring system, and sonobuoy dispensers for persistent anti-surface and anti-submarine warfare missions.



(The MQ-9B SkyGuardian)

- II) According to General Atomics, the MQ-9B can provide roughly 80% of the capability of a large human-flown maritime patrol aircraft at about 20% of its cost per hour. That makes it much more economical for navies to, for example, send out SeaGuardians to clear big volumes of air or sea and then, if anything of interest is discovered, vector in a human-crewed aircraft to save it the time, cost, and wear that it otherwise might have expended.

This is the primary reason the Indian Navy is keen on these UAVs as it significantly reduces the wear and tear on manned aircraft, its fleet of 12 P-8I long range maritime patrol aircraft, as well as reduce crew fatigue in keeping an eye over the wide expanse of the Indian Ocean Region and beyond.

- III) For the Army and Air Force, the MQ-9Bs can provide round-the-clock surveillance looking far beyond the borders, for instance on the movement of Chinese military buildup and troop movement along the **Line of Actual Control (LAC)** and deep inside. It also seamlessly integrates with other U.S.-origin platforms that India operates, the P-8Is, AH-64 Apache attack helicopters, MH-60R multi-role helicopters among others expanding MQ-9B's multi-domain mission set.

INDIA-US WTO DISPUTE

Why is it in the news?

- ★ Recently, India and the US have agreed to end six trade disputes at the **World Trade Organisation**. This comes amid Prime Minister Narendra Modi's State Visit to the US.

Background

- I) In 2018, the US imposed 25 per cent and 10 per cent import duties on certain steel and alu-



minium products respectively on grounds of national security.

- II) In retaliation, India in June 2019 imposed customs duties on 28 American products, including chickpeas, lentils, almonds, walnuts, apples, boric acid, and diagnostic reagents.

What were the Disputes?

- I) The six disputes include three initiated by India and as many by the US.
- II) These include countervailing measures on certain hot-rolled carbon steel flat products from India, certain measures relating to solar cells and modules, export-related measures, steel and aluminium products, and additional duties on some products from the US.
- III) The US had filed a complaint in the WTO about India's support measures to its export sector under different schemes. In 2019, a WTO dispute panel ruled that India's export measures are inconsistent with global trade norms.

WTO Rules

- I) According to WTO rules, a member country can file a case in the **Geneva-based multilateral body** if they feel that a particular trade measure is against the norms of the world body.
- II) Bilateral consultation is the first step to resolving a dispute. If both sides are not able to resolve the matter through consultation, either of them can approach the establishment of a dispute settlement panel.
- III) The panel's ruling or report can be challenged by WTO's appellate body.

Current status of WTO's appellate body

- I) The appellate body is not functioning because of differences among member countries to appoint its members.
- II) The US has been blocking the appointment of the members.

- III) Several disputes are already pending with this body.

Expectations from the agreement

India's removal of retaliatory customs duties on 28 American products such as almonds, walnuts, and apples will restore and expand market opportunities for US agricultural producers and manufacturers in India.

Way Forward

- I) The US is the **largest trading partner of India**. In 2022-23, the bilateral goods trade increased to USD 128.8 billion as against USD 119.5 billion in 2021-22. Hence, both countries should resolve the disputes on mutually agreed terms and later inform the Geneva-based WTO about the same.
- II) This agreement on ending trade disputes represents the culmination of intensified bilateral engagement over the last two years deepening economic and trade ties.

INDIA TO BE 'VOICE OF GLOBAL SOUTH'

Why is it in the news?

- I) As India assumed the **presidency of the G20 group of countries for 2022 to 2023**, Indian External Affairs Minister S Jaishankar said that **the country would be the "voice of the Global South, that is otherwise under-represented in such forums"**.
- II) The term has since been used multiple times, such as when Jaishankar said of ongoing global conflicts, **"polarisation may occur elsewhere, the people who suffer most are the Global South"**.
- III) **'Global North'** refers loosely to countries like the US, Canada, Europe, Russia, Australia and New Zealand, while **'Global South'** includes countries in Asia, Africa and South America.



The Need for the 'Global North' and the 'Global South'

- I) For a long time in the study of international political systems, the method of categorising countries into broad categories for easier analysis has existed. The concepts of '**East**' and '**West**' is one example of this, with the Western countries generally signifying greater levels of economic development and prosperity among their people, and Eastern countries considered as being in the process of that transition.
- II) Another similar categorisation is of **First World, Second World and Third World countries**, referring to countries associated with the Cold war-era alliances of the US, the USSR, and non-aligned countries, respectively.
- III) At the centre of these concepts is the **World Systems approach introduced by sociologist Immanuel Wallerstein in 1974**, emphasising an interconnected perspective of looking at world politics. He said there are three major zones of production: core, peripheral and semi-peripheral.
 - a) The core zones reap profits, being the owners of cutting-edge technologies – countries like the US or Japan.
 - b) Peripheral zones, on the other hand, engage in less sophisticated production that is more labour-intensive.
 - c) In the middle are countries like India and Brazil.

So, what was the need for new terms?

- I) In the post-Cold War world, the First World/Third World classification was no longer feasible, because when the Communist USSR disintegrated in 1991, most countries had no choice but to ally at some level with the capitalist US – the only remaining global superpower.

- II) Other classifiers have also seen criticism:
 - # The East/West binary was seen as often perpetuating stereotypical thinking about African and Asian countries. Categorising incredibly diverse countries into a monolith was felt to be too simplistic.
 - # Also, the idea that some countries were 'developed' while others were not was thought to be too wide a classification, inadequate for accurately discussing concerns.
- III) Writing in 2014 from the perspective of his organisation's philanthropic activities, Bill Gates said of the '**developing**' tag, "Any category that lumps China and the Democratic Republic of Congo together confuses more than it clarifies. Some so-called developing countries have come so far that it's fair to say they have developed. A handful of failed states are hardly developing at all. Most countries are somewhere in the middle."

Where Global South comes in

- I) What sets the terms Global North and South apart are that first, they are arguably more accurate in grouping like countries together, measuring similarly in terms of **wealth, indicators of education and healthcare, etc.**

Another commonality between the South countries is that most **have a history of colonisation, largely at the hands of European powers.**
- II) Secondly, this classification trains more focus on the Global South. When leaders such as Jaishankar mention it, they are also pointing to the region's historical exclusion from prominent international organisations – **such as from the permanent membership of the United Nations Security Council.**

As bodies like the UN and the IMF are involved in



major decision-making that affect the world in terms of politics, economy and society, the exclusion is seen by these countries as contributing to their slower growth. As a result, the idea that the South can together advocate for common causes has come up, as underlined by the External Affairs Minister.

- III) Interestingly, when Jaishankar criticised the expectation from India to take a stance on the Ukraine war and rebuke Russia in June this year, China's state-owned newspaper praised the comments. This is where the idea of **'South-South'** cooperation comes in.
- IV) Why the concept is being reiterated now is partly because of the **economic emergence of some of these South countries, such as India and China, in the last few decades**. Many consider the world to now be multipolar rather than one where the US alone dominates international affairs. The progress achieved by many Asian countries is also seen as challenging the idea that the North is the ideal.
- V) As **Samuel P Huntington** wrote in his 1996 book **'The Class of Civilizations and the Remaking of Global Order'**, **"East Asians attribute their dramatic economic development not to their import of Western culture but rather to their adherence to their own culture."**

Criticism of the classification

- I) Some of the earlier terms' criticisms apply here, too, such as the argument that the term is too broad. In the ongoing debate about North countries paying for funding green energy, having historically contributed to higher carbon emissions, many in the Global North have objected to China and India's exclusion from this, given their increasing industrialisation.

- II) There is also the question of whether the South simply aims to replace the North and the positions it occupies, again continuing a cycle in which a few countries accumulate crucial resources.

INDIA'S JET ENGINE DEAL WITH THE U.S. AND ITS SIGNIFICANCE

Why is it in the news?

- I) A mega defence deal for the manufacture of fighter jet engines in India is expected to dominate the agenda of Prime Minister Narendra Modi's first state visit to the United States this week.

According to sources, India and the U.S. have almost finalised details and the White House is set to sign off on the deal that will **allow American manufacturing company General Electric (GE) Aerospace to share critical technology with Hindustan Aeronautics Limited (HAL) for the joint production of GE-F414 jet engines that will power indigenous Light Combat Aircraft (LCA) Tejas Mk-II.**

- II) The proposed agreement has evoked considerable interest in India and beyond, with experts terming it a **significant step for bilateral defence and high-tech cooperation amid China's growing influence and global technological dominance.**

Tracing India's quest for indigenous aero-engines

- I) India's pursuit of self-reliance and technological transformation in the defence sector stems from the necessity to deal with the **dual threat along its borders and maintain strategic autonomy in the emerging world order.**
- II) Over the years, India has seen substantial accomplishments in various helicopter, missile

and space programmes. India has also designed and built a fighter jet but hasn't achieved much success in producing engines to power these aircraft.

- III) The quest began in the 1960s with the **country's first indigenous fighter, HF-24 Marut**. The aircraft was envisioned as a supersonic jet, but failed to achieve its potential for want of a suitable engine and was eventually phased out.
- IV) A few decades later, India sanctioned the **Kaveri programme to develop an indigenous military gas turbine engine for the ambitious LCA project**. The programme went on for around 30 years and incurred an expenditure of more than ¹ 2,000 crore. However, it could not be integrated with the LCAs because it failed to meet the necessary technical requirements.



(Light Combat Aircraft Tejas)

- V) With Kaveri still a work in progress, India shortlisted **American GE-F404 engines for LCA Tejas Mark-1** as an interim measure. In 2010, the **Aeronautical Development Agency (ADA)** selected the more powerful variant, **F414 engines, to power Tejas Mark-2**. In a media release, the company stated that it would supply an initial batch of the selected variant and the rest will be manufactured in India under a **transfer of tech-**

nology (ToT) arrangement.

The deal, however, did not materialise due to U.S. domestic legislation and regulatory hindrances and remained on the back burner for over a decade.

- VI) As a sign of deepening ties and with an eye on China, the U.S. recognised India as a **“major defence partner”** in 2016, which paved the way for sharing of critical military equipment and technology. It sought to put India on par with NATO-member countries.

What will the deal include?

- I) While there has been no official confirmation yet, senior officials from New Delhi and Washington have hinted at a **possible collaboration on the co-production of F414 jet engines**.
- II) Multiple media reports claim that the **U.S. has agreed to transfer around 80% transfer of the tech value to India**; which is unprecedented considering that America maintains strict controls over domestic military technology and has never handed over such critical technological know-how to a non-ally in the past.
- II) The agreement will, however, require final approval from the U.S. Congress before it is inked by both sides.

What are the features of the F414 engine?

- I) India has shortlisted the F414-INS6 model for LCA Mk-II for the IAF, and the export market in the future. An advanced and more efficient version of the F404 engines conceived in the early '90s, F414 engines currently power the LCA Tejas.
- II) At the time the deal was struck, in 2010, the aerospace giant said that the Indian variant will include a fully digital electronic system to control different aspects of the engine, known as **the Full Authority Digital Engine Control (FADEC)**,

along with added single-engine safety features customised to meet the country's defence requirements.

III) **The engine's main specifications are:**

- # An afterburner turbofan 154-inch Long engine in the 22,000-pound (98 kilonewtons) thrust class — 35% more thrust than the F404 engines. The afterburner tech increases the thrust of a jet engine for short periods to improve an aircraft's take-off, climb, and combat performance.
- # A thrust-to-weight ratio of 9:1, which is an indicator of aircraft propulsion. The higher an aircraft's thrust-to-weight ratio, the higher its acceleration, excess thrust, and rate of climb.

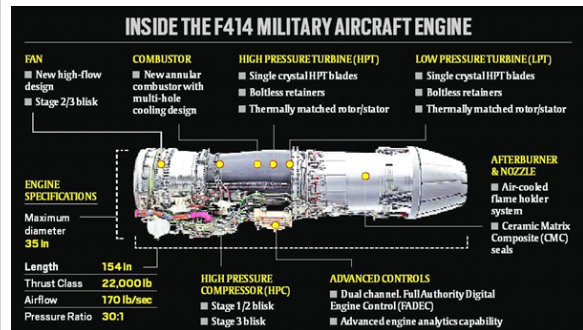


22,000 lb thrust class

- # Has low maintenance costs and boasts of unrestricted engine performance on demand with more than five million engine flight hours.
- # Is more reliable and has greater engine durability with a reduced life-cycle cost. The engine is designed to maximise time on wings, which is a measure of the operational reliability of an engine.

IV) The F414 engines power several advanced, next-generation combat aircraft around the globe. Currently, these engines are operational in Boeing's F-18 Super Hornet twin-jet fighters and Saab's JAS 39-Gripen (Next Generation) single-

engine combat aircraft and are being integrated into aircraft being built in South Korea. As per estimates, GE has produced F414 engines for F-18 Super Hornets at \$3.71 million.



How crucial is the deal for India?

- I) India will become the **fifth country in the world** to produce jet engines once the deal is sealed, joining the U.S., Russia, France and the U.K. Besides, boosting its military capabilities and growing defence manufacturing at a time when the world is reeling due to the impact of the Russia-Ukraine conflict, the agreement will help replace the fleet of ageing Russian fighters.
- II) Experts predict a transformative impact on the aerospace and defence manufacturing industry since India plans to produce more than 350 fighter jets for its air force and navy over the next two decades.

Conclusion

Addressing India's dependence on Russian imports, expanding the type and sophistication of the arms the U.S. is willing to sell to India may elevate the U.S. as an alternative to India's traditional dependence on Russian hardware, particularly amid rising concerns about Russia's strategic embrace of China, and growing questions about the quality, reliability, and capacity of a Russian defence industrial base increasingly strained by the Ukraine conflict.



WILL THE U.S. FEDERAL RESERVE RESUME THE RATE HIKE CYCLE?

Why is it in the news?

- I) The U.S. **Federal Reserve (Fed)** recently paused its rate hike cycle by deciding to hold interest rates after ten rate hikes since March 2022. The central bank kept its **target for the benchmark federal funds rate between 5% and 5.25%** until its next policy meeting.
- II) Many analysts, however, expect the Federal Reserve to resume its rate hikes and some even expect the federal funds rate to hit 6% soon.

What does a pause in rate hikes mean?

- I) Central banks around the world try to steer their economies primarily by targeting interest rates at which lending/borrowing happens in the short-term credit markets.
 - # For instance, if a central bank wants to lower short-term interest rates, it can enter the market where banks borrow funds for their short-term needs with fresh funds, bid up the price of these loans and thus lower interest rates. The fresh money injected into the banking system, in turn, would tend to percolate into the economy and cause prices to rise in the wider economy.
 - # A central bank can thus use monetary policy to influence prices in the wider economy. And keeping inflation within a certain target range is a major goal of central banks.
- II) Another policy goal that central banks try to meet along with the inflation target is to keep the economy operating at its full capacity wherein all resources are fully employed.

- # Many economists believe that there is a trade-off between inflation and unemployment. According to this framework, if inflation falls too low, this can cause a rise in unemployment and hence unused capacity.
- # So, the agenda of most central banks is to keep inflation up at a certain level at which the economy functions at full capacity. Inflation above a certain level, however, is seen as having no positive effect on economic activity.

Why did the Fed decide to hold rates steady?

- I) **U.S. Fed Chairman Jerome Powell** said that the central bank is waiting for signs that there has been a decisive slowdown in inflation before it decides on further actions. It should be noted that the Fed began raising interest rates after inflation hit multi-decade highs as the U.S. economy slowed down due to the Covid-19 lockdowns and the U.S. central bank responded by flooding the economy with massive amounts of dollars.
- II) While inflation has dropped from a peak of 9.1% in June last year to 4% in May this year, it is still higher than the Fed's stated target of keeping inflation within 2%. And even though US unemployment has risen slightly to 3.7% in May this year, it has witnessed a steady fall since the highs seen during the pandemic. In other words, the labour market does not seem to be heavily affected by the Fed's rate hikes since last year.
- III) It must also be understood that the effects of monetary policy usually take time to show up in terms of their impact on prices in the wider economy. So, the Fed may be cautious after a series of ten rate hikes about allowing interest

rates to rise too much too soon. A rapid withdrawal of monetary support can cause prices to undershoot the Fed's inflation target, something the U.S. central bank may not want.

What lies ahead?

- I) The Fed's rate hike pause is no guarantee that there won't be any future rate hikes in the short term. Other western central banks have continued to raise rates after a pause, and major central banks such as the European Central Bank and the Bank of England continue to raise interest rates as inflation continues to be a challenge in their economies.
- II) It is hard to predict the trajectory of economic indicators such as growth and inflation, or even the response of central banks with any level of certainty since there are multiple complex variables at play at the same time. For example, many economists over the last year or so have been trying to predict a recession in the U.S. without much success. It can only be said that the U.S. Federal Reserve's actions are likely to be influenced by several factors including inflation, economic growth and political compulsions ahead of the U.S. Presidential elections next year.

THE INDO-US TIES: ECONOMICS & STRATEGY

Why is it in the news?

- I) The bipartisan consensus in Washington on fostering the bilateral relationship is exemplified by the invitation extended to the Prime Minister by the leaders of the two chambers of the US Congress to address a joint meeting of Congress for a second time — an honour that has been accorded earlier only to a few leaders including Winston Churchill, Nelson Mandela, and Israel's

Prime Ministers Binyamin Netanyahu and Yitzhak Rabin.

- II) Prime Minister Modi first addressed a joint meeting of Congress on June 8, 2016.

Economic Engagement

- I) At the heart of the Indo-US strategic partnership is **deepening economic engagement** and a resolve on both sides to elevate the bilateral relationship to a **"global strategic partnership"**. While the relationship is founded in shared democratic values and an increasing convergence of interests on regional and global issues, an indication of how far the needle has moved is in the fact that only 25 years ago, India was under US sanctions.
- II) Modi's visit comes at a time when the value of trade between the two countries has touched a record \$191 billion, making the **US India's largest trading partner**. For India, the favourable balance of trade position with the US is comforting, given that it has an adverse balance of trade equation with the majority of its other major trading partners. **For the US, India is the ninth largest trading partner.**

in US\$ billion	2018	2019	2020	2021
INDIA'S EXPORTS TO THE US				
Merchandise	54.28	57.69	51.19	73.37
Services	28.87	29.74	25.84	28.98
Total	83.16	87.43	77.03	102.35
US EXPORTS TO INDIA				
Merchandise	33.19	34.29	27.39	39.94
Services	25.20	24.33	17.42	16.72
Total	58.39	58.62	44.82	56.66
TOTAL BILATERAL				
Merchandise & Services	141.55	146.05	121.85	159.01

Source: US Dept of Commerce, US Bureau of Census, Indian Embassy in Washington

- III) American companies have invested around \$60 billion in India in sectors ranging from manufacturing to telecommunications and consumer



goods to aerospace. And Indian companies have put in more than \$40 billion in sectors such as IT, pharmaceuticals, and green energy, supporting 425,000 jobs from California to Georgia.

- IV) In February, Air India announced the purchase of more than 200 Boeing aircraft — a historic deal that would support over one million American jobs across 44 states, and which will likely figure as a key pitch of his re-election campaign.
- V) At the **US-India Business Council (USIBC)** event, Secretary of State said Modi's visit "**will further solidify what President Biden has called a 'defining relationship' of the 21st century**".

Strategic underpinnings

- I) Much of the relationship's broader subtext is strategic, with both partners cranking up the engagement with an eye on China. Central to this cooperation is also the post-pandemic consensus on diversifying and deepening supply chains with trusted countries, while reducing strategic dependencies.
- II) The two governments are pursuing more than 50 bilateral dialogue mechanisms at various levels.
 - a) The flagbearer of the strategic engagement is the **Quadrilateral Security Dialogue**. The Quad began as a broad partnership after the 2004 Indian Ocean tsunami, but gained strategic heft after the four-country grouping, which has **Australia and Japan alongside India and the US**, was repurposed in 2017, primarily as a **counter to China's growing influence in the Indian Ocean rim, and as a forum for redoubling focus on the Indo-Pacific region**.
 - b) The **I2U2, a grouping of India, Israel, the US and the United Arab Emirates**, is focused

on **joint investments and new initiatives in water, energy, transportation, space, health, and food security**.

- c) National Security Advisor Ajit Doval and his US counterpart Jake Sullivan launched a new **US-India initiative on Critical and Emerging Technologies**. During Secretary of Commerce visit in March, the two countries established a partnership to make the semiconductor supply chain more resilient through private sector cooperation. The semiconductor manufacturing agreement could have three main upsides for New Delhi.
 - # The most important is the possibility of India getting aligned for a more central role in the global electronics supply chain — especially the possibility of potential convergence among the chip manufacturing incentive scheme launched by India and other governments around the world.
 - # There is a commitment to mainstream India's \$10 billion incentives by dovetailing component manufacturing projects from established foreign chip firms and industry leaders, as opposed to just marginal players that have shown interest in India's scheme so far.
 - # There is also the possibility of India benefiting from a further realignment of the regional collaborative effort being fostered by the US, which aims to diversify the sourcing supply base for semiconductor chips and avoid duplication of efforts.



- # The US is already pursuing the ‘**Chip 4**’ alliance initiative with three other top semiconductor makers, Taiwan, Japan, and South Korea. In September 2021, India, Japan, and Australia had announced plans to establish a semiconductor supply chain initiative “to secure access to semiconductors and their components”.
- d) The defence sector is likely to see multiple pacts, building on the bilateral cooperation framework that is already in place. Cooperation in areas such as armoured vehicles, ammunition, and air combat could include a deal for India, the world’s largest arms importer, to manufacture under licence GE’s F414 turbofan jet engine to power the indigenous Tejas Mk2 light combat aircraft that is under development.

Issues Associated

- I) The US still has significant export controls on India (instituted after the 1998 nuclear test), which inhibits the free transfer of technology. And the GE deal, if it goes through, will require clearance by Congress.
- II) Among the outstanding trade issues that require resolution are visa delays and the revoking of India’s trade benefits under the **Generalised System of Preferences (GSP)** programme in 2019. The US has complained about India’s trade policy being overly protectionist, especially with regard to entry barriers for foreign investment and unsteady legal rules. India has been raising tariffs over the last few years, reversing an earlier policy of lowering tariffs that endured for decades.
- III) The seeming contradiction in India being a key partner of the US even as it ramps up procurement of discounted crude oil from Russia (which is now almost half of India’s total crude imports, with state-owned oil utilities buying more Russian oil than private companies) needs to be resolved. The US has looked the other way so far — even as G-7 countries slapped price caps on Russian oil products to restrict Moscow’s access to funds for its war on Ukraine, while still maintaining an incentive for the country to supply to the global market.
- IV) The Government will likely be nudged to join the trade pillar of the **US-led Indo-Pacific Economic Framework (IPEF)**. From Washington’s perspective, there is no political appetite for a full-scale **free trade agreement (FTA)** with India in Congress at this moment, and it sees the IPEF as a more practical substitute for bilateral deals. (**The Trade Policy Forum Working Group on Resilient Trade launched in January 2023 is seen as a primer for an FTA**) India has signed up for three pillars of the IPEF — committed to building more resilient supply chains, tapping clean energy opportunities, and combating corruption — but has opted out of the fourth pillar (trade) citing reservations about the commitments required on environment, labour, digital trade, and public procurement.
- V) There is growing disquiet within sections of the Union government over India not finding an entry into the **Minerals Security Partnership (MSP)**, a US-led partnership to secure supply chains of critical minerals that is aimed at reducing dependency on China. The partnership, which was floated last year, has now been expanded to include a new member, Italy (along with the 11 founding countries and the European Union).



CHINA'S 'DEVELOPMENTAL' SECURITY APPROACH

Why is it in the news?

- I) Recently, the **Cyberspace Administration of China** announced that the **U.S. chip giant Micron**, which had been under investigation by the Cybersecurity Review Office, failed to obtain a security clearance, and that its products posed a threat to national security.
- II) Consequently, business operators tied to **critical information infrastructure** were advised not to procure Micron products. This is the latest incident in a series of crackdowns by the Chinese government against American consultancies and domestic firms dealing with overseas clients.

What are the other instances?

- I) Two weeks before the Micron announcement, the Chinese authorities had raided the offices of **Capvision, a Shanghai-based consultancy firm** that connects lakhs of China-based experts with backgrounds in defence, military, finance, high tech, trade, energy, and medicine among others, to mostly overseas clients.
Capvision was charged by Chinese security authorities with using economic inducements to steal state secrets and facilitating the transfer of sensitive information sourced from its experts, to its foreign clients. In the process, the company was found guilty of violating several laws relating to national security.
- II) Before that, in April this year, the offices of **American consultancy firm Bain and Co.** were raided and its employees in China questioned. While no employee was detained, the authorities seized computers and phones from its offices.
- III) In March too, Chinese authorities raided another

American firm called **Mintz**, and detained some of its employees, forcing the firm to shut its two offices in Beijing. Meanwhile, the Chinese government has been stalling several mergers and acquisition applications involving foreign entities, which has, in turn, led to mounting operational costs for foreign businesses.

Why is the Chinese government cracking down on such firms?

- I) In October 2022, **the U.S. tightened export controls** which would make it harder for China to obtain and manufacture advanced computing chips and supercomputers. Therefore, at the outset, the actions by Chinese authorities appear motivated by vengeance against the U.S.-led efforts to constrain China's tech advancement, as has been widely reported in the Western media. By heckling American firms and restricting their access to the vast Chinese market, Beijing seeks to capitalise on the divergence that exists between the U.S. administration and the American business community over the former's China policy.
- II) The crackdown on consultancy and due diligence firms is likely to have ripple effects across all overseas businesses operating in China. Businesses rely on consultancy firms to navigate the regulatory environment which may prove to be challenging, especially in a country like China where regulatory unpredictability and uncertainty have been a norm in the last few years.
- III) However, the above perspective amounts to a limited understanding of the motives of the Chinese authorities. There is a domestic component to these decisions that is different from the one that has largely been featured by mainstream media.



Why has security come to the forefront in Chinese politics?

- I) Beijing has justified each of the above-discussed actions using national security concerns. However, the reality is that **threat to security has become a ubiquitous concern in all aspects of governance in China.**

Under President Xi Jinping, Chinese discourse on national security has repeatedly underlined that the idea of **'development' cannot be isolated from that of 'security'.**

- II) China's incessant attempt to securitise its development has meant that non-traditional security issues have acquired greater significance in its developmental narrative. And among all the non-traditional security issues, cybersecurity and data/information security seem to concern Chinese authorities the most. This is apparent in their recent attempts to strengthen cybersecurity and counter-espionage laws.

The recently amended **Counter-Espionage Law** that will come into effect from July 1, 2023, aims to treat all "documents, data, materials, and items relating to national security and interests," at par with state secrets, thus, broadening the scope of espionage. It also expands the definition of espionage to include cyberattacks against state organs or critical information infrastructure. The revised law also empowers authorities to seize data, electronic equipment, information on personal property, and even ban border crossing.

- III) China also unveiled in its position paper on **Global Digital Governance** that calls upon States to "respect the sovereignty, jurisdiction and governance of data of other States," and to "not obtain data located in other States through companies

or individuals without other States' permission."

A combined reading of these documents with the **Comprehensive National Security concept, first floated in 2014**, suggests that the concept of national security has permeated each and every aspect of governance and developmental strategy during Mr. Xi's reign.

- IV) The recent crackdowns are thus reflective of this approach to 'developmental' security. The existing view within the Chinese administration is that several foreign businesses operating in China are indulging in espionage. The suspicion is that due diligence firms and consultancies are leveraging their vast networks to extract sensitive data under the garb of free exchange of information. The authorities also suspect the installation of backdoors by U.S. tech companies at the behest of their government.

What next?

- I) China now, finds itself in an odd spot where development and security are applying diametrically opposing forces, thereby creating a regulatory dilemma. While development requires "reform and opening up," and creating a business-friendly environment, the need to balance development with security warrants enforcing restrictive measures which impinge upon free economic activity.
- II) The victims of the recent crackdowns not only have the U.S.-China competition to blame but also China's evolving national security discourse. The fact that Chinese authorities clarified that their actions against Micron are an isolated case and all foreign businesses are welcome so long as they comply with domestic regulations, supports this idea. Nevertheless, the blurring of lines between development and security are likely to hurt



foreign business sentiment in the long run.

- III) However, from India's perspective, one cannot help but notice the outright contradiction that China's discourse presents when it comes to its relationship with New Delhi. While Beijing insists on the need to hyphenate development with security, it calls on India to keep the border issue (security) at its proper place and not let it derail the overall relationship (economics and development) with China.

THE INDIA, U.S. INITIATIVE ON FUTURE TECH

Why is it in the news?

- I) Recently, **India and the United States unveiled a roadmap for enhanced collaboration in high-technology areas**, with a focus on addressing regulatory barriers and aligning export controls for smoother trade and deeper cooperation in critical areas.
- II) This was part of the Initiative on **Critical and Emerging Technology (iCET)** announced by President Joe Biden and Prime Minister Narendra Modi last year.

What is iCET?

- I) The **Initiative on Critical and Emerging Technologies** is a framework agreed upon by India and the U.S. for cooperation on critical and emerging technologies in areas including artificial intelligence, quantum computing, semiconductors and wireless telecommunication.
- II) It was **launched in January this year** to strengthen their strategic partnership and drive technology and defence cooperation.
- III) Mr. Modi and Mr. Biden first announced **the framework on the sidelines of the Quad meeting in Tokyo in May 2022**.

What are the focus areas of the initiative?

- I) Primarily, the iCET seeks to position New Delhi and Washington D.C. as **"trusted technology partners"** to build supply chains and support the co-production and co-development of items.
- II) The broad outline of areas the two countries intend to explore to expand the depth of tech partnership and cooperation between their governments, businesses, and academic institutions include:
- a) Setting up a research agency partnership to drive collaboration in areas like AI;
 - b) Developing a new defence industrial cooperation roadmap to accelerate technological cooperation for joint development and production;
 - c) Developing common standards in AI;
 - d) Developing a roadmap to accelerate defence technological cooperation and 'innovation bridge' to connect defence startups;
 - e) Supporting the development of a semiconductor ecosystem;
 - f) Strengthening cooperation on human spaceflight;
 - g) Advancing cooperation on development in 5G and 6G; and
 - h) Adopting OpenRAN network technology in India.

What has been the progress so far?

- I) India and the U.S. have made significant progress in several key areas identified for collaboration since the launch of iCET, a likely outcome of multiple high-profile visits and talks between officials and stakeholders over the past year.

The two countries have already put in place the



Quantum Coordination Mechanism, launched a public-private dialogue (PDD) on telecommunication to drive collaboration in OpenRAN, 5G and 6G, and held important exchanges on AI and space.

- II) India and the U.S. signed an MoU on establishing a **semiconductor supply chain** that paved the way for creating a semiconductor sub-committee to review recommendations from an industry-led task force launched in connection with the iCET.
- III) On the defence front, the two countries are close to concluding a mega jet engine deal. In addition, a new initiative to advance cutting-edge technology cooperation, known as the **India-U.S. Defence Acceleration Ecosystem (INDUS-X)**, is set to be launched during the visit.
- IV) India and the U.S. have also concluded a roadmap for '**Defence Industrial Cooperation**' to guide the policy direction for the next few years. The two countries have also established a Strategic Trade Dialogue to remove regulatory barriers and review existing export control norms to take forward strategic technology and trade collaborations envisaged under iCET.



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INTERNAL SECURITY

TOPIC: DARK PATTERNS

Why is it in the news?

- I) Recently, the Centre asked e-commerce companies to refrain from using “**dark patterns**” on their platforms that may deceive customers or manipulate their choices.
- II) The government has set up a **17-member task force** to prepare guidelines on protecting consumers against such practices.

What are dark patterns?

- I) Dark patterns, also known as **deceptive patterns**, is the term used to describe the ways in which websites or apps make their users do things that the users do not intend to do or would not otherwise do, as well as to discourage user behaviour that is not beneficial for the companies.
- II) The term was coined by **Harry Brignull**, a London-based user experience (UX) designer, in 2010.
- III) The Internet is replete with examples of dark patterns.
 - a) For instance, that annoying advertisement that pops on your screen while visiting a website, and you can't find the cross mark 'X' to make it go away because the mark is too small to notice (or to click/tap). Worse, when you try to click/tap on the tiny 'X', you may end up tapping the ad, opening a new tab that redirects you to that ad's website.
 - b) Another example is of certain dating apps that require the user to type the word 'delete' if they want to delete their account permanently — the pop-up, showing 'yes' and 'no' options, has been done away with.

- c) Similarly, although Instagram allows its user to deactivate their account through the app, it needs them to visit its website if they want to entirely delete their account.

All these extra steps can be seen as speed bumps that discourage users from getting off such platforms even though they may want to.

- IV) Numerous websites and apps trick their users into allowing them to track their location or gather their data. Apps like Instagram send a pop-up to its users asking if they want the service to use your app and website activity to provide a better ads experience. According to a report, Instagram uses terms like “activity” and “personalised” instead of “tracking” and “targeting”, so the user may not realise what they're actually giving the app permission to do.

How to spot 'dark patterns' on websites?

- I) The best and most effective way to recognise dark patterns is to educate yourself about the tricks used by websites and apps to influence your decisions. The website founded by Brignull, deceptive.design (formerly darkpatterns.org) lists various types of dark patterns, and explains them in detail.
- II) According to Brignull, if you know what cognitive biases are and the kind of tricks that can be used to change your mind to persuade you to do things, then you're less likely to have them trick you.

What are governments doing about 'Dark Patterns'?

- I) India isn't the first country to seek action against dark patterns. The issue has been a subject of



discussions for quite some time now.

- II) In recent years, countries like the United States and United Kingdom have passed legislation to curb dark patterns.
 - a) In March 2021, California passed amendments to the **California Consumer Privacy Act**, banning dark patterns that made it difficult for consumers to exercise some of the rights that the law provides, like opting out of the sale of their data.
 - b) In April 2019, the UK issued a set of guidelines — later made enforceable under its **Data Protection Act, 2018** — which prohibited companies from using “nudges” to draw underage users into options that have low privacy settings.
- III) Companies have been sued for indulging in dark patterns behaviour. Last year, an Australian court fined Trivago, a part of US-based online travel firm Expedia Group, about Rs 244 crore for falsely presenting hotel rooms as being the cheapest available, when it was in fact promoting rooms of paid advertisers.

Way Forward

- I) Dark and deceptive patterns don't just stop with laptops and smartphones. The **Federal Trade Commission (FTC) report** has warned that as augmented reality (AR) and virtual reality (VR) platforms and devices grow in usage, dark patterns will likely follow users to these new channels as well.
- II) Internet users who are able to identify and recognise dark patterns in their daily lives can choose more user-friendly platforms that will respect their right to choose and privacy.

THE ALLEGED COWIN DATA LEAK

Why is it in the news?

- I) Recently, reports emerged that a **bot on the messaging platform Telegram** was allegedly returning personal data of Indian citizens who registered with the **COVID-19 vaccine intelligence network (CoWIN)** portal for vaccination purposes.
- II) The bot spewed out personal details like name, Aadhaar and passport numbers upon entry of phone numbers.

What does the CoWIN portal track?

- I) **CoWIN is a government-owned web portal** set up in 2021 to administer and manage India's COVID-19 vaccine rollout. The health register-style platform leverages existing public digital infrastructure such as
 - # **The Electronic Vaccine Intelligence Network (eVIN)**, an app that provides data on vaccine cold chains in the country;
 - # **Digital Infrastructure for Verifiable Open Credentialing (DIVOC)**, a vaccine certificate issuer; and
 - # **Surveillance and Action for Events Following Vaccination (SAFE-VAC)**, a vaccine adverse event tracker.
- II) The platform, on a real-time basis, tracks vaccines and beneficiaries at the national, State, and district levels. It monitors vaccine utilisation and wastage, and maintains an inventory of the vials.
- III) For citizens, CoWIN verifies identity, helps schedule vaccine appointments, and issues a vaccine certificate. The database captures information flowing from **four separate input streams — citizen registration; health centres; vaccine inventory; and vaccine certificates.**

- # Each stream functions independently, and at the same time exchanges data to minimise redundancies. The platform is a microservices-based, cloud-native architecture developed from the ground up on **Amazon Web Services (AWS)**.
- # A microservice architecture is a pattern that arranges an application as a collection of loosely linked, fine-grained services. These services interact with each other through certain set protocols.

What is the background to the data breach?

This is not the first time, reports about data leaks have emerged.

- I) In January 2022, the personal data of thousands of people in India were reportedly leaked from a government server. The information included COVID-19 test results, phone numbers, names and addresses of citizens. The data could be accessed via online search.
- II) In December, in a separate security breach, an Iranian hacker claimed to be in possession of data from the CoWIN database.
- III) Both the reports of the data leak were rubbished by the **Ministry of Electronics and Information Technology (MeitY)**. There is no record of any investigation being carried out by CERT-In in connection with these data leaks. Even the vulnerability notes which the nodal cybersecurity agency shared on a regular basis made no reference to these breaches.

How did the Telegram bot get access to CoWIN-related data?

- I) There are few ways to look into this data breach to know where things could have gone wrong. Cloud providers like **AWS, Microsoft's Azure and Google Cloud** typically provide security only for the underlying infrastructure, and not for secur-

ing the applications and databases. Customers hosting their data are responsible for what they build in a cloud environment. The absence of AWS in CERT-In's vulnerability notes last year could mean there was no security lapse at the cloud infrastructure's end.

- II) While the cloud offers superior security compared to traditional data centres, legacy systems deployed in virtual servers are the weak links in the chain. Such links are a perfect route for hackers to gain entry into a database. This shifts the focus to CoWIN, which was built leveraging legacy software tools. So, an entry point for those behind the bot may have been an old system that was connected to the portal.
- III) In past data breaches, cybersecurity experts have attributed data leaks to human error or negligence in setting up databases in the cloud. Misconfiguring a system, or involvement of third-party apps with limited privacy features, could have also exposed user data to unauthorised people.

What is the larger picture?

- I) Whatever the outcome of the CERT-In probe, the fact remains that sensitive personal data of millions of Indian citizens who signed up for the COVID-19 vaccination is in the hands of cybercriminals. It is unclear how they plan to use this information. But such leaks reveal India's unfinished data protection business.
- II) A **data protection law** could be a useful tool in fixing accountability and building safeguards around the use and processing of personal data.
- III) In 2017, the Supreme Court of India recognised **privacy as a fundamental right**, highlighting the need to protect personal information. But the country is still struggling to frame a personal data protection policy.

SOCIAL ISSUES

THE GUILLAIN-BARRÉ SYNDROME

Why is it in the news?

- I) The Peruvian government has recently declared a state of national emergency for up to three months, due to a spike in the number of cases of a **rare neurological disorder called Guillain-Barré Syndrome**.
- II) The disorder, which affects the body's nervous system, is characterized by **muscle weakness and breathing difficulties, and can even lead to total paralysis in extreme situations**.
- III) Back in 2019, Peru faced a similar problem following an outbreak of a bacterial infection called **campylobacter**.

What is Guillain-Barré Syndrome?

- I) Guillain-Barré Syndrome is a rare neurological disorder where the body's immune system which normally protects it from infections and other foreign bodies mistakenly attacks its own peripheral nerve cells.
- II) More specifically, the myelin sheath, an insulating layer of fat and protein that surrounds the nerve cells becomes inflamed.
- III) The myelin sheath enables signals to pass through the nerve tracts at breakneck speed under normal conditions. If the sheath is inflamed, the nerves can hardly transport stimuli.
- IV) Simply put, a person with this syndrome will have difficulty speaking, walking, swallowing, excreting or performing other normal functions of the body. The condition can get progressively worse.

branch out from the brain and the spinal cord get damaged as a result, and the muscles can become weak or paralyzed.

- VI) The first symptoms include a tingling sensation in the body's extremities, weakness in the legs that spreads to the upper body, difficulty in facial movements, unsteady walking or inability to walk, pain and, in severe cases, paralysis.

What causes Guillain-Barré Syndrome?

- I) Though, the exact reasons for Guillain-Barré Syndrome are not yet understood, it often develops shortly after a person gets an infectious disease. Also, rarely, vaccinations can cause it.
- II) Guillain-Barré Syndrome, or GBS, also was linked to the **cytomegalovirus, Epstein Barr virus, Zika virus and even the COVID-19 pandemic**.

Why does this happen?

- I) According to the Scientists, our immune system is highly specialized to recognize foreign substances such as viruses, bacteria and fungi. It produces proteins called antibodies that bind to the surface structures of pathogens while building up an immune response against them.
- II) In an autoimmune disease like Guillain-Barré Syndrome, the invaders camouflage themselves with a surface that mimics the body's own structures. For instance, the surface structures of the bacterium *Campylobacter* look very similar to the myelin sheath.

So, the antibodies also target the body's own cells and structures as foreign bodies and attach themselves to the surface. This results in a cas-



cade of reactions. The exact nature of these interactions in autoimmune diseases are not yet known.

- III) Occasionally vaccinations can also cause GBS. This is because vaccines tend to have similar weak or inactive structures akin to the pathogens they protect against. The body's immune system then triggers an immune response.

Is Guillain-Barré Syndrome curable?

- I) The condition of the patient tends to worsen for up to two weeks after the onset of the disease. At week four, the symptoms plateau, after which recovery begins. The recovery can extend from anywhere between six to 12 months and occasionally up to three years.
- II) Currently, there is no certain cure for Guillain-Barré Syndrome. The paralysis not only affects the legs and arms, but also important parts of the nervous system that regulate breathing, blood pressure and heartbeat. To prevent this from happening, doctors continuously monitor the patient's vital signs and, in case of an emergency, put them on a ventilator.
- III) There are also two treatments that can help recovery and reduce the severity of the disease.
 - a) **Plasma exchange or Plasmapheresis:** The plasma or the liquid part of the blood is removed and separated from the blood cells, inducing new plasma production to make up for the loss. This treatment is aimed at removing the antibodies which are attacking the peripheral nerves.
 - b) **Immunoglobulin therapy:** The healthy antibodies from blood donors are injected intravenously. The damaged antibodies contributing to GBS are then blocked by the high doses of the immunoglobulins. Apart

from this, physical therapy might also be useful in alleviating pain.

Why is this happening in Peru?

- I) There are no reports on the current scenario suggesting that this outbreak of GBS cases are being triggered by another infection. The last known outbreak was in 2019. The country was also struggling with the worst dengue outbreak in its recorded history, this year.
- II) A surge of GBS cases following a wave of Zika virus infections was also observed in the French Polynesia between 2012-2014.

REVISED NCD GUIDELINES ON PALLIATIVE CARE

Why is it in the news?

- I) India is home to nearly 20% of the world's population, two-thirds of which reside in rural areas. Apart from a rising population, India has experienced a steep rise in the burden of lifestyle-related non-communicable diseases.
- II) Nearly 1.4 million people are diagnosed with cancer in India every year while diabetes, hypertension, and respiratory diseases are also on the rise. All these diseases need palliative care sooner or later in the disease trajectory.

What is palliative care?

- I) Palliative care is the **branch of medicine focusing on improving the quality of life and preventing suffering among those with life-limiting illnesses**. It aims to identify patients at risk of over-medicalisation at the expense of quality of life and financial burden on the family. It is often misinterpreted as end-of-life care.
- II) However, palliative care aims to improve the quality of life by addressing the physical, psychological, spiritual, and social domains of the



health of people suffering from life-limiting diseases like heart failure, kidney failure, certain neurological diseases, cancer, etc.

How many need palliative care?

- I) Palliative care in India has largely been available at tertiary healthcare facilities in urban areas. Due to this skewed availability of services, it is accessible to only 1-2% of the estimated 7-10 million people who require it in the country.
- II) Post-independence India has made considerable efforts to improve the health of its people. A three-tier health system, multiple national health programmes and schemes, and the Ayushman Bharat Health Insurance Scheme are all positive steps taken towards universal health coverage.
- III) But despite these efforts, 55 million people in India are pushed below the poverty line every year due to health-related expenditures. Over-medicalisation plays a significant role in this financial burden.

Is there a palliative care programme?

- I) The **National Programme for Prevention & Control of Cancer, Diabetes, Cardiovascular Diseases & Stroke (NPCDCS), now the National Programme for Prevention & Control of Non-Communicable Diseases (NP-NCD)**, includes chronic diseases whose treatment contributes the most to health-related expenses. These diseases progress to a stage where, in an ideal scenario, palliative care should take over curative care.

Launched in 2010 to counter the rising burden of noncommunicable diseases in the country, the programme envisaged the provision of promotive, preventive, and curative care from the primary to tertiary institutes, thus providing health services delivery across the continuum of care.

- II) The revised operational guidelines of NP-NCD were expected to strengthen the programme. However, it has not succeeded in addressing certain gaps in palliative care in India.

What are the gaps in the guidelines?

- I) As per the **Global Atlas of Palliative Care, in 2020**, the need for palliative care was higher for non-cancer illnesses. However, the revised NP-NCD operational guidelines, released recently, mention palliative care in synonymy with cancer only. Cancer is just one of 20 common health conditions that require palliative care. This is a step back from the previous operational guideline (2013-2017), in which chronic and debilitating conditions also fell under the ambit of palliative care.
- II) Since most patients who need palliative care are suffering from debilitating diseases, home-based care forms the ideal mode of healthcare delivery. Previously, the programme guidelines mentioned support being provided to facilitate home-based palliative care services. However, palliative care service delivery starts only from the district hospital in the revised guidelines, with no mention of home-based care.
- III) The guidelines mention the linking of 11 programmes to promote the convergence of services focusing on the care of non-communicable diseases. One of these is the **National Programme for Palliative Care (NPPC)**. NPPC was announced in 2012; however, the lack of a dedicated budget has prevented the implementation of the programme since its inception. Experiences from the field suggest that many medical officers at primary health centres are not aware of the existence of such a programme. Theoretically, the linkage could improve the provision of



palliative care, but the mechanisms of the linkage – that too with a programme that has not yet been fully implemented – is unclear.

Is palliative care accessible?

- I) Despite various other vertical government programmes with palliative care provision as one of their objectives, like the National Programme for Healthcare of Elderly, access to palliative care continues to be abysmal.
- II) Apart from limiting its attention to cancer, the guidelines have also skipped an opportunity to bring focus on children suffering from chronic diseases. An estimated 98% of children facing moderate to severe suffering during their end of life reside in lower and middle-income countries like India. This could be due to diseases like cancer, birth defects, neurological conditions, etc.

How is such access measured?

- I) The guidelines' narrow focus is also evident from the indicator chosen to assess the programme's impact. Access to palliative care will be assessed by **estimating morphine-equivalent consumption of strong opioid analgesics (excluding methadone) per death from cancer.** Including an indicator to assess morphine access is a welcome move, but an indicator focusing only on patients with cancer might lead to an inaccurate assessment of coverage of services.
- II) The World Health Organisation recommends the use of morphine consumption per capita to assess morphine access for palliative care services. Using this indicator would also have allowed us to compare the progress of palliative care services in India with other countries.

Way Forward

- I) The **67th World Health Assembly in 2014** called for palliative care to be integrated into health systems at all levels.
- II) Despite the needs at the grassroots and international calls for including palliative care along with curative treatment, the realities on the ground are a far cry from what is desirable. It is high time we realise the ongoing pandemic of non-communicable diseases in India and strengthen our palliative care services.

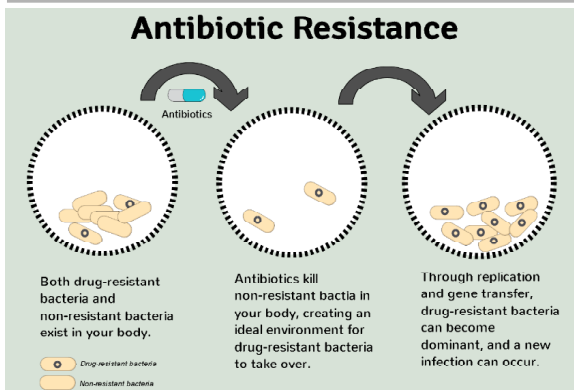
ONE HEALTH PRIORITY RESEARCH AGENDA ON ANTIMICROBIAL RESISTANCE

Why is it in the news?

- ★ Food and Agriculture Organization of the United Nations (FAO), United Nations Environment Programme (UNEP), World Health Organisation (WHO) and World Organisation for Animal Health (WOAH) has launched one health priority research agenda for antimicrobial resistance.

What is Antimicrobial Resistance (AMR)?

- I) **Antimicrobial Resistance (AMR)** occurs when bacteria, viruses, fungi and parasites change over time and no longer respond to medicines making infections harder to treat and increasing the risk of disease spread, severe illness and death.
- II) Antimicrobials are agents used to prevent, control and treat infectious diseases in humans, animals and plants. They include antibiotics, fungicides, antiviral agents and parasiticides. Disinfectants, antiseptics, other pharmaceuticals and natural products may also have antimicrobial properties.



What is One Health Approach?

- I) One Health is an integrated, unifying approach that aims to sustainably balance and optimize the **health of people, animals, and ecosystems**.
- II) One Health recognizes that the health of humans, domestic and wild animals, plants and the wider environment (including ecosystems) are closely linked and interdependent.
- III) Consequently, addressing global health issues requires a multisectoral, multidisciplinary response to AMR at this One Health interface.

What are the objectives of One Health Approach?

- I) To improve our understanding of transmission of AMR; drivers & impact.
- II) To strengthen the evidence-base for interventions.
- III) To advocate for the prioritization of AMR mitigation and inform policy-making.

What is the need for One Health Approach on Antimicrobial Resistance?

- I) Antimicrobial resistance (AMR) has been recognized as one of the greatest global threats to the health of humans and animals, plants and ecosystems as well as a threat to the achievement of the **Sustainable Development Goals (SDGs)**.
- II) In the globally connected world, resistance to antimicrobials may spread and circulate among

humans, animals, plants and the environment, necessitating a “One Health” approach.

- III) The priority research agenda identifies research areas at the interface between sectors that are most relevant to **low- and middle-income countries (LMICs)**, where the negative impacts of AMR are highest and are currently increasing.

What are the Highest Priority Research Areas?

- I) **Transmission:** This pillar focuses on the environment, plant, animal, and human sectors where AMR transmission, circulation and spread occur. This includes what drives this transmission across these areas, where these interactions occur, and the impact on different sectors.
- II) **Integrated surveillance:** This pillar aims to identify cross-cutting priority research questions in order to improve common technical understanding and information exchange among One Health stakeholders. The surveillance aims for harmonisation, effectiveness, and implementation of integrated surveillance with a focus on LMICs.
- III) **Interventions:** This pillar focuses on programmes, practises, tools, and activities aimed at preventing, containing, or reducing the incidence, prevalence, and spread of AMR. This also calls for the best use of existing vaccines, as well as other One Health-related measures to reduce AMR.
- IV) **Behavioural insights and change:** The priority research areas under this pillar are concerned with comprehending behaviour across various groups and actors involved in the development and spread of AMR at the One Health interface. It focuses on research addressing human behaviour that affects AMR, including ways to combat it.



V) **Economics and policy:** This pillar addresses investment and action in AMR prevention and control. This pillar also takes into account the cost-effectiveness of an AMR investment case, financial sustainability, and long-term financial impact. The agenda also emphasises the importance of developing research capacity in LMICs, which will be critical for addressing research gaps and developing evidence.

MALARIA

Why is it in the news?

★ The U.S. **Centre for Disease Control and Prevention (CDC)** has identified locally acquired malaria (LAM) cases in Florida and Texas in the last two months.

What is a locally acquired malaria case?

- I) Locally acquired malaria denotes cases where the disease presents in patients with no travel history, indicating that it has been acquired within their geographical area.
- II) A locally acquired case would mean that the mosquito transmitting the disease first bite a person carrying the malaria-causing parasite and then another person, thus transmitting the disease locally.

Malaria in U.S

- I) Malaria was endemic in large parts of the U.S. until the 1950s when it was eradicated due to increased urbanisation and improved socio-economic conditions.
- II) Almost all cases of malaria in the U.S. are found in people who have a history of international travel.
- III) Locally acquired cases of malaria in the country are rare. In fact, Texas recorded its last locally acquired malaria case in 1994— before it re-

surfaced this year.

- IV) The parasite identified in locally acquired cases across Texas and Florida is *Plasmodium vivax*.

About Malaria

- I) Malaria is an acute febrile illness caused by *Plasmodium* parasites, which are spread to people through the bites of infected female *Anopheles* mosquitoes. It is preventable and curable.
- II) Malaria is not contagious and cannot spread from one person to another; the disease is transmitted through the bites of female *Anopheles* mosquitoes.
- III) Five species of parasites can cause malaria in humans and 2 of these species – *Plasmodium falciparum* and *Plasmodium vivax* – pose the greatest threat.
- IV) This risk of infection is higher in some areas than others depending on multiple factors, including the type of local mosquitoes. It may also vary according to the season, the risk being highest during the rainy season in tropical countries.

Symptoms

- I) Infants, children under 5 years, pregnant women, travellers and people with HIV or AIDS are at higher risk.
- II) Severe symptoms include extreme tiredness and fatigue; impaired consciousness; multiple convulsions; difficulty breathing; dark or bloody urine jaundice (yellowing of the eyes and skin); and abnormal bleeding.

Treatment

- I) Malaria is a serious infection and always requires treatment with medicine.
- II) Since 2021, WHO recommends broad use of the **RTS, S/AS01 malaria vaccine** among children

living in regions with moderate to high P. falciparum malaria transmission. The vaccine has been shown to significantly reduce malaria, and deadly severe malaria, among young children.

- III) Chemopreventive therapies and chemoprophylaxis: Although designed to treat patients already infected with malaria, some antimalarial medicines can also be used to prevent the disease.

NATIONAL SICKLE CELL ANAEMIA ELIMINATION MISSION

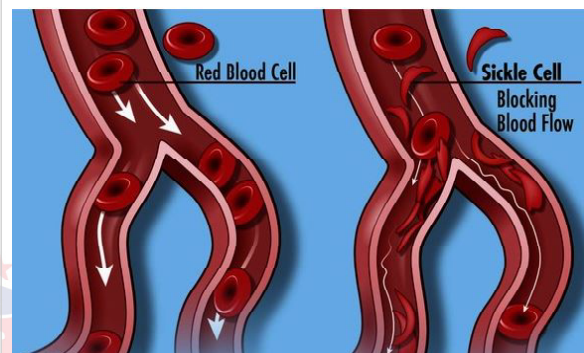
Why is it in the news?

- I) Recently, Prime Minister has launched the **National Sickle Cell Anaemia Elimination Mission** in Shahdol, Madhya Pradesh.
- II) The PM distributed about 3.57 crore **Ayushman Bharat Pradhan Mantri Jan Arogya Yojana (AB-PMJAY)** cards in Madhya Pradesh.
- III) The PM also gave sickle cell genetic status cards to the beneficiaries. The card will be divided into different categories based on the screening results, if a male is positive and a female is also positive then the chances of giving birth to a positive child are increased. This card will be helpful in the elimination of sickle cell anaemia.

What is Sickle Cell Anaemia?

- I) Sickle cell disease is a hereditary disease caused by mutations in one of the genes that encode the haemoglobin protein, the disease is inherited as an autosomal recessive trait.
- II) The mutation causes the red blood cells to take on an unusual sickle shape. The misshapen cells lack plasticity and can block small blood vessels, impairing blood flow.

- III) This condition leads to shortened red blood cell survival, and subsequent anaemia, often called sickle-cell anaemia. Poor blood oxygen levels and blood vessel blockages in people with sickle-cell disease can lead to chronic acute pain syndromes, severe bacterial infections, and necrosis (tissue death).
- IV) Individuals affected by sickle cell disease are chronically anaemic and experience significant damage to their heart, lungs, and kidneys.



- V) It is transmitted by parents carrying a defective **'beta globin'** gene. For a child to be affected, both mother and father must carry one copy of the sickle cell gene — also known as **sickle cell trait** — and pass both copies of the altered form to the child.
- VI) Sickle-cell anaemia is particularly common among people whose ancestors come from sub-Saharan Africa, India, Saudi Arabia and Mediterranean countries. Its Prevalence is higher in communities that practice endogamy, as the chances of having two parents with sickle cell trait is higher.
- VII) Sickle-cell disease can be managed by simple procedures including high fluid intake, healthy diet, folic acid supplementation, pain medication and vaccination & antibiotics for the prevention and treatment of infections.



VIII) The only cure comes in the form of **gene therapy and stem cell transplants** — both are costly and still in developmental stages.

What is the Status of Anaemia in India and Need for the National Mission?

- I) India is the second-worst affected country in terms of predicted births with the disease — i.e., chances of being born with the condition.
- II) The disease is more common in the tribal population of India, but occurs in non-tribals too. It is expected that about 10% of tribals are sickle cell gene carriers and 1-1.5% have sickle cell disease.
- III) As per Census 2011, India has an 8.6% tribal population which is 67.8 million across the Indian states. The MoHFW tribal health expert committee report has listed sickle cell disease as one of the 10 special problems in tribal health that affect the tribal people disproportionately, thus making this an important intervention.

What is National Sickle Cell Anaemia Elimination Mission?

- I) The programme was first announced in the Union Budget 2023.
- II) It will be implemented in 17 high-focus states across namely Gujarat, Maharashtra, Rajasthan, Madhya Pradesh, Jharkhand, Chhattisgarh, West Bengal, Odisha, Tamil Nadu, Telangana, Andhra Pradesh, Karnataka, Assam, Uttar Pradesh, Kerala, Bihar, and Uttarakhand.
- III) It aims to address the significant health challenges posed by sickle cell disease, particularly among tribal populations of the country.
- IV) It aims to eliminate sickle cell genetic transmission by the year 2047 (i.e., before India celebrates Amrit Kaal in 2047).

V) The program will cover the entire population from zero to 18 years of age and shall incrementally include the entire population up to 40 years. Over a period of three years, spanning from the fiscal year 2023-24 to 2025-26, the program targets screening approximately 7.0 crore people.

VI) The strategy emphasizes on Three pillars:

- a) Health promotion: Awareness generation & pre-marital genetic counselling.
- b) Prevention: Universal screening and early detection.
- c) Holistic Management & continuum of care:
 - # Management of persons with sickle cell disease at primary, secondary and tertiary health care levels; treatment facilities at tertiary health care facilities.
 - # Patient support system.
 - # Community adoption.

VII) The programme will be executed as part of the **National Health Mission (NHM)** and in integration with existing mechanism under NHM such as **Rashtriya Bal Swasthya Karyakram (RBSK)** and **Pradhan Mantri Surakshit Matritva Abhiyan (PMSMA)**.

NOTE: The first description of sickle haemoglobin in India was by Lehman and Cutbush in 1952 in the tribal populations in the Nilgiri hills in south India.

ASPARTAME

Why is it in the news?

- I) According to a report, the cancer research arm of the **World Health Organisation (WHO)** will list the popular sugar substitute aspartame as “**possibly carcinogenic to humans**”.
- II) Aspartame is **one of the world’s most common**

artificial sweeteners and is used in a wide range of diet soft drinks, sugar-free chewing gum, sugar-free ice cream, sugar-free breakfast cereals, etc.

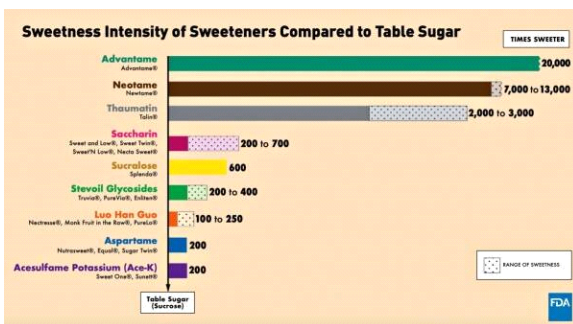
III) A number of studies have repeatedly said that aspartame does not pose a risk for cancer. The listing by WHO, if it comes, will break from those earlier findings, pitting it against the food industry and regulators.

What exactly is Aspartame?

I) Chemically, aspartame is a **methyl ester of the dipeptide of two natural amino acids, L-aspartic acid and L-phenylalanine.**

It was discovered by **James M Schlatter**, a chemist at the American pharmaceutical company G D Searle & Co. (which is now a subsidiary of Pfizer) in 1965, apparently by accident, when, while researching an anti-ulcer drug, he happened to lick his finger and detected a sweet taste.

II) According to the **US Food and Drug Administration (FDA)**, aspartame is about 200 times sweeter than table sugar — which makes aspartame far less sweet than other artificial sweeteners like advantame and neotame, but even then, 1 gram of aspartame has the sweetness intensity of roughly 2 teaspoons (about 8 g) of sugar.



III) Aspartame is preferred by people trying to cut calories or lose weight, or by diabetics, because while 2 teaspoons (8 g) of sugar provides about 32 kcals of energy, 1 g of aspartame is only 4

kcals.

IV) It is often argued that a 12 fl oz (about 350 ml) can of regular cola contains about 10 teaspoonsfuls of sugar, while the same quantity of diet cola containing aspartame has only 7 kcals. Indeed, cans/ bottles of diet fizzy drinks often say “zero sugar” or “zero calories” on the packaging.

V) Aspartame is present in several brands of artificial sweeteners, the most common of which in India are Equal and Sugar-Free Gold.

So, is aspartame dangerous?

I) Over more than 40 years, aspartame has been one of the most widely studied and rigorously tested chemical additives in food, including for its possible links with cancer. More than 100 studies have found no evidence of harm caused by aspartame.

II) While doubts and concerns have continued to be raised by some critics and a few studies, there is a broad scientific consensus on the safety of aspartame for all groups of people except one — those suffering from **phenylketonuria (PKU)**, a rare inherited disorder in which the patient does not have the enzyme that is needed to break down phenylalanine, one of the two amino acids in aspartame. Foods containing aspartame carry the warning “Not for phenylketonurics”.

III) The USFDA permitted the use of aspartame in food in 1981, and has reviewed the science of its safety five times since then. Aspartame is also certified as safe for human consumption by the **European Food Safety Authority (EFSA)**, national regulators in Japan, Australia, New Zealand, and Australia, and even the WHO’s JECFA. Around 100 countries around the world, including India, permit the use of aspartame.



JOHA RICE

Why is it in the news?

- ★ The Joha variety of rice is found to be effective in lowering blood glucose and is an effective nutraceutical of choice in diabetes management.

About Joha Rice

- I) Joha is a **short-grain winter paddy** known for its significant aroma and noteworthy taste.
- II) It is cultivated in the **Northeastern region of India**.
- III) Joha rice is also rich in several antioxidants, flavonoids, and phenolics. Some of the reported bioactive compounds are oryzanol, ferulic acid, tocotrienol, caffeic acid, catechuic acid, gallic acid, tricin, and so on, each with reported antioxidant, hypoglycaemic and cardio-protective effects.
- IV) It got the **GI (geographical indications)** Tag from the Union ministry of commerce.

Research on Joha Rice

- I) The research explored the nutraceutical properties of aromatic Joha rice. They detected two unsaturated fatty acids viz., linoleic acid (omega-6) and linolenic (omega-3) acid.
- II) These essential fatty acids (which humans cannot produce) can help maintain various physiological conditions. Omega-3 fatty acid prevents several metabolic diseases such as diabetes, cardiovascular diseases, and cancer.
- III) Joha has also proved to be effective in lowering the blood glucose and preventing diabetes onset in diabetic rats.

Rise in Diabetes Incidence

- I) According to a Lancet study, the number of people living with diabetes worldwide is expected to

double to more than 1.3 billion in 2050 from 529 million in 2021.

- II) Recently in an ICMR study, it is found that the national prevalence of diabetes is 11.4 percent, while 35.5 percent of Indians suffer from hypertension.
- III) Systemic racism, inequality, lifestyle changes and poor eating habits are accelerating the pace of diabetes in the world.

Some additional information

- I) Rice is one of the most important food crops and feeds more than 60 per cent of the population of India. *Oryza sativa* is the scientific name of rice.
- II) It is India's largest agricultural crop (accounting for over 40% of the total foodgrain output).
- III) India is the world's biggest exporter (around 40% of the world's export).
- IV) India is the 2nd largest rice producer in the world after China.
- V) Climatic Requirements: Hot and humid climate, Temperature required is 21 to 37° C.
- VI) A nutraceutical or 'bioceutical' is a pharmaceutical alternative which claims physiological benefits. Nutraceuticals are products derived from food sources that are purported to provide extra health benefits, in addition to the basic nutritional value found in foods. Because nutraceuticals and bioceuticals are largely unregulated, these supplements are the subject of more of marketing hype than actual clinical testing, and for many, it is not even yet known whether they provide more benefits than risks for consumers.



HOW CAN INDIA TACKLE ITS DIABETES BURDEN?

Why is it in the news?

- I) There was great interest in the results of the largest, **long-term (2008-2020)** study on metabolic factors in the Indian subcontinent as part of the **ICMR-InDiab study**.
- II) It was launched in **2008** to estimate the country's **NCD (chronic non-communicable diseases) burden**, and done over five phases between 2008 and 2020 across the country, with each phase covering five States (all seven northeastern States were covered in one phase).

What are the key findings?

- I) It estimated that about 11% of the population is diabetic, and 15.3 % of the country is in the pre-diabetic stage. Given that the study was conducted in the most populous nation in the world, the actual numbers are naturally staggering. As per these estimates, 101.3 million people in the country are diabetic, and in the pre-diabetes stage, there are another 136 million people.
- II) Questions are being raised about whether this constitutes an emergent crisis in India and of the urgent methods that need to be employed to handle this situation, and control possible burgeoning of these numbers in the future.
- III) According to the **World Health Organization (WHO)**, about 422 million people worldwide have diabetes, and 1.5 million deaths are directly attributed to the disease each year. Both the number of cases and the prevalence of diabetes have been increasing, and there is a **globally agreed target to halt the rise in diabetes and obesity by 2025**.

What are the implications of these statistics?

- I) The thing with metabolic lifestyle disorders, is that with some attention, it is possible to ward off severe complications and a morbid state of life; it is also possible to ensure that the 136 million at the pre-diabetic stage do not proceed to diabetes.
- II) According to **Madras Diabetes Research Foundation, which conducted the study funded by the Indian Council of Medical Research** the anchor of any intervention programme should be '**prevention**' — in the case of diabetics, the aim has to be to prevent the onset of life-threatening complications; and in the case of pre-diabetics, all efforts must be taken to prevent the progress to diabetes, and in rural areas, where the prevalence is still low, the aim should be to keep it that way.
- III) There are multiple studies that show that poor control of blood sugar leads to complications — cardiovascular disease, kidney disease, neuropathy, blindness, and lower-extremity amputation — which then become a significant cause of increased morbidity and mortality. The question is whether any nation will be equipped to provide comprehensive care to all diabetics who develop complications in the course of living with diabetes.
- IV) While it is sensible to ensure that there are sufficient facilities to treat the complications, the sagacious approach would be **to launch public awareness campaigns** on using lifestyle modifications to keep blood sugar within acceptable limits and complications at bay. Education on a mass scale should be launched across the country for control and periodic check-ups, sticking to the recommended drug regimen and reinforcing

ing health-seeking behaviour.

- V) While doing the study, researchers encountered a strange phenomenon — that the conversion from pre-diabetes to diabetes was faster in India, in some cases even within six months. So immediate attention must be paid to promoting a healthy lifestyle that would lead to retarding the speed of progress to diabetes, or even prevent movement to diabetes.
- VI) Urban India accounts for 16.4% of the prevalence while in the rural population the prevalence is 8.9%. Though the prevalence is lower now, this is an area where the possibility for prevention is greater. As traditional lifestyles change and more modern practices take over, it is essential to once again stress on maintaining a healthy diet, getting sufficient moderate to vigorous exercise and periodic testing for those with risk factors and after a certain age group.
- VII) **Periodic epidemiological screening programmes** are very important to catch new diabetics and bring them into the protective net.

Were there any surprises during the study?

- I) The impression, even among researchers, was that the prevalence was high only in metro cities, however, there were quite surprised to find that it was similar, or growing in 2-3 tier cities. In Kerala, said to be top among States with better social development indicators, the prevalence in rural areas had escalated to supersede that in urban areas.
- II) All the northeastern States were covered in one phase, and the surprises included high prevalence in Tripura and Sikkim. While in Tripura, it was averred that the ethnic composition of the State was different from that of the other States in the region, being populated with Bengalis, lead-

ing to a high rate of 13% prevalence; in Sikkim where the prevalence of diabetes and pre-diabetes (31%) was high, it was put down to its smaller size and relatively better socio-economic indicators there.

What is the way forward?

Experts have indicated tie-ups as part of the **public-private partnership mode** to involve the larger community in supporting detection and treatment for diabetes.

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POLITY AND GOVERNANCE

THE NATIONAL RESEARCH FOUNDATION BILL

Why is it in the news?

- ★ Recently, the Union Cabinet has approved the introduction of the **National Research Foundation (NRF) Bill** in Parliament, placing once again the debate on **science and technology funding** in the spotlight.

What is the NRF?

- I) Setting up the NRF was one of the key recommendations of the **National Education Policy 2020**.
- II) The NRF intends to **act as a coordinating agency** between researchers, various government bodies and industry, thus bringing industry into the mainstream of research.
- III) In addition to providing research grants to individuals, the NRF plans to seed, grow and facilitate research in India's universities, especially State universities, by funding research infrastructure and researchers.

How will it be funded?

- I) The NRF will operate with a budget of **₹ 50,000 crore for five years**, of which 28% (₹ 14,000 crore) will be the government's share, and the remaining 72% (₹ 36,000 crore) will come from the private sector. The NRF draft proposes the government's share to increase eventually to **₹ 20,000 crore per year**.

Out of the government's share, **₹ 4,000 crore** will be used from the existing **Science and Engineering Research Board's budget**, which will be subsumed under the NRF. Therefore, the government has earmarked an additional **₹ 10,000 crore** over

the next five years for the NRF.

- II) However, this increase in the **nation's gross domestic expenditure on research and development (GERD)** seems too meagre, (less than 2% of GERD) especially if one compares the GDP and the comparative spending in other big economies, such as the U.S. and China.
- III) As per the last available statistics (2017-18), India's GERD was **₹ 1,13,825 crore**. While India's GDP was 7.6 and 5.1 times smaller than that of the U.S. and China respectively, India's GERD was nearly 24 times less than both these countries during the same period. And in the last five years, that gap has further widened.

How can the NRF facilitate the "ease of doing science"?

- I) First, the time between applying for a research grant and receiving the money must be minimal, preferably within six months. Although the NRF draft mentions that the peer-review process will be completed within six months, releasing funds may take time, pending financial clearance.
- II) Second, all the paperwork must be digitally processed without sending stacks of papers in hard copies to the NRF.
- III) Third, all finance-related queries, paperwork, approval, and acceptance need to be between the NRF and the finance department of the university/research institution keeping the scientist free to focus on research.
- IV) Fourth, the NRF needs explicit spending guidelines away from the **General Financial Rules (GFR) and the government's e-Marketplace (GeM)** usage. Scientific research needs independent guidelines for spending money, which provides flex-



ibility while making scientists accountable.

- V) Finally, the release of money needs to be timely. Although the NRF draft mentions timely disbursement of funds, a mechanism needs to be in place to facilitate and implement this.

The proposed NRF is largely modelled after the **National Science Foundation of the U.S.** It borrows some of the best practices from the German, U.K., Swiss, Norwegian, South Korean, and Singapore science agencies.

Way Forward

- I) While the participation of the private industry in the NRF is an important and welcome step, it is unclear how the government will raise ¹ 36,000 crore from the industry. Although the NRF describes a legislative route to facilitate this, a more detailed plan and establishing mechanisms akin to escrow accounts will reassure the scientific community.
- II) Though the NRF draft discusses critical thinking, creativity, and bringing innovation to the forefront, it is unclear how the NRF will transparently seed, fund and coordinate research across institutions. Hence, the success of NRF will lie in how the government sets rules and implements the same, different from what already exists.

THE ONLINE GAMING

Why is it in the news?

- I) The **Goods and Services Tax (GST) Council**, in its 50th meeting decided to levy a **uniform 28 per cent tax on full face value for online gaming, casinos and horse-racing.**
- II) The government is now expected to bring in a legal amendment to facilitate inclusion of online gaming and horse racing under actionable claim

and hence, facilitate taxation of these categories with no distinction for game of skill or chance.

- III) While the government has maintained that this decision is not intended to end any industry, online gaming companies have raised concerns about the impact of this move on the industry, as it is likely to affect volumes and thus the viability of gaming companies.

What is the decision of the GST Council for online gaming, casinos and horse racing?

- I) The **uniform levy of 28 per cent tax** will be applicable on the face value of the chips purchased in the case of casinos, on the full value of the bets placed with bookmaker/totalisator in the case of horse racing, and on the full value of the bets placed in case of online gaming.
- II) The government will bring in amendments to the GST-related laws to include online gaming and horse racing in Schedule III as taxable actionable claims.

In the context of GST, an actionable claim is defined as goods under the **Central Goods and Services Tax Act, 2017**. It is a claim to an unsecured debt or a claim to any beneficial interest in movable property that is not in the possession of the claimant. So far, lottery, betting, and gambling were classified as actionable claims. Now, horse racing and online gaming will be added.

- III) According to Union Finance Minister, the intent is not to end any industry but rather a “moral question” about taxing both gaming at the same rate as other “essential items”.

What was the decision by the Group of Ministers (GoM)?

- I) A **Group of Ministers (GoM)** was constituted to look into the issues related to taxation on casino



nos, horse racing and online gaming. The GoM submitted its first report in June 2022, which was then discussed in the GST Council in its 47th meeting in June-end last year.

- II) In the first report, the GoM had recommended a uniform 28 per cent rate for casinos, race courses and online gaming on the full value of the consideration paid (contest entry fee/bets pooled/coins purchased etc.).

It had also recommended that no distinction should be made for levying GST on the basis of an activity being a game of skill or of chance or both. After Goa raised reservations on the GoM report in June last year, the Council decided for a review of the report.

- III) Following this, three meetings of the GoM were conducted and the discussions were around two questions:

- a) Whether the activities of race course and online gaming amount to betting and gambling or not in the context of various High Court and Supreme Court judgments; and
- b) How should the supplies of casinos, race courses and online gaming be valued — on the full-face value of bets placed or on Gross Gaming Revenue (GGR) (for casinos), totalisator fee (for race courses) and platform fee/GGR (for online gaming).

How will the tax work in real life?

- I) At present, most gaming companies were paying a **tax of 18 per cent** applicable on the platform fees, distinguishing based on the factor of these activities being games of skill such as fantasy gaming platforms. The Revenue Department, however, has maintained that the tax rate on these categories.

To illustrate, let's assume that the platform fee –

the commission the game was charging from a player to participate in a contest – was 10%. So, for every Rs 100 deposited in the game, the platform makes Rs 10. Now, the 18% GST was applicable on the Rs 10. This means that effectively, on every Rs 100, the GST on it was Rs 1.8.

- II) However, under the new structure, a GST of 28% will be applicable on the entire face value of the bet or the consideration paid, and not the platform fee. Meaning that for every Rs 100 deposited, the GST on it will be Rs 28.

In effect, under the new regime, the GST that online games of skill will have to pay will increase by around 15.6 times.

- III) According to Ministry of Finance, GST will be levied at the time of payment for these activities and for overseas companies providing online gaming facilities here, tax and implementation authorities, payment channels will make the effort to collect the tax because payment is made from here.

Who gets impacted?

- I) The decision has been applied indiscriminately to gaming and gambling platforms. This includes companies that have spent years in lobbying efforts to create a distinction between a game of skill and game of chance, essentially trying to distinguish themselves from gambling platforms. As such, online gaming is perhaps the only segment of the internet economy that has multiple highly profitable companies.
- II) Dream11 had a net profit of Rs 143 cr on revenues of Rs 3,841 crore in FY22. Gameskraft—which operates Rummy Culture, Gamezy, Rummy Time, among others—touched Rs 2,112 crore in revenue during FY22 as its profit grew to Rs 937 crore.



III) However, the GST decision has already started showing an impact on some of these companies. Stocks of Delta Corp – which operates casinos and online gaming platform Adda52 – were down by 22 per cent at the time of publishing. Nazara Technologies, which has said that the impact will be minimal on it, was down by 3.6 per cent.

How big is the online gaming market in India?

- I) The revenue of the Indian mobile gaming industry is expected to exceed \$1.5 billion in 2022, and is estimated to reach \$5 billion in 2025. The industry in the country grew at a CAGR of 38% between 2017-2020, as opposed to 8% in China and 10% in the US. It is expected to grow at a CAGR of 15% to reach Rs 153 billion in revenue by 2024.
- II) India's percentage of new paying users (NPU) in gaming has been the fastest growing in the world for two consecutive years, at 40% in 2020 and reaching 50% in 2021.
- III) According to a report, transaction-based games' revenues grew 26% in India, with the number of paying gamers increasing by 17% from 80 million in 2020 to 95 million in 2021.

THE LEGAL ROW BETWEEN FARMERS AND PEPSICO

Why is it in the news?

- I) Recently, the Delhi High Court held that there was "no merit" in the appeal filed by PepsiCo over the patent rights for its 'unique potato' variety.
- II) The appeal was against an order passed by the **Protection of Plant Varieties and Farmers Rights' Authority (PPVFRA)**, revoking PepsiCo's registration vis-a-vis the unique potato variety developed by it.

What was the case about?

- I) The PPVFRA revoked PepsiCo's registration with respect to its **potato plant variety, 'FL 2027' (used in Lay's chips)**, on the grounds provided under Section 34 (grounds for revocation of registration) of the Protection of Plant Varieties and Farmers Rights Act, 2001 (PPV&FR).
FL 2027 is a 'chipping potato' variety with low external defects, high dry matter/high solids content and stable sugars, all of which make it highly suitable for the manufacture of chips.
- II) According to the appellant, it was developed in the U.S. by **Robert W. Hoopes**, a plant breeder and a former employee of Frito-Lay Agricultural Research, a division of PepsiCo Inc. A certificate of registration for FL 2027 was granted to PepsiCo India on February 1, 2016, conferring it an exclusionary right to market, sell, import, export or distribute FL 2027 for a period of six years.
- III) However, in an application filed by Kavitha Kurungati, a farmers' rights activist, the PPVFRA revoked the company's registered potato variety on December 3, 2021.

What is the PPV&FR Act?

- I) The Act provides an effective framework to conserve and encourage the development of various plant varieties. It established an effective system to safeguard and recognise the rights of breeders, researchers and farmers to promote agricultural development in the country.
- II) Additionally, it also facilitates the mushrooming of the Indian seed industry to ensure the availability of high-quality seeds and planting materials to farmers.

What are grounds for revocation?

According to Section 34 of the PPV&FR Act, the protection granted to a breeder may be revoked by the authority on the following grounds:



- a) That the grant of a registration certificate is based on incorrect information furnished by the applicant;
 - b) That the registration certificate was granted to an ineligible person;
 - c) When the breeder does not provide the registrar with the required documents;
 - d) A failure to provide an alternative denomination for variety registration in case the earlier variety provided is not permissible for registration;
 - e) A failure of the breeder to provide the required seeds for compulsory licence;
 - f) Failure to comply with the acts, rules, regulations and directions issued by the Authority; and
 - g) If the grant of the registration certificate is against public interest.
- II) Multinational food processing companies and investors must prioritise the well-being of farmers and their rights by developing a comprehensive understanding of India's local laws, particularly the PPV&FR Act 2001, and recognise the safeguards and protections it provides to farmers.

INTERNET SHUTDOWNS OR PARTIAL APP BANS

Why is it in the news?

- ★ Recently, the **Telecom Regulatory Authority of India (TRAI)** sought inputs on whether it would be possible to have “**selective**” app bans instead of internet shutdowns, in order to reduce the impact that a wholesale communications lockdown can entail.

Why did the court reject the appeal?

- I) In relation to Section 34(a) (incorrect information furnished), it was discovered that PepsiCo had sought the registration of FL 2027 variety as a “new variant” instead of an “extant variant” in its application dated February 16, 2012, despite furnishing the date of its commercialisation in India to be December 17, 2009.
- II) However, to be registered as a “new variant” an additional requirement of ‘novelty’ in addition to ‘distinctiveness’, ‘uniformity’ and ‘stability’ must be satisfied one year before the date of filing of the application for registration. The court held that FL 2027 could not fulfil the criteria of novelty and was only eligible for registration under “extant variety”.

What next?

- I) India is an **agri-based economy** with the agriculture sector having the highest workforce, nearly 152 million as of FY2021 as per Statista.

Does India have a history of Internet shutdowns?

- I) Internet shutdowns are imposed in States and districts across India from time to time in order to prevent the rapid spread of provocative content during communally charged periods. The Indian government considers **Internet shutdowns a legitimate tool** of maintaining law and order.
- II) Shutdowns can be prolonged, with access to education, work, banking, and information strained. As such, the government has sought to stay the course on imposing restrictions but not at the scale of a shutdown.
- III) In Jammu and Kashmir as well as in Manipur, authorities and courts have gradually loosened long-term restrictions by allowing wired internet connections and limited wireless internet access.

How would the TRAI move work?

- I) The approach suggested by TRAI would require



telecom operators and messaging app firms like WhatsApp to cooperate with each other and stop access to services during a shutdown.

- II) The telecom regulator has sought inputs on licensing messaging apps in India, which may require firms to be subjected to surveillance and blocking requirements.

Has the TRAI considered app regulation before?

- I) In 2015 and 2018, the TRAI had held consultations on regulating messaging apps, a process that led to wide-ranging protections for **net neutrality — the concept that all internet traffic should be treated equally**.
- II) Telecom operators had then called for regulation because they argued that messaging apps provide the same service without going through the stringent security and surveillance regulations that telecom operators go through. Telcos were also wary of their revenues being undercut by online calls and messages, which were cheaper than calling and SMS rates then. However, from 2016 onwards, the **Department of Telecommunication (DoT)** and the TRAI have rejected this argument, holding that telcos cannot discriminate between categories of data used by consumers.
- III) Since then, regulating messaging apps has become more a matter of security and policing. Seeking a deterrent against communal misinformation and provocative content spreading online, the Ministry of Electronics and Information Technology added a requirement of **'traceability'** to the IT Rules, 2021, wherein one can find the original sender of a forwarded message. However, civil society groups and tech firms said that such requirements were impossible without breaking end-to-end encryption.

What about VPNs?

- I) It is possible to block websites and certain apps by ordering telecom operators to do so. However, **Virtual Private Networks (VPNs)** make these blocks trivial to bypass. VPNs tunnel a user's internet traffic through another server. While these tools are mostly used for completely innocuous purposes, the government has been showing a growing distrust of VPNs as they are often encrypted, leaving the government with little visibility into what goes on in users' connections.
- II) VPN firms usually route data through servers located in another country, and frequently cycle the IP addresses these servers use to evade detection and blocking. Some VPN firms promise that they do not maintain logs of their customers' usage.
- III) Since the government has not publicly stated what procedural safeguards it exercises when intercepting web traffic of users, these services are used by both privacy-conscious users and terrorists and cybercriminals.
- IV) When the Indian **Computer Emergency Response Team (CERT-in)** published directions in 2022 requiring VPN firms to retain records of users from India, most large VPN providers stopped offering servers physically located in India. However, these firms continued serving users in India, allowing people to connect to foreign servers through an encrypted connection and access blocked sites.

Can VPNs be blocked?

- I) Blocking VPNs is not straightforward, as companies operating them tend to frequently change the IP addresses associated with their servers. While VPN services' websites may be blocked,

the installation files can be found elsewhere online. Recently, the Manipur High Court was informed by telecom operators that blocking VPNs was technically unfeasible.

- II) However, Internet rights activists say that blocking VPNs would be a damaging move for online privacy. VPNs help secure digital rights under the Constitution of India specially for journalists, whistle-blowers and activists. The encrypted nature of information transfer over VPNs allows them to not only secure confidential information but also to safeguard their own identity, thus protecting them from surveillance and censorship.

CHALLENGES TO J&K CHANGES

Why is it in the news?

Nearly four years after the **abrogation of Article 370 of the Constitution**, the Supreme Court of India is set to hear a batch of petitions challenging the **Union government's decision to revoke the special status of Jammu and Kashmir (J&K) which led to the bifurcation of the State in 2019.**

What led to the challenge?

- I) Article 370 of the Constitution accorded J&K a special status that substantially limited Parliament's power to legislate for the State as compared to other States. The provision came into force as a result of the **Instrument of Accession signed by erstwhile ruler of J&K Maharaja Hari Singh in 1947.** It was intended to be a temporary provision to allow the State to transition from an independent princely state to a democratic state under the dominion of India.
- II) On August 5, 2019, then President of India Ram

Nath Kovind under **Article 370(1), promulgated the Constitution (Application to Jammu and Kashmir) Order, 2019 (CO 272), which superseded the Constitution (Application to Jammu and Kashmir) Order, 1954,** thereby allowing for the application of all provisions of the Constitution to the State of Jammu and Kashmir.

- III) Article 370 could only be amended after a recommendation by the J&K Constituent Assembly. However, the Presidential Order (CO 272) allowed the Union government to amend Article 370 without such recommendation.

This was done by amending another part of the Constitution which explains how it should be interpreted — Article 367. As a result of the amendment, the term 'Constituent Assembly' in Article 370(3) would be read as 'Legislative Assembly of the State', and the term 'Government of J&K' would be read as 'Governor of J&K'.

- IV) Since J & K was under President's Rule at the time, the powers of the J&K Legislative Assembly were vested in the Union Parliament. Accordingly, a few hours after the promulgation of CO 272, Union Home Minister Amit Shah moved a statutory resolution in the Rajya Sabha under Article 370(3) recommending the abrogation of Article 370.
- V) On August 6, then President Kovind issued a Proclamation (CO 273) putting into effect the Rajya Sabha's recommendation. As a result, all clauses of Article 370 ceased to operate, except clause 1, which was amended to state that the Constitution of India applies to the State of J&K. This scrapped the special status for J&K.
- VI) Subsequently, Home Minister moved the **Jammu and Kashmir Reorganisation Bill, 2019 which proposed to make Ladakh a Union territory (with-**



out a legislature) and Jammu & Kashmir a separate Union territory (with legislature).

- VII) On August 9, 2019, the President gave his assent to the Jammu and Kashmir Reorganisation Act, 2019 (2019 Act) which bifurcated the state of Jammu and Kashmir.
- VIII) The Union territory of Ladakh comprises Kargil and Leh districts while the Union territory of Jammu and Kashmir comprises all the remaining territories of the erstwhile State of Jammu and Kashmir.

What do the petitions contend?

- I) The petitions challenge the Presidential Orders of August 5 and 6, 2019, as well as the 2019 Act, contending that they are “**unconstitutional, void and inoperative.**”
- II) To challenge the Presidential Orders, the petitioners have invoked the ‘**doctrine of colourability,**’ which prohibits the passing of legislation seeking to do indirectly something not allowed to be done directly. Article 370(3) prohibited the President from amending Article 370 without the concurrence of the Constituent Assembly. However, the two Presidential orders in effect did so without the Assembly’s concurrence, thereby subjecting them to a constitutional challenge.
- III) The petitioners have also argued that the 2019 Act is unconstitutional since Article 3 does not give the Parliament powers to downgrade federal democratic States into a less representative form such as a Union Territory. The **delimitation exercise** has also been challenged on the ground that it violates the right to equality.
- IV) Several petitions also contend that in a federal democracy, the right to **autonomous self-government is a fundamental right under Part III of the**

Constitution and cannot be taken away without adhering to the due procedure established by law.

Pointing out a gross violation of the quasi-federal balance, the petitioners have highlighted that the abrogation defeats the principle of **pluralistic federalism.**

- V) Multiple petitions have also alleged gross violations of constitutional rights in J&K. It has been argued that the act of destroying its status “without the concurrence, consultation, or recommendation of the people of that State, acting through their elective representatives,” amounted to an “overnight abrogation of democratic rights and freedoms guaranteed to the people of the State of Jammu and Kashmir upon its accession.”

NATIONAL WATER MISSION

Why is it in the news?

- ★ Recently, a Memorandum of Understanding (MoU) was signed between **Bureau of Water Use Efficiency (BWUE), National Water Mission (NWM) and Indian Plumbing Association (IPA)** to improve water use efficiency.

More about the news

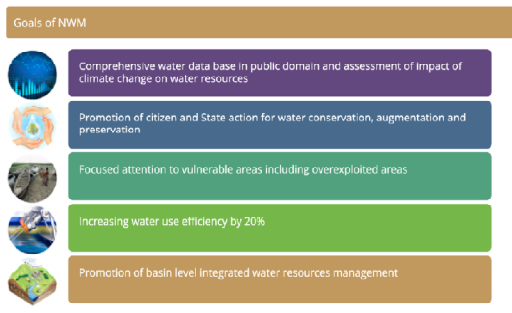
- I) As per the MoU, NWM & IPA shall work together to impart and promote public education, awareness and outreach programmes and water stewardship.
- II) The focus will be on the circular economy of water including grey water use (5Rs: Reduce – Recycle- Reuse-Replenish-Respect).
- III) The MoU further envisages that NWM & IPA shall work together for promoting and generating awareness towards rain water harvesting and recharge of aquifers.
- IV) They will also work together to promote recla-

mation of used water primarily in the urban landscape.

- V) The signing of MoU is an important step in accomplishing the Goal-4 of National Water Mission-increasing the water use efficiency by 20%.

About National Water Mission

- I) The Government of India has established the National Water Mission as one of the eight National Missions under the **National Action Plan on Climate Change**.
- II) The main objective of NWM is conservation of water, minimizing wastage and ensuring its more equitable distribution both across and within States through integrated water resources development and management.
- III) NWM has identified five goals as under:



Important campaigns run by National Water Mission

- I) **Catch The Rain:** National Water Mission’s (NWM) campaign “Catch The Rain” with the tagline “Catch the rain, where it falls, when it falls” is to nudge the states and stake-holders to create appropriate **Rain Water Harvesting Structures (RWHS)** suitable to the climatic conditions and subsoil strata before monsoon.
- II) **Water Talk:** 47 water talks have been undertaken till May 2023 to discuss various issues related to water use.
- III) **Water Tech Talk:** 20 water tech talks have been undertaken till May 2023 to discuss use of tech-

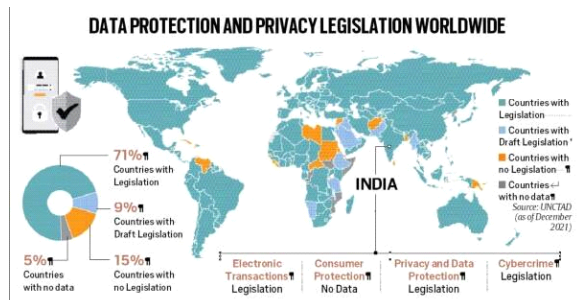
nology in water use.

- IV) **Sahi Fasal:** ‘Sahi Fasal’ campaign was launched by National Water Mission on 14th NOV 2019 to nudge farmers in the water stressed areas to grow crops which are not water intensive, but use water very efficiently; and are economically remunerative; are healthy and nutritious; suited to the agro-climatic-hydro characteristics of the area; and are environmentally friendly.

DATA PROTECTION BILL

Why is it in the news?

- I) Recently, the Union Cabinet has approved the **Digital Personal Data Protection Bill, 2022**.
- II) The Bill, once it becomes law, will play a crucial role in India’s trade negotiations with other nations, and especially regions like the European Union, whose **General Data Protection Rules (GDPR)** are among the world’s most exhaustive privacy laws.



What is the significance of a privacy law?

- I) The Digital Personal Data Protection Bill, 2022, is a crucial pillar of the overarching framework of technology regulations the Centre is building, which also includes the **Digital India Bill** — the proposed successor to the Information Technology Act, 2000, the **draft Indian Telecommunication Bill, 2022**, and a **policy for non-personal data governance**.

- II) The proposed law will apply to processing of digital personal data within India; and to data processing outside the country if it is done for offering goods or services, or for profiling individuals in India.
- III) It requires entities that collect personal data — called **data fiduciaries** — to maintain the accuracy of data, keep data secure, and delete data once their purpose has been met.

What are the concerns around the draft Bill?

- I) The Bill approved by the Cabinet is understood to have largely retained the contents of the original version that was proposed in November 2022. This is especially true of some of the proposals that privacy experts had flagged earlier.
- II) The Bill is learnt to have prescribed that the central government can exempt “any instrumentality of the state” from adhering to the provisions on account of national security, relations with foreign governments, and maintenance of public order among other things.
- III) The control of the central government in appointing members of the data protection board — an adjudicatory body that will deal with privacy-related grievances and disputes between two parties — is learnt to have been retained as well. The chief executive of the board will be appointed by the central government, which will also determine the terms and conditions of their service.
- IV) There is also concern that the law could dilute the **Right to Information (RTI) Act**, as personal data of government functionaries is likely to be protected under it, making it difficult to be shared with an RTI applicant.

How does India’s proposal compare with other countries?

- I) An estimated 137 out of 194 countries have put

in place legislation to secure the protection of data and privacy, according to the **United Nations Conference on Trade and Development (UNCTAD)**, an intergovernmental organisation within the United Nations Secretariat.

- II) Africa and Asia show 61% (33 countries out of 54) and 57% (34 countries out of 60) adoption respectively. Only 48% of Least Developed Countries (22 out of 46) have data protection and privacy laws.
- III) **EU model:** The GDPR focuses on a comprehensive data protection law for processing of personal data. It has been criticised for being excessively stringent, and imposing many obligations on organisations processing data, but it is still the template for most of the legislation drafted around the world.
- IV) **US model:** Privacy protection is largely defined as “**liberty protection**” focused on the protection of the individual’s personal space from the government. It is viewed as being somewhat narrow in focus, because it enables collection of personal information as long as the individual is informed of such collection and use.
- V) **China model:** New Chinese laws on data privacy and security issued over the last 12 months include the **Personal Information Protection Law (PIPL)**, which came into effect in November 2021. It gives Chinese data principals new rights as it seeks to prevent the misuse of personal data. The **Data Security Law (DSL)**, which came into force in September 2021, requires business data to be categorised by levels of importance, and puts new restrictions on cross-border transfers.



THE CHANGES TO THE LIBERALISED REMITTANCE SCHEME

Why is it in the news?

- ★ Recently, the Finance Ministry deferred the imposition of an increased 20% rate for **Tax Collected at Source (TCS)** by three months to October 1, and said transactions made using international credit cards overseas would not fall under the purview of the **Liberalised Remittance Scheme (LRS)**. Therefore, the latter would not be subjected to TCS.

What is Liberalised Remittance Scheme (LRS)?

- The scheme puts forth that all resident individuals, including minors, may remit up to \$250,000 each financial year out of India for any current or capital account transaction, or a combination of both. Relevant transactions may entail private visits to any country (excluding Nepal and Bhutan), gift or donation, emigration, maintenance of close relatives abroad, business travel (or attending specialised conferences), medical treatment and foreign education, among other things.
- It was introduced in February 2004 and has been revised recurrently in keeping with prevailing economic conditions. Its introductory threshold was \$25,000.

What is TCS and how does it work?

- TCS refers to the tax collected by the seller of a commodity at the time of sale. It is over and above the price of the commodity and is required to be remitted to the government's account.
- The seller is responsible for handing over the tax amount to the government and not the customer. The responsibility is sometimes taken over

by the aggregator or transactional platform if the seller is not located in India.

- Under the mechanism, sellers could be the central government, state government, local authority, statutory authority, corporation and/or company registered under the Companies Act, among others. A buyer is classified as a person who obtains goods or the right to receive goods in any sale, auction, tender or any other mode.
- The tax does not apply to Indian individuals if they furnish a declaration that the purchased goods would be utilised for manufacturing, processing or producing articles or things (for purpose of generating power) and not for further sale.
- To put things into perspective, while LRS designates the upper limit of remittance, the TCS threshold would determine when the taxation eligibility is triggered.

What is the threshold and how does it work?

- Transactions of up to Rs 7 lakh per annum per individual, other than for purchasing overseas tour program packages, do not draw any TCS. For example, if an individual spends Rs 8 lakh in a financial year, s/he would not be taxed for the initial Rs 7 lakh spend, but would be charged as per the rate corresponding to the nature of transaction for the additional Rs 1 lakh spend.
- This is not a purpose-specific but a combined threshold; that is, irrespective of the purpose, if an individual's remittances exceed Rs 7 lakh, it would be liable to taxation.

What has changed?

- The announcement is significant for the travel industry. It was proposed in the Union Budget that the TCS for purchase of overseas tour packages be increased from 5% to 20% if the upper



limit is breached. The same was to apply for payments made for purposes other than education (whether or not financed by loan) and medical treatment. The implementation has now been deferred by three months.

- II) Purchase of tour packages now draws TCS at 5% and did not have any threshold. The same rate applies for transactions exceeding the threshold other than for education and medical treatment. No changes were made with respect to remittances for educational purposes and medical treatment, both within and beyond the threshold.
- III) The idea behind the previous announcement was to widen and deepen the tax base and minimise avenues for tax-avoidance.

How will things move in the ongoing financial year once implemented?

- I) While there would be no impact on remittances upto Rs 7 lakh during the ongoing financial year, taxation on transactions beyond the threshold would be determined at the then prevailing rates, that is, rates before and after the imposition.
- II) For example, if the transaction pertains to purchase of a tour package, it will incur taxation at 5% (for those over Rs 7 lakh) until the new regime is imposed. Thereafter, it would incur 20% as per the new regime.

What about credit cards?

- I) The government also announced that transactions facilitated using international credit cards while being overseas would not fall under the LRS umbrella. Thus, transactions via credit cards when travelling abroad will not attract TCS.
- II) According to the government, the implementation was being postponed to give banks and credit

card networks adequate time to put requisite IT-based solutions in place. It clarified that the earlier notification (on May 19), about payments by individuals using debit or credit cards to be excluded from LRS limits, has been superseded.

- III) The intent behind the bringing credit cards under the ambit was to remove the differential treatment accorded to credit cards in relation to other modes of foreign exchange.

WHY ARE INDIAN DRUGMAKERS UNDER THE LENS?

Why is it in the news?

- I) Since October 2022, Indian pharma companies have been under constant international scrutiny for exporting allegedly contaminated drugs, which have led to deaths of children.
- II) Recently, Nigeria raised the red flag on two oral drugs; Cameroon too sounded an alarm over another cough syrup reportedly made in India when several children died. Sri Lanka called out two drugs manufactured in India linking them to adverse reactions in several patients.
- III) In the latest move, Gambia has declared that from July 1, it is running strict quality control checks on all pharma products shipped into the country, before they leave Indian shores.

Has India launched a probe?

- I) Soon after Gambia reported deaths of at least 70 children related to a contaminated cough syrup made in India, in December last year, reports from Uzbekistan of at least 18 children dying after consuming cough syrup contaminated with high amounts of **diethylene glycol (DEG) or ethylene glycol** poured in. The pharma company, Marion Biotech's licence was cancelled

by the national watchdog the **Central Drugs Standard Control Organisation (CDSCO)**

- II) The complaints from across the world on quality of Indian drugs does not seem to stop. The latest in line are alerts from Sri Lanka, where patients are reported to have died after being administered anaesthetic drugs made in India, and that an eye medication had caused visual impairment in 10 patients. Nigeria's National Agency for Food and Drugs Administration and Control found a batch of oral paracetamol and another cough medicine manufactured by companies based in Mumbai and Punjab to be sub-standard.

Why are regulators failing to take action against faulty manufacturing practices?

- I) The issue of contaminated cough syrup batches seeping into the supply chain and finding their way to paediatric patients is not only limited to exports. India has recorded at least five major DEG poisoning events since 1972, killing at least 84 children. The incidents occurred in Chennai, Maharashtra, Bihar, Haryana, and the latest being the 2019 case in Jammu.

For instance, the Jammu case, where the Himachal Pradesh Drug Control Administration (HPDCA) said in court that the errant manufacturer Digital Vision did not have the proper facility to test finished products for contamination. The pharma company, however, was not in the dock for the first time. It has a poor track record of at least 19 prior violations. State Food and Drug Administration bodies are not mandated to disclose the reports of inspections conducted by them on the pharma manufacturing facilities that fall under their jurisdiction.

- II) Ideally, when a manufacturer is found to be vio-

lating laws especially in cases where there is a threat to life or alleged deaths, a criminal prosecution of the persons who are responsible for manufacturing and marketing the drug should be launched. Under India's convoluted drug regulatory law, the Centre is responsible for imports and approving new drugs based on safety and efficacy data but the licensing and prosecutions of pharma companies is the responsibility of State governments.

Why are pharma companies not punished?

- I) Under the **Drugs and Cosmetics Act, 1940**, manufacturers not adhering to good manufacturing practices can be subjected to a maximum punishment of imprisonment for life. Even when prosecutions are filed, the cases move at a snail's pace in courts.

For instance, in Andhra Pradesh, of the 54 judgments in cases filed against pharma companies between 1999 and 2017, the state was able to secure convictions in only eight cases. Poor conviction rate was due to glaring errors committed by drug inspectors including shoddy paperwork, failure to seize, record its condition of storage and label the samples properly, as also the failure to complete the testing process of samples before its expiry date.

- II) According to a 2019 report titled '**Drug Regulation in India: The Working and Performance of CDSCO and SDRAs,**' while there ought to be one drug inspector for every 50 manufacturing units and 200 pharmacists, there were vacancies in most States waiting to be filled. Karnataka was working at nearly half its sanctioned capacity for drug inspectors, while Himachal Pradesh had 27% vacant posts. In HP, nearly 15% posts were lying vacant.



Way Forward

Hence, India needs to tighten the screws by ensuring robust pharma inspections and make sure that any slip-up by manufacturers is reported and prosecuted.

NRF AIMS TO BOOST RESEARCH IN HIGHER EDUCATIONAL INSTITUTES

Why is it in the news?

The NRF is supposed to fund, promote and mentor research in higher educational institutions which is expected to improve the environment of scientific research in the country.

Broad-basing research

- I) One of the main objectives of the NRF is to **get colleges and universities involved in scientific research**. The NRF detailed project report had pointed out that less than one per cent of the nearly 40,000 institutions of higher learning in the country were currently engaged in research.
- II) Active researchers, whether serving or retired, can be encouraged to take up NRF professorships at universities and colleges to start or improve their research cells in collaboration with the existing faculty. There will be no age barrier for such research mentors; they can apply for funding as long as they are active and bring value to the host institution. It also plans to offer doctoral and post-doctoral fellowships to young researchers at these universities.
- III) University professors and researchers will get opportunities to participate in long-term projects aimed specifically at solving societal problems, such as river cleaning, access to clean energy in villages, etc.

Research in social sciences

- I) The NSF would fund and promote research not just in natural sciences but also in humanities, social sciences and art. This is considered vital for inculcating creativity, critical thinking and communication skills.
- II) The detailed project report noted that finding solutions to big national problems required not just application of science and technology but an understanding of social sciences, history and various socio-cultural dimensions of the nation. Social sciences, Indian Languages and Knowledge Systems, Arts and Humanities are among the ten major 'directorates' sought to be established under NRF, along with others like natural sciences, mathematics, earth sciences and engineering.

National priorities

- I) While the NRF is envisaged to support all good-quality peer-reviewed research proposals, it does aim to identify priority areas in which science and technology interventions can help larger national objectives.
- II) The priority areas could include clean energy, climate change, sustainable infrastructure, improved transportation and accessible and affordable healthcare.
- III) Towards this end, the NRF hopes to fund and support large-scale, long-term, multidisciplinary, multi-institutional projects. It also proposes to set up Centres of Excellence in major thrust areas to focus on research considered important for the country. In addition, the NRF would also back and coordinate the research happening in mega international projects like LIGO or ITER, that India is actively involved in.

Funding

- I) The core objective of the NRF would be to sharply increase the funding available to scientific research in the country, both from government and private sources.

India's spending on research and development has remained below 0.7 per cent of its GDP, when even countries like Egypt or Brazil spend more. Advanced competitors, like the United States, China, Israel, Japan or South Korea, spend anywhere between 2 to 5 per cent of their respective GDPs on scientific research.

- II) Scientists have noted that the relatively small amount available for research in India has a direct bearing on the quality and quantity of research output. The number of researchers per million population is only 253 in India while it is more than 1,200 in China, nearly 4,200 in the United States and over 8,000 in Israel.
- III) The estimated allocation of Rs 50,000 crore over a five-year period for the NRF though does not form any substantial increase in the current spending, but according to scientists, it is likely to go up once the NRF starts to make its mark.

PROTEST OVER ASSAM DELIMITATION DRAFT

Why is it in the news?

- I) Recently, the **Election Commission (EC)** released a draft delimitation document for Assam, proposing a change in boundaries of several Lok Sabha and Assembly constituencies of the state.
- II) The proposal has run into controversy in Assam. While the government has welcomed it for "**protecting indigenous interests**", Opposition parties like the **AIUDF, which represents the state's Bengali-origin Muslims**, are unhappy, alleging that

the draft divides voters on religious lines.

- III) The proposed boundaries also threaten the electoral futures of some sitting legislators and parliamentarians, who now may lose their constituencies.

What is delimitation, why is it being done in Assam?

- I) Delimitation is the **act of redrawing boundaries of Lok Sabha and Assembly seats** to represent changes in population. Its aim is to provide equal representation for equal population segments, to ensure that no political party has an advantage.
- II) Delimitation is a **constitutional exercise** carried out based on preceding Census figures (year 2001 in this case).
- III) While the slated delimitation process was done in the rest of the country in 2008, it was deferred in Assam (as well as some other Northeastern states) citing security concerns of the time. A 2020 notification from the Law Ministry officially revived the exercise in Assam. Following that, in December 2022 the EC announced that it would initiate the exercise.

What are the highlights of the proposal?

- I) While the number of seats (126 Assembly and 14 Lok Sabha) are being retained, the EC has proposed not just changes in geographical boundaries, but also an increase in the number of reserved constituencies for **Scheduled Tribes (ST) and Scheduled Castes (SC)**.
- II) **Some of the key highlights:**
- Reserved seats increased:** SC assembly seats have increased from 8 to 9; ST assembly seats have increased from 16 to 19.
 - Districts with autonomous councils (administered under the Sixth Schedule of the Constitution) get more seats: one assembly

seat increased in West Karbi Anglong District; three assembly seats increased in the Bodo Territorial Region.

- c) **Change in nomenclature:** Kaliabor Lok Sabha constituency now named 'Kaziranga'.

How was the process carried out?

- I) While the constituencies were delimited on the basis of census figures of 2001, the EC also took in the views and suggestions of 11 political parties and 71 organisations they had met during their visit to Assam in March.
- II) Chief among the representations made by these parties included using 2001 census as the basis (the EC noted that some parties were for it and some against), protection of the rights of the "indigenous" people in Assam, and accounting for the "change in demographic pattern", among others.
- III) The poll body said suggestions and objections to the draft proposal were open till July 11. Following that, the commission would conduct a public hearing in Assam.

THE UNIFORM CIVIL CODE AND ITS IMPACT ON DIFFERENT COMMUNITIES

Why is it in the news?

- I) Recently, Prime Minister Narendra Modi made a pitch for the **Uniform Civil Code (UCC)** and hit out at Opposition parties for allegedly inciting minority communities against it.
- II) The PM's statement comes after the 22nd Law Commission invited the views of the public and "recognised" religious organisations on the UCC within 30 days.

What is the UCC?

- I) UCC is the idea of having a **common code of per-**

sonal laws for people of all religions. Personal law includes aspects of inheritance, marriage, divorce, child custody, and alimony. However, currently, India's personal laws are fairly complex and varied, with each religion following its own specific regulations.

- II) While the form and shape of a common civil code are often debated, the idea also finds mention in the Constitution.

a) **Part IV of the Indian Constitution deals with the Directive Principles of State Policy,** which, although not enforceable by courts, are supposed to act as guiding principles that play a fundamental role in governing the country.

b) **Article 44** mentions the State should "endeavour to secure for citizens a Uniform Civil Code throughout the territory of India."

What was the debate in the Constituent Assembly?

- I) The Constituent Assembly witnessed a lengthy discussion on a common civil code while adopting it as a directive principle.
- II) When the said Article was being discussed on November 23, 1948, several Muslim members suggested adopting a common civil code with a caveat that it would apply to citizens with prior consent. However, BR Ambedkar was strongly opposed to the amendments.
- III) Mohamad Ismail, a member from Madras, proposed a proviso be added to it, stating that "the personal law of any community which has been guaranteed by the statute shall not be changed except with the previous approval of the community ascertained in such manner as the Union Legislature may determine by law."

Ismail also said that a group or community's



right to follow its personal law was a fundamental one and that any tinkering with it would be “tantamount to interference with the way of life of those people who have been observing these laws for generations”.

- IV) Similarly, lawyer and educator KM Munshi, who founded Bharatiya Vidya Bhavan, said that Hindus themselves have their separate laws and asked, “Are we going to permit this piecemeal legislation on the ground that it affects the personal law of the country? It is therefore not just a question for minorities but also affects the majority.”
- V) Finally, Ambedkar, the then Chairman of the Drafting Committee, pointed out that barring the North-West Frontier Province, Muslims in different parts of India like Bombay and the United Provinces were governed by Hindu law in matters of succession until 1937. However, he assured that the UCC would not be enforced upon the people as Article 44 “merely proposes that the State shall endeavour to secure a civil code”. Ambedkar also underlined the possibility that a future Parliament could make provisions for applying the UCC in a “purely voluntary” manner.

What have the previous Law Commissions said?

- I) In 2016, a reference was sent by the Ministry of Law and Justice to the Law Commission for examining all matters relating to the UCC’s implementation.
- II) First came the 21st Law Commission of India, which, after taking in the views of various stakeholders, issued a consultation paper instead of a final report on the issue.
 - a) The paper, titled **Reforms of Family Law**, was published on August 31, 2018, and argued

for reforming family laws across religions through amendments and codification of personal laws to limit “**ambiguity in interpretation and application.**”

- b) Citing sati, devadasi, triple talaq, and child marriage as examples of ‘social evils’ under the garb of religious customs, the Commission observed that these “**practices do not conform with basic tenets of human rights and nor are they essential to religion.**”
 - c) Relying on the Constitution’s Sixth Schedule, which provides certain protections to some states, the paper said that while framing laws, it must be remembered that “**cultural diversity cannot be compromised to the extent that our urge for uniformity itself becomes a reason for threat to the territorial integrity of the nation.**”
- III) Since over three years had lapsed since the paper’s publication, the 22nd Law Commission of India considered it expedient to deliberate afresh over the subject, in light of its importance, relevance, and also various court orders on the subject.
 - IV) However, even before the UCC was taken up by the Law Commissions, it was extensively deliberated by the judiciary, from as far back as 1952.

What has the Supreme Court said?

- I) In a number of rulings, the SC has supported the introduction of UCC.
- II) Notable among the rulings is the landmark **1985 Shah Bano ruling** in which the SC upheld the right of a Muslim woman to seek alimony. The judgment set off a political battle as well as a controversy about the extent to which courts can interfere in Muslim personal law and the decision was undone by Parliament.



According to the court, a common Civil Code will help the cause of national integration by removing disparate loyalties to law which have conflicting ideologies.

III) In **Sarla Mudgal v Union of India (1995)**, the SC while prohibiting conversion to Islam to benefit from laws that allow polygamy said that the need for a UCC “can hardly be doubted”.

However, it added that this can happen only when the social climate is properly built up by elite of the society and statesmen amongst leaders who instead of gaining personal mileage rise above and awaken the masses to accept the change.

IV) In October 2022, the Centre, while responding to a plea filed before the top court for uniformity in laws of divorce, succession, inheritance, adoption and guardianship, said that the Constitution obligated the State to have a UCC for its citizens and that the matter would be placed before the 22nd Law Commission.

What is its Significance?

- I) The initiative is a significant step towards advancing Digital India and promoting the well-being of livestock and the livestock industry.
- II) The portal will seamlessly integrate with the **SUGAM portal of the CDSCO**, further simplifying the approval process for veterinary products.
- III) The portal is following the animal vaccination coverage initiative and Mobile Veterinary Units (MVUs).
- IV) The portal will enable quick and easy coordination between various Government Departments, Institutes, and Industry through a seamless interconnected system designed to expedite and strengthen the regulatory process.
- V) With the launch of NANDI, DAHD continues to stride towards achieving the interventions laid out as part of its **Animal Pandemic Preparedness Initiative (APPI)**.

NANDI PORTAL

Why is it in the news?

- ★ Recently, the Union Minister of Fisheries, Animal Husbandry & Dairying, launched the **NANDI (NOC Approval for New Drug and Inoculation System) portal**.

About NANDI Portal

- I) It is developed by the **Department of Animal Husbandry and Dairying (DAHD)** in collaboration with the **Central Drugs Standard Control Organization (CDSCO)**.
- II) **Objective:** The Portal Will expedite the regulatory approval process for veterinary products. It will enhance transparency and efficiency in assessing and examining proposals for veterinary drugs and vaccines.

SOME ADDITIONAL INFORMATION

About Animal Pandemic Preparedness Initiative (APPI)

- I) The programme focuses on prevention of outbreaks, especially zoonotic diseases, or infections caused by microorganisms that jump from animals to humans.
- II) The key activities under APPI which are at different stages of execution are as follows:
 - a) Joint investigation and outbreak response teams.
 - b) Integrated disease surveillance system.
 - c) Strengthening the Regulatory system.
 - d) Disease modelling algorithms and early warning systems.
 - e) Strategizing Disaster Mitigation with the National Disaster Management Authority.
 - f) Initiate targeted R&D to develop vaccines/



diagnostics/therapies for priority diseases.

- g) Build genomic and environmental surveillance methods to improve the timeliness and sensitivity of disease detection.

About Central Drugs Standard Control Organisation (CDSCO)

- I) CDSCO is the drug regulatory agency under the central government primarily implementing the provisions of the **Drugs and Cosmetics Act, 1940**.
- II) The Act includes approval of new drugs, conduct of their clinical trials, regulation of imported drugs, Pharmaco-vigilance and coordinating the activities of the states so as to achieve uniformity throughout the country in the administration of the said Act.

About SUGAM portal

- I) SUGAM is an **e-Governance system** to discharge various functions performed by CDSCO under Drugs and Cosmetics Acts, 1940.
- II) It is an online web portal where applicants can apply for NOCs, licenses, registration certificates, permissions & approvals.
- III) It provides an online interface for applicants to track their applications, respond to queries and download the permissions issued by CDSCO.

ANNA BHAGYA 2.0 SCHEME

Why is it in the news?

- I) Recently, **Food Corporation of India (FCI)** rejected various States' demands to reconsider the decision to restrict purchase through the **Open Market Sale Scheme (OMSS)**, which is going against Karnataka's Anna Bhagya 2.0 scheme.
- II) State governments had alleged that such a move was against the interest of the poor.

What is the Open Market Sale Scheme (OMSS)?

- I) OMSS refers to the selling of food grains by the

government/government agencies at predetermined prices in the open market from time to time.

- II) Food Corporation of India sells surplus stocks of wheat and rice under Open Market Sale Scheme (Domestic) at pre-determined prices through e-auction in the open market from time to time to enhance the supply of food grains.

What is FCI's argument?

The FCI had said the States' schemes cater to the same set of beneficiaries covered under the Prime Minister's Garib Kalyan Ann Yojna and to curb the inflation.

About Anna Bhagya 2.0 scheme

- I) It is Karnataka's food security program that provides subsidized rice to poor families in the state.
- II) The scheme aims to alleviate poverty in the region by providing poor families with access to subsidized rice. This will help to reduce the cost of living for these families and can help to improve their food security.

THE CONTENTION BETWEEN COAL INDIA AND CCI

Why is it in the news?

- I) Recently, the Supreme Court held that there was **"no merit" in Coal India Ltd (CIL)**, a public sector undertaking, being excluded from the purview of the **Competition Act**.
- II) The Court was hearing the PSU's appeal against the **Competition Appellate Tribunal's order** which alleged the former of abusing its position.

What was the case about?

- I) The chain of events goes back to March 2017 when the **Competition Commission of India (CCI)** had imposed a penalty of ₹ 591.01 crore on CIL for imposing unfair/discriminatory conditions



in **fuel supply agreements (FSAs)** with the power producers for supply of non-coking coal.

In other words, CIL was found to be supplying lower quality of the essential resource at higher prices and placing opaque conditions in the contract about supply parameters and quality.

- II) The regulator contended that Coal India and its subsidiaries operated independently of market forces and enjoyed market dominance in the relevant market with respect to production and supply of non-coking coal in India.

What did the PSU argue in court?

- I) Coal India argued that it operated with the principles of **'common good'** and ensuring equitable distribution of the essential natural resource. With this objective, it was secured as a **'monopoly'** under the **Nationalisation Act, 1973 (more specifically, the Coal Mines (Nationalisation) Act, 1973)**.
- II) The entity said that it may have to adhere to a differential pricing mechanism to encourage **cap-tive coal production (referring to mines that are handed over to companies for specific and exclusive use through lease or any other route)**. Differential pricing, which may be inconsistent with market principles, was to ensure the viability of the larger operating ecosystem as well as for pursuing welfare objectives. Furthermore, coal supply also has a bearing on larger national policies, for example, if the government were to encourage growth in backward areas through increased allocation.
- III) The PSU stated that it did not operate in the commercial sphere. It specifically pointed to 345 out of its 462 mines having suffered cumulative losses totalling 1 9,878 crore in 2012-13. About 51% of its manpower too were engaged in these

mines, adding separately that they could not lay-off employees unlike private players.

How did the CCI respond?

The respondents broadened the scope of the arguments.

- I) The **Raghavan Committee (2020) report**, put up for perusal by the respondents, had observed that state monopolies were not conducive to the best interests of the nation. They could not be allowed to operate in a state of inefficiency and should instead, operate amid competition.
- II) Furthermore, coal ceased to be an **'essential commodity'** in February 2007 and the Nationalisation Act too was removed from the **Ninth Schedule (laws that cannot be challenged in court)** in 2017.
- III) It was also pointed out that Coal India was a fully-government owned entity until the disinvestment in 2010. **The government's shareholding reduced to 67% with the rest held by private hands.**
- IV) Moreover, it was stated that the CIL directed 80% of its supplies to power companies. The latter would then pass power generated using coal to discoms (distribution companies), who, in turn, would supply power to the final consumer. The continual supply of coal, adherence to the contract, reasonableness in the rates and quality of coal also serve a common good.
- V) Coal constitutes about 60 to 70% of the costs for power generation companies. Thus, irregular prices and supply will have a significant bearing indirectly on consumers.

What were the SC's observations?

- I) The court said there was **"no merit"** in the argument that the Competition Act would not apply to CIL because they are governed by the



Nationalisation Act, and it cannot be reconciled with the Competition Act.

- II) Also, the court stated that the novel idea which permeates the Act, would stand frustrated, in fact, if the state monopolies, the government companies and public sector units are left free to contravene the (competition) act. Separately, it said that entities cannot act with caprice, treat unfairly otherwise or similarly situated entities with discrimination.
- III) Further, the judgment reinforced the principle of “**competitive neutrality**” — entailing that the Competition Act equally applies to public and private sector enterprises. Government companies, across sectors, which may be dominant in their sector of operation, would have to conduct business in a fair and non-discriminatory manner so as to not fall foul of the principles of antitrust law. This allows for a level playing field between public sector and private enterprises operating in India.

THE SHAKTI SCHEME- FREE BUS TRAVEL FOR WOMEN IN KARNATAKA

Why is it in the news?

- I) Recently, the newly-elected Congress government in Karnataka launched the **Shakti scheme**. In this scheme, **women can travel for free in non-premium services of State-run buses across Karnataka**.
- II) The main purpose of this scheme is said to be to increase the work participation rate of women and to promote public transportation in Karnataka.

What was the genesis of Shakti scheme?

- I) The Congress announced the Shakti scheme in

its manifesto for the 2023 Karnataka Assembly Election, as part of five guarantees.

- II) The Shakti scheme, and the other guarantees, are believed to have helped the Congress win a comfortable majority in the elections, and form the government in Karnataka.

What are the contours of Shakti scheme?

- I) Under this scheme, women and transgenders can travel free in non-premium services of State-run bus services across Karnataka.
- II) The free travel scheme is restricted within the State to women who are domicile of Karnataka. They will be able to travel in general and express bus services operated by State-run Road Transport Corporations.
- III) The State Government will issue the ‘**Shakti Smart Card**’ after receiving applications from women, including students, through the **Seva Sindhu portal**. Until then, it has asked RTCs to accept any identity card issued by the Central or State government that carries the photograph and address of the beneficiary, to issue a ‘**zero ticket**’ (free ticket).
- IV) The government has directed completion of issuance of smart cards within three months.
- V) The government has **reserved 50% of the seats for men in the services** in which women are eligible to avail free travel, except Bengaluru Metropolitan Transport Corporation (BMT) services.

How many people will benefit from Shakti scheme?

- I) The scheme is expected to benefit 41.81 lakh women (including 11.58 lakh passholders), according to a statement by the **Karnataka State Road Transport Corporation (KSRTC)**.
- II) The RTCs met the estimated target of beneficiaries on June 12, the first weekday the scheme

was operational. A total of 41.34 lakh women travelled free in RTC buses on June 12. The cost to the State exchequer was ₹ 8.84 crore.

- III) On June 13, the Transport Department's maximum estimate of free ridership for a day under the Shakti scheme was breached, with over 51.52 lakh women boarding State-run Road Transport Corporation (RTC) buses, which was the third day of implementation of this welfare programme.
- IV) The total value of the free tickets on the third day was ₹ 10.82 crore, and the cumulative cost for three days was ₹ 21.05 crore. On all three days, Bengaluru Metropolitan Transport Corporation recorded the highest women ridership.

How is the cost of free travel reimbursed to RTCs?

- I) The government has decided to reimburse the cost of free travel to the corporations based on the zero ticket, or data from Shakti smart cards.
- II) The government routinely reimburses the subsidy provided for bus passes, apart from special grants and financial assistance. The government has reimbursed ₹ 3,606.52 crore to the four corporations from April 2022 to March 2023.

What is fare-free public transport concept?

- I) The **Fare-Free Public Transport (FFPT)** has been adopted in many countries and by various States in India. Australia and certain pockets of the U.S., among others, experimented with the concept for many years.
- II) In India, many States have rolled out the measure partially to certain sections of the population, such as senior citizens, disabled persons, women, transgenders, minors, people working in public service sectors, and for journalists.
- a) In 2021, Tamil Nadu Chief Minister announced

free travel for women on basic-fare government buses.

- b) In Delhi, Chief Minister implemented free bus services for women in Delhi Transport Corporation (DTC) buses.
- c) In Punjab, woman can travel free-of-cost in all government-owned buses, including Punjab Roadways Transport Corporation (PRTC), Punjab Roadways Buses (PUNBUS), and city bus services operated by local bodies.



SCIENCE AND TECHNOLOGY

ISRO TO EXPLORE THE MOON'S SOUTH POLE

Why is it in the news?

- I) **Chandrayaan-3, India's third lunar mission** is a follow-up to the 2019 Chandrayaan-2 mission, which partially failed after its lander and rover couldn't execute a soft-landing on the Moon.
 - II) The Chandrayaan-3 will reach the lunar orbit almost a month after its launch, and its **lander, Vikram, and rover, Pragyaan**, are likely to land on the Moon. Notably, the landing site of the latest mission is more or less the same as the Chandrayaan-2: near the south pole of the moon at 70 degrees latitude. If everything goes well, the Chandrayaan-3 will become the world's first mission to soft-land near the lunar south pole.
 - III) All the previous spacecraft to have landed on the Moon have landed in the **equatorial region**, a few degrees latitude north or south of the lunar equator. The furthest that any spacecraft has gone from the equator was **Surveyor 7, launched by NASA**, which made a moon landing way back on January 10, 1968. This spacecraft landed near 40 degrees south latitude.
- II) It is easier and safer to land near the equator. The terrain and temperature are more hospitable and conducive for a long and sustained operation of instruments. The surface here is even and smooth, very steep slopes are almost absent, and there are fewer hills or craters. Sunlight is present in abundance, at least on the side facing the earth, thus offering a regular supply of energy to solar-powered instruments.
- III) The polar regions of the Moon, however, are a very different, and difficult, terrain. Many parts lie in a completely dark region where sunlight never reaches, and temperatures can go below 230 degrees Celsius. Lack of sunlight and extremely low temperatures create difficulty in the operation of instruments. In addition, there are large craters all over the place, ranging from a few centimetres in size to those extending to several thousands of kilometres.

Why hasn't any spacecraft ever landed near the lunar south pole?

- I) There is a very good reason why all the landings on the Moon so far have happened in the equatorial region. Even **China's Chang'e 4, which became the first spacecraft to land on the far side of the moon — the side that does not face the earth — landed near the 45-degree latitude.**
- II) Due to their rugged environment, the polar regions of the Moon have remained unexplored. But several Orbiter missions have provided evidence that these regions could be very interesting to explore. There are indications of the presence of ice molecules in substantial amounts in the deep craters in this region — **India's 2008 Chandrayaan-1 mission indicated the presence of water on the lunar surface with the help of its two instruments onboard.**
- II) In addition, the extremely cold temperatures here mean that anything trapped in the region would

remain frozen in time, without undergoing much change. The rocks and soil in Moon's north and south poles could therefore provide clues to the early Solar System.

Why don't some parts of the lunar polar regions receive any sunlight?

- I) Unlike the Earth, whose spin axis is tilted with respect to the plane of the Earth's solar orbit by 23.5 degrees, the Moon's axis tilts only 1.5 degrees. Because of this unique geometry, sunlight never shines on the floors of a number of craters near the lunar north and south poles. These areas are known as **Permanently Shadowed Regions, or PSRs**.
- II) According to a 2019 NASA report, Water that happens to find its way into PSRs may remain there for long periods of time. Data from the Diviner instrument onboard **LRO (Lunar Reconnaissance Orbiter, robotic spacecraft currently orbiting the Moon)** which measures temperatures across the Moon, including PSRs, indicate that some surfaces are cold enough so that water is stable at the surface.

META'S SOCIAL MEDIA APP THREADS

Why is it in the news?

- ★ Recently, Meta has unveiled an app called **Threads** to rival Twitter, targeting users looking for an alternative to the social media platform owned — and frequently changed — by Elon Musk.

What is Threads?

- I) Launched by Facebook, Instagram, and WhatsApp-parent Meta on July 5, Threads is a **text-based public conversation app** that was built by the team behind the photo-sharing app

Instagram.

- II) Both iOS and Android users in over 100 countries could access the app this week attracting around 70 million sign-ups in just two days.
- III) While Twitter had around 368 million monthly active users worldwide in December 2022, Instagram has over two billion monthly active users.

How does Threads work?

- I) Threads is **part of a user's Instagram account**. Threads users will need to sign up through Instagram, and can cross over with their original username and the accounts they were following on Instagram.
- II) A number of settings such as blocking, restricting users, and hiding words are synced between the two platforms. However, if a user decides they don't like Threads, they can only deactivate the account. Deleting Threads would mean deleting their Instagram account as well. Users are shown content from the accounts they follow on both Instagram and Threads, as well as recommended content.
- III) There are also plans to let users choose to see only the accounts they follow. There is also no way to privately message others on Threads yet.
- IV) According to Google's Play Store, Threads can collect data such as a user's location, their personal information, financial information, health and fitness, messages, photos and videos, files and documents, calendar events, and more. Some of the personal information that Threads can collect includes the user's address, phone number, political or religious beliefs, and/or sexual orientation.
- V) Though Threads is still in its early days, Meta plans to make it compatible with the open so-



cial networking protocol ActivityPub, so that Threads could one day work with platforms such as the decentralised social media site Mastodon and the content management system and website-builder WordPress.

How similar is Threads to Twitter?

- I) Threads is similar to Twitter in terms of its user interface and basic features. Threads users can make posts and comment in response. They can also heart posts, repost and quote them, or share posts on Instagram, Twitter, and other platforms. Threads posts can go up to 500 characters and include media such as links, pictures, and videos which are up to five minutes long.
- II) News organisations and other professionals often rely on Twitter for instant updates and official statements or comments. However, Threads does not yet support the keyword searches which are necessary for these users. Threads also does not display trends in the way Twitter does.
- III) Meta's new app feels like a familiar mix of both Instagram and Twitter's most recognisable features. Threads does not have advertisements yet. It remains to be seen how the platform will evolve in response to user and advertiser demands.

Why is Threads facing issues in the EU?

- I) Users in the European Union were not able to download Threads on July 5, as Meta delayed releasing the app in these countries due to challenges with regulatory compliance in the region.
- II) The EU's **Digital Markets Act (DMA)**, which began to apply in May, plans to categorise large online platforms as "gatekeepers" and put in place rules to ensure they handle data fairly, do not put rivals at a disadvantage, and gain consent to track users outside the "core platform service" for targeted advertising.

- III) Separately, the European Court of Justice in July took the side of Germany's anti-cartel watchdog which wanted to stop Meta's practice of mixing data collected across Facebook, Instagram, and WhatsApp.

What are some other Twitter rivals?

- I) When Twitter was taken over by Mr. Musk in late October 2022, rival social media sites saw an uptick in user sign-ups as many linked Mr. Musk's leadership with a rise in bigotry and misinformation on Twitter. Mastodon, for instance, scooped up around one million new users. However, growth was not consistent and Mastodon was criticised for its confusing structure of multiple servers that users can access.
- II) Bluesky is another contender. Twitter's co-founder and former CEO Jack Dorsey is on the board of Bluesky, which is building a public conversation protocol so that users can move between platforms instead of being walled in. Bluesky's beta version requires an invite but the platform recorded 50,000 users in April and over 58,000 sign-ups in early July. Bluesky uses the invite codes to deter spammers and bad actors, so its growth as a Twitter rival is naturally restricted.

How are Bluesky and Mastodon different from Twitter and Threads?

- I) Bluesky and Mastodon both aim to be decentralised platforms. Bluesky is based on the AT Protocol and its founders intend for creators to build their own applications on the protocol so that users can move between social media platforms without losing their data. Mastodon, meanwhile, offers providers called



servers which users must join to connect with others. These servers can be region-specific or based on topics such as Technology, Gaming, LGBTQ+, Music, and more. Mastodon servers have their own entry requirements and policies. Users can move between servers or host their own.

- II) Meta's Threads plans to use the ActivityPub protocol which Mastodon uses in the future so that the platforms can work together.
- III) In contrast, Twitter is a centralised social media platform which has more direct control over user actions and content moderation. If Twitter users want to shift their accounts to another platform, they have to start again with zero followers and posts.

Way Ahead

- I) With a userbase in the billions, Meta is perhaps the best rival to take on an increasingly erratic Twitter.
- II) Yet Threads brings experimental features, dark patterns, and algorithmic feeds during a time when more internet users want usability, transparency, and accountability from their social media companies.

CARBON MOLECULES IN SPACE

Why is it in the news?

- ★ Recently, the **CH₃⁺ molecule (methyl cation)**, has been detected in space for the first time by the **James Webb Space Telescope (JWST)**.

Some of the key points

- I) JWST detected the carbon compound methyl cation (CH₃⁺) in a protoplanetary disk system called d203-506, which lies around 1,350 light-years from Earth in the **Orion Nebula**.

- II) The star at the centre of the system is a red dwarf just 10% as massive as our sun, and the entire system is being bombarded by strong ultraviolet radiation from nearby hot, young, massive stars.

About CH₃⁺ molecule

- I) CH₃⁺ is a simple organic molecule, just one carbon atom and 3 hydrogen atoms. But it reacts with other molecules to form more complex ones.
- II) Organic molecules are carbon based. They contain carbon atoms bonded to hydrogen atoms but can also bond to other elements, such as oxygen, nitrogen or phosphorus. Everything that makes us and all life on Earth is carbon-based.

Why does detecting carbon molecules in space matter?

- I) Carbon compounds form the foundations of all known life, and as such are particularly interesting to scientists working to understand both how life developed on Earth, and how it could potentially develop elsewhere in our universe.
- II) The discovery of methyl cation in a region where planets that could eventually host life may help scientists better understand how and where in the universe life could get started.
- III) The discovery of methyl cation in a region where planets that could eventually host life may help scientists better understand how and where in the universe life could get started.

SOME ADDITIONAL INFORMATION

James Webb Space Telescope

- I) It is the world's premier space science observatory led by **NASA with its partners, ESA (European Space Agency) and CSA (Canadian Space Agency)**.
- II) It will be a giant leap forward in the quest to understand the Universe and our origins, as it will examine every phase of cosmic history from

the Big Bang to the formation of galaxies, stars, and planets to the evolution of our own Solar System.

- III) It is currently at a point in space known as the **Sun-Earth L2 Lagrange point**, approximately 1.5 million km beyond Earth's orbit around the Sun.
- IV) The JWST will be able to see right through and into massive clouds of dust that are opaque to earlier generation visible-light observatories like the Hubble Telescope.
- V) The Webb telescope is equipped with cameras and other instruments sensitive to infrared or heat radiation, and the Hubble is not.

NOTE: Lagrange Point

- I) It is named after Italian-French mathematician Joseph-Louis Lagrange.
- II) A Lagrange point is a location in space where the combined gravitational forces of two large bodies, such as Earth and the sun or Earth and the moon, equal the centrifugal force felt by a much smaller third body. The interaction of the forces creates a point of equilibrium.
- III) Objects placed at these positions are relatively stable and require minimal external energy or fuel to keep themselves there, and so many instruments are positioned here.

UPGRADED GIANT METREWAVE RADIO TELESCOPE (uGMRT)

Why is it in the news?

- ★ Recently, an international team of astronomers from India, Japan and Europe has published the results from monitoring pulsars, called '**nature's best clocks**', by using six of the world's most sensitive radio telescopes, including **India's largest telescope uGMRT**.



Some of the Key Points

- I) The 100-m Effelsberg radio telescope in Germany, the Lovell Telescope of the Jodrell Bank Observatory in the United Kingdom, the Nançay Radio Telescope in France, the Sardinia Radio Telescope in Italy and the Westerbork Synthesis Radio Telescope in the Netherlands were used for observations.
- II) The results provide a hint of evidence for the relentless vibrations of the fabric of the universe, caused by ultra-low frequency gravitational waves.
- III) Such waves are expected to originate from a large number of dancing monster black hole pairs, crores of times heavier than our sun.

About Giant Metrewave Radio Telescope (GMRT)

- I) It is a **low-frequency radio telescope** that helps investigate various radio astrophysical problems ranging from nearby solar systems to the edge of the observable universe.
- II) It is a project of the **Department of Atomic Energy (DAE), operating under the Tata Institute of Fundamental Research (TIFR)**.
- III) It is located at a site about 80 km north of Pune.

About uGMRT

The uGMRT will increase its sensitivity by up to three times and make it a more powerful and versatile facility.



HYPERSPECTRAL REMOTE SENSING TECHNOLOGY

Why is it in the news?

- I) Recently, the **Ministry of Agriculture & Farmers Welfare** signed a MOU with Pixxel Space India Pvt. Limited to develop various geospatial solutions for the Indian Agriculture Ecosystem using Pixxel's hyperspectral dataset.
- II) The project focuses on leveraging sample hyperspectral data from Pixels path finder satellites to develop analytics models focused on crop mapping, crop stage discrimination, crop health monitoring, and soil organic carbon assessments.
- III) This will enable the Government to develop use cases with hyperspectral data provided by Pixel. Mahalanobis National Crop Forecast Centre (MNCFC) on behalf of the DA&FW will associate with Pixel team for developing and implementing the suitable methodologies.

Mahalanobis National Crop Forecast Centre (MNCFC)

- I) Named after great Indian Statistician P. C. Mahalanobis, was established in 2012 to operationalize the use of space and related technology for better agricultural forecasting and drought assessment.
- II) It comes under the Department of Agriculture, Cooperation & Farmers welfare, Ministry of Agriculture & Farmers Welfare.

What is Hyperspectral Remote Sensing Technology?

- I) Hyperspectral remote sensing, also known as **imaging spectroscopy**, is currently being used by researchers and scientists with regard to the detection and identification of minerals, terrestrial vegetation, and man-made materials and backgrounds.

- II) With advancing technology, imaging spectroscopy has begun to focus on the Earth. The concept of hyperspectral remote sensing began in the mid-80's and to this point has been used most widely by geologists for the mapping of minerals.
- III) Actual detection of materials is dependent on the spectral coverage, spectral resolution, and signal-to-noise of the spectrometer, the abundance of the material and the strength of absorption features for that material in the wavelength region measured.

Applications in Agriculture

- I) This is an emerging technology with unique capabilities for monitoring agriculture. Crop health monitoring by detecting the changes in chlorophyll content and canopy moisture status, using hyperspectral data would be beneficial to find crop risk management solutions to farmers.
- II) Soil nutrient mapping including soil organic carbon assessments is one of the important applications of hyperspectral technology. The soil reflectance observations measured by the sensors offer more direct, cost-effective datasets to estimate soil organic carbon.
- III) This will also help to develop the early detection of crop stress, accurate diagnostics of crop stress due to pest/disease or water using hyperspectral data offer numerous opportunities to strengthen the current advisory system of the Government benefiting millions of farmers.
- IV) The new technology will reduce dependence on manual surveys and measurements which are time consuming and prone to errors.



THE LAB-GROWN MEAT

Why is it in the news?

- I) **“Cell-cultivated chicken”** – that’s the official name of chicken meat that is grown in a laboratory for human consumption.
- II) Recently, on June 21, the two California-based companies were cleared to make and sell cell-cultivated chicken in the country in what is being hailed by stakeholders in the concept as a **major step forward for reducing the carbon emissions associated with the food industry worldwide.**

What happened on June 21?

- I) The two companies, **Good Meat and Upside Foods**, have received the U.S. government’s approval to make and sell their cell-cultivated chicken.
- II) The **U.S. Food and Drug Administration** was involved in the regulatory process but didn’t technically approve the products because the process doesn’t require an approval.
- III) In such cases, a company in question is required to conduct a safety assessment of its own facilities and the veracity of its production process. Sometimes, in order to boost consumer and investor confidence, it may consult with the FDA. At the end of this process, if the FDA is satisfied by the company’s submissions, it will send a “no questions” letter, signalling the regulatory body’s tacit approval.
- IV) The FDA provided such letters to Upside in November 2022 and to Good Meat in March 2023.
- V) In June, the U.S. Department of Agriculture finalised the label “cell-cultivated chicken” for the product being sold, and provided a ‘grant of inspection’, which is required to operate production facilities.

What is cell-cultivated chicken?

- I) To make cell-cultivated meat, these two companies isolate the cells that make up this meat (the meat that we consume), and put them in a setting where they have all the resources they need to grow and make more copies of themselves. These resources are typically **nutrients, fats, carbohydrates, amino acids, the right temperature, etc.**
- II) The ‘setting’ in which this process transpires is often a **bioreactor (also known as a ‘cultivator’)**, a **sensor-fit device – like a container – that has been designed to support a particular biological environment. (Because of the techniques involved, producing meat in this way is also called cellular agriculture.)**
- III) Once these cells have become sufficiently large in number, which takes around two to three weeks in Upside’s process, they resemble a mass of minced meat. They are collected and then processed, with additives to improve their texture and/or appearance, and are destined for various recipes.

Which forms of cell-cultivated meat exist?

- I) After pork, chicken is the second most widely consumed meat in the world, according to the **U.N. Food and Agriculture Organisation (FAO)** – but in the U.S. it has been the highest consumed meat since 2010.
- II) Good Meat and Upside have thus far focused on chicken, and plan to expand their offerings to include other meats in future.
- III) Researchers are also developing cell-cultivated versions of sea bass, tuna, shrimp, and pork. A 2021 report estimated that there were 107 companies in 24 countries (including two from India). The first country to approve the sale of alternative meat was Singapore in 2020.



IV) The consulting firm McKinsey has estimated that the global alternative meat market could have \$20-25 billion in sales by 2030.

Why was cell-cultivated meat created?

I) Its proponents have advanced the following arguments in favour of developing lab-grown meat: **emissions, land use, prevention of animal slaughter, food security, and customisation**. The first two are related to climate mitigation.

The FAO has estimated that global livestock is responsible for 14.5% of all anthropogenic greenhouse-gas emissions. Of this, the production of beef as a commodity accounted for 41%, whereas chicken meat and eggs accounted for 8%. Similarly, the 2021 report estimated that lab-cultivated meat would use 63% less land in the case of chicken and 72% in the case of pork.

II) Climate scientists have also asked people – especially in richer countries – to reduce their meat consumption, but carnivorous diets remain popular, in turn maintaining lab-grown meat as a promising alternative. Its proponents have also advanced such meat as a way to meet the world's nutritional security needs.

III) Finally, some experts have said that lab-grown meat can be customised to be healthier than their animal counterpart, such as being designed to contain less fat, thus contributing to public health.

What are the challenges?

I) **Consumer acceptance** – Perfectly substituting animal meat with alternative meat requires the latter to match the former's taste, texture, and appearance, and cost. Researchers have achieved some success on these counts but it remains a work in progress, especially as more meats acquire alternative counterparts.

II) **Cost** – The cost of cell-cultivated meat is expected to remain high in the near future. One 2020

analysis even concluded that it may never be cost-competitive, while reports have also expressed concerns about the costs imposed by quality control, especially at scale.

III) **Resources** – For the cellular cultivation process, researchers require high quality cells to begin with (plus information about how different cell types contribute to the 'meat'), a suitable growth-medium in which the cells can be cultured, plus other resources required to maintain the quality of the final product.

IV) **Criticism** – A recent study by researchers found that if cell cultivation requires a **"highly refined growth medium"**, akin to that used in the pharmaceutical industry, then the "environmental impact of near-term [cell-cultivated meat] production is likely to be orders of magnitude higher than median beef production."

TRANSCRANIAL MAGNETIC STIMULATION (TMS)

Why is it in the news (Introduction)?

I) Magnetic pulses applied non-invasively to the scalp can stimulate the brain, to reverse brain changes, and to bring about rapid relief to severely depressed patients for whom standard treatments may have failed. This non-invasive brain stimulation modality is called **repetitive transcranial magnetic stimulation (rTMS)**.





II) rTMS is based on the phenomenon of **electromagnetic mutual induction**, first reported by Michael Faraday in 1831. In 1985, Anthony Barker and his colleagues developed the first modern TMS device.

rTMS generates brief electromagnetic pulses via an insulated coil placed over the scalp. These magnetic pulses non-invasively modulate the cortical activity of the brain.

III) Recently, a study by Stanford University researchers reported some evidence that in people without depression, **a part of the brain called the anterior insula sends signals to another part called the anterior cingulate cortex, whereas in people with depression, the signal goes the other way.** According to the researchers, TMS may be alleviating depression by reversing the signal to go the right way.

IV) Daily rTMS stimulation for several weeks has also been shown to be effective in reducing the symptoms of a range of neuropsychiatric disorders.

V) In 2008, the **U.S. Food and Drug Administration (FDA)** approved TMS as a treatment for clinical depression.

VI) The use of TMS is based on the following principle: if a conducting medium, such as the brain, is adjacent to a magnetic field, a current will be induced in the conducting medium.

In TMS, an electromagnetic coil is placed on the scalp. Passing intense electrical pulses in the coil produces a powerful magnetic field – typically about 2 tesla – which results in current flow in brain tissue and the depolarisation of brain cells.

VII) The neuropsychological effects of TMS are particularly likely when a current is delivered in

repetitive trains rather than as single pulses. If the stimulation occurs more quickly than once per second (1 Hz), it is called **fast rTMS**. The use of appropriately shaped coils allows reasonably localised stimulation of specific brain areas.

VIII) The person receiving rTMS sits in a comfortable chair, is awake and alert during the treatment session. It's quite different from **electroconvulsive therapy (ECT)**. Unlike ECT, rTMS does not involve producing a seizure, and does not require the person to be asleep or under anaesthetic.

Why does TMS work?

I) rTMS stimulation, over the course of a few weeks, increases neuronal activity in the area under the coil. It also changes the strength of connections between different areas of the brain.

There is some reason to believe this restores the normal interaction between brain regions, although such hypotheses require further testing and replication.

II) By briefly passing a current through a coil of wires, a strong and rapidly fluctuating magnetic field can be formed. This generates electrical currents in the underlying brain tissue. This also affects the membrane potential of nearby brain cells.

III) rTMS can stimulate specific brain regions, such as the **sensory or motor areas**, to evoke corresponding sensory or motor responses. It can also interfere with ongoing brain activity and act as a brief virtual lesion.

IV) Antidepressant medications may act in similar ways, but less directly. The chemicals they affect can influence brain function quite widely, turning activity or connectivity in brain circuits up or down. rTMS likely does this more directly. By



directly making nerve cells fire, rTMS can directly change their activity levels. These more direct actions could possibly explain why rTMS may work in some people who have not responded to medication.

- V) Clinical trials have found that rTMS treatments result in a gradual improvement in depression. A person's mood will slowly lift, usually over the course of several weeks; they will become more interested in things, sleep better, be more motivated, and have more energy.
- VI) In people who respond, depression can go away for several months up to many years. If depression returns, most people will get better again with further treatment.

What are the clinical applications?

TMS has been used for many years in clinical neurophysiology to explore the integrity of the motor cortex of the brain after a stroke.

- I) Clinically, rTMS has been used to relieve depressive states. In the treatment of depression, 40 pulses of stimulation are delivered over four seconds, followed by a gap of 26 seconds before the next 40 pulses. A brain area called the **left prefrontal cortex, which is in the front part of the brain**, is targeted in this process.
- II) Around 2,400-3,000 pulses are delivered in a single session, which may last for about 30 minutes. To achieve a clinical antidepressant effect, TMS is usually repeated daily for two to three weeks.
- III) Recently, researchers have developed accelerated rTMS protocols. These treatment sessions last only for three minutes. Such protocols are also called **intermittent theta burst stimulation (iTBS)**. The difference between standard rTMS and iTBS is in the speed of the delivered electromag-

netic pulses.

iTBS uses a three-minute protocol for clinical depression with a mix of high and low frequencies.

- IV) Research studies have also examined whether active and sham (dummy) TMS produce the same clinical response in depression. These studies concluded that greater response was observed in patients who received active treatment.
- V) rTMS has also been used to **treat refractory obsessive-compulsive disorder (OCD)**. Although the FDA has approved the use of rTMS for refractory OCD, more evidence and refinement in protocols are needed at this time. At present, it remains an add-on treatment.
- VI) There is also preliminary evidence that rTMS relieves **post-traumatic stress disorder (or PTSD)**.

Does TMS have adverse effects?

- I) Rarely, rTMS may induce seizures in at-risk patients, for example those with a family history of epilepsy. This is more likely with fast rTMS than with slow rTMS. However, current safety protocols have also greatly reduced the likelihood of seizures.
- II) Minor side-effects are more common, including muscle tension headaches. To prevent short-term changes in hearing threshold as a result of the noise generated by the equipment, earplugs are recommended during the session.

Way Forward

The field of non-invasive brain stimulation is rapidly expanding. This offers hope to millions who are clinically depressed. rTMS has proved to be a safe and efficacious brain stimulation modality in treating refractory depression.



ARE PHONONS, PARTICLES OF SOUND, QUANTUM TOO?

Why is it in the news?

- I) One of the two big news items these days from the realm of computing is **quantum computers (the other is artificial intelligence)**.
- II) Recently, **IBM published a paper** in which it claimed to have demonstrated that a quantum computer could solve a useful problem that today's conventional computers can't, a result merited by concerns that their computations might become too unreliable when they also become complicated.

What are qubits?

- I) Quantum computers use **qubits as their basic units of information**. A qubit can be a particle – like an electron; a collection of particles; or a quantum system engineered to behave like a particle. Particles can do funky things that large objects – like the semiconductors of classical computers – can't because they are guided by the rules of quantum physics. For example, these rules allow each qubit to have the values 'on' and 'off' at the same time.
- II) The premise of quantum computing is that information can be '**encoded**' in some property of the particle, like an electron's spin, and then processed using these peculiar abilities. As a result, quantum computers are expected to perform complicated calculations that are out of reach of the best supercomputers today.
- III) Other forms of quantum computing use other units of information. For example, **linear optical quantum computing (LOQC)** uses photons, the particles of light, as qubits. Just like different pieces of information can be combined and processed by encoding them on electrons and then

having the electrons interact in different ways, LOQC offers to use optical equipment – like mirrors, lenses, splitters, waveplates, etc. – with photons to process information.

- IV) In fact, any particle that can be controlled and manipulated using quantum-mechanical phenomena should, on paper, be usable as an information unit in a quantum computer.

What are phonons?

- I) Photons are packets of light energy; similarly, **phonons are packets of vibrational energy**.
- II) According to a paper, we can build a quantum computer whose information unit is, colloquially speaking, sound. The problem is that researchers can manipulate electrons using electric currents, magnetic fields, etc., and they can manipulate photons with mirrors, lenses, etc. But to manipulate phonons, researchers from the University of Chicago have reported developing **an acoustic beam-splitter**.

What is a beam-splitter?

- I) Beam-splitters are used widely in **optics research**. Imagine a torchlight shining light along a straight line. This is basically a stream of photons. When a beam-splitter is placed in the light's path, it will split the beam into two: i.e., it will reflect 50% of the photons to one side and let the other 50% pass straight through.
- II) While it seems simple, the working of a beam-splitter actually draws on quantum physics. If you shine a million photons at it, it will create two beams, each of 500,000 photons. We can then reflect these two beams to intersect each other, creating an interference pattern (Young's double-slit experiment).
- III) But researchers have found that an interference pattern appears even when they shine photons at the beam-splitter one by one. What are the photons interfering with? The answer



is themselves. This is because:

- a) Particles can also behave like waves, and
 - b) Until an observation is made, a quantum system exists in a superposition of all its possible states (like a qubit being partly 'on' and partly 'off' at the same time).
- IV) So, when the single wave interacts with the beam-splitter, it enters a superposition of the two possible outcomes – reflected and transmitted. When these states recombine, an interference pattern shows up.

What did the new study do?

- I) In the new study, the researchers developed an acoustic beam-splitter – a tiny device resembling a comb, with 16 metal bars jutting out of it. It was placed in the middle of a 2-mm-long channel of lithium niobate.

Each end of the channel had a **superconducting qubit – a qubit whose circuit components were superconducting** – that could both emit and detect individual phonons. The whole setup was maintained at an ultra-low temperature.

- II) If these phonons were converted to sound, their frequency would be too high for humans to hear. Each phonon in the study represented, the “collective” vibration of around one quadrillion atoms.
- III) The team found that these phonons interacted with the comb just like photons interact with an optical beam-splitter. When a phonon was emitted from the left side of the channel, it was reflected half of the time and transmitted to the right side the other half. When phonons were emitted simultaneously from the left and the right sides, they both ended up on one side (as expected).

HOW DO TELEGRAM BOTS FUNCTION?

Why is it in the news?

- I) Recently, reports came out which alleged that a **Telegram bot** had access to and was presenting the identification numbers of the documents submitted for vaccination purposes which includes Aadhaar, PAN card, and even passport numbers of individuals.
- II) In a similar incident, in 2021, a bot on the platform was found selling phone numbers pulled from Facebook. Security researchers reportedly found a network of deep fake bots on the platform that were generating non-consensual images of people submitted by users, some of which involved children.

What is Telegram?

- I) Telegram is an **open-source API messaging platform service** launched in 2013. The platform allows developers to create their own apps and use the free-to-use API to develop specialised tools, like bots, to integrate services. The platform currently has over 700 million monthly active users and is one of the 10 most downloaded apps in the world, and is known for supporting file shares of up to 2GB, stored on the cloud that can be accessed from different devices.
- II) **Supported financially by Pavel Durov and his brother Nikolai** on the technological front, Telegram makes money through its sponsored messages and premium subscriptions.
- III) According to the Platform's website, the platform protects private conversations from snooping third parties including officials, marketers, and advertisers. The platform does not process any requests related to group chats and private conversations among participants. They only entertain requests related to sticker sets, channels,



and bots as they are publicly available.

What are Telegram bots?

- I) Bots are **computer programs that act as agents of a user or another computer program**. Bots on Telegram are small applications that run entirely within the platform and can be designed to support any kind of task or service.
- II) Bots on Telegram can host full Web Apps and can be designed to support everything from online stores to arcade games. Additionally, they can also be designed to make it easier for users to access information held within large databases they are connected to. Users can enter commands, or simply enter the name or description of files they are looking for and the bot can search the connected database to present the information.
- III) Bots are listed on the platform as special accounts that do not require a phone number to set up and are connected to the owner's server which processes input and requests from users. They can be found using the search feature on the Telegram app. Users can identify bots by looking at their username which usually has bot as the suffix. They can also have @stickers @gif @wiki or @bing as their suffix.

Who can create bots on Telegram?

- I) Any developer with some skills in computer programming or a third-party service provider can create a Telegram bot using the platform's bot API. The API gives the tools and framework required to integrate code for the bot within the platform. The platform assists the creation of bots through "**Botfather**" a virtual user designed to be the central development tool for Telegram bots.
- II) Telegram requires bots created using its Bot API to be registered using an authentication token generated by the platform. Bots on the platform

can be created using a wide range of programming languages which include Java and Python.

What is the use of bots on Telegram?

- I) Bots are usually used in professional areas for smart communication and pulling information from defined databases.
- II) Users can send commands to bots that they respond to with relevant information or perform tasks they are designed to do. For example, if a user does not wish to open their email app to check their messages, they can use a bot to check their email within the Telegram app. Users can also authorise bots to respond to emails from the Telegram app.

Are bots on Telegram safe?

- I) While Telegram encourages developers to create bots that comply with its terms of service, not all bots may be secure and some can pose security risks.
- II) Bots may collect user data, including personal information and chat history and users should read the terms of service and privacy policy to understand how individual bots handle user data.
- III) Bots can also be created by threat actors to contain malicious content, such as links to phishing websites or malware. Threat actors can also distribute bots to scam users, promising rewards or discounts on purchases to lure users into sharing their personal data.
- IV) Some bots could have security vulnerabilities that can be used by threat actors to compromise the security of users.
- V) According to a report, introducing a bot to a secure Telegram chat could also downgrade the level of encryption as they may not be using Telegram's encryption protocol, which works by scrambling and making it illegible while in transit.

ENVIRONMENT & BIODIVERSITY

DEEP SEA MINING

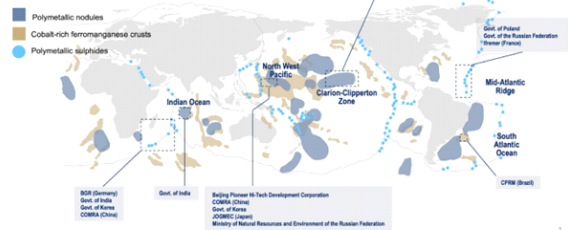
Why is it in the news?

The **International Seabed Authority (ISA)** — the **United Nations body that regulates the world’s ocean floor** — is preparing to resume negotiations that could open the international seabed for mining, including for materials critical for the green energy transition.

What is Deep Sea Mining?

- I) Deep sea mining involves removing mineral deposits and metals from the ocean’s seabed. There are three types of such mining: **taking deposit-rich polymetallic nodules off the ocean floor, mining massive seafloor sulphide deposits and stripping cobalt crusts from rock.**
- II) These nodules, deposits and crusts contain materials, such as nickel, rare earths, cobalt and more, that are needed for batteries and other materials used in tapping renewable energy and also for everyday technology like cell phones and computers.
- III) Engineering and technology used for deep sea mining are still evolving. Some companies are looking to vacuum materials from seafloor using massive pumps. Others are developing artificial intelligence-based technology that would teach deep sea robots how to pluck nodules from the floor. Some are looking to use advanced machines that could mine materials off side of huge underwater mountains and volcanoes.
- IV) Companies and governments view these as **strategically important resources** that will be needed as onshore reserves are depleted and demand continues to rise.

Exploration for minerals in the Area



How is Deep Sea Mining regulated now?

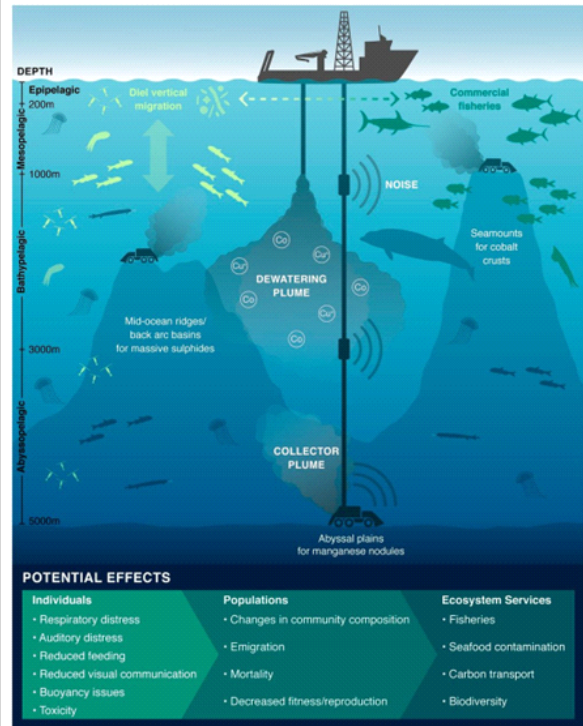
- I) Countries manage their own maritime territory and exclusive economic zones, while the high seas and the international ocean floor are governed by the **United Nations Convention on the Law of the Seas**. It is considered to apply to states regardless of whether or not they have signed or ratified it.

Under the treaty, the seabed and its mineral resources are considered the **“common heritage of mankind”** that must be managed in a way that protects the interests of humanity through the sharing of economic benefits, support for marine scientific research, and protecting marine environments.
- II) Mining companies interested in deep sea exploitation are partnering with countries to help them get exploration licenses. More than 30 exploration licenses have been issued so far, with activity mostly focused in an area called the **Clarion-Clipperton Fracture Zone**, which spans 1.7 million square miles (4.5 million square kilometres) between Hawaii and Mexico.



Why is there pressure on the ISA to establish regulations now?

- I) In 2021 the Pacific Island nation of Nauru — in partnership with mining company Nauru Ocean Resources Inc, a wholly-owned subsidiary of Canada-based The Metals Company — applied to the ISA to exploit minerals in a specified deep-sea area. That triggered a clause of the UN treaty that requires the ISA to complete regulations governing deep sea exploitation by July 2023.
- II) If no regulations are finalized, Nauru can submit an application to conduct the mining without any governing regulations. Other countries and private companies can start applying for provisional licenses if the UN body fails to approve a set of rules and regulations by July 9.



What are the Environmental concerns?

- I) Only a small part of the deep seabed has been explored and conservationists worry that ecosystems will be damaged by mining, especially without any environmental protocols. Damage from mining can include noise, vibration and light pollution, as well as possible leaks and spills of fuels and other chemicals used in the mining process.
- II) Sediment plumes from the mining processes are a major concern. Once valuable materials are taken extracted, slurry sediment plumes are sometimes pumped back into the sea. That can harm filter feeding species like corals and sponges, and could smother or otherwise interfere with some creatures.
- III) The full extent of implications for deep sea ecosystems is unclear, but according to scientists, biodiversity loss is inevitable and potentially irreversible.

What's next?

- I) The **ISA's Legal and Technical Commission**, which oversees the development of deep-sea mining regulations, will meet in early July to discuss the yet-to-be mining code draft. The earliest that mining under ISA regulations could begin is 2026. Applications for mining must be considered and environmental impact assessments need to be carried out.
- II) In the meantime, some companies — such as Google, Samsung, BMW and others — have backed the **World Wildlife Fund's call to pledge to avoid using minerals that have been mined from the planet's oceans**. More than a dozen countries—including France, Germany and several Pacific Island nations— have officially called for a ban, pause or moratorium on deep sea mining at least until environmental safeguards are in place, although it's unclear how many other



countries support such mining. Other countries, such as Norway, are proposing opening their waters to mining.

SOME ADDITIONAL INFORMATION

India's Deep Ocean Mission

- I) **Deep Ocean Mission** seeks to **develop the technologies required for exploring and, then, extracting minerals in the deep seabed.**
- II) It would develop a **manned submersible** that can carry **three people to a depth of 6,000 meters** in the ocean with a suite of scientific sensors and tools.
- III) It includes an integrated mining system that will be developed to bring up mineral ores from the deep sea.
- IV) It will pursue **technological innovations for exploration and conservation of deep-sea biodiversity through bio-prospecting of deep-sea flora and fauna** and studies on **sustainable utilization of deep-sea bio-resources.**
- V) The mission will seek to explore the prospects of **deriving energy and freshwater from the ocean** through studies and detailed engineering design for **offshore ocean thermal energy conversion (OTEC)**-powered desalination plants.

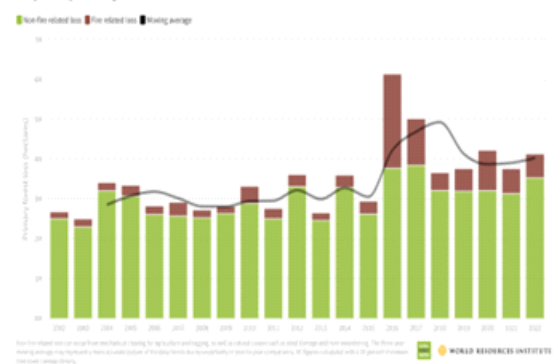
combustion of fossil fuels.

- II) According to the University of Maryland, primary forest cover loss in tropical areas in 2022 was 10% more than in 2021.

What are primary forests?

- I) Primary forests are **mature, natural forests that have remained undisturbed in recent history.** They often store more carbon than other forests and are rich sources of biodiversity.
- II) Primary forest loss is almost irreversible in nature: even if the green cover regrows, a secondary forest is unlikely to match the extent of biodiversity and carbon sequestering capabilities of a primary forest.

Tropical primary forest loss, 2002-2022



GLOBAL TROPICAL PRIMARY FOREST COVER

Why is it in the news?

- I) Tropical areas lost 4.1 million hectares of forest cover – equivalent to losing an area of 11 football fields per minute – in 2022, according to the **World Resources Institute's (WRI) Global Forest Watch.**
This forest loss produced 2.7 billion tonnes of carbon dioxide emissions, which is around the same as India's annual emissions due to the

(Tropical Primary Forest Loss, 2002-2022)

Some of the New findings of Global Forest Watch

- I) The world is not on track to meet most of its forest-related commitments. WRI measures progress on **two goals – ending deforestation by 2030, and restoring 350 million hectares (Mha) of lost and degraded forests by 2030 – that represent multiple global forest pledges.**
- II) We need to reduce global deforestation by at least 10% every year to meet the 2030 target. In 2022, although the global deforestation rate was 3.1% lower than the baseline from 2018-2020, it

was still over one million hectares above the level needed. This puts the world off track to meet the 2030 goal.

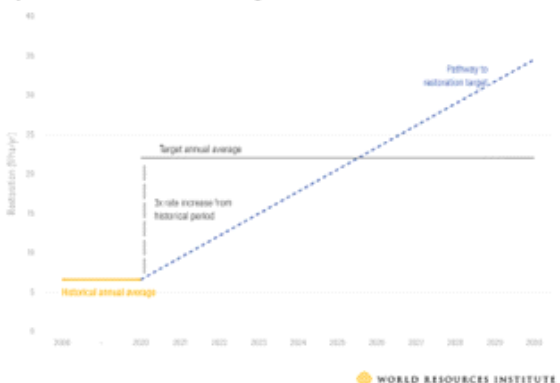
Global progress toward target to end deforestation by 2030



(Global progress towards target to end deforestation by 2030)

III) To meet the target of restoring 350 Mha of forests globally by 2030, the world needs to increase tree cover by 22 Mha per year, between 2021 and 2030. Despite registering some gains, the overall change in tree cover in the last 20 years was a net loss of 100 Mha. This means that we are still losing forests and not restoring them at the required rate.

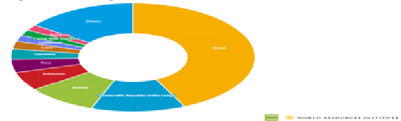
Projection to Reach 2030 Restoration Target



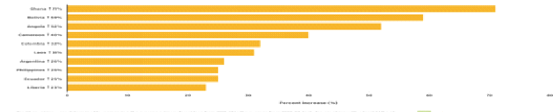
(Projection to reach 2030 restoration target)

IV) **Brazil and the Democratic Republic of Congo** are the two countries with the most tropical forest cover, and both registered losses of this resource in 2022. Ghana and Bolivia also rapidly lost their primary forest cover. On the other hand, Indonesia and Malaysia managed to keep their primary forest cover loss to record-low levels in 2022.

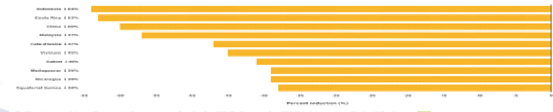
Top countries for primary forest loss by area in 2022



Top 10 countries for increase in primary forest loss as of 2022



Top 10 countries for reduction in primary forest loss as of 2022



(Top countries for primary forest cover loss by area in 2022)

V) Brazil's high rate of primary forest cover loss occurred in the last year of Jair Bolsonaro's presidency. In his term, Bolsonaro faced international criticism for presiding over a surge of destruction in the world's biggest rainforest, along the Amazon River.

The rate of primary forest cover loss in the country increased by 15% from 2021 to 2022. Non-fire-related losses in 2022 also reached the highest rate since 2005.

Forest loss in the Amazon basin not only affects carbon but also regional rainfall. If deforestation continues at the current rate, it may eventually lead to a tipping point that, if crossed, could convert most of the ecosystem into a savanna.

VI) The Democratic Republic of Congo lost more than half a million hectares of primary forest cover



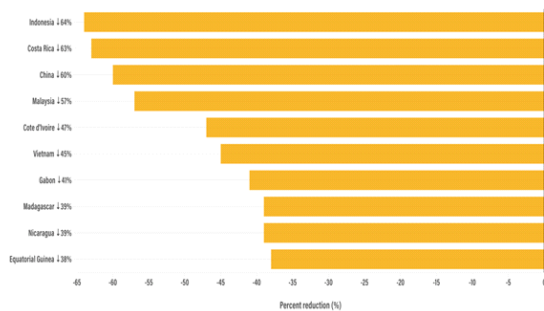
in 2022. This rate of loss has continued to increase in recent years. As the population of the country grows, there is more demand for food, which in turn is leading to an expansion of area under agriculture and encroachment of land hosting primary forests.

Primary forests are burned for short-term cultivation and then left fallow for regeneration of soil nutrients. However, increased demand for food has shortened the fallow periods, destroying more forests.

A \$500 million agreement was signed at the United Nations Climate Change Conference in 2021, in Glasgow, to protect the Democratic Republic of Congo's forests, but it is yet to have an impact on the deforestation rate in the country.

VII) Indonesia, on the other hand, reduced its primary forest loss rate more than any other country has in recent years. Malaysia also managed to keep its primary forest level low in 2022, alongside Costa Rica, China, Cote d'Ivoire, Vietnam, Gabon, Madagascar, Nicaragua, and Equatorial Guinea.

Top 10 countries for reduction in primary forest loss as of 2022



Top 10 countries were determined by comparing the average primary forest loss from 2015-17 to the average from 2020-22. Includes countries with a least 1 Mha of tropical primary forest in 2001. WORLD RESOURCES INSTITUTE

(Top ten countries for reduction in primary forest loss as of 2022)

VIII) According to Global Forest Watch, India lost 43.9

thousand hectares of humid primary forest between 2021 and 2022, which accounts of 17% of the country's total tree cover loss in the period.

The total tree cover loss in India between 2021 and 2022 was 255 thousand hectares.

IX) The total global tree cover loss in 2022 declined by 10%. This includes primary, secondary, and planted forests. This decrease, according to Global Forest Watch, is a direct result of a decrease in fire-related forest losses which decreased 28% from 2021. Non-fire losses in 2022 increased by slightly less than 1%.

NEW COLLECTIVE QUANTIFIED GOAL (NCQG)

Why is it in the news?

The recently-concluded **Bonn climate conference in Germany**, expected to outline the political agenda for the crucial end-of-year **Conference of Parties-28 (COP28) in Dubai**, was critical for reviewing and reforming the climate finance architecture.

About New Collective Quantified Goal (NCQG)

I) In 2009, developed countries pledged to provide \$100 billion annually to developing nations by 2020. However, it became evident that addressing climate change requires significantly higher financial resources. As a result, the **New Collective Quantified Goal (NCQG)** was established in the 2015 Paris Climate Agreement.

The NCQG aims to align with the evolving needs of developing nations, considering scientific evidence and addressing the growing demands for Loss and Damage funding.

II) The NCQG is regarded as the **“most important climate goal”** as it raises the commitment ceiling for developed countries, ensuring greater





consideration of the needs and priorities of developing nations. It addresses the lack of clarity in defining and sourcing 'climate finance' present in the previous commitment.

- III) Climate advocacy groups emphasize the increasing need for funding to address **Loss and Damage** caused by climate change. The NCQG aims to ensure adequate financial support for managing these adverse impacts, especially in vulnerable countries.

What is the Rationale behind an Updated Finance Goal?

- I) According to the **Organisation for Economic Co-operation and Development**, developed countries provided \$83.3 billion in 2020 towards the \$100 billion commitment. However, an analysis by Oxfam highlights potential misleading figures and reporting practices, raising concerns about the achievement of the target.
- II) Transparency issues and the lack of reliable reporting practices complicate the evaluation of progress in climate finance. **Improving reporting accuracy and transparency** is necessary to assess the actual funds allocated and disbursed.
- III) The absence of a universally agreed-upon definition and sources of 'climate finance' hampers tracking and assessing financial contributions by developed countries. A clear definition and transparent reporting are essential for accountability and effective resource allocation.
- IV) Given that developed countries' economic growth often results in high carbon emissions, they bear a greater responsibility for climate change. This recognition calls for a **fair distribution of climate financing burdens**.

What are the Challenges in Climate Financing?

- I) While funds for climate finance have increased quantitatively, many developing nations struggle

to access these resources promptly. Enhancing accessibility and efficient distribution is crucial for effective climate action.

- II) A significant portion of climate finance comes from private sources, leading to delays in disbursement. Ensuring timely access to funds is vital for developing countries to implement climate initiatives effectively.
- III) The majority of climate finance is provided as loans and equity, potentially burdening developing nations with debt. This impedes their ability to address climate change and develop sustainable infrastructure.
- IV) Accessing climate finance often involves long waiting periods, exacerbating the debt burden for developing nations. High-interest rates on loans further hinder their sustainable development efforts.

What are the Perspectives of Developed Countries?

- I) Developed countries argue that the NCQG should be a collective goal, applicable to both developed and developing nations. This perspective promotes shared responsibility and encourages all countries to contribute to climate financing.
- II) Concerns exist that framing the NCQG as a collective goal could disproportionately burden developing nations. The financing required for mitigation, adaptation, and addressing loss and damage may exceed their financial capabilities.
- III) Developed countries emphasize the importance of **mobilizing private-sector investments and loans for climate finance**. They believe increased private sector involvement can contribute significantly to funding needs and accelerate the implementation of climate action plans.

The Crucial Year of 2023

- I) The year 2023 carries immense significance as countries face a deadline to agree upon the



NCQG. This agreement will determine financial commitments and targets for climate financing, surpassing the previous \$100 billion per year goal.

- II) Experts estimate that transitioning to a low-carbon economy necessitates annual investments of \$4 trillion to \$6 trillion. These significant financial requirements underscore the urgency of reaching consensus on the NCQG and mobilizing resources accordingly.
- III) To address diverse aspects of climate change effectively, some propose setting separate targets or sub-goals within the NCQG. This approach ensures a comprehensive focus on scaling up concessional financing, reducing debt creation, and facilitating an equitable transition.

Way Forward

- I) As nations work towards finalizing the NCQG, it becomes essential to prioritize inclusivity, transparency, and effective resource allocation. By addressing the challenges of accessibility, debt burdens, and ensuring the participation of all stakeholders, the NCQG can foster an equitable and people-led transition towards a sustainable future.
- II) The upcoming Global Stocktake at COP28 will play a pivotal role in shaping the roadmap for climate financing and enabling the transformation required to combat climate change effectively.

CRITICISM OVER COP28 UAE PRESIDENCY

Why is it in the news?

- I) Almost a week after the United Nations' crucial climate meetings in Bonn, Germany from June 5 to 15, which are considered the halfway mark to

the COP climate summit in November, questions over the **COP28 Presidency of the United Arab Emirates (UAE) Industry Minister Sultan Ahmed al-Jaber** still remain.

- II) While the UAE leader did say in Bonne that COP28 was going to be **“inclusive” and deliver a “game-changing outcome”** to tackle climate change, he did not talk about a concrete plan to phase out fossil fuels or address his links to the fossil fuel industry.

More about the news

- I) Each year, the **host country for the Conference of Parties (COP) summit nominates a president to helm the climate negotiations with almost 200 countries.** The UAE announced Mr. al-Jaber, the State oil company CEO, as its pick in January, a move that has faced backlash from Western lawmakers, leaders of some countries, as well as civil society groups.
- II) Notably, more than 130 lawmakers from the United States and the European Parliament last month wrote a letter to European Commission chief and U.S. President asking them to urge the UAE to withdraw its appointment of Mr. al-Jaber as the COP28 President. They argued that the move could risk undermining the climate negotiations and asked the world leaders to help restore **“public faith in the COP process severely jeopardised by having an oil company executive at the helm.”**

Who is Sultan al-Jaber?

- I) Mr. al-Jaber, who is the **CEO of the Abu Dhabi National Oil Company (ADNOC)** since 2016, was appointed as UAE's Minister of Industry and Advanced Technology in 2020, a new department established that year.
- II) The leader, who has a chemical engineering and





economics background, was serving as a Minister of State in the UAE government since 2013. Also in 2020, he was for the second time appointed as the UAE's special envoy for climate change, a role previously held by him from 2010 to 2016.

- III) The Minister is also serving in a contrasting role, as the **Chairman of Masdar, a renewable energy firm in Abu Dhabi**, which he helped start in 2006. According to a report, Masdar is now active in more than 40 countries and has invested in mainly solar and wind power projects of a total capacity of 15 gigawatts, which it notes, is capable of displacing more than 19 million tonnes of carbon dioxide emissions annually.
- IV) In July 2020, Mr. al-Jaber was also appointed **Chairman of the Emirates Development Bank**, which according to his Ministry's website, provides financial services for the sustainable economic and social development of the UAE.

Why is Sultan al-Jaber's appointment as the COP28 president facing criticism?

- I) Climate campaigners and groups have been voiced their discontent with the appointment of an oil executive to head a summit responsible for brokering global partner negotiations to mitigate climate change and build a framework to meet the countries' pledge at the 2015 summit in Paris to limit global warming to 1.5 degrees Celsius as against pre-industrial levels.
- II) Scientists are near-unanimous that carbon emissions need to be halved by 2030 and 'net zero' emissions reached mid-century if the goal has to be achieved. Another agreement within the scientific community and many world leaders is that reducing the production and use of fossil fuel resources— coal, oil and gas— is the way

to meet the promises of the Paris Agreement.

- III) However, as the CEO of the state oil firm ADNOC, Mr. al-Jaber's 2030 strategy for the firm is to build a more **"profitable upstream, more valuable downstream and more sustainable and economic gas supply,"** which essentially means more fossil fuels.
- IV) Critics argue that the appointment was **"a scandal" and a "perfect example of a conflict of interest."** The decision to name as president of COP28 the chief executive of one of the world's largest oil and gas companies—a company that has recently announced plans to add 7.6 billion barrels of oil to its production in the coming years, representing the fifth largest increase in the world— risks undermining the negotiations.

Why has Mr. al-Jaber's advocacy of carbon capture been criticised?

- I) World leaders have faced a dilemma about the best approach to meet international climate goals, with some pushing for a phaseout of fossil fuels as the way to go while others insist on oil and gas continuing to play a role in the future, provided their emissions are somehow curbed. Mr. al-Jaber belongs to the latter school of thought.
- II) Climate campaigners and scientists have expressed caution that technologies proposed so far to capture fossil fuel emissions have not been tested at scale. They also argue that responses do not hit at the root cause of the problem and look at post facto containment once emissions are released, pointing out that they could also divert attention and resources from effective alternatives such as renewable energy.
- III) However, Mr. al-Jaber has talked about the need to tackle fossil fuel emissions, a stand that ob-

servers say mark his inclination to industry interest. He has said that the goal should be a global system “free of unabated fossil fuels.” The term ‘abated’ relates to approaches used in reducing or capturing greenhouse gas emissions that result from the burning of fossil fuels.

- IV) At the Bonn talks this week, it was emphasised that the proposal to tackle emissions shouldn’t take away from the need to drastically cut fossil fuel use, a position shared by other European nations and vulnerable island states where sea levels are rising making them extremely vulnerable to climate impacts.
- V) Meanwhile, the UAE, while having backed the idea of significantly boosting wind and solar power, has made clear that it wants to keep fossil fuels as an option for the foreseeable future. Mr. al-Jaber said his country wants “a comprehensive, holistic approach to an energy transition that included all sources of energy.”

What plans has Mr. al-Jaber highlighted to tackle climate change as the COP28 President?

- I) While not offering a concrete framework so far, Mr. al-Jaber has emphasised that the summit in Dubai will be “**inclusive**,” while concerns about greenwashing and freedom for young activists and campaigners in the gulf country during the summit exist.
- II) While taking the immediate phaseout of fossil fuels off the table, Mr. al-Jaber has reiterated the need to double down on renewables. He said in a speech this year that “reaching net zero will deliver the biggest market transformation, greatest economic and human promise since the first Industrial Revolution,” adding that this could be done by tapping into the renewables market.
- III) Supporting the idea that developing nations,

while vulnerable to climate change, have their economic and development priorities fulfil, Mr. al-Jaber said one of the important focuses of the negotiations would be to get funds from bigger nations and funding from multilateral development banks, institutions, and to activate already existing corpus funds to which nations have pledged.

WAS INDIA’S HOT SUMMER OF 2023 THE FIRST OF MANY TO COME?

Why is it in the news?

- I) A recent report from the **India Meteorological Department (IMD)** indicated an increasing trend in the number and duration of heatwaves, based on data from the months of March to June from 1961 to 2020. This year, heatwaves started as early as on March 3, and many areas reported temperatures that were higher than average.
- II) The number of days with temperatures exceeding 30 degrees Celsius has also increased of late. While a temperature of 33 degrees Celsius was recorded between 1961 and 1990 for around 70 days every year, from 1991 to 2022, this temperature was recorded for 89 days a year. It thus became the new normal.
- III) The concept of the **new normal vis-à-vis climate change** refers to long-term changes in weather patterns and climatic conditions that are expected to or have become more frequent because of climate change.

Are weather patterns changing?

- I) Climate change is increasing both the frequency and the intensity of extreme weather events. In India, for one, normal monsoon patterns have given way to, among others, delayed onset, short



but intense bursts of rain, and delayed withdrawal.

Some weather events have also become drier and others wetter thanks to the effects of climate change on the water cycle, which leads to more evaporation and eventually causes more precipitation. Some areas also experience heavier than normal precipitation while others are becoming prone to unexpected droughts.

- II) The **U.N. Intergovernmental Panel on Climate Change's Sixth Assessment Report** warned of prolonged rain-free periods along with excessive rainfall in many parts of the world. In recent decades, India has recorded several such extreme events.
- III) An October 2017 study conducted by the **Indian Institute of Tropical Meteorology (IITM), Pune**, reported that there was a three-fold increase in widespread extreme events from 1950 to 2015. From June to September 2022, there were variations in rainfall in different parts of India: a significant increase was recorded in central and south India whereas parts of Kerala, Karnataka, and Madhya Pradesh flooded many times. A significant shortfall was also recorded in many parts of Uttar Pradesh, Bihar, Odisha, and the northeast.
- IV) High monsoon rainfall variability and continuous warming raise the probability of dry and hot extremes, with profound implications for agriculture, water resources, and India's overall economy.
- V) There is also a strong connection between land and ocean heatwaves, driven by atmospheric circulation, increase in sea-surface temperature, and feedback mechanisms that exacerbate the intensity and duration of extreme temperatures.

For example, when a land-based heatwave occurs, it can enhance evaporation rates and reduce soil moisture, leading to drier conditions. This drier surface, in turn, absorbs more solar radiation, amplifying the heatwave. This feedback can also influence the persistence of heatwaves over both land and ocean environments.

Are marine heatwaves playing a role?

- I) The oceans play a key role in the formation of monsoon winds and in keeping the monsoon alive. When extreme heat warms their waters, the change in temperature can lead to cascading effects, such as marine heatwaves, ocean acidification, sea-level rise, and ice melting faster at the poles.
- II) Marine heatwaves are periods of temperature much higher than the average seasonal temperature in that region. The Indian Ocean recorded six marine heatwaves over a period of 52 days in 2021. They used to be rare in this water-body but today are an annual occurrence.
- III) A low pressure develops over the Indian sub-continent when the land heats up during the summer. The moisture for monsoon rains is thus carried by the winds as they blow in from the Indian Ocean. However, rainfall over the land decreases when ocean heatwaves occur, as the winds are drawn to areas over the ocean instead of land.
- IV) In recent decades, oceans have remained warmer for longer periods than normal. In 2022, IITM researchers reported a significant increase in the number of marine heatwaves in recent decades because of warming and a strong **El Niño (a phenomenon that describes the unusual warming of surface waters in the eastern tropi-**



cal Pacific Ocean).

- V) Specifically, they found that from 1982 to 2018, the western Indian Ocean region had a four-fold increase in marine heatwaves (an increase of 1.2 to 1.5 events per decade); the northern Bay of Bengal region followed with a two- or three-fold rise (an increase of 0.4 to 0.5 events per decade).
- VI) Earlier this month, the U.S. NOAA announced that another El Nino period had begun this year, with the potential to set new surface temperature highs.

How is climate risk being amplified?

- I) Amplification is what happens when certain climate-related factors and/or events interact with each other or happen at the same time, intensifying or exacerbating the overall risks and consequences associated with climate change. A good example is the warm and dry conditions that have put Canada on course for its worst-ever wildfire destruction this year. Such amplification happens in the form of various feedback loops and interconnected processes in the earth's climate system. It has greater consequences than just individual extremes and is also more complex and challenging to deal with.
- II) The interaction of multiple climatic and non-climatic risks can also increase overall risk. According to a January 2023 study by the School of Geography and the Environment, University of Oxford, the combined consequences of excessive heat and drought are expected to put more than 90% of the world's population at higher risk, potentially deepening socioeconomic disparities. Such an amplification can occur as a result of an El Niño, prolonged hot days, dry monsoons, and/or ocean heatwaves occurring together,

compounding risks across sectors. Such a combination will also affect water availability, soil moisture, and crop output while increasing food prices and lowering incomes. The co-occurrence of heatwaves and droughts can also lead to wildfires, tree mortality, and a higher risk of thermal power-plant failures.

- III) Ultimately, the risks can push sensitive and vulnerable systems over a tipping point, ultimately avalanching into drastic consequences for socio-ecological systems.

Way Forward

- I) Amplified climate risks underscore the urgency of taking proactive measures to mitigate greenhouse gas emissions, adapt to changing conditions, and enhance resilience in both natural and human systems.
- II) Identifying compound event hotspots and monitoring them are important to frame suitable adaptation strategies.
- III) By understanding and addressing these amplification mechanisms, we will be able to reduce the overall risk associated with climate change and build a more sustainable and resilient future.

BONN MEETING-TAKING STOCK OF CLIMATE ACTION

Why is it in the news (Introduction)?

- I) In different ways, countries have been taking measures to respond to climate change since at least the mid-1990s, though it is only in the last decade or so that these actions have become significant enough for any meaningful impact. But the global response has never kept pace with the worsening of the climate crisis, whose seriousness has increased rapidly in the last few

years.

- II) Amidst almost daily reminders of this worsening crisis, negotiators from around the world are currently meeting in the **German city of Bonn to discuss ways to strengthen their collective response to climate change. This meeting in Bonn, at the headquarters of the UN Climate Change, happens every year.** The work done and decisions taken here feed into the year-ending annual climate change conferences.
- III) One of the most important tasks to be accomplished at this year's Bonn meeting is what is known as **Global Stocktake, or GST, a term that is expected to come up frequently in climate change conversations this year.** Mandated by the 2015 Paris Agreement, GST is an exercise aimed at assessing the progress being made in the fight against climate change, and deciding ways and means to enhance the global effort to bridge the adequacy gap.

LOW-PROFILE, HIGH-OUTPUT MEETS

THE YEAR-ENDING climate change meets are high-profile, but usually not very productive. The focused gaze of the world, media spotlight and the weight of expectations reduce the chances of a compromise, integral to negotiations. Most of these climate conferences, or COPs, have been underachievers. But these are not the only meets in the international process of climate change negotiations.

ONE MEETING in Bonn, in the middle of the year, is a permanent fixture on the climate calendar. Bonn happens to host the secretariat of UN Climate Change. There is a relatively lesser presence of media and NGOs, and no political appearances. Most of the progress on the negotiations are made in these kinds of meetings. The outcome of these meetings feed into the negotiating process at the COPs.

- IV) As things stand today, this stocktake exercise is expected to result in a significant increase in the global response to climate change, not just in terms of reductions in greenhouse gas emissions, but also in terms of adaptation, provision for finance and availability of technology.

The Stocktake

- I) The current stocktake — it has been going on for more than a year now and is supposed to conclude this year — is the first such exercise and

is mandated by the Paris Agreement to happen every five years hereafter. Essentially, it is an opportunity for course correction.

- II) There is a wealth of scientific evidence that shows that the current set of actions being taken by the world is woefully inadequate **to limit the global temperature rise within 1.5 degree Celsius from pre-industrial times.** The most notable of these is the sixth assessment report of the **Intergovernmental Panel on Climate Change (IPCC)**, published over the last four years. The world needs to cut its emissions by almost half by 2030 from the 2019 levels if it has to retain any realistic chances of achieving the 1.5 Degree target. At current levels of climate action, the world is headed to a nearly 3 Degree Celsius warmer World by 2100.

- III) But as can be expected, course correction is not a straightforward exercise. Under the Paris Agreement, countries are allowed to decide the level of their contribution to the global effort to contain climate change. In effect, every country is free to decide what climate actions it would take. But since the collective effort of every country is now proving inadequate, some amount of imposition seems necessary. And no country is comfortable with that.

Familiar fault lines

- I) As a result, the GST discussions are fraught with the same troubles as the rest of the climate negotiations — apportioning responsibility for enhanced climate action. The fault lines are familiar. Rich and developed countries want major emitters like China and India, and others, to do more. Developing countries, mainly China and India, have been reminding the developed countries of their unfulfilled commitments, and con-



tinued underperformance.

II) The fault lines were evident during the opening meeting of the third and final round of technical discussions. The United States said bridging the gap was not the sole responsibility of the developed countries, and it would not accept any attempt to include such suggestions in the GST decisions, either explicitly or through references to phrases such as “closing of pre-2020 gaps”.

The US was clearly referring to longstanding demands of the developing countries. Climate actions in the pre-2020 period were directed by the **Kyoto Protocol, the predecessor to the Paris Agreement**. A set of about 40 developed countries, including the United States, had specifically allocated emissions reduction targets, besides other obligations, to be met by 2020.

These countries collectively, and most of them individually, did not meet the targets. Developing countries argue that the inability of the developed countries to deliver on their commitments was the main reason for the worsening of the climate crisis in recent years, and therefore it was incumbent on the developed countries to scale up their actions now to compensate for their earlier failure.

The United States also said that the next round of climate action plans finalised by countries must have emission reduction contributions from all sectors of the economy. This again was directed at countries like India, whose climate commitments are mainly about increasing renewable energy footprint, improving energy efficiency, and augmenting its forests. In par-

ticular, India has not committed to restricting methane emissions from agriculture, a sensitive subject not just for itself but throughout the developing world.

III) Not surprisingly, India reacted strongly to the US suggestion and said it would not accept any “**prescriptive messages**” from GST on what the content of a country’s climate action plan, called **Nationally Determined Contributions or NDCs** in official terminology, should be.

India said it retained its “**sovereign right**” to determine its climate targets in pursuit of its national goals. It also said that it did not accept the suggestions that NDCs must necessarily be economy-wide, covering all sectors or all greenhouse gases (like methane). It aligned itself with other developing countries in reiterating the demand for the closing of pre-2020 gaps.

IV) The most forceful argument on pre-2020 gaps came from China, which said it was disappointed to see that the repeated demands of 134 developing countries had not been captured adequately in GST discussions so far. It said the pre-2020 gaps were an integral part of the global efforts towards fulfilling the Paris Agreement targets, and pointed out that there was now irrefutable scientific evidence to show that a bulk of the carbon dioxide emissions from 1850 to 2018 had been generated before 1990.

Conclusion

I) Several other points of discussion under GST — finance, adaptation, technology transfer — are also heavily contested. Negotiators are expected to finish the technical discussions on GST in Bonn.

II) Its findings would be presented at the annual year-ending climate conference, this time hap-



pening in **Dubai**. The Dubai meeting will, hopefully, take the final decisions on the GST.

ARCTIC OCEAN COULD BE ICE-FREE IN SUMMER BY 2030s

Why is it in the news?

- I) According to a new study, **the Arctic Ocean could be ice-free in summer by the 2030s**, even if we do a good job of reducing emissions between now and then.
- II) Predictions of an ice-free Arctic Ocean have a long and complicated history, and the 2030s is sooner than most scientists had thought possible (though it is later than some had wrongly forecast). What we know for sure is the disappearance of sea ice at the top of the world would not only be an emblematic sign of climate breakdown, but it would have global, damaging and dangerous consequences.

More about the news

- I) The Arctic has been experiencing climate heating faster than any other part of the planet. As it is at the frontline of climate change, the eyes of many scientists and local indigenous people have been on the sea ice that covers much of the Arctic Ocean in winter. This thin film of frozen seawater expands and contracts with the seasons, reaching a minimum area in September each year.
- II) The ice which remains at the end of summer is called **multiyear sea ice** and is considerably thicker than its seasonal counterpart. It **acts as barrier to the transfer of both moisture and heat between the ocean and atmosphere**. Over the past 40 years this multiyear sea ice has shrunk from around 7 million sq. km to 4 million. That

is a loss equivalent to roughly the size of India or 12 UKs. In other words, it's a big signal, one of the most stark and dramatic signs of fundamental change to the climate system anywhere in the world.

- III) As a consequence, there has been considerable effort invested in determining when the Arctic Ocean might first become ice-free in summer, sometimes called a **"blue ocean event"** and defined as when the sea ice area drops below 1 million sq. km. This threshold is used mainly because older, thicker ice along parts of Canada and northern Greenland is expected to remain long after the rest of the Arctic Ocean is ice-free.
- IV) One problem with predicting when this might occur is that sea ice is notoriously difficult to model because it is influenced by both atmospheric and oceanic circulation as well as the flow of heat between these two parts of the climate system. That means that the **climate models – powerful computer programs used to simulate the environment** – need to get all of these components right to be able to accurately predict changes in sea ice extent.

Melting faster than models predicted

- I) Back in the 2000s, an assessment of early generations of climate models found they generally underpredicted the loss of sea ice when compared to satellite data showing what actually happened. The models predicted a loss of about 2.5% per decade, while the observations were closer to 8%.
- II) The next generation of models did better but were still not matching observations which, at that time were suggesting a blue ocean event would happen by mid-century. Indeed, the **latest IPCC climate science report, published in**



2021, reaches a similar conclusion about the timing of an ice-free Arctic Ocean.

- III) As a consequence of the problems with the climate models, some scientists have attempted to extrapolate the observational record resulting in the controversial and, ultimately, incorrect assertion that this would happen during the mid-2010s. This did not help the credibility of the scientific community and its ability to make reliable projections.

Ice-free by 2030?

- I) The scientists behind the latest study have taken a different approach by, in effect, calibrating the models with the observations and then using this calibrated solution to project sea ice decline. This makes a lot of sense, because it reduces the effect of small biases in the climate models that can in turn bias the sea ice projections. They call these “**observationally constrained**” projections and find that the Arctic could become ice-free in summer as early as 2030, even if we do a good job of reducing emissions between now and then.
- II) There is still plenty of uncertainty around the exact date – about 20 years or so – because of natural chaotic fluctuations in the climate system. But compared to previous research, the new study still brings forward the most likely timing of a blue ocean event by about a decade.

Why this Matters?

- I) Arctic sea ice is an important component of the climate system. As it dramatically reduces the amount of sunlight absorbed by the ocean, removing this ice is predicted to further accelerate warming, through a process known as a positive-feedback. This, in turn, will make the **Greenland ice sheet** melt faster, which is already

a major contributor to sea level rise.

- II) The loss of sea ice in summer would also mean changes in atmospheric circulation and storm tracks, and fundamental shifts in ocean biological activity. These are just some of the highly undesirable consequences and it is fair to say that the disadvantages will far outweigh the slender benefits.

WHY THE ‘WORLD’S FIRST CARBON-NEUTRAL AIRLINE’ IS FACING A LAWSUIT?

Why is it in the news?

- I) For three years, California-based Mayanna Berrin has opted to fly the steeply-priced — but purportedly “**green**” — **Delta Air Lines**.
- II) Delta in 2020 marketed itself as the “**world’s first carbon-neutral airline**”, investing \$1 billion to work on reducing fuel usage and investing in carbon removal techniques. The carbon claims responded to a growing keenness among people like Berrin who wanted to engage in ecologically conscious air travel, and by extension, participate in a global transition away from carbon emissions. The veracity of these claims is now under scrutiny: on May 30, Berrin filed a lawsuit — the first of its kind against a U.S. airline’s climate claims — arguing Delta Air Line’s assertions were bogus, misleading and false.
- III) **The ‘green airline’ tag** is a contested commodity, as flyers and companies alike are realising that flying is a significant contributor to carbon pollution (accounting for more than 2% of all greenhouse-gas emissions). As per estimates, aviation emissions could grow by 300-700% by 2050.

What does the lawsuit say?

- I) The lawsuit accuses Delta of misleading customers with its sustainability pledges, which were



advertised across press materials, social media and merchandise.

Delta's in-flight napkins read: **"Carbon neutral since March 2020. Travel confidently knowing that we will offset the carbon emitted on your Delta flight."**

- II) Delta relied on **"carbon offsetting"**, shorthand for a slew of ways companies can reduce or remove carbon emissions from the environment. Activities like planting trees, shifting to cleaner fuel, funding carbon capture techniques in theory balance out a company's carbon emissions.
- III) According to Delta's latest ESG report, it was responsible for roughly 43.2 million metric tons of carbon dioxide emissions in 2022 — almost seven times Botswana's carbon dioxide emissions from fossil fuels and industry in 2021.

Is it an airline-wide problem?

- I) A Dutch court in April this year heard a **"greenwashing"** case against Netherlands-based airline KLM. According to a Rights group, the KLM's advertisements suggest flying with the airline is not directly hazardous to the environment, which violates Europe's consumer laws by misleading customers about sustainability initiatives.
- II) According to an investigation, the carbon offset systems of most airlines are **"flawed"** and deceptive. A **June 2022 Greenpeace report** found seven of the biggest European airlines — including KLM and Lufthansa — were committing **"quite offensive"** levels of greenwashing.
- III) Another study which examined 37 airlines' claims on carbon offsets found 44% of these airlines — such as Air Canada and Swiss Airlines — mislead customers and profited from **"green"**

assertions.

- IV) In 2021, the International Air Transport Association (IATA), which is home to 300 airlines across 120 countries, pledged to achieve net zero by 2050, in a move that was criticised as **"greenwashing"** by experts.

What are carbon credits?

- I) Carbon offsets work like a game of Monopoly, except instead of money, companies deal in carbon emissions. A company gets **"carbon credits"** for investment in offset projects, tokens which represent an amount of carbon dioxide which would have been funnelled out of the atmosphere due to these initiatives.
- II) **Each credit is equal to a metric ton of CO₂**, which would have caused global warming. These credits allow companies to continue emitting carbon in one place (say, aeroplane travel), with the promise their offsets are reducing emissions elsewhere (in distant rainforests). The voluntary carbon-offset market is expected to grow from \$2 billion in 2020 to around \$250 billion by 2050, as per a 2023 report by Morgan Stanley.
- III) The **United Nations** in 2008 formalised this idea by setting up the **Reducing Emissions from Deforestation and Forest Degradation (REDD+)**, believing that the incentives from offsetting will help nations achieve climate goals.
- IV) In the aviation industry, carbon offsets have begun to attract customers' attention, as platforms offer flyers to **"cancel"** their greenhouse emissions by paying extra.

Why the controversy?

- I) The offset market has been criticised for **appealing to climate consciousness without real effort or impact**. One line of scrutiny is about the efficacy of offsets in general: growing



evidence shows reforestation as a climate adaptation programme is ineffective and misleading. They failed to sequester the carbon in the first place, or the gains made were quickly reversed or inflated.

- II) Another concern hints at the **moral problem of greenwashing** — where big polluters continue to use fossil fuels and opt for a cheaper route to cutting emissions by way of offsets, all while middle- and low-income nations struggle with climate realities. Experts also argue it lulls people into thinking they are contributing to the environment. While those in favour argue carbon offset programs may work one day towards achieving net-zero goals, the consensus is they bear little to no immediate impact. One 2015 working paper found global CO₂ emissions would have been 600 million tons lower if countries had cut pollution at the source instead of buying offsets.
- III) There are also **blind spots built into the offset system**. The voluntary carbon offset market is self-regulated: there are middlemen in the form of organisations like REDD+ that connect credit buyers and sellers. There are **“certification”** standards set by companies like Verra which allow companies to create and register their **carbon-offsetting projects (the Gold Standard is considered among the most rigorous credit programs)**.
- IV) Offset programs work only when they remove or reduce carbon emissions that wouldn't have been eliminated otherwise, what is called **“additionality”**. Paying to conserve rainforests that no one was planning to cut then technically doesn't amount to offsetting carbon emissions, and the company should receive no credits for it.
Proving additionality is a structural challenge,

for it is hard to track the genuine progress of activities on the ground. Moreover, there is no universally-recognised way to count carbon offsets, and little transparency around their mathematical modelling, making any correlation between carbon reductions and offset programs tenuous.

- V) A 2021 paper analysed the **world's largest carbon offset program, the Clean Development Mechanism**, and found at least 52% of approved carbon offsets were allocated to projects that would very likely have been built anyway, amounting to a substantial misallocation of resources. The program included setting up 1,350 wind farms in India.

Way Forward

- I) Instead, the focus can be on decarbonising commercial aviation, with the help of **sustainable aviation fuel (SAF)**, hydrogen, and full-electric propulsion techniques. But these avenues are predicted to face obstacles as air traffic continues to grow and innovative decarbonising technologies are far in the distance.
- II) A Moody's 2021 report found about 10 million gallons of low-emission aviation fuel was produced globally in 2021, less than 0.02% of industry's current needs.
- III) Governments are working to tighten regulations around environmental marketing to discourage greenwashing, such as U.S. regulators updating their **“Green Guides”** which would rein in claims that are **“unfair”** or **“deceptive”**. South Korea announced a draft law to penalise companies for false green claims. Greenwashing is considered an unfair trade practice under the **Consumer Protection Act, 2019**, which prohibits misleading claims, but implementation of these regulations remains a challenge.



ECONOMY

INTERNATIONALISATION OF RUPEE

Why is it in the news?

- I) Pushing for a roadmap towards the **internationalisation of the rupee**, the **Reserve Bank of India's (RBI) inter-departmental group (IDG)** said that with India remaining one of the fastest-growing countries and showing remarkable resilience in the face of major headwinds, the rupee has the potential to become an internationalised currency.
- II) These recommendations are significant, in light of the economic sanctions imposed by the US on Russia for invading Ukraine and the growing clamour for finding an alternative to the US dollar for international transactions.

What do you mean by Internationalisation of rupee?

- I) Internationalisation is a process that involves **increasing the use of the rupee in cross-border transactions**.
- II) It involves promoting the rupee for import and export trade and then other current account transactions, followed by its use in capital account transactions. These are all transactions between residents in India and non-residents.
- III) The internationalisation of the currency, which is closely interlinked with the nation's economic progress, requires further opening up of the currency settlement and a strong swap and forex market.
- IV) More importantly, it will require full convertibility of the currency on the capital account and cross-border transfer of funds without any re-

strictions. **India has allowed only full convertibility on the current account as of now.**

- V) Currently, the US dollar, the Euro, the Japanese yen and the pound sterling are the leading reserve currencies in the world. China's efforts to make its currency renminbi has met with only limited success so far.

What is the relevance?

- I) Currently, the US dollar is said to enjoy an '**Exorbitant Privilege**', which refers to the innumerable benefits that accrue to the US on account of all other countries of the world using the US dollar as their currency in most of their international transactions, among global currencies.

The dollar's position is supported by a range of factors, including the size of the US economy, the reach of its trade and financial networks, the depth and liquidity of US financial markets, and a history of macroeconomic stability and currency convertibility. Dollar dominance has also benefited from the lack of viable alternatives.

- II) According to the RBI's working group, the obvious challenger to the US dollar dominance is the Chinese Renminbi. However, its ability to rival the US dollar will depend on future policies in both the US and China and the ability of the Chinese economy and its financial system to demonstrate the same long-term resilience, integrity, transparency, openness and stability, which are characteristics of the US economy.
- III) In the wake of the sanctions imposed on the Russian government, its public sector and even individuals linked to the government, many coun-



tries have become cautious of the price they may have to pay if they are subjected to similar sanctions by the Western governments. China, Russia and a few other countries have become more vocal in questioning the US dollar-dominated global currency system.

They would like to reduce their reliance on the US dollar and its financial markets as well as their dependence on dominant international payment mechanisms based on the **Society for Worldwide Interbank Financial Telecommunications (SWIFT) messaging system**.

- IV) While the Asian crisis of 1997-1998 underscored the necessity of emerging market economies having **strong foreign exchange reserves to manage external shocks**, in an increasingly polarised world, it no longer seems a sufficient defence against the threat of economic sanctions.
- V) The RBI-appointed group feels that it is imperative for India to continue exploring alternatives to both the USD and the Euro.

Advantages of internationalisation of the rupee

- I) The use of the rupee in cross-border transactions mitigates currency risk for Indian businesses. Protection from currency volatility not only reduces the cost of doing business, it also enables better growth of business, improving the chances for Indian businesses to grow globally.
- II) While reserves help manage exchange rate volatility and project external stability, they impose a cost on the economy. Internationalisation of the rupee reduces the need for holding foreign exchange reserves. Reducing dependence on foreign currency will make India less vulnerable to external shocks.
- III) As the use of the rupee becomes significant, the bargaining power of Indian businesses would

improve, adding weight to the Indian economy and enhancing India's global stature and respect.

What are the recommendations of the working group?

- I) The working group has recommended a slew of short to long term measures to accelerate the pace of internationalisation of the rupee.
- II) For the short term, the group has suggested adoption of a standardised approach for examining the proposals on bilateral and multilateral trade arrangements for invoicing, settlement and payment in the rupee and local currencies, opening of the rupee accounts for non-residents both in India and outside India and integrating Indian payment systems with other countries for cross-border transactions.
- III) It suggested strengthening the financial market by fostering a global 24x5 Rupee market and recalibration of the FPI (foreign portfolio investor) regime.
- IV) Over the next two to five years, the group has recommended a review of taxes on **masala (rupee-denominated bonds issued outside India by Indian entities) bonds, international use of Real Time Gross Settlement (RTGS) for cross-border trade transactions and inclusion of Indian Government Bonds in global bond indices**.
- V) For the long term, the group has recommended that efforts should be made for the inclusion of the rupee in **IMF's (International Monetary Fund) SDR (special drawing rights)**.

SOME ADDITIONAL INFORMATION

What is SDR?

- I) The SDR is an international reserve asset created by the IMF to supplement the **official reserves of its member countries**.
- II) The value of the SDR is based on a **basket of five**



currencies — the U.S. dollar, the euro, the Chinese renminbi, the Japanese yen, and the British pound sterling.

THE CENTRE-STATE TUSSELE OVER THE OPEN MARKET SALE SCHEME

Why is it in the news?

- I) States have been looking at alternative ways of procuring wheat and rice in the aftermath of the **Food Corporation of India's (FCI)** quantity restrictions followed by the refusal to allow states to procure the two food grains through its **Open Market Sale Scheme (OMSS)**.
- II) The Congress government in Karnataka announced that being unable to procure enough rice in the market at a reasonable cost in time to meet the needs of its free food grain distribution scheme for BPL families- the Anna Bhagya scheme, it had decided to temporarily give cash to the beneficiaries in lieu of the promised five kg of free rice.
- III) The Centre has made it clear that the reason for first restricting supplies per bidder and eventually excluding states for the OMSS was to curb inflation and regulate supply.

What is the Open Market Sale Scheme (OMSS)?

- I) Firstly, the procurement of food grains like wheat and paddy for the central pool happens in Rabi and Kharif marketing seasons by the FCI and State corporations according to procurement estimates finalised by the government of India before the seasons. These purchases happen as per the **Minimum Support Price**. From the central pool, the government has to set aside wheat and rice for the 80 crore beneficiaries of free foodgrains under the **National Food**

Security Act (NFSA), maintain a buffer stock, and have a marketable surplus.

- II) Under the **Open Market Sale Scheme**, the FCI from time to time sells surplus food grains from the central pool especially wheat and rice in the open market to traders, bulk consumers, retail chains and so on at pre-determined prices. The Corporation does this through **e-auctions** where open market bidders can buy specified quantities at the prices set at the start of a cycle and revised routinely.

Usually, **states are also allowed to procure food grains through the OMSS without participating in the auctions**, for their needs beyond what they get from the central pool to distribute to NFSA beneficiaries. The idea is to activate the OMSS during the lean season, the time between harvests, to improve and regulate domestic supply and availability of the two grains and bring down their prices in the open market; essentially making the scheme a measure to curb food grain inflation.

- III) This year's OMSS was operationalised by the FCI in the month of January. According to the Food Ministry, six weekly e-auctions of wheat had been conducted by FCI till March 15, 2023. The total quantity of 33.7 LMT wheat was offloaded and the prices of Wheat came down by 19% due to this massive intervention in a span of 45 days.
- IV) The next e-auction for wheat under OMSS is due to start on June 28 and the bidding for rice will commence on July 5. The FCI has kept a base price of wheat at the same level at ¹ 2,150 per 100 kg, while that for rice has been set at ¹ 3,100 per quintal.
- V) The sales have been fairly low during the last

few years owing to harvests getting affected by weather conditions as well as lower surpluses when the government distributed additional free food grains under the Garib Kalyan Yojana in the pandemic years. The scheme started during the pandemic has now been merged under the NFSA.

How has the Centre revised the OMSS?

- I) Recently, the Centre decided to restrict the quantity that a single bidder can purchase in a single bid under the OMSS. While the maximum quantity allowed earlier was 3,000 metric tonnes (MT) per bid for a buyer, it will now range from 10-100 metric tonnes (MT).

The rationale given for the same by the Corporation is that the quantities have been reduced this time “to accommodate more small and marginal buyers and to ensure wider reach of the scheme”. The body contends this move will allow the supplies to the general public immediately. The objective behind the move is also to curb retail prices as allowing smaller bids should ideally break monopolies of bulk buyers, allowing more competitive bids by small buyers.

- II) Due to global supply chain shocks like the Russia-Ukraine conflict and hampered production at home, retail food inflation has risen sharply. In February this year, retail wheat inflation was up by 25.37% and only declined to 19.91% in March. As per official data, rice prices have increased by up to 10% in the last year at the mandi level, while by 8% in the last month.
- III) Another reason for the move is to meet the FCI’s food security obligations. The Centre said that in recent years, production of agriculture crops was affected due to untimely rains, rise in temperature in the month of March and so on, mak-

ing it incumbent upon the FCI to release its stocks “judicious manner under the OMSS (D)” so that the overall stock position is maintained at a comfortable level”.

Why has the FCI discontinued the sale of grains under OMSS to states?

- I) First, the Centre had decided earlier this month to reduce the quantity a particular bidder can purchase under the OMSS, but recently, in a notification sent to the States, it stopped the sale of rice and wheat from the Central pool under the OMSS to state governments, also disallowing private bidders to sell their OMSS supplies to state governments.
- II) The Centre has explained the discontinuation of OMSS grains to the states by giving the same rationale. In order to ensure that the inflationary trends are kept under control while ensuring adequate stock levels in the Central pool it has been decided to exclude State governments from the ambit of OMSS(D).

INDIA’S HIGHWAY NETWORK

Why is it in the news?

India’s network of national highways, at 1.45 lakh km, is now the **second largest in the world after the United States**, and it has increased by 59 per cent in the past nine years.

More about the news

- I) This road network transports 64.5% of all goods in the country and 90% of India’s total passenger traffic uses the road network to commute.
- II) In the last nine years, the 4-lane NH increased about two-fold to 44,654 km from 18,371 km in 2013-14.
- III) The usage of FASTags has helped in reducing the



waiting time at the toll plazas to 47 seconds which is envisaged to be completely eliminated by 2047.

Related Government Initiatives

- I) **Bharatmala Pariyojana** envisages development of about 26,000 km length of Economic Corridor with a view to develop the road connectivity to Border areas, development of Coastal roads including road connectivity for non-major ports.
- II) The **National Infrastructure Pipeline (NIP)** for FY 2019-25 aims to provide world-class infrastructure to citizens and improve their quality of life. The roads sector is likely to account for 18% capital expenditure over FY 2019-25.
- III) The **National Monetisation Pipeline (NMP)**'s strategic objective is to unlock the value of investments in brownfield public sector assets by tapping institutional and long-term patient capital, which can thereafter be leveraged for further public investments.
- IV) **National Payments Corporation of India (NPCI)** has developed the National Electronic Toll Collection (NETC) which offers an interoperable nationwide toll payment solution including clearing house services for settlement and dispute management.
- V) **Public-Private-Partnerships (PPP)** in the highway sector is promoted through Foreign Direct Investment up to 100 % in the road sector, Provision of subsidy up to 40% of project cost to make projects viable, 100% tax exemption in any consecutive 10 years out of 20 years after commissioning of the project, etc.
- VI) **PM Gati Shakti - National Master Plan for Multimodal Connectivity**, a digital platform was launched to bring 16 Ministries including Railways and Roadways together for integrated plan-

ning and coordinated implementation of infrastructure connectivity projects.

IMF'S VIEW ON CRYPTOCURRENCY IN LATIN AMERICA

Why is it in the news?

- I) Recently, the **International Monetary Fund (IMF)** issued a statement on the use of cryptocurrency in the Latin America and Caribbean market, and about the rising interest in blockchain-based **central bank digital currencies (CBDCs)**.
- II) According to the global monetary authority, a ban on crypto "may not be effective in the long run" in the region. This has raised eyebrows due to the international organisation's change in stance on crypto in the LatAm market.

Why is Latin America's crypto economy so significant?

- I) Countries like **Argentina, Chile, and Columbia** have experienced devaluation of their currency against the **U.S. dollar**. To preserve the value of their savings, some residents have explored converting their funds to U.S. dollars. However, there are legal restrictions controlling this. Others have chosen to convert their assets to stablecoins - cryptocurrencies designed to reflect the value of fiat currencies such as the U.S dollar.
- II) Brazil, Argentina, Colombia, and Ecuador are among the top 20 in **Chainalysis' 2022 Global Crypto Adoption Index**.
- III) Separately, a number of central banks in the Latin American market are also considering CBDCs, meaning that more people could soon be exposed to blockchain-based infrastructure.

Why does El Salvador stand out among crypto economies?

- I) **El Salvador is the first country in the world to**



adopt Bitcoin - the largest cryptocurrency by market capitalisation - as its legal tender. The country with a population of 6.5 million adopted Bitcoin on September 7, 2021 under the leadership of **President Nayib Bukele**, who is an ardent crypto supporter. He has since bought over 2,000 BTC and continued to buy even as the crypto market suffered crashes, joking about getting the asset for cheap.

- II) El Salvador uses a digital wallet known as **Chivo** to regulate users' crypto transactions. However, there have been complaints about the wallet causing funds to disappear and enabling identity fraud.
- III) Bitcoin reached an all-time high of over \$67,000 in November 2021. During this time, Bukele made ambitious plans to issue Bitcoin bonds, build a 'Bitcoin City' and start volcanic mining of Bitcoin. However, these plans were largely put on hold as Bitcoin suffered multiple crashes through 2022. On November 17, 2022, Bukele said that he would be buying Bitcoin every day from November 18. And as on June 29, the country's Bitcoin investment value is down 26.3% in total.
- IV) El Salvador's president also predicted that Bitcoin would reach a value of \$100,000 by the end of 2022. The asset did not even come close to its previous high. As on June 29, Bitcoin is worth a little over \$30,000.

How did the IMF react to El Salvador's Bitcoin adoption?

- I) The IMF said it was against El Salvador's move, citing fiscal risks and consumer protection issues. According to its statement, IMF's executive directors urged the authorities to narrow the scope of the Bitcoin law by removing Bitcoin's legal tender status. They were further concerned

by Bukele's Bitcoin-backed bonds idea.

- II) El Salvador was also told that its adoption of Bitcoin might affect its application for a loan of \$1.3 billion. Further, it called for regulation of cryptocurrency and recording crypto transactions for transparency.

What is the difference between cryptocurrency and CBDCs?

- I) Cryptocurrencies and CBDCs are both blockchain-based digital currencies. But while cryptocurrencies are generally run by private companies or individuals, a CBDC is controlled and tracked by a country's central bank and corresponds to that country's fiat currency.
- II) Bitcoin's price may vary by hundreds or even thousands of dollars in a short period of time, and its founder is a mystery. On the other hand, a CBDC such as the **eNaira, issued by the Central Bank of Nigeria**, would (ideally) be worth as much as its physical counterpart.
- III) While investors often buy large quantities of Bitcoin or other cryptocurrencies and hold them in the hope of making a profit, this doesn't make sense in the case of CBDCs as they are not meant to be investment vehicles.
- IV) China's government, meanwhile, has **energetically promoted its digital renminbi (e-RMB)**. Transactions with its CBDC crossed \$13.9 billion last year. However, China also banned crypto mining and unregulated virtual assets in the country, prompting a large section of the mining population to flee to other countries.
- V) The Bahamas in the Caribbean was one of the first countries to officially introduce its **Sand Dollar CBDC**.



INFLATION & GREEDFLATION

Why is it in the news?

Latest financial reports from the US and Europe continue to show that firms across the board, seem to be making more profit than what their overall sales should merit - leading to **Greedflation**.

About Inflation — and disinflation, deflation and reflation

- I) **Inflation:** Inflation or the inflation rate is the rate at which the general price level rises. When it is reported that the inflation rate was 5% in June it implies that the general price level of the economy (as measured by a representative basket of goods and services) was 5% more than what it was in June 2022.

There are two main ways in which inflation happens: Either price get pushed up because input costs have risen — this is called cost-push inflation; or they are pulled up because there is excess demand — this is called demand-pull inflation.

- II) **Disinflation:** Disinflation refers to the trend when the inflation rate decelerates. Suppose it was 10% in April, 7% in May and 5% in June. This is disinflation. In other words, disinflation refers to a period when even though prices are rising (or inflation is happening), it is happening at a slower rate each passing month.
- III) **Deflation:** Deflation is the exact opposite of inflation. Imagine if the general prices level in June was 5% lower than what it was in June last year. That's deflation.
- IV) **Reflation:** Reflation typically follows deflation as policymakers try to pump up economic activity either by government spending more and/or

interest rates being reduced.

About Greedflation

- I) Imagining a scenario: What if prices were going up not because workers were getting higher wages but because their companies — were making more profits?

If the input costs have gone up, a businessman or a company will be forced to raise their prices otherwise they cannot sustain their business.

In such a case, higher sales in terms of rupees do not lead to higher profits because even the input costs have increased.

- II) Greedflation simply means (corporate) greed is fuelling inflation. In other words, instead of the wage-price spiral, it is the profit-price spiral that is in play.

In essence, greedflation implies that companies exploited the inflation that people were experiencing by putting up their prices way beyond just covering their increased costs and then used that to maximise their profit margins. That, in turn, further fuelled inflation.

- III) In the developed countries — in Europe and the US — there is a growing consensus that greedflation is the real culprit.

- IV) Examples:

While the biggest driver of high inflation that Europe witnessed in 2022 (since the start of the war) was the spike in energy costs but there was very little contribution of higher wages. There was, however, an extra and significant injection of inflation from rising profits of firms.

The Indian corporate sector has generated superlative profits in the post pandemic period. Profits during recent times have



been nearly thrice the profits corporations earned earlier.

Way Forward

- I) Profit margins should shrink and the share of corporate sector income going to labour compensation (or the labour share of income) should rise as unemployment falls and the economy heats up.
- II) One effective way to prevent corporate power from being channelled into higher prices in the coming year would be a temporary excess profits tax.

SOME ADDITIONAL INFORMATION

How is inflation solved?

- I) If inflation is because of excess demand, the central banks raise interest rates to bring overall demand in line with overall supply.
- II) However, if inflation is due to cost pressures, even then the central banks raise interest rates. Raising interest rates does nothing to boost supply. Still central banks do what they can: contain demand because that is all they can do. The idea is to prevent something called the wage-price spiral.

About wage-price spiral

- I) If prices go up, it is natural that workers will ask for higher wages. But if wages go up, it only fuels the overall demand, while doing nothing to boost the supply. This will end in further inflation surges because while a worker has more money, so does his colleague. In other words, inflation rises.
- II) Raising interest rates slows down overall economic activity and demand, often leading to job losses.
- III) Through this rather unjust and iniquitous method, the central banks prevent a wage-price spiral and consequent inflation.

GO FIRST'S INSOLVENCY RESOLUTION PROCESS

Why is it in the news?

- I) The **low-cost airline Go First (originally GoAir)** filed for the initiation of insolvency proceedings in early May this year. The company had been struggling with engine troubles for some time, which had led to the grounding of a large number of its aircraft. The percentage of grounded aircraft had risen from 7% of Go First's fleet in December 2019 to 50% in December 2022.

As a consequence, the market share of the airline crashed from 11% in November 2019 to 6.9% in March 2023. This significantly affected its cash flows, weakening its ability to meet its obligations.

- II) It is a struggling company's financial creditors (banks) and operational creditors (who supply goods and services) who typically initiate proceedings under **the Insolvency and Bankruptcy Code (IBC), 2016** for non-payment of their dues. In Go First's case, however, it was the company that filed for the initiation of these proceedings. The airline had not defaulted on its loan repayments to banks, but had reportedly defaulted on obligations to its operational creditors.
- III) Instances of a company initiating IBC proceedings are not common — there had been only 390 such cases until the end of March 2023.

What is the Insolvency and Bankruptcy Code?

- I) In 2016, the government put in place a framework **to deal with the problem of bad loans in the country's banking system**. The IBC provides a framework for a time-bound resolution process. Broadly, if a company is unable to service its



obligations (payments that are due to its financial and operational creditors), one of two processes could follow:

- (i) the company's liabilities are restructured, and it gets a chance to continue its operations, perhaps under new owners;
 - (ii) its assets are liquidated, and the money is recovered.
- II) Before the IBC, there were other regulatory frameworks to deal with bad loans. But it usually took very long for the process to conclude.

As per the **World Bank's Ease of Doing Business report**, it would take 4.3 years on average to resolve insolvency cases before the IBC was

- III) The IBC put strict timelines in place. Initially, the process was to be completed within 270 days, failing which the company would be pushed into liquidation; **the deadline was subsequently extended to 330 days**. The time-bound nature of the process under IBC was appealing, because delays in resolution lead to further destruction in the value of the firm.

So did the introduction of the IBC help creditors?

- I) The IBC attempted to reshape the credit culture in the country by titling the balance in favour of creditors. The threat of losing their company — under this framework, as soon the proceedings are initiated, the existing promoters/ management lose control over the firm — works as a powerful deterrent for errant promoters and puts pressure on them to honour their obligations.
- II) This framework has also given a negotiating tool to operational creditors, who are typically small firms, to negotiate the payment of their dues by larger firms.
- III) Data from the Insolvency and Bankruptcy Board of India show that of all the cases admitted un-

der IBC, proceedings in almost half have been initiated by operational creditors, signalling how widely this is being used by these firms.

And has the IBC succeeded in making a difference?

- I) Contrary to expectations, outcomes under the Code have fallen short of expectations. The amounts recovered by banks have been lower than anticipated, and the time for completing the process has generally tended to exceed the prescribed timelines.
- II) By the end of March 2023, 6,571 cases had been admitted under the IBC. Of these, 4,515 have been closed; the remaining are undergoing proceedings. Of the 4,515 cases that have been closed, 2,030 or 45% have ended up in liquidation. Resolution plans have been accepted in only 677 cases (15%). In these cases, creditors have realised only Rs 2.86 lakh crore as against their claims of Rs 8.98 lakh crore — this is less than a third of what was owed to them.
- III) Then there are the delays in the process. The average time it takes to close cases works out to 614 days. Of the cases that are currently going through the resolution process, 64% have crossed the 270-day deadline. And in the cases that have gone into liquidation, 55% have been going on for more than two years, while 19% have been pending for more than one year.

What have been the consequences of Go First filing for bankruptcy?

- I) The cancellation of Go First's flights, especially in the ongoing busy season, has contributed to the mismatch between demand for air travel and supply of seats, and ticket prices have shot up, especially on routes where Go First had a significant presence.
- II) Also, with Go First's market share collapsing,



that of other airlines has risen. IndiGo's market share has gone up from 57.5% in April to 61.4% in May. The share of other airlines like Air India has also seen an uptick. Competition has reduced further in the domestic aviation sector.

So, will Go First fly again — and if so, when?

- I) Since the airline's request for initiation of proceedings was admitted, there have been reports that its promoters, the Wadia Group, and the banks who have lent the airline money, are trying to put together a revival package.
- II) The airline is reported to have submitted a plan to the aviation regulator. As per this plan, Go First has proposed to commence operations with a fleet of 26 aircraft and 152 daily flights.



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GEOGRAPHY & DISASTER MGT

THE ANTHROPOCENE EPOCH

Why is it in the news?

In a major development that could change the Earth's official geological timeline, geologists have said sediments at **Crawford Lake in Canada's Ontario** have provided evidence of the beginning of the Anthropocene epoch — a proposed geological epoch that began when human activity started to have a significant impact on the Earth.



(Trees surround Crawford Lake in Milton, Ontario; A team of scientists is recommending the start of a new geological epoch defined by how humans have impacted the Earth should be marked at the pristine Crawford Lake outside Toronto in Canada)

More about the news

- I) Members of the **Anthropocene Working Group (AWG)**, which has been working since 2009 to make the Anthropocene part of the planet's time scale, the 35 geologists have estimated that the new epoch started sometime between 1950 and 1954.
They revealed the findings after analysing the lake's bottom sediments, which have over the years captured the fallouts of large-scale burn-

ing of fossil fuels, explosion of nuclear weapons and dumping of plastic and fertilisers on land and in water bodies.

- II) The data show a clear shift from the mid-20th century, taking Earth's system beyond the normal bounds of the **Holocene (the epoch that started at the end of the last ice age 11,700 years ago)**.
- III) Notably, not every geologist agrees that the Anthropocene epoch is a reality as there are disagreements within the scientific community regarding when it began, or has it already begun, or if they have enough evidence to prove its advent.

What is the Anthropocene epoch?

- I) The Anthropocene epoch as a term was first coined by **Nobel Prize-winning chemist Paul Crutzen and biology professor Eugene Stoermer in 2000** to denote the present geological time interval, in which the Earth's ecosystem has gone through radical changes due to human impact, especially since the onset of the Industrial Revolution.
- II) There are numerous phenomena associated with this epoch, such as global warming, sea-level rise, ocean acidification, mass-scale soil erosion, the advent of deadly heat waves, deterioration of the biosphere and other detrimental changes in the environment.
- III) Many of the changes will persist for millennia or longer, and are altering the trajectory of the Earth System, some with permanent effect. They are being reflected in a distinctive body of geo-



logical strata now accumulating, with potential to be preserved into the far future.

What have the geologists found?

- I) The 79 feet deep and 25,800 square-foot-wide Crawford Lake was chosen for examination by the geologists over 11 other potential sites as its layers of sediment preserved the annual impact of human activities on the Earth's soil, atmosphere and biology.
- II) According to the team who has studied the lake, said there are distinct and multiple signals starting around 1950 in the water body, which showed that "the effects of humans overwhelm the Earth system".
Another member, who analysed the water body, told that the "presence of plutonium (due to detonation of nuclear weapons) gives us a stark indicator of when humanity became such a dominant force that it could leave a unique global 'fingerprint' on our planet."
- III) But these findings don't mean that they have proved the advent of the Anthropocene epoch. In the following months, AWG plans to present a proposal in front of the **Sub-commission on Quaternary Stratigraphy (SQS)**, a constituent body of the **International Commission on Stratigraphy (ICS)**, and if it passes, it will go to the ICS for the next round of approval.
- IV) Both SQS and ICS are part of the **International Union of Geological Sciences (IUGS)**, which represents more than 1 million geoscientists across the globe. A final approval might come at the 37th International Geological Congress in Busan, South Korea, which will take place next year.

How is the Earth's geological time divided?

- I) The planet's geological time scale is divided into five broad categories: **eons, eras, periods, ep-**

ochs and ages. While eon is the broadest category of geological time, age is the smallest category. Each of these categories is further divided into sub-categories. For instance, Earth's history is characterised by four eons, including Hadeon (oldest), Archean, Proterozoic, and Phanerozoic (youngest).

- II) Most of the boundaries on the geological time scale correspond to the origination or extinction of particular kinds of fossils. This is also related to something called the principle of **faunal succession, which states that different kinds of fossils characterise different intervals of time.**
- III) As of now, we're in the **Phanerozoic eon, Cenozoic era, Quaternary period, Holocene epoch and the Meghalayan age.**

CENTRE IDENTIFIES 30 CRITICAL MINERALS

Why is it in the news?

- I) In a strategic move, the Centre has identified 30 critical minerals, including **lithium, cobalt, nickel, graphite, tin and copper**, which are essential for the country's economic development and national security.
- II) The identification of these minerals — which form part of multiple strategic value chains, including clean technologies initiatives such as zero-emission vehicles, wind turbines, solar panels; information and communication technologies, including semiconductors; and advanced manufacturing inputs and materials such as defence applications, permanent magnets, ceramics — was done on the basis of a report on critical minerals prepared by an expert team constituted by the **Ministry of Mines**. The ministry will revisit the list periodically.



30 CRITICAL ELEMENTS/ SUBGROUPS
IN PERIODIC TABLE OF ELEMENTS
Higher elements are ones chosen by India.
Periodic table: American Chemical Society

Legend:

- Alkali Metals
- Alkaline Earth Metals
- Transition Metals
- Other Metals
- Non-metals
- Halogens
- Noble Gases
- Lanthanides
- Actinides

30 Critical Elements/ Subgroups: Li, Be, B, C, N, O, F, Ne, Al, Si, P, S, Cl, Ar, K, Ca, Sc, Ti, V, Cr, Mn, Fe, Co, Ni, Cu, Zn, Ga, Ge, As, Se, Br, Kr, Rb, Sr, Y, Zr, Nb, Mo, Tc, Ru, Rh, Pd, Ag, Cd, In, Sn, Sb, Te, I, Xe, Ba, La, Ce, Pr, Nd, Pm, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, Lu, Cs, Ba, Hf, Ta, W, Re, Os, Ir, Pt, Au, Hg, Tl, Pb, Bi, Po, At, Rn, Fr, Ra, Ac, Th, Pa, U, Np, Pu, Am, Cm, Bk, Cf, Es, Fm, Md, No, Lr.

The exercise

- I) While elements such as cobalt, nickel and lithium are required for batteries used in electric vehicles or cell-phones, rare earth minerals are critical, in trace amounts, in the semiconductors and high-end electronics manufacturing. Most countries of the world have identified critical minerals as per their national priorities and future requirements.
- II) In India too, some efforts have been made in the past to identify the minerals that are critical for the country, including an initiative in 2011 by the Planning Commission of India (now NITI Aayog) that highlighted the need for the “assured availability of mineral resources for the country’s industrial growth”, with a clear focus on the well-planned exploration and management of already discovered resources. That report analysed 11 groups of minerals under categories such as metallic, non-metallic, precious stones and metals, and strategic minerals. From 2017 to 2020, a big thrust was accorded to the study of exploration and development of rare earth elements in the country.
- III) The specific trigger for the latest exercise is India’s international commitments towards reducing carbon emissions, which require the country to urgently relook at its mineral requirements

for energy transition and net-zero commitments. In November 2022, the Ministry of Mines had constituted a seven-member Committee under the chairmanship of Joint Secretary (Policy), Ministry of Mines to identify a list of minerals critical to our country and the panel decided to have a three-stage assessment to arrive at a list of critical minerals.

Critical minerals

- I) These are minerals that are essential for economic development and national security, and the lack of availability of these minerals or the concentration of extraction or processing in a few geographical locations could potentially lead to “supply chain vulnerabilities and even disruption of supplies”. This is true for minerals such as lithium, graphite, cobalt, titanium, and rare earth elements, which are essential for the advancement of many sectors, including high-tech electronics, telecommunications, transport, and defence.
- II) One of the definitions cited in the report characterises a mineral as critical when the risk of supply shortage and associated impact on the economy is (relatively) higher than other raw materials. This definition of a critical mineral was first adopted in the US and the subsequent legislation that resulted from the analysis. The European Union also carried out a similar exercise and categorised critical minerals on the basis of two prerequisites: supply risk and economic importance.
- III) Australia refers to critical minerals as: “metals, non-metals and minerals that are considered vital for the economic well-being of the world’s major and emerging economies, yet whose supply may be at risk due to geological scarcity,



geopolitical issues, trade policy or other factors”.

CRITICAL MINERALS: INDIA'S NET IMPORT RELIANCE (2020)

Critical Mineral	%age	Major import sources
Lithium	100%	Chile, Russia, China, Ireland, Belgium
Cobalt	100%	China, Belgium, Netherlands, US, Japan
Nickel	100%	Sweden, China, Indonesia, Japan, Philippines
Vanadium	100%	Kuwait, Germany, South Africa, Brazil, Thailand
Niobium	100%	Brazil, Australia, Canada, South Africa, Indonesia
Germanium	100%	China, South Africa, Australia, France, US
Rhenium	100%	Russia, UK, Netherlands, South Africa, China
Beryllium	100%	Russia, UK, Netherlands, South Africa, China
Tantalum	100%	Australia, Indonesia, South Africa, Malaysia, US
Strontium	100%	China, US, Russia, Estonia, Slovenia
Zirconium (zircon)	80%	Australia, Indonesia, South Africa, Malaysia, US
Graphite (natural)	60%	China, Madagascar, Mozambique, Vietnam, Tanzania
Manganese	50%	South Africa, Gabon, Australia, Brazil, China
Chromium	2.5%	South Africa, Mozambique, Oman, Switzerland, Turkey
Silicon	<1%	China, Malaysia, Norway, Bhutan, Netherlands

Source: 'Unlocking Australia-India Critical Minerals Partnership Potential', Australian Trade and Investment Commission, July 2021

Three-stage process

- I) In its three-stage assessment for identifying the minerals critical to India, the panel, in the first stage, looked at the strategies of various countries such as Australia, USA, Canada, UK, Japan and South Korea. Accordingly, a total of 69 elements/ minerals that were considered critical by major global economies were identified for further examination, and due importance was given to domestic initiatives as well.
- II) In the second stage of assessment, an inter-ministerial consultation was carried out with different ministries to identify minerals critical to their sectors. Comments and suggestions were received from the Ministry of Power, Department of Atomic Energy, Ministry of New and Renewable Energy, Department of Fertilisers, Department of Science and Technology, Department of Pharmaceuticals, NITI Aayog, etc.
- III) The third stage assessment was to derive an empirical formula for evaluating minerals criticality, taking cognizance of the EU methodology that considers two major factors — economic im-

portance and supply risk.

- IV) Based on this process, a total of 30 minerals were found to be most critical for India, out of which two are critical as fertiliser minerals: **Antimony, Beryllium, Bismuth, Cobalt, Copper, Gallium, Germanium, Graphite, Hafnium, Indium, Lithium, Molybdenum, Niobium, Nickel, PGE, Phosphorous, Potash, REE, Rhenium, Silicon, Strontium, Tantalum, Tellurium, Tin, Titanium, Tungsten, Vanadium, Zirconium, Selenium and Cadmium.**

Specialised agency

- I) Alongside this list, the committee also called for a need for establishing a **National Institute or Centre of Excellence on critical minerals on the lines of Australia's CSIRO, which is the largest minerals research and development organisation in Australia and one of the largest in the world.** A wing in the Ministry of Mines can be established as a Centre of Excellence for Critical Minerals, and this proposed Centre will periodically update the list of critical minerals for India and notify the critical mineral strategy from time to time and will execute a range of functions for the development of an effective value chain of critical minerals in the country.
- II) To build competitive value chains in India, the discovery of mineral wealth and identifying areas of its potential by use of advanced technologies has been cited as essential. The identification of critical minerals will help the country to plan for the acquisition and preservation of such mineral assets taking into account the long-term need of the country, and, in turn, reduce the import dependency as India is 100% import dependent for certain elements.



Global practices

- I) **The US**, adopted a two-stage screening methodology to arrive at the list of critical minerals. An early warning screening tool assesses a mineral's potential criticality using three fundamental indicators: supply risk, production growth, and market dynamics. This was followed by an in-depth supply chain analyses and inter-agency collaboration, wherein detailed analysis of the underlying factors are carried out.
- II) In **the UK**, the criticality to the British economy was determined in terms of their global supply risks and the economic vulnerability to such a disruption. Three indicators were used to estimate the production concentration, companion metal fraction and recycling rate. A total of 18 minerals were identified as critical to the UK economy.
- III) **The European Commission** has been issuing a list of critical raw minerals since 2011 that is updated every three years. The main parameters used to determine the criticality of the mineral for the EU are the economic importance, in terms of end-use applications and the value added of corresponding EU manufacturing sectors. Supply risk is the other parameter. A total of 34 raw materials are identified as Critical Raw Materials for 2023.
- IV) **Japan's** first list of critical minerals was prepared by the country's Advisory Committee on Mining Industry in 1984, under the direction of the Ministry of International Trade and Industry (current METI). In March 2020, Japan released its latest perspective on how to secure its supply chains for critical minerals and materials as part of the New International Resource Strategy. The strategy underscored the growing impor-

tance of critical minerals for EVs and renewable power generation equipment. Japan has identified a set of 31 minerals as critical for their economy.

- V) The Australian Government, in 2019, released its inaugural Critical Minerals List and associated national strategy and a list of 24 critical minerals was first identified. Two more elements were added in the latest critical mineral strategy.

Domestic and global outreach

- I) The **Geological Survey of India, an attached office of Ministry of Mines**, has carried out a G3 stage mineral exploration (fairly advanced) during Field Season 2020-21 and 2021-22 in **Salal-Haimna areas of Reasi district, Jammu & Kashmir**, and estimated an inferred resource of 5.9 million tonnes of lithium ore. The estimated value of lithium at that site will be estimated on completion of further exploration. Based on the mapping outcome, more exploration programmes on various mineral commodities including lithium will be taken up in future in different parts of the country, including Jammu & Kashmir.
- II) In addition, a joint venture company namely **Khanij Bidesh India Ltd. (KABIL)** has been incorporated with equity contribution from three Central Public Sector Enterprises. It is mandated to identify and acquire overseas mineral assets of critical and strategic nature such as lithium, cobalt and others so as to ensure supply side assurance.

KABIL has initiated engagement with several state owned-organisations of the shortlisted source countries through the Ministry of External Affairs and the Indian Embassies in coun-

tries like Argentina and Australia to acquire mineral assets, including lithium, cobalt and rare earth elements.

- III) In a fresh boost, **India has recently been inducted into the Mineral Security Partnership (MSP), a US-led collaboration of 14 countries that aims to catalyse public and private investment in critical mineral supply chains globally.** India's inclusion assumes significance given that one of the key elements of New Delhi's growth strategy is powered by an ambitious shift in the mobility space through the conversion of a large part of public and private transport to electric vehicles. This, alongside a concerted electronics manufacturing and semiconductor push, underlines the need to secure the supply of critical minerals.

Conclusion

India is seen as a late mover in attempts to enter the lithium value chain, coming at a time when EVs are predicted to be a sector ripe for disruption. The year 2023 could be an inflection point for battery technology – with several potential improvements to the Li-ion technology, and alternatives to this combination in various stages of commercialisation.

FLASH FLOODS AND LANDSLIDES IN PARTS OF HIMACHAL PRADESH AND HARYANA

Why is it in the news?

- I) Recently, the Chandigarh-Manali highway was blocked following flash floods and landslides in parts of Haryana and Himachal Pradesh.
- II) Flash floods were witnessed in Khotinallah near Aut (in HP) on the Pandoh–Kullu stretch due to a heavy downpour and the commuters have been stranded as a result. Moderate to heavy rains

have also lashed several parts of Kangra, Mandi and Sirmaur districts.

What are flash floods and how are they different from floods in general?

- I) Excessive or continuous rainfall over a period of days, or during particular seasons, can lead to stagnation of water and cause flooding. Flash floods refer to such a situation, but occurring in a much shorter span of time, and are highly localised.

For instance, the US's meteorological agency, the National Weather Service, says flash floods are caused when rainfall creates flooding in less than 6 hours. It adds that flash floods can also be caused by factors apart from rainfall, like when water goes beyond the levels of a dam.

- II) In India, flash floods are often associated with **cloudbursts – sudden, intense rainfall in a short period of time.** Himalayan states further face the challenge of overflowing glacial lakes, formed due to the melting of glaciers, and their numbers have been increasing in the last few years.

- III) **Frequently, flash floods are accompanied by landslides, which are sudden movements of rock, boulders, earth or debris down a slope.** It is common in mountainous terrains, where there are conditions created for it in terms of the soil, rock, geology and slope.

Natural causes that trigger landslides include heavy rainfall, earthquakes, snow-melting and undercutting of slopes due to flooding.

Landslides can also be caused by human activities, such as excavation, cutting of hills and trees, excessive infrastructure development, and overgrazing by cattle.

IV) Flash flooding commonly happens more where rivers are narrow and steep, so they flow more quickly. They can occur in urban areas located near small rivers, since hard surfaces such as roads and concrete do not allow the water to absorb into the ground.

How common are flash floods and floods?

I) According to government data from a project by the **Assam State Disaster Management Authority, India is the worst flood-affected country in the world, after Bangladesh, and accounts for one-fifth of the global death count due to floods.** Flash floods have been commonly witnessed in cities like Chennai and Mumbai. Depression and cyclonic storms in the coastal areas of Orissa, West Bengal, Andhra Pradesh, and others also cause flash floods.

II) Further, data from the **National Disaster Management Authority (NDMA)** states that one of the reasons for flood situations occurring so frequently is that **nearly 75 per cent of the total Indian rainfall is concentrated over a short monsoon season of four months (June to September).**

As a result, the rivers witness a heavy discharge during these months. About 40 million hectares of land in the country are liable to floods according to the National Flood Commission, and an average of 18.6 million hectares of land are affected annually.

III) Flash floods may in the future, begin to take place after wildfires that have been taking place more frequently. This is because wildfires destroy forests and other vegetation, which in turn weakens the soil and makes it less permeable for water to seep through.

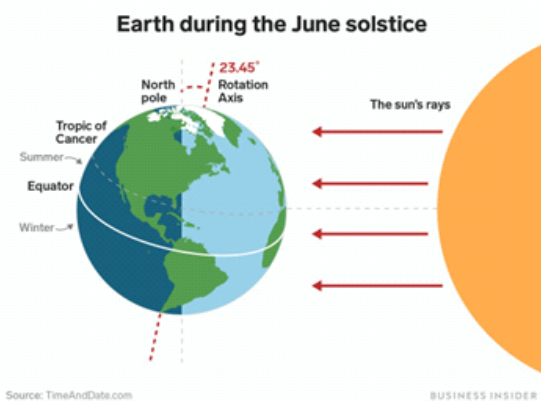
IV) According to the Indian glaciologist Syed Iqbal

Hasnain, one way of dealing with the current situation is a comprehensive strategy of monitoring on the ground in hilly areas, planning development works in a way that is sensitive to the region's ecology, and mitigation to reduce the extent of damages.

SUMMER SOLSTICE

Why is it in the news?

- I) The longest day of the year, for anyone living north of the Equator, is **June 21**.
- II) The day is referred to as the **summer solstice, and it occurs when the sun is directly over the Tropic of Cancer, or more specifically right over 23.5 degrees north latitude.**



Why do we have the summer solstice?

- I) Since Earth rotates on its axis, the Northern Hemisphere gets more direct sunlight between March and September over the course of a day, which also means people living in the Northern Hemisphere experience summer during this time. The rest of the year, the Southern Hemisphere gets more sunlight.
- II) During the solstice, the Earth's axis — around which the planet spins, completing one turn each day — is tilted in a way that the North Pole

is tipped towards the Sun and the South Pole is away from it.

- III) Typically, this imaginary axis passes right through the middle of the Earth from top to bottom and is always tilted at 23.5 degrees with respect to the Sun. Therefore, the solstice, is that instant in time when the North Pole points more directly toward the Sun than at any other time during the year. Solstice means “**sun stands still**” in Latin.
- IV) While the solstice occurs at the same time across the world, different countries experience it at different times according to their time zones.

What happens during the solstice?

- I) This day sees the Earth receiving a greater amount of energy from the Sun. The maximum amount of sunlight received by the Northern Hemisphere during this time is usually on June 20, 21 or 22.

In contrast, the Southern Hemisphere receives most sunlight on December 21, 22 or 23 when the northern hemisphere has its longest nights — or the winter solstice.

- II) The amount of light received by a specific area in the Northern Hemisphere during the summer solstice depends on the latitudinal location of the place. The further north one moves from the equator, the more light one receives during the summer solstice. At the Arctic Circle, the sun does not set during the solstice.

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MISCELLANEOUS

GLOBAL PEACE INDEX (GPI) 2023

Why is it in the news?

Recently, the **2023 Global Peace Index (GPI)** was released.

About GPI

- I) This is the **17th edition** of the Global Peace Index (GPI), which ranks 163 independent states and territories according to their level of peacefulness.
- II) It is produced by the **Institute for Economics and Peace (IEP)** and it is the world's leading measure of global peacefulness.
- III) The GPI covers 163 countries comprising 99.7 percent of the world's population, using 23 qualitative and quantitative indicators from highly respected sources.
- IV) It measures the state of peace across three domains- **Societal safety and security; Ongoing domestic and international conflict and Militarisation.**

Some of the key findings of the Index

- I) It reveals the average level of global peacefulness deteriorated for the ninth consecutive year, with 84 countries recording an improvement and 79 a deterioration. This demonstrates that the deteriorations were larger than the improvements, as the post-COVID rises of civil unrest and political instability remain high while regional and global conflicts accelerate. The two indicators with the largest deteriorations in 2022 were conflict-related, external

conflicts fought and deaths from internal conflict, followed by political instability.

- II) There were 59 countries where political instability deteriorated over the past year, compared to just 22 where the indicator improved.
- III) Deaths from global conflict increased by 96% to 238,000. New data shows a higher number of conflict deaths in Ethiopia than Ukraine, eclipsing the previous global peak during the Syrian war. 79 countries witnessed increased levels of conflict including Ethiopia, Myanmar, Ukraine, Israel, and South Africa.
- IV) The global economic impact of violence increased by 17% or \$1 trillion, to \$17.5 trillion in 2022, equivalent to 13% of global GDP. A Chinese blockade of Taiwan would cause a drop in global economic output of \$2.7 trillion, almost double the loss that occurred due to the 2008 global financial crisis.
- V) Despite the conflict in Ukraine, 92 countries improved on military expenditure and 110 decreased their military personnel.

Ranking of the Countries

- I) The top 10 most peaceful countries include Iceland, Denmark, Ireland, New Zealand, Austria, Singapore, Portugal, Slovenia, Japan, Switzerland.
- II) The least peaceful countries are 154- Iraq, 155- Sudan, 156- Somalia, 157- Ukraine, 158- Russia, 159- Democratic Republic of the Congo, 160 - South Sudan, 161- Syria, 162- Yemen, 163- Afghanistan.
- III) India has occupied the 126th spot in the



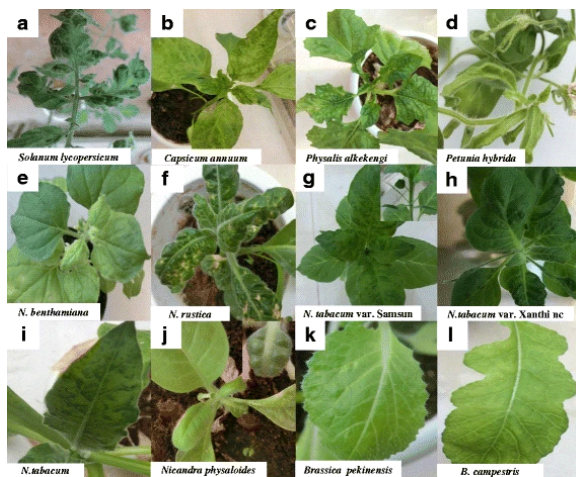
rankings, two higher than its previous position. India experienced an improvement of 3.5 percent in overall peacefulness over the past year, owing to improvements in violent crime, neighbouring countries' relations, and political instability. The improvement on the neighbouring countries relations indicator occurred because of fewer incidences of cross border violence and ceasefire violations with Pakistan and China in 2022.

- IV) Among other countries, Nepal, China, Sri Lanka, United States of America, and Pakistan, have been ranked 79, 80, 107, 131, 146, respectively.

CUCUMBER MOSAIC VIRUS (CMV) AND TOMATO MOSAIC VIRUS (ToMV)

Why is it in the news?

Recently, the farmers in Maharashtra and Karnataka have mentioned two mosaic viruses namely CMV and ToMV for the loss of tomato crops.



(The foliage of plants infected with ToMV shows alternating yellowish and dark green areas, which often appear as blisters on the leaves)

Tomato mosaic virus (ToMV)

- I) It belongs to the **Virgaviridae family** and is closely related to the tobacco mosaic virus (TMV). ToMV was first reported in the United States in 1909.
- II) It hosts on tomato, tobacco, peppers, and certain ornamental plants.
- III) ToMV spreads mainly through infected seeds, saplings, agricultural tools and often, through the hands of nursery workers who have failed to sanitize themselves properly.
- IV) It causes foliage of plants to show alternating yellowish and dark green areas, which often appear as blisters on the leaves. It also causes distortion of leaves and twisting of younger leaves.
- V) The fruit develops necrotic spots, which leads to overripening. Younger plants are dwarfed, and fruit setting is affected.

Cucumber Mosaic Virus (CMV)

- I) It belongs to the **Bromoviridae family** and was identified in cucumbers in 1934.
- II) It hosts on cucumber, melon, eggplant, tomato, carrot, lettuce, celery, cucurbits (members of the gourd family, including squash, pumpkin, zucchini, some gourds, etc.), and some ornamentals.
- III) CMV spreads through aphids, which are sap-sucking insects. CMV too can spread through human touch, but the chances of that are extremely low.
- IV) Conditions of high temperature followed by intermittent rain, which allow aphids to multiply, are conducive to the spread of CMV.
- V) CMV too causes distortion of leaves, but the pattern is different. Often leaves at the top and bottom are distorted while those in the middle remain relatively blemish-free. While specific effects vary depending on the host, overall, CMV



causes stunting and lower production.

- VI) In cucumber, the virus causes a mosaic-like pattern of alternating yellow and green spots. In tomatoes, fruit formation is affected, and in some cases the fruit is distorted and small.

Prevention

- I) Following biosafety standards in nurseries, and compulsory seed treatment to stop the spread of ToMV.
- II) Fields must be cleared of weeds and plant material before fresh planting as ToMV can remain dormant in weeds and plant remains around the field, and come back later.
- III) To control CMV the best way is to stop the aphids, by spraying quick acting insecticides or mineral oils on the plants.

DIAMOND LEAGUE

Why is it in the news?

Recently, Neeraj Chopra won gold in the javelin throw at the **Diamond League in Lausanne (a city on Lake Geneva, in Switzerland)**. This was his second consecutive Diamond League win in this season following the win at Doha in May 2023.

About the Diamond League

- I) The Diamond League is an annual series of elite track and field competitions.
- II) It was started in 2010 as a replacement for the previous IAAF Golden League and IAAF World Athletics Final events.
- III) The Diamond League is organised by World Athletics (formerly IAAF or International Association of Athletics Federations), the international governing body for athletics.
- IV) The 14th edition of the Diamond League began in May 2023 in Doha, the capital of Qatar. The fif-

teen meetings in this edition are scheduled at various cities across the world. The finals will be held in September 2023 in Eugene, United States.

About Neeraj Chopra

- I) Neeraj Chopra is an **Indian track and field athlete in the javelin throw** from Haryana.
- II) At 2020/21 Tokyo Olympics, he won the gold in Javelin Throw, becoming the first Indian to win a gold medal in track and field and the second Indian to win an individual Olympic gold after Abhinav Bindra (in shooting).

SPECIAL OLYMPICS WORLD GAMES

Why is it in the news?

- I) India ended their **Special Olympics World Games** campaign with a whopping 202 medals.
- II) India secured 76 gold, 75 silver and 51 bronze medals in the global multi-sport spectacle that celebrates unity, diversity and special skills among people with intellectual disabilities.

About Special Olympics World Games

- I) It was founded in 1968.
- II) The mission of Special Olympics is to provide year-round sports training and athletic competition in a variety of Olympic-type sports for children and adults with intellectual disabilities, giving them continuing opportunities to develop physical fitness, demonstrate courage, experience joy and participate in a sharing of gifts, skills and friendship with their families, other Special Olympics athletes and the community.
- III) The Special Olympics strives to create a better world by fostering the acceptance and inclusion of all people.



What is its importance?

It offers the opportunity to unite the world like no other event can. Here people with and without disabilities, people of different nations, cultures, political views and religions meet and can overcome existing prejudices with the power of sport.

How are the Paralympic Games different from the Special Olympics?

- I) The Special Olympics is solely for athletes with intellectual disabilities. The Paralympics focus more on physical disabilities.
- II) The Olympics and Paralympics are about elite competition and specialization, and the athletes compete in Olympic and Paralympic Games only once every four years in their sport. In contrast, the Special Olympics provides sporting opportunities throughout the year and across the world.
- III) In Special Olympics competitions, it's a fundamental rule that athletes in competitions are matched up with others of the same competitive ability.
- IV) The Paralympics are run by the **International Paralympic Committee (IPC)** and the Special Olympics are run by **Special Olympics International (SOI)**.

THE ROW OVER AWARDING GITA PRESS THE GANDHI PEACE PRIZE

Why is it in the news?

- I) The ruling BJP and the opposition Congress have locked horns over the decision to award the **Gandhi Peace Prize 2021 to Gita Press in Gorakhpur, the world's largest publisher of Hindu religious texts**. This decision was announced on

June 18, 2023, on the occasion of **Mahatma Gandhi's 125th birth anniversary**.

- II) The prize was awarded to Gita Press for its '**outstanding contribution towards social, economic and political transformation through non-violent and other Gandhian methods**'.
- III) Prime Minister Narendra Modi, who heads the jury for the prize, observed that conferring the prestigious award on the press house as it completed 100 years since its establishment, is a recognition of its work in community service. The prize recognises the contribution of Gita Press to the '**collective upliftment of humanity, which personifies Gandhian living in true sense**'.
- IV) Following the announcement, Congress called the decision a travesty, likening Gita Press to Nathuram Godse or Vinayak Damodar Savarkar, triggering a war of words.

What is the Gandhi Peace Prize?

- I) Instituted in 1995, the Gandhi Peace Prize is awarded for **social, economic and political transformation through non-violence, to any deserving person/s or institution/s**. The award comprises of a citation and an amount of Rs 1 crore and is open to all persons regardless of nationality, race, language, caste, creed or gender and any association, institution or organisation. The awardee is selected by a **five-member jury comprising of the Prime Minister, Chief Justice of India, Leader of Opposition and two eminent personalities**.
- II) Nominees must be proposed either by former jury members, former awardees, members of Parliament, Nobel laureates for the last five years, Secretary-General of the United Nations or heads of other international peace organisations, Vice-Chancellors of universities, Chief Ministers, or



Governors. Work achieved within the ten years preceding the nomination is considered for the award. The decision of the jury is final and cannot be challenged or appealed.

- III) Previous recipients include eminent personalities such as **Nelson Mandela (2000), Coretta Scott King (2004), Qaboos bin Said Al Said (2019) and Sheikh Mujibur Rahman (2020), Several institutions such as Indian Space Research Organisation (2014), Akshaya Patra Foundation (2016) and Ekal Abhiyan Trust (2017) too have been awardees.**

What does Gita Press do?

- I) Founded in 1923, **Gita Press is a unit of Gobind Bhawan Karyalaya, Kolkata, registered under the West Bengal Societies Act, 1960.**

The press — **one of the world's largest publishers** — is most famous for publishing the **Hindu text Srimad Bhagwat Gita**. As of date, the institution has published 41.7 crore books in 14 languages, including 16.21 crore copies of the Gita. The institution's main objective is to promote and spread the principles of Hinduism via publication of religious texts, marketed at subsidised rates.

- II) Apart from the Gita, the press has over 3500 archived manuscripts, including the Ramayana, Upanishads, Puranas, discourses of eminent Saints and other books & magazines.

Its most prominent publication is **Kalyan (welfare) – a monthly magazine being published since 1927**. With over 2.5 lakh subscribers, the magazine carries articles by old and contemporary, eminent Indian saints and scholars apart from special columns like “Read, Understand and Do” and “To Think About.”

- III) The institution was founded by **Hanuman Prasad**

Poddar and Jay Dalal Goyandka. As per its website, the institution neither solicits donations nor accepts advertisements in its publications and any deficit in funds is met by services offered by its other departments. Apart from its main publishing house at Gorakhpur, Uttar Pradesh, Gita Press has branches in Kolkata and Rishikesh. Gita Press also **runs a Vedic school in Churu, Rajasthan and an Ayurveda medicine centre in Rishikesh.**

What have critics said about the Gita Press?

The book “**Gita Press and the Making of Hindu India**”, authored by senior journalist Akshaya Mukul, opined that the Gorakhpur-based press, under the garb of protection of Sanatan Hindu Dharma, was pursuing an agenda similar to the **Rashtriya Swayamsevak Sangh (RSS), the ideological parent of the Bharatiya Janata Party (BJP)**— to make India a Hindu state.

- I) In his 540-page book, he highlighted that early issues of the company's magazine Kalyan were aimed at more than disseminating religious texts. He claimed that the Gita Press was a political project, working closely with the Hindu Mahasabha, RSS, Jan Sangh, and the BJP.

- II) Echoing the views of the Hindu Mahasabha, Gita Press wrote about cow-protection and Hindu-Muslim issues as early as 1926. By 1947, the Gita Press was writing about an independent India as a Hindu India without Muslims, similar to that year's annual resolution of the Hindu Mahasabha.

- III) He added that Gita Press had famously opposed Mahatma Gandhi's support for temple entry for Dalits, but was not against its books being distributed among the Dalits. These religious books are cheap, but well-produced and are widely dis-



tributed in northern India, seeping deep within the core Hindi belt.

- IV) One of Gita Press' founders — Mr. Hanuman Prasad Poddar — was among those arrested after the assassination of the Mahatma and had also presided over a Town Hall in Banaras to welcome then RSS chief M. S. Golwalkar after he was released from jail in 1949.

GLOBAL LIVEABILITY INDEX 2023

Why is it in the news?

Recently, the **Global Liveability Index 2023** was published.

About Global Liveability Index 2023

- I) It was published by the **Economic Intelligence Unit (EIU) of the Economist**.
- II) The concept of liveability **assesses the best or worst living conditions of cities** based on 30 qualitative and quantitative factors across five broad categories of stability, healthcare, culture and environment, education, and infrastructure.
- III) It quantifies the challenges that might be presented to an individual's lifestyle in 173 cities worldwide.
- IV) Assessing liveability has a broad range of uses, from benchmarking perceptions of development levels to assigning a hardship allowance as part of expatriate relocation packages.

Major Findings

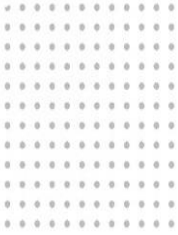
- I) The top rank of the liveable cities is dominated by European and North American cities. Asia-Pacific cities have made some of the biggest gains, accounting for eight of the top ten movers up the rankings as economies recover from the pandemic.

- # Vienna in Austria tops the ranking of the most liveable cities in the world followed by Copenhagen in Denmark, Melbourne, and Sydney on 3rd and 4th rank while Vancouver has been placed as the 5th best city on the liveability index.
 - # Among Asian countries, only Osaka in Japan features among the top 10 most liveable countries at number 9.
- II) Damascus (Syria) and Tripoli (Libya) are still at the bottom of the list, held back by social unrest, terrorism and conflict. However, while Damascus has seen no improvement since last year, scores for Tripoli and other cities in the bottom ten have improved as the pandemic has receded.

Key Analysis

- I) After the end of covid restrictions, the liveability index has shown a noticeable improvement across the world. The average index score among all 172 cities has now reached 76.2 out of 100.
- II) EIU's Liveability Index has risen significantly in the 2023 survey, reaching a 15-year high as the world moves on from the covid-19 pandemic and healthcare and education scores improve in many cities in Asia and the Middle East and Africa.
- III) However, scores for stability have slipped backward since last year, amid several instances of civil unrest around the world. The war in Ukraine and the resulting economic and political disruption are affecting liveability in many European cities.

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GROUP-II

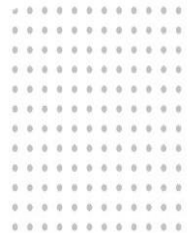
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