

# Lectures Bureau Monthly

## April 2023



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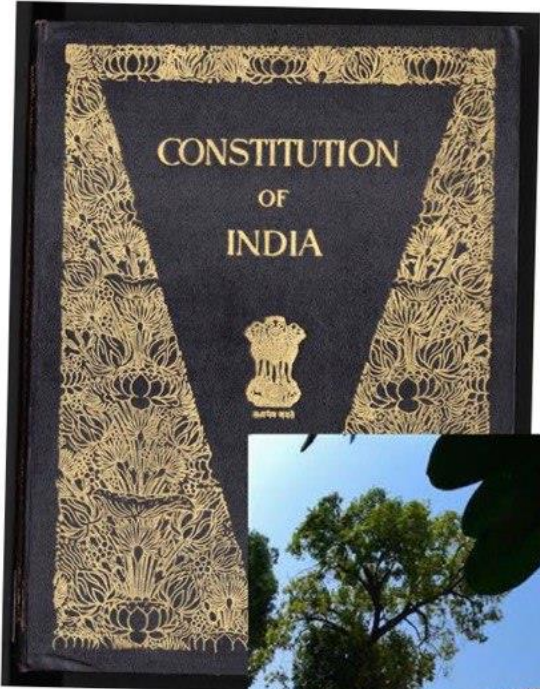
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# Polity and Governance

By Lectures Bureau



## Vacancies of judges remain high, cases pile up: India Justice Report

- Indian courts are jammed with cases and are seeing pendency increase by the day.
- At the same time they are also functioning with fewer judges than the sanctioned number, said the **India Justice Report (IJR), 2022**.
  - High Courts are functioning with only 778 judges as against sanctioned strength of 1108.
  - The subordinate courts were found functioning with 19,288 judges against a sanctioned strength of 24,631 judges.

### Rising pendency

- The number of cases pending per judge is rising in most States over the past five years.
- The sanctioned strength has remained more or less the same and the caseload per judge increased in 22 states and UT.
  - At High Court level, **Uttar Pradesh has the highest average pendency**; cases remain pending for an average of 11.34 years.
- **Case clearance rate (CCR)** - The number of cases disposed of in a year measured against the number filed in that year.
  - A common metric used to determine the rate at which cases are disposed of.
  - A CCR of more than 100% indicates that the number of pending cases is reducing.

### Report indicates

- The report found that the High Courts are clearing more cases annually than the subordinate courts.
- At the same period, **Tripura is the only State where the CCR in district courts remained above 100%** with exception during Pandemic.
- Nationally the number of court halls appears sufficient for the number of actual judges the IJR said.

## SC says critical views on govt. policies no anti-establishment

Lifting the **telecast ban on Malayalam channel Media One**, the Supreme Court rapped the government for silencing voices in the media who speak truth to power.

### Court's decision

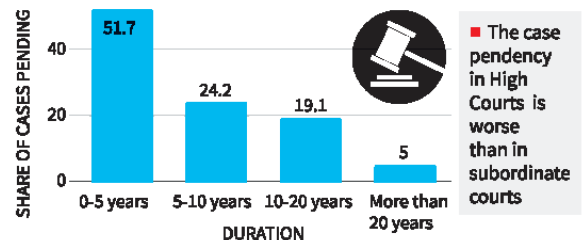
- The critical views about government policies cannot be termed anti-establishment and use of such a terminology betrays the Press.
- The Press has a duty to speak truth to power and present citizens with hard facts that will present grave dangers to democracy.
- The court ordered the government to renew telecast permission to the channel within four weeks.

### Background causes

- The less restrictive **Public interest immunity (PII)** claims proceedings as an alternative to the sealed cover proceedings while dealing with state requests for confidentiality.
- Under the alternative PII proceedings, the court would test the relevance of the material the state desires to be kept confidential in public interest.
- The court would appoint **amicus curiae** to balance the concerns of confidentiality with the need to preserve public confidence in the objectivity of the justice delivery.

### Piling up

The chart shows the share of cases pending in High Courts across various years. The share of cases pending for more than five years, across 25 High Courts in the country was 48.3%.



- Though the PII proceedings would be a closed sitting, a reasoned order allowing or dismissing the PII claim of the state should be pronounced in open court.
  - Even if the PII claim is successful, the court could opt to redact confidential portions of the document with summary of the contents of documents.

### **Intelligence reports' impact**

- The Chief Justice questioned the government's view that it could investigate or collect intelligence on citizens and later claim blanket immunity from disclosure in court.
- **Intelligence agencies reports impact the life, liberty and profession of individuals** and entities and to give such reports absolute immunity from disclosure is,
  - Antithetical to a transparent and accountable system of constitutional values.

### **The role of Parliamentary Committees**

*It is not far from the truth to say that Congress in session is Congress on public exhibition, whilst Congress in Committee rooms is Congress at work*

- Former President of US Woodrow Wilson

- Due to **sheer volume of information and scale of operations** that Indian Parliament is required to undertake, it is not feasible to take up all issues on the floor of the House.
- Thus, Parliamentary committees — panels made up of MPs are constituted to deal with such situations and take up sector-specific concerns.
- During the course of the 17th Lok Sabha, only 14 Bills have been referred for further examination so far.
- As per data from PRS, **25% of the Bills introduced were referred to committees** in the 16th Lok Sabha, as compared to 71% and 60% in 15th and 14th LS respectively.

### **Not what we think**

- Contrary to popular perception, looking into Bills is not the only purpose that committees serve.
- Their relevance, sheer magnitude of effort that goes into making Parliament a dynamic, functional space where members converge every few months and debate on matters of nation importance are underestimated.
- However, in these times of political rancour and polarisation, public proceedings of the House seem to reflect serious fault lines.

### **The evolution of committees**

- Even though a **structured committee system was established in 1993**, individual committees were being formed for various reasons as far back as independence.
- For instance, there are about **five of the many crucial committees of the Constituent Assembly** are to be mentioned.
  - The Ad Hoc Committee on the Citizenship Clause.
  - Northeast Frontier (Assam) Tribal and Excluded Areas Sub-Committee (July 28, 1947)
    - Covered the **Naga, Khasi, Garo, Jaintia and Mikhir Hills**.
  - Excluded and Partially Excluded Areas (Other than Assam) Sub-Committee (August 18, 1947).
    - Looked over **Munda's Minute of Dissent** with regard to scheduled areas in the Chhota Nagpur Plateau.
  - Expert Committee on Financial Provisions of the Union Constitution (December 5, 1947)



- Gave recommendations on Union and Province (State) tax collection, central excise duty, liquor revenue, divisible pool of income tax, etc.
- Advisory Committee on the Subject of Political Safeguards for Minorities (May 11, 1949),
  - Looked at the abolition of reservations for religious minorities.
- Today, both the Lok Sabha and the Rajya Sabha have their own Standing (permanent) Committees and Ad Hoc (need-based) Committees.
- There are also Joint Committees with representation from both Houses.

### The role of committees

- Committees go into the details of a specific piece of legislation, analyse the impact it may have on governance indicators and then make their recommendations.
- The **government is required to table an ‘Action Taken’ report** for the House to judge the progress made on the suggestions of the committee.
- Even though **committee reports aren’t binding on the government**, it helps the legislature ensure an oversight on the executive.
- For instance, during the recently concluded Budget Session, reports tabled on the Demand for Grants highlighted certain inconsistencies on the part of the government.
  - The **Committee on Rural Development & Panchayati Raj** in its report noted that the revised estimates always fell short of the budget estimates.
  - More importantly, the actual figures are also way less and it was able to spend only ₹701 crore out of the allocation of ₹905 crore.
  - Such objective assessments are only possible in the confines of a committee room, where partisan divides dissolve to make way for consensus.

### Current progress

- Perhaps the most salient work done by a committee in recent years is on the **Digital Data Protection Bill**.



- There are also **some other important laws have been referred to Committees such as**;
  - Prohibition of Child Marriage (Amendment) Bill that seeks to raise the legal marriageable age of women to 21,
  - The Anti-Maritime Piracy Bill that brings into enactment the UN Convention on the Law of the Sea for combating piracy in the high seas,
  - Jan Vishwas Bill that amends 42 laws across sectors like agriculture and media,
  - Wildlife Protection (Amendment) Bill that extends the scope of protected species,
  - the Competition (Amendment) Bill, the Electricity (Amendment) Bill, the Criminal Procedure (Identification) Bill
  - The Multi-State Cooperative Societies (Amendment) Bill.

## The road ahead

- In the U.S., committee's play a crucial role and Bills are referred to them post introduction for scrutiny and allows changes to be made and to go for voting.
- The Parliament could consider a compulsory referral, for the Bills that are tabled on the floor, to the appropriate committees.
- Arming them with **more powers** will help them **ensure accountability** from the executive instead of making them toothless tigers.
- It is essential for the **parliamentary ecosystem in India to institutionalise such procedures** and **not allow political considerations to hasten law-making**.

## SC asks if Mishra report can be used to decide on quota for Dalit converts

- **Justice Ranganath Mishra Commission report** of 2007 for Religious and Linguistic Minorities recommendation of Scheduled Caste reservation for,
  - Dalit converts to Christianity and Islam is not all that "perfunctory" and needs a re-check its stance said SC.
- This comes a few months after the **Centre discredited the report as "myopic"** and something prepared within the four walls of a room.
- The Centre recently constituted a new commission headed by former Chief Justice of India **K.G. Balakrishnan** giving it two years to prepare a report.
- Court asked whether its empirical data could be used to determine if,
  - **The exclusion of Dalit converts to Christianity and Islam from the Constitution (Scheduled Castes) Order, 1950 was discriminatory and unconstitutional.**

## Social stigma

- The government has argued that Dalits who converted to Christianity or Islam to overcome the burdens of caste cannot claim reservation benefits
  - Enjoyed by those who chose to stay back in the Hindu religious system.
- But some argue that **social stigma may still continue** to be attached to members of historically backward communities among Hindus who got converted.
- The court would look into the question of whether the caste system can be imported into Islam and Christianity.

## The rules for recognition as a national party

- Arvind Kejriwal-led **Aam Aadmi Party (AAP)** received the status of a national party by the poll body the Election Commission of India on April 10.
- Meanwhile, the Trinamool Congress (TMC), the Communist Party of India (CPI), and the Nationalist Congress Party (NCP) **lost their national party status**.

## Recognition of National Party

- The Election Commission reviews the poll performance of recognised parties after every State Assembly election or general election to the Lok Sabha.
- The rules for recognition as a national party are specified by the Commission in **para 6B of the Election Symbols (Reservation and Allotment) Order, 1968.**
- A party becomes eligible to be accorded national status if **it manages to fulfil one of the following conditions:**
  - (a) If it is recognised as a State party in at least four States
  - (b) If it secures 6% of the total votes polled in four States in last LS or Assembly elections and in addition gets four of its members elected to LS.
  - (c) If it wins 2% of seats in the Lok Sabha from at least three States.

- Besides this, the **Symbols Order of 1968** was amended in 2016 to give parties one additional “pass over”.
  - As per this amendment, if a national or State party fails to fulfil the eligibility criteria in the next general or assembly elections after receiving recognition,
  - It will continue to be recognised as a national or State party and not be stripped of its status.
  - However, whether it will continue to be recognised after any subsequent election would again have to be determined by the eligibility criteria.

### **Current scenario**

- The AAP gained national status as it was recognised as a **State party in four States Delhi, Punjab, Goa, and Gujarat**.
- The **Trinamool Congress**, which lost its national status, had gained it in 2016 by virtue of the “pass over” amendment to the Symbols Act.
  - It was a State party in West Bengal, Tripura, and Manipur but it did not meet eligibility conditions to remain a State party in Arunachal Pradesh in 2014 General and State elections.
- Meanwhile, the **NCP lost its recognition** in three States- Goa, Manipur, and Meghalaya where it did not secure enough assembly votes between 2017 and 2018.
  - It is currently a State party in only two States Maharashtra and Nagaland.
- The **CPI** with national status from 1989 also retained its status despite its performance in the 2014 Lok Sabha election, courtesy the amendment to the Symbols Act.

### **What are the criteria to be recognised as a State party?**

- For recognition as a State party, it has to **secure at least 6% of the valid votes** polled and **two seats in Assembly polls or one in Lok Sabha polls**.
- There are three other alternatives for eligibility:
  - (a) at General Elections or Legislative Assembly elections, the party has to win 3% of seats in the legislative assembly of the State (minimum of 3 seats),
  - (b) at a Lok Sabha General Elections, the party has to win one Lok Sabha seat for every 25 Lok Sabha seats allotted for the State,
  - (c) at a General Election to the Lok Sabha or the Legislative Assembly, the party has to poll 8% of votes in a State.
- ECI also revoked State party status granted to Rashtriya Lok Dal in Uttar Pradesh, Bharat Rashtra Samithi in Andhra Pradesh and such others.
- The **Tipra Motha** in Tripura, **Lok Janshakti Party** in Nagaland and **Voice of the People Party** in Meghalaya were granted recognised **State political party status**.

### **Benefits of recognition as national and State parties**

- A **recognised political party enjoys privileges such as**;
  - a reserved party symbol,
  - free broadcast time on State-run television and radio,
  - consultation in the setting of election dates,
  - Giving input in setting electoral rules and regulations.
- For **registered but unrecognised political parties** election symbols are allocated by the Returning Officers after the last date for withdrawal of candidature as per availability.

### **A reminder about unfettered constitutional posts**

- Two recent comments of the Supreme Court of India will have direct bearing on the concept of the independence of various constitutional authorities in India.



- In the *Sena versus Sena* case, the Court expressed its serious concern over the active role being played by Governors in State politics.
- Then the court divested the executive of its sole discretion of taking steps to ensure independence of EC of India and its appointment procedures.

### Need for independent institutions

- A democracy requires a system of checks and balances to prevent the arbitrary use of power by the elected government of the day.
- The Constituent Assembly of India had recognised the need for such independent institutions to regulate sectors of national importance without any executive interference.
  - For example we have various constitutional authorities such as Public Service Commission, CAG, ECI, Finance Commission, NCSC/ST/BC etc.
- It is also necessary that such bodies are provided with complete independence to enable them to function without fear or favour and in larger interests of the nation.
- An essential attribute of independence is about not being influenced by any vested interest and the ability to withstand pressure from the executive.

### Notable examples from Constitution

- While empowering the President of India to appoint all constitutional authorities, the Constitution-makers had kept in mind that independence is of paramount importance.
- The Constitution-makers have used simple words such as 'shall be appointed by the President' in the appointment of the Prime Minister (Article 75),
  - Attorney-General for India (Article 76), Chairman and members of Finance Commission (A 280), Public Service Commission (A 316).
  - A 324 provides that president will appoint the CEC and EC's subject to any law made in that behalf by Parliament.
  - However, the words 'shall be' 'under his hand and seal' are used while authorising the President for appointment of judges of SC and HC(A124 & 217)
- In *N. Gopalaswami and Ors vs The Union of India*, SC held that the President acts on the aid and advice of the Council of Ministers,
  - With the Prime Minister as the head in all matters which vests in the executive.
- However, in cases where the appointment of a particular constitutional authority is to be kept independent of the executive,
  - The question arises whether such an interpretation would be in line with the thinking which prevailed during the relevant Constituent Assembly debates.

### Unrestricted and unfettered choice

- In the draft Constitution, the article for appointment of the CAG assembly made it essential that the words 'by warrant under his hand and seal' to be introduced.
- **Auditor-General**- Constituent Assembly discussed that the Auditor-General should be always independent of either the legislature or the executive.
  - He is the watch-dog of our finances; his position must be made so strong that he cannot be influenced by anyone, howsoever great he may be.
- For appointments to be made by the President, the Constitution provides for certain conditions to be fulfilled by those who may be considered for such appointments.
- In these articles, the words used are 'To be appointed by the President' and President must act on advice of the Prime Minister after ensuring that the requisite qualifications are fulfilled.

## A special status

- It is pertinent to keep in mind that the Constitution affixes the phrase “by warrant under his hand and seal” only to refer to appointment to positions.
- Constitutional authorities such as the Judges of the SC, HC and CAG of India are to be kept free from political or executive pressure.
- Whereas appointment of judges and ECs has been made free from the influence of the executive, explains the intention of Constitution makers.

## Chhattisgarh CM writes to PM seeking inclusion of higher quota Bills in 9<sup>th</sup> Schedule

Chhattisgarh CM Bhupesh Baghel wrote to PM seeking the inclusion of two amendment Bills allowing for higher quota in jobs and educational institutions in 9<sup>th</sup> Schedule.

## Ninth Schedule and inclusions

- The Ninth Schedule includes a list of Central and State laws which cannot be challenged in courts.
- In Chhattisgarh’s case, the two amendment Bills that pave the way for a 76% quota for SC, ST and OBC were passed unanimously by the Assembly and not by Governor.
- With special circumstances, it is only by including the amended provision in Ninth Schedule of Constitution; people of the deprived and backward classes will be able to get justice.

## High Court ruling

- The Chhattisgarh HC struck down a 2013 State government order to allow a 58% quota holding that reservation above the 50% ceiling was unconstitutional,
  - followed by the passage of Chhattisgarh Public Service (Scheduled Castes, Scheduled Tribes and Other Backward Classes Reservation) Amendment Bill
  - And the Chhattisgarh Educational Institutions (Reservation in admission) Amendment Bill.

## Nagaland’s municipal tightrope

The Neiphiu Rio-led Nagaland govt preferred to be in contempt of SC than face the wrath of community-based organisations by repealing the Nagaland Municipal Act of 2001.

## Background issue

- This led to the cancellation of State Election Commission’s notification for holding elections to Nagaland’s 39 urban local bodies (ULBs)
  - With 33% of the seats reserved for women.
- The apex court has stayed the notification cancelling the civic body polls and it was in this year Nagaland elected two women in recent Assembly elections.

## Reason for opposition to ULB polls

- Nagaland is arguably the only State where ULB seats are not reserved for women as mandated by clause IV of the 74th Amendment to the Constitution of India.
- Most of the traditional tribal and urban organisations oppose the 33% reservation of seats for women as they argue that such reservation would violate
  - The special provisions granted by Article 371A of the Constitution to Nagaland.
- A 371A- no Act of Parliament would apply to the religious or social practices of Nagas, Naga customary law and procedures,
  - Administration of civil and criminal justice involving decisions according to Naga customary law, and ownership and transfer of land and its resources.
  - The hohos (apex tribal bodies) point out that women have traditionally not been part of decision-making bodies.

## Civil polls in Nagaland

- The first and only civic body election in Nagaland was held in 2004 without any reservation of seats for women.
- The State government amended the 2001 Municipal Act in 2006 to include 33% reservation for women in line with the 74th Amendment.
- This triggered widespread opposition forcing the government to indefinitely postpone the ULB polls in 2009.
- In 2012 State Assembly passed a resolution to exempt Nagaland from Article 243T of the Constitution which is related to the reservation for women.
  - This resolution was revoked in November 2016 and elections to the civic bodies with 33% reservation were notified later.
  - But it led to widespread mayhem with large-scale violence and arson and government made the election process null and void.

## Way forward

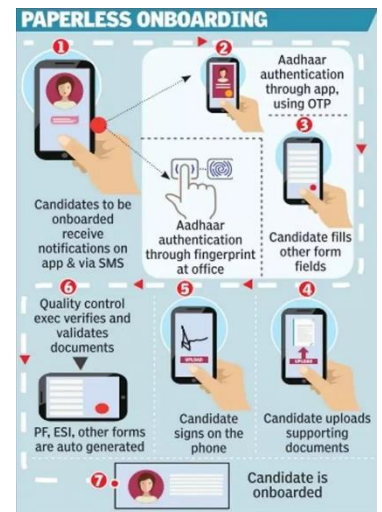
- The groups against reservation for women want a guarantee that the 33% quota would not violate the provisions of Article 371A.
- They suggested that the duration of reservation should be capped at two tenures and demanded that the post of chairperson should not be reserved for women.
- The Naga Mothers' Association (NMA) said that State government erred in not listening to or consulting with women's organisations before taking the decision.
- Supreme Court pulled up Nagaland government for adopting an ingenious method of repealing the Act to evade the undertaking given to court for holding the polls.

## Aadhaar authentication for private use proposed

A draft notification proposing the use of "voluntary" Aadhaar authentication by non-government entities was released.

## Aadhaar Authentication for Good Governance

- The draft Aadhaar Authentication for Good Governance (Social Welfare, Innovation, Knowledge) Amendment Rules, 2023 would allow
  - Aadhaar authentication for promoting ease of living for residents and enabling better access to services.
- The existing 2020 Aadhaar Authentication for Good Governance Rules already allows the government departments to undertake Aadhaar authentication.
- Voluntary private sector-led authentication would be helpful in the hospitality sector, where ID requirements when checking into hotels could be done through Aadhaar.



## T.N. not joining NPS resulted in avoidable expenditure of ₹1,296.61 crore, says CAG

### CAG report

- By not joining the National Pension Scheme and designating a fund manager in accordance with the Pension Fund Regulatory and Development Authority Act,
  - Tamil Nadu government has incurred an avoidable additional expenditure of ₹1,296.61 crore since 2020-21.
  - Said according to the State Finances Audit Report of the Comptroller and Auditor General (CAG) for the last year.

- This avoidable excess burden had been mounting year after year, thus impacting the State's revenue expenditure and fiscal prudence.

### **Defined Contributory Pension Scheme (DCPS)**

- Tamil Nadu government launched this scheme for its employees on April 1, 2003 for all new entrants joining State government service on or after 2003.
- Under this system, employees contribute 10% basic pay and dearness allowance which is matched by the State government and both
  - The employer's and employee's contribution are initially transferred to the public account under the head Defined Contributory Pension Scheme (DCPS).
- DCPS accounts of individual government employees are maintained by the Government Data Centre (GDC).
- Every year, GDC calculates the interest due at the notified rates and credits the interest into the DCPS accounts of the employees.

### **Why were political parties not informed about defective VVPATs, demands Congress**

- The Congress slammed the Election Commission (EC) for not keeping political parties in loop as reports emerge that,
  - The EC has identified 6.5 lakh Voter Verifiable Paper Audit Trail (VVPAT) machines as defective.
- The number of machines in which defects had been found was more than one-third the number used in the 2019 Lok Sabha election.
- This might have affected the voters both in the last general election and the subsequent Assembly polls and affected the standard operating procedures.

### **Easternmost district gets PM excellence award**

- Changlang in Arunachal Pradesh, India's easternmost district received the Prime Minister's Award for Excellence in Public Administration.
- It received the award for its innovative New Age Learning Centre (NALC) in the category of innovation.
- NALC is a flexible, futuristic, leisure learning space-cum-library set up to enable people from all the age groups to learn and improve every aspect of their personality.

### **None too soon**

SC has given a reminder to Governors that Constitution expects that a decision to return a Bill to the State Assembly for reconsideration should be made as soon as possible.

### **News behind**

- Article 200 dealing with Governor to convey a sense of immediacy in the matter of returning a Bill.
  - The expression 'as soon as possible' contains significant constitutional content and must be borne in mind by constitutional authorities.
- This effectively means it would be constitutionally impermissible for Governors to hold on to Bills indefinitely without communicating their decision to the House.
- The Telangana Governor against whose apparent inaction on several Bills the State had approached the Court,
  - Communicated to Court that no Bills were pending with her and had returned two Bills for reconsideration while seeking further information from the government on a few others.



- The issue of granting assent is seen in most parliamentary democracies as a formality, but the peculiar discretionary powers with which,
  - Governors are clothed in India have given much scope for controversy.
  - The Governor's power to withhold assent or return a Bill, with a message, for reconsideration is **seen as discretionary**.
- In the Constituent Assembly, it was explicitly clarified that returning a Bill was to be done only on advice, and that it was an enabling provision for a government to recall a pending Bill in case it had second thoughts on its advisability.

### **Problems associated**

- There are **three clear problems associated with Article 200**, which deals with assent to Bills: the absence of a time limit for acting on Bills,
  - the scope for reserving a Bill for the President's consideration against the express advice of the Cabinet and
  - the claim that the Governor can kill any Bill by declining assent.
- **Article 163** hedges the primary rule that the **Governors function on the 'aid and advice' of the Cabinet**,
  - with a clause that prohibits any inquiry into whether a particular matter fell within their discretion or not.
- There is no doubt that these ought to be changed either by amending the Constitution or through an appropriate Supreme Court verdict.

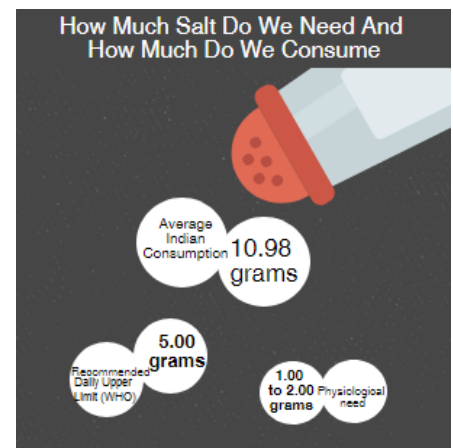
# Society and Social Issues

By Lectures Bureau



## Why India should cut down on its salt intake

- The seemingly innocuous act of consuming salt can have dangerous repercussions like hypertension, heart disease and stroke when taken in excess.
- An average Indian's sodium consumption is more than double the physiological need and exceeds WHO's recommended **daily intake of <5 g of salt for adults**.
- The WHO recently published the '**Global Report on Sodium Intake Reduction**' that tells the progress toward reducing population sodium intake by 30% by 2025.



## India's progress

- India has enacted voluntary measures to decrease sodium in food supply and promote healthier food choices.
- India scored 2 out of 4 scores measured by the WHO on the implementation factors for sodium reduction.

## Reducing sodium intake

- **First, correlation between reduced sodium intake and decreased blood pressure.**
  - Lowering sodium intake by 1 gram per day (2.5 grams of salt) leads to a 5 mm Hg reduction in systolic blood pressure (BP) for individuals aged 55.
  - And causes 22% decrease in stroke incidence and a 16% decrease in myocardial infarction incidence.
- Second, elevated BP is a **critical risk factor for cardiovascular disease** the foremost cause of mortality worldwide.
- Third, the **economic impact of cardiovascular disease** on low- and middle-income countries (LMICs) is estimated at \$3.7 trillion between 2011 and 2025.
  - World Economic Forum projects that the Indian economy alone faces losses of \$2 trillion between 2012 and 2030 as a consequence of cardiovascular disease.

## India's scenario

Cardiovascular disease and hypertension pose significant challenges in India, primarily due to four reasons.

- As per data from Registrar General of India, WHO and Global Burden of Disease Study **cardiovascular diseases is the primary cause of mortality and morbidity.**
  - In the last 25 years, the age-adjusted cardiovascular disease mortality rate has risen by 31%.
  - Hypertension has been identified as the leading risk factor for such diseases in India.
- Data from National Family Health Survey-5 reveals that **hypertension** is more prevalent among men aged 15 and above compared to women in the same age group.
  - Hypertension is more common in southern States particularly Kerala, while Punjab and Uttarakhand in the north also report high incidence rates.
- The **pre-hypertensive population** defined by systolic blood pressure levels of 120-139 mmHg or diastolic blood pressure levels of 80-89 mmHg, warrants attention.
  - At the national level, 38.5% of women and 49.2% of men are pre-hypertensive, with a higher prevalence in the northern States.
- A 2020 Report shows that **circulatory system diseases account for 32.1% of all documented deaths** with hypertension being a major risk factor.

## Government initiatives

- Evidence shows an average daily consumption of approximately 11 grams and India needs a comprehensive national strategy to curb salt consumption.
- The Food Safety and Standards Authority of India (FSSAI) has implemented the 'Eat Right India' movement,
  - That strives to transform the nation's food system to ensure secure, healthy, and sustainable nutrition for all citizens.
- FSSAI also launched a social media campaign called 'Aaj Se Thoda Kam.'

## CDC flags concern on eye-drops from India

The national public health agency United States' Centres for Disease Control and Prevention has expressed that;

- A drug-resistant bacteria strain allegedly linked to eye-drops from India could gain a foothold in U.S. healthcare settings.

## Health warning

- The eye-drops were manufactured by the Chennai-based Global Pharma Healthcare and distributed in the U.S. market by the EzriCare and Delsam Pharma.
  - Now it has been recalled the eye drops owing to the infection and allergy of causes on usage.
- The CDC has cautioned that patients should stop using the eye-drops pending information and guidance from CDC and U.S. Food and Drug Administration.

## In controlled digital lending, the issue of public interest

An ongoing legal tussle in United States between four major publishers and the Internet Archive (IA), poses fundamental question about copyright law and technology.

## Internet Archives (IA)

- A not-for-profit organisation is trying to build a globally accessible digital library.
- It has archived more than 735 B web pages, 41M books and texts, 14.7M audio recordings, 8.4 M videos, 4.4 M images, and 890,000 software programs.
- Within a short span of time, the IA has become a truly global digital library to access information particularly for persons with disabilities.
- A substantial portion of the books digitised by IA are outside copyright protection and are accessible without restrictions.

## The issue

- Publishers have alleged that around 3.6 million books, which have also been available to borrow under some conditions, are actually copyrighted.
  - Particularly upset by National Emergency Library that the IA set up during COVID-19 pandemic, wherein the IA relaxed the conditions for lending.
- The publishers have argued that the IA violated the diverse rights provided under copyright law for 127 titles published by them.
- The IA rebutted that books under copyright protection are lent only in a regulated manner, through 'Controlled Digital Lending' (CDL).

## Understanding Controlled Digital Lending

- The IA's CDL model follows the lending approach generally seen in physical libraries, where if one copy is owned that copy can be loaned to one person at a time.
  - So, IA avails one digital copy of each non-circulating print book it has stored.
- Also, irrespective of the number of physical copies of that book that libraries participating own it counts as only one additional copy per library.



- For example, if libraries of the AIIMS, IISc and NLSIU were partners in the IA's digitisation project;
  - And each of these institutions had six physical copies of a particular book on health law,
  - The CDL model would ensure that readers could borrow no more than three copies of that book at a time.

### CDL and the public interest

- Conversations with librarians indicate that lending physical copies of books from libraries, including at India's leading universities in India, has been on the decline.
- But that does not mean the demand for reading books is going down so much but it is such that people prefer to read on their smartphones or tablets.
- The CDL is a positive response to this trend;
  - It also helps bridge the gap between urban and rural and the privileged and unprivileged, reader's *vis-à-vis* access to books.
  - Because it allows even people in the remotest villages to access books from libraries that are far away.
  - CDL initiatives ease access to many books that may have gone out of print or may not be available to access in many physical libraries.
  - It invokes enormous public benefits for education, research, and cultural participation.
- However, the court concluded that the public benefits highlighted by the IA "cannot outweigh the market harm to the publishers".
- When the IA was engaging in CDL, the sales of print and electronic copies of these titles from the publisher's preferred platforms were not affected said IA.

### India and CDL

- Though India is yet to have a major CDL initiative, some universities such as the NLSIU have initiated major digitisation projects that can facilitate CDL in future.
- In addition, current lending practices in physical libraries could be threatened and it is high time to remind the rights of the users of copyrighted works and public interest.

### Gehlot's poll prescription

- In India's government hospitals, where the wards are overcrowded and people are unlettered and overwhelmed especially the poor village people;
  - The Rajasthan Right to Health Bill is a boon that will ensure free of cost treatment and will reimburse the private hospital with certain conditions.

### Record statistics

- As per the National Crime Records Bureau data, over 10,000 people died in road accidents in the State in 2021 and those who survived are saddled with debts.
- ~55 million Indians were pushed into poverty in a single year due to healthcare costs.
- The RTH Bill focuses on access to healthcare, and guarantees several rights to patients, including privacy, dignity and control over their health records,
  - But what triggered the 16-day strike by doctors was the attempt to bring private healthcare enterprises into the circle.
  - Private sector doctors alleged there was no clarity on what is emergency and which hospitals could be drafted for the operation of the law.
- CM Ashok Gehlot's government bought peace with the striking doctors by removing hospitals and clinics with less than 50 beds out of the RTH ambit, initially.

- It has now been given to establishments that have not taken any kind of government subsidy.



### Rajasthan's scheme interventions

- Rajasthan has a primary healthcare centre (PHC) every 10 km (except in the desert districts like Churu).
- There are 151 beds available for a population of one lakh and 12 community health centres for a 10 lakh population,
  - But specialised care is available at a distance of 50 km to 80 km.
- Already existing Mukhya Mantri Chiranjeevi Swasthya Bima Yojana, the universal health coverage scheme, 1.39 crore families have been insured for ₹25 lakh.
- Facilities run in the public-private-partnership (PPP) mode charge ₹700 which is possibly closer to what government will reimburse private hospitals under this Bill.
- It is better for the government to improve its own institutions rather than rooting the private institutions and hospitals.

### Politics and positions

- RTH was a part of the Congress's manifesto in the 2018 Assembly election.
- It was important considering out-of-pocket spending accounted for 44.9% of Rajasthan's total health expenditure as per the National Health Accounts 2018-2019.
  - That's lower than Uttar Pradesh's 71.3% expenditure, but higher than Karnataka's 33.3%.
- The Chiranjeevi scheme launched in 2021 covers 88% of the State's population, according to the National Family Health Survey 2019-21.
  - The health allocation was 7% of the State budget in 2022-23, now it rose to 7.4% one of the highest among States.

### Hope and life

- The Bill will be particularly beneficial to those with chronic conditions that require regular medications and tests.
- It will ensure that patients are able to access treatments and monitoring without financial burden.
- It also proposes that private healthcare providers provide free treatment to eligible patients under various government schemes.

### 85 Trains cancelled as protests by Kudmi community continue

The protest by the Kudmi community for ST status continues as different organisations of the community block railways and roads in West Bengal's Paschim Medinipur district.

### Committee formed for rethink on NPS for govt. employees

- The Finance Ministry notified the formation of a committee to review the pension system for government employees in relation to amendments of Finance Bill of 2023.

- While some states announced a switchover for employees covered by **NPS to Old Pension Scheme** that assured 50% of last drawn salaries as pension.
- The four-member committee will be led by T.V. Somanathan (Finance Secretary) and will include chairman of **Pension Fund Regulatory and Dev Authority (PFRDA)**.
  - The NPS offers no guaranteed pension.

### **MHA to provide financial assistance to prison inmates**

- The Ministry of Home Affairs (MHA) would provide States with financial support to **help underprivileged prisoners** who are
  - Unable to get bail or secure release from prisons **due to financial hardship**.
- According to **Prisons Statistics of India Report, 2021** over 5.54 lakh people were lodged in prison against the capacity of 4.25 lakh, an occupancy rate of 130%.

### **Support for Poor Prisoners**

- The scheme envisages financial support to poor persons who are in prisons and unable to afford the penalty or the bail amount.
- It will enable majority of who belong to socially disadvantaged or marginalised groups with lower education and income levels to get out of prison.
- To further strengthen the process ministry has included;
  - **Technology-driven solutions** will be put in place to ensure that benefits reach the poor prisoners
  - Reinforcing the **e-prisons platform**
  - Strengthening of **District Legal Services Authority**
  - Sensitisation and capacity building of stakeholders to ensure that quality legal aid is made available to needy poor prisoners, etc.

### **Credit system will integrate general and vocational education**

- The **National Credit Framework (NCrF)** would function as a broad framework for all regulatory organisations and universities including institutions of national importance.
  - It is a meta-framework to seamlessly integrate the credits earned through school education, higher education and vocational and skill education.
- University Grants Commission said **institutions would be free to notify their detailed implementation guidelines** with flexibility for catering to their academic requirements.

### **NEP and changing system**

- National Education Policy (NEP) put emphasis on the **integration of general academic education and vocational and skill education**.
- This would provide seamless horizontal and vertical mobility between the two streams for lifelong learning.
  - Under the system, one credit corresponds to 30 notional learning hours in a year of two semesters.
  - Every semester, a student is required to earn a minimum of 20 credits.
  - A student earns 40 credits in one year corresponding to 1,200 notional learning hours. But students can also earn more than 40 credits in a year.
  - The credits earned by a student during the entire schooling period will be 160 credits and higher education level starts from level 4.5 to 8.
  - A three-year degree will have levels 4.5, 5 and 5.5 corresponding to the first year, second year and third year.

## Northeast gets its first AIIMS, slew of projects

- PM Modi inaugurated the first All India Institute of Medical Sciences (AIIMS) in the Northeast at Changsari near Guwahati.
- It was laid the foundation stone in 2017. The super speciality hospital has a capacity of 750 beds including 30 AYUSH beds and will admit 100 MBBS students annually.
- Among the projects is the Assam Advanced Healthcare Innovation Institute (AAHII) within the Indian Institute of Technology, Guwahati complex.
  - This will be a research and innovation centre in the area of medical sciences with 500 bed connected multispecialty hospital.

## AIIMS

- A Group of autonomous government public medical universities of higher education under the jurisdiction of Ministry of Health and Family Welfare.
- These institutes have been declared by an act of parliament as Institutes of National Importance.
- AIIMS, Delhi established in 1956 is the forerunner institute and considered as pioneer health institution of South Asia.

## Top-notch toilets to usher in change

A quarter of all new public restrooms in Indian cities will soon have high-end features

- such as luxurious bath cubicles, touchless flushing, breast-feeding rooms and automatic sanitary napkin incinerators.

## Aspirational toilets

- These will be indicated as “aspirational toilets” on Google Maps and directed 25% of public toilet seats added in any city or urban unit are aspirational toilets.
- The high-end public conveniences may also have following;
  - Attached libraries, cafes and shopping complexes to help raise funds for their maintenance and upkeep.
  - The focus areas to construct these luxury restrooms will be tourist and religious destinations as well as iconic cities.
  - Places with a high footfall - markets, railway stations, inter-State bus depots and National Highways will be given preference.
- The idea is to ensure the presence of such conveniences in places where people are likely to spend over three hours at a stretch.
- Guidelines have been issued to the States to include stain-free, graffiti-free bathrooms, green patchery around them, vending machines for sanitary napkins, etc.
  - An SMS-based feedback mechanism for users must also be put in place.

## Exploring business models

- The Ministry has decided to engage start-ups that can build such toilets across the country and so far 75 companies have been shortlisted.
- A team of experts from the Indian Institute of Technology, Kanpur has been entrusted with the task of screening and evaluating the proposals of these start-ups.
- The aspirational toilets scheme was launched in September 2022 as part of the Swachh Bharat Mission (SBM) 2.0, with an aim to help make cities open defecation free.
  - As of now for SBM 2.0, 2.5 times more money have been allotted to the first phase of mission launched in 2014.

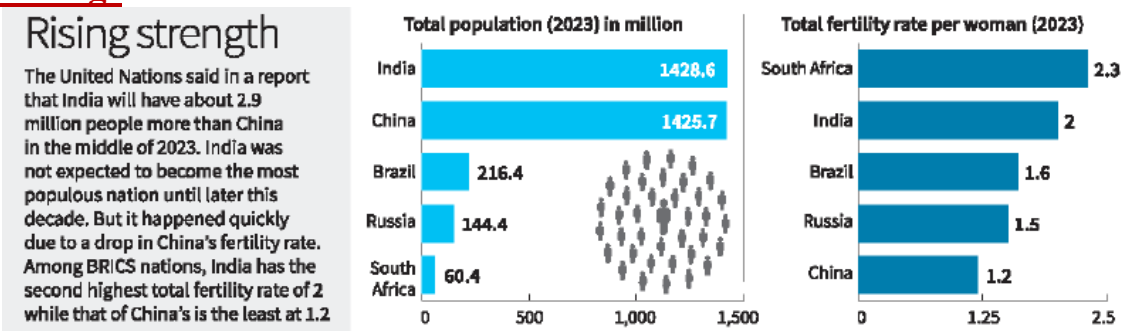
## India's population to edge ahead of China's by mid-2023, says UN

- India is set to overtake China to become the world's most populous country by the middle of 2023, according to data released by the United Nations.



- India's population is pegged to reach 142.86 crore against China's 142.57 crore. This shows India will have 29 lakh more people than its Asian neighbour.
- The United States is a distant third, with an estimated population of 34 crore said the State of World Population Report, 2023 of the UN Population Fund (UNFPA).

### Report findings



- The report says that contrary to the alarm bells about exploding numbers, population trends everywhere point to slower growth and ageing societies.
- Just eight countries will account for half the projected growth in global population by 2050 —
  - the Democratic Republic of Congo, Egypt, Ethiopia, India, Nigeria, Pakistan, the Philippines and the United Republic of Tanzania
  - While two-thirds of people now live in a country where lifetime fertility corresponds with zero growth.
- The UN agency said its findings for India too had suggested that “population anxieties have seeped into large portions of the general public”.
- It called for a radical rethink on how countries address changing demography and cautioned against use of family planning as a tool for achieving fertility targets.
- The family planning targets can lead to gender-based discrimination and harmful practices such as prenatal sex determination leading to sex-selective abortion.

### FSSAI needs an energy shot to regulate processed food

The social media influencer drawn into Cadbury's Bournvita controversy received support from The Nutrition Advocacy in Public Interest — India (NAPi).

### News behind

- Foodpharmer on social media drew the ire of Mondelez India, the company that owns Bournvita over the issue of high sugar level in their chocolates than told in ads.
- The NAPi said that a Bournvita advertisement and product packaging was misleading and did not disclose the sugar content.
- The organisation has filed a formal complaint with the Department of Consumers Affairs, working under the Ministry of Consumer Affairs, Food & Public Distribution.
- It alleges the ads violate the provision of the Consumer Protection Act, 2019.

### Labelling on front

- The FSSAI has been discussing the possibility of front-of-pack labelling.
  - According to this, brands would need to put a notification indicating if a food product was high in fat, sugar, and salt (HFSS).
  - The labelling would allow consumers to make informed choices.
- The statutory body had issued a draft notification on front-of-package labelling that proposed “Indian Nutrition Rating” (INR).
- The health star-rating system for packaged foods will assign half a star (least healthy) to five stars (healthiest) depending on the ingredients and the degree of processing.

- A panel formed by FSSAI in 2020 looked into various confectionaries for its sugar content.
  - Only 20% of products were found to be meeting the new threshold - 36 g of sugar per 100 g while rest had over the limit.

### Without shelters, adoption of dogs, 2023 Rules could worsen canine crisis

- According to the World Health Organization, 36% of the worlds and 65% of Southeast Asia's rabies deaths happen in India.
- The National Rabies Control Programme has recorded 6,644 clinically suspected cases and deaths of human rabies in 2012-22.
- There have also been several media reports of the young and the old being attacked by packs of stray dogs, fatally in some cases.
- Stray dogs are a nuisance by spreading disease; injuring and/or killing humans and wildlife and by keeping people from accessing public spaces.

### New rules

- Government has announced the notification of its Animal Birth Control Rules 2023, which are a bone of contention,
  - With the earlier Animal Birth Control (Dogs) Rules 2001.
- They purportedly respond to three stimuli:
  - strays cannot be relocated, as the Supreme Court of India has held
  - must not face cruelty and
  - must be cared for.
- Under the 2001 Rules, neither effort succeeded because the entire dog population (or at least a large fraction) needed to be treated at once.
  - But the programme was implemented in piecemeal fashion, allowing some dog populations to supplant others over time and the menace to continue.
  - Neutering and vaccination also do not prevent dogs from forming packs and harassing passers-by.
- The 2023 Rules require strays to be caught, vaccinated, neutered, and released back.
  - It also asks residents' welfare associations to care for stray dogs and feed them away from the children and the elderly at fixed intervals.
  - This could further the dogs' homelessness and thus susceptibility to disease, injury, and discomfort.
  - In the process, the Rules also transform "stray dogs" into a new class of "community animals" a contrivance whose purpose is not clear.

### Way forward

- The Rules must prohibit the improper disposal of solid waste and casual feeding of dogs and require them to be adopted and directly cared for to eliminate homelessness.
- The Animal Welfare Board of India said that local authorities will be held responsible for any violation [during birth-control procedures] and animal-human conflicts.
  - These authorities will be needing more funds and staff, the requisite infrastructure, and proper coordination.
- 2023 Rules potentially create more points of failure at the level of local governments and residents' welfare associations while dressing up the cruelty of dog homelessness.

### Govt. plans 100 'eat right' food streets across India

- The Health Ministry and Ministry of Housing and Urban Affairs have asked States and Union Territories to develop 100 food streets in 100 districts across the country.

- The aim of this project is to encourage safe and healthy practices to reduce food-borne illnesses and improve overall health outcomes.
  - The project envisages 100 such food streets in 100 districts across the country.
- Safe food practices would not only boost the “eat right campaign” and food safety but also improve the hygiene credibility of local food businesses.

### Faith in children’s vaccines has gone up in India, says UNICEF

- Only China, India, and Mexico, three out of the 55 countries showed improvement in popular perception of importance of vaccines for children.
- The data is collected by The Vaccine Confidence Project (London School of Hygiene and Tropical Medicine) and published by UNICEF.
- Vaccine confidence marks a decline in over third of the studied countries including,
  - Republic of Korea, Papua New Guinea, Ghana, Senegal, and Japan after the start of the pandemic

### Vaccine hesitancy



- The report warns of the growing threat of vaccine hesitancy due to factors such as misleading information and declining trust in vaccine efficacy.
- UNICEF India released the report ‘The State of the World’s Children 2023: For Every Child, Vaccination,’ highlighting the significance of childhood immunisation.
- The pandemic interrupted childhood vaccination almost everywhere especially due to intense demands on health systems,
  - The diversion of immunisation resources to COVID-19 vaccination, health worker shortages and stay-at-home measures.
- The report said a total of 67 million children missed out on vaccinations between 2019 and 2021 with vaccination coverage levels decreasing in 112 countries.

### Houses unfinished, Bihar serves notices to 2.21 lakh beneficiaries of PMAY-G

- Bihar government has served notices to beneficiaries for not completing construction of their houses under the Pradhan Mantri Awas Yojna-Gramin (PMAY-G).
- The State has also initiated departmental action against government employees for not ensuring completion of construction of houses after disbursement of entire amount.

### PMAY-G

- The PMAY-G is aimed at providing beneficiaries with pucca houses (minimum size 25 square metres) with all basic facilities.
- Launched by the Union Ministry of Housing and Urban Affairs in June 2015 and implemented in April 2016.

- It's a **flagship scheme of the Central government** while it bears 60% of the amount provided through the scheme and State government bears the rest.

### **Stray dog population control is dogged by bad science**

- Children, usually from poor families or in rural areas are being hunted and killed by homeless dogs and causing a public health crisis and human rights issue.
- The main culprit behind this is seemed to be the **Animal Birth Control (ABC) rules, introduced in 2001 by the Ministry of Culture.**
- Now it is replaced by ABC rules, 2023 which aims to implement a technique called **'catch-neuter-vaccinate-release'** to control population of free-ranging dogs and cats.

### **Issue unnoticed**

- **Dog population in India is about 65 million** now despite the efforts of policy and funds spent so far.
- Experts say that these methods did not work because it is unimplementable from a scientific, logistic and economic perspective.
- The **ABC programme does not seem to have any benchmarks or targets.**
  - For example, before the start of the programme a municipal corporation would be required to estimate the base population of dogs to be sterilised.
  - It would then need to set targets for population reduction within a reasonable time period and then calculate how many would need to be sterilised.
  - However, municipalities **set targets for sterilisation based on budgets and available facilities.**
- Dogs are incredibly fecund animals and **reproduce at a high rate** if enough resources are available and to achieve sustained population reduction,
  - Both **field and modelling studies** shows that nearly 90% of dog population needs to be sterilised but that minor detail is missed in ABC programme.

### **Feeding dogs**

- The other major problem is that the ABC Rules, 2023, bizarrely require people to feed dogs, wherever they may be.
- Most people throw a few biscuits or leave leftover food outside their houses but some with almost religious fervour, go out of their way to feed dozens of dogs.
- **Reckless feeding tends to congregate dogs and leads to pack formation,** territoriality and aggression even amongst sterilised dogs.
  - At its worst, this frenzied hunting behaviour can end up causing severe injury or even death due to mauling, especially of small children and the elderly.
- Another study also found that in urban areas, **dogs were the second leading cause of road accidents** and causes harm to wildlife and immense loss of biodiversity.
- The unkindest cut of all is that the ABC Rules **ban the euthanasia of rabid animals,** making India the only country in the world to follow such a cruel practice.

### **Way out**

- Solving this problem requires a **multi-pronged approach and some difficult decisions.**
- Strict pet ownership laws, a ban on irresponsible feeding in public places, encouraging adoption and long-term sheltering of homeless dogs will result in win-win solutions.
- Unlike the ABC programme, the expenses incurred in setting up shelters will at least result in removing dogs from streets permanently,
  - Whereas the **ABC Rules require that the dogs are released back into the same area,** where they can be a nuisance in perpetuity.



- If the “greatness of our nation and its moral progress” is to be judged by how we treat animals, then surely we should not be making the worst enemies of our best friends.

### India as most populous can be more boon than bane

- India is to become the most populous country by mid-2023 surpassing China.
- United Nation reports suggest that India will have a population of 142.86 crore by mid-2023, which is 2.9 million higher than China’s population of 142.57 crore.

### Population growth, size, composition

- Population is not a burden. Instead, it is the nature of population growth, size and its composition that decides when a population becomes a resource or a burden.
- Population is a resource as long as the country’s carrying capacity is intact.
- Carrying capacity is not just per capita availability of natural resources and it changes according to technology, production and consumption systems of a country.
  - With total fertility rate of 2.0 in 2023, India is already at replacement level fertility, meaning two children replacing their parents.
  - This indicates that the population is on a path toward stabilisation.
  - However, it continues to experience positive growth, but in a decelerated mode until 2064, from which point it will become negative growth.
  - The peak of India’s population size will be around 169.6 crore in 2063.
- With 68% of the working age population, the country can harness the available demographic opportunity once it works on the key mechanisms.

### Relevant mechanisms

- There are four key mechanisms that translate a demographic bonus to economic dividend: employment, education and skills, health conditions and governance.
- Employment or job creation is an important to translate demographic bonus to economic dividend if India is able to generate sufficient and quality jobs.
- Education, skills generation and ensuring a healthy lifespan by preventing diseases and disabilities are important to translate demographic opportunity into economic gains.
  - It also reduces excessive public spending and helps in greater capital creation.
- Good governance with conscientious policies is another important aspect for reaping demographic dividend as it helps in creating a healthy environment
  - For increasing efficiency and productivity of the population.

### In perspective

- A relatively younger population of India provides higher support ratios there is lesser disease, disability and caring burden.
- India’s opportunity must be looked in comparison to consequences of population decline and ageing across countries like Japan, China and other major economies.
- A majority of them have been implementing pronatalist policies to improve birth rates but it seems to be largely ineffective.
  - Once fertility tends to decline, it is hard to reverse it as seen in many cases.
- India has the potential to become a worldwide market for both production and consumption, with lower manufacturing costs due to a relatively cheaper workforce.
- At the same time, a total fertility rate of less than 1.8 may not be economically beneficial for India.
- Therefore, drastic population control methods run the risk of inducing forced population ageing, which would result in the nation getting old before getting rich.

## **Malaria set to be notifiable disease across India even as cases show a decline**

Malaria is set to become a notifiable disease across India and currently malaria is a notifiable disease in 33 states and UTs in India.

### **The behind news**

- This is a part of **India's vision to be malaria-free by 2027** and to eliminate the disease by 2030.
- Malaria is not just a public health issue but also a social, economic, and political challenge that requires the cooperation of all stakeholders.
- India was the only high-burden, high-impact country in the Southeast Asia region to report a decline in malaria cases in 2020 as compared to 2019.
  - It has witnessed **85.1% decline in malaria cases and 83.36% decline in deaths** during 2015-2022.

### **Kept in check**

- An integrated **health information platform (HIP-Malaria Portal)** to monitor on real time basis and periodic regional review meetings is essential to keep in check.
- Globally, **children in the poorest households** are five times more likely to be infected with malaria and among children whose mothers have lower education.
- For achieving the **global technical strategy for malaria 2016-2030, Sustainable Development Goal targets and zero malaria** we need to reach all people at all level.

## **WHO flags contaminated cough syrup made in India**

- The World Health Organization said that contaminated cough syrup made by an Indian company had been found on the Marshall Islands and in Micronesia.
- It said in its medical product alert that a batch of substandard (contaminated) Guaifenesin Syrup TG Syrup had been identified and reported to the WHO.
  - Guaifenesin is an expectorant used to relieve chest congestion and symptoms of cough.
  - The analysis found that the **product contained unacceptable amounts of diethylene glycol and ethylene glycol as contaminants.**
  - Diethylene glycol and ethylene glycol are toxic to humans when consumed and can prove fatal.

## **Centre plans an 'overhaul' of its research institutions**

- The **Department of Science and Technology (DST)** is the main source of funds and sustenance for at least 30 autonomous research bodies in India.
  - It is in the middle of a **rationalisation exercise that involves merging, disengaging and even closure of organisations.**
- The exercise is part of a larger project initiated by the Centre to reduce the number of autonomous institutions funded by various Ministries.

### **Proposals initiated**

- The DST has proposed to merge the Raman Research Institute (RRI) with the Jawaharlal Nehru Centre for Advanced Scientific Research, Bangalore.
  - The RRI founded in **1948 by Sir C.V. Raman** is among the country's top institutes for research into theoretical and high-energy physics.
- It has also proposed to merge the S.N. Bose National Centre for Basic Sciences and the Bose Institute, Kolkata,
  - with the Kolkata-based Indian Association for Cultivation of Sciences.

- The Indian National Science Academy, New Delhi and the National Academy of Sciences (NASI), Allahabad, will be merged into the Indian Association of Science.
- The Indian Science Congress Association which organises the annual Indian Science Congress has been recommended to become corporatized and Section-8 companies.

### Behind the 'dearth' of rabies vaccine

Every year from November to March, when the weather improves the mating season for dogs begins and its bites and attacks also increase.

### Dogs in India

- There are on an average six to seven million dog bites every year in India. Each dog bite will require five doses of vaccine.
- Many cases may also go unreported and not all patients who are bitten get their vaccines on time and many cases go unreported.
- **India's rabies vaccine market is growing at a steady rate.** In 2022, its market value stood at \$141.4 million, while the 2023 estimated value is at \$147.6 million.
  - Manufacturers say **State and Central governments fail to forecast demand,** leading to delays.

### Rabies Vaccine

- The rabies vaccine is **lyophilized (freeze dried) and filled in vials in powdered form.**
- In 24 to 32 hours, most Indian companies have the capacity to produce close to 50,000 vials.
  - But it can be used only in the measure of one dose per person while in polio vaccine with one vial has up to 10 doses.
- Indian Immunological has a market share of 27.6%, with Bharat Biotech at 15.6%, followed by Chiron Behring at 8.7% and Cadila Pharma at 7.9%.
- Even if the manufacturing plant is functioning at 80% of its full capacity, the Indian companies can churn out 3.2 million to 4.2 million vials each month.
- Major Indian manufacturers supply rabies vaccine to countries like Turkey, Bangladesh, Myanmar and some African nations, among others.
  - Though produced in adequate amount to meet the demand of the country, **manufacturers focus on exporting as they get higher price through exports.**



➤ Rabies is a fatal neurological disease caused by the rabies virus. The virus is transmitted through infected saliva of canine animals; over 90% rabies cases are transmitted by dogs

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➤ It is contracted through wounds (scratches from infected animal) or bite from an infected animal

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➤ All age groups are susceptible, but it is most common in people younger than 15

# International Issues

By Lectures Bureau



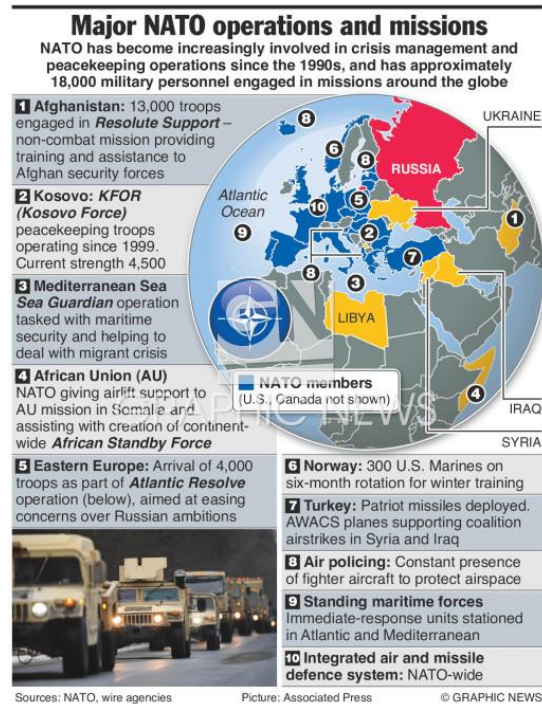
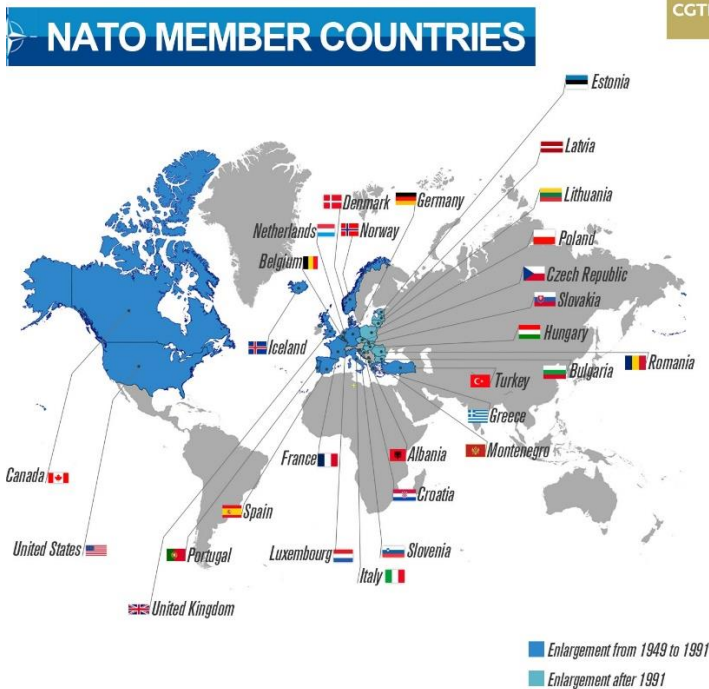


## NATO is open to stronger ties with India, says U.S. envoy

- A leading U.S. official has said the **North Atlantic Treaty Organization (NATO)** is “open” to deepening ties with India.
- NATO said Russia should withdraw from Ukraine and that NATO is watching China-Russia relation in the backdrop of Russia’s continued military operation in Ukraine.

## NATO

- The North Atlantic Alliance is an **intergovernmental military alliance** between 30 **member states** – 28 European and two North American.
- Established in the **aftermath of World War II**, the organization implemented the **North Atlantic Treaty** signed in **Washington, D.C.** on **4 April 1949**.
- **Headquarters:** Brussels, Belgium.



## Russia promises to deepen strategic partnership with India

Russia described **India and China** as “friendly sovereign global centres of power” and vowed to give importance to comprehensive deepening of ties and enhance coordination.

## Russia - India

- Moscow asserted that its attitude towards other countries and multilateral bodies is contingent on the constructive, neutral or unfriendly character of their policies.
- Russia said it places special emphasis on increasing the volume of trade with India, strengthening investment and technological ties
  - And ensuring resistance to destructive actions of “unfriendly states and their alliances”.
- Russia underlined that it will build on a privileged strategic partnership with India.

## India, Malaysia move beyond dollar to settle trade in rupee

India and Malaysia have agreed to settle trade in the Indian rupee, the Ministry of External Affairs announced.

## Recent development

- The announcement came against the backdrop of ongoing official efforts to safeguard Indian trade from the impact of Ukraine crisis.

- The shift away from the U.S. dollar indicates that India is willing to take concrete steps towards **de-dollarisation of its international trade**.
- The **Union Bank of India** has become the first bank in India to operationalise this option by opening a **Special Rupee Vostro Account**,
  - Through its corresponding bank in Malaysia India International Bank of Malaysia.
- Trade between India and Malaysia can now be settled in Indian Rupee (INR) in addition to the current modes of settlement in other currencies.



### **RBI's move**

- Reserve Bank of India in July 2022 has decided to **allow the settlement of international trade in the Indian Rupee (INR)**.
- It is aimed at facilitating the growth of global trade and to support the interests of the global trading community in Indian rupees.
- Trading in the U.S. dollar has faced growing difficulties especially after the Russian economy was sanctioned by the Western powers.
- Banks from 18 countries were allowed by the RBI to open Special Rupee Vostro Accounts to settle payments in the rupee.

### **India- Malaysia**

- This mechanism is expected to benefit the traders on both sides as they can directly trade in Indian Rupee and therefore save on currency conversion spreads.
- The India-Malaysia bilateral trade touched \$19.4 billion during 2021-22 and now this move is expected to help bilateral trade to overcome currency-related obstacles.
- Malaysia is the third largest trading partner of India in the ASEAN region, after Singapore and Indonesia.

### **India-Romania pact on defence to help in better cooperation**

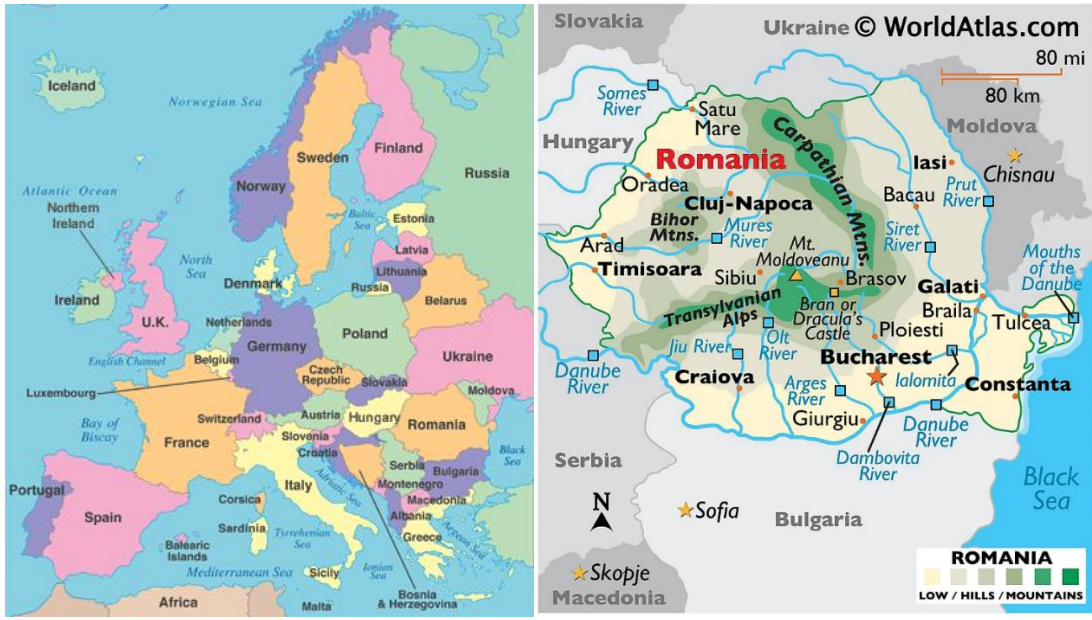
The defence cooperation agreement signed between India and Romania will enhance collaboration on **exchange of expertise and knowledge** on subjects of mutual interest,

- Including co-development and **co-production of military hardware**.

### **Deepening ties**

- The agreement covered the security situation in the **Black Sea region and in Indo-Pacific region** and cooperation in the multilateral framework.
- Both discussed on matters of interest such as exchange of experience in cyber defence, training and education, communications and informatics.
  - Military medicine, scientific research in the field of defence policy and military history, technical-military field.
- India represents an important partner for Romania in Indo-Pacific region and represents an opportunity to advance the cooperation between the EU and India.





### The demand for Scottish independence

British PM Rishi Sunak has rejected a call from the new First Minister of Scotland Humza Yousaf to hold a second referendum for Scotland’s independence from the U.K.



### Scotland’s demand of independence

- Scotland accounts for 8% of Britain’s population and economy and one-third of its landmass.
- Formed in 9<sup>th</sup> CE, the Kingdom of Scotland went on to fight wars to remain independent from England and later ruled by the same monarch from 1603.
- In 1707, due to economic and political vulnerabilities prevailing, both side agreed on entering into a political union under the name of Great Britain.
  - Scotland had some decision making powers but did not get equal representation and cultural and political differences remained.
  - Demands for self-governance began leading to two referendums in 1979 and 1997, resulting in the formation of a new Parliament of Scotland in 1999.
  - Health, transport, education, and so on – Scottish Parliament
  - Power to legislate on defence, foreign policy, trade, immigration, and currency remained with UK.
  - The last referendum for independence took place in 2014 where 55% of Scots voted to stay while 45% voted to walk out.

## The demand of Scotland

- The **Scottish National Party (SNP)** said the people who live in Scotland should have the right to decide if they want to be an independent country.
- To relinquish doubts over the future of Scotland after independence, the SNP has been coming out with **White Papers on its vision for “building a new Scotland”**.
  - It also plans to rejoin the EU, to expand its trade in the bloc and to receive other associated benefits.
  - The SNP also plans to keep using the British pound Sterling as its currency after independence.
  - It also argues that Scotland is different from the U.K. in that its electoral system is already fairer and more proportionally represented than the U.K.
  - It stands for different things more open immigration policies, a faster push for green transition, free university education and geriatric care.
  - Taxation on higher earners and inclusion of the LGBTQ community.



## U.K.'s stand

- The British government believes that the **SNP has failed to give a clearer picture** on how issues of pensions and healthcare would work in an independent Scotland.
- It has also warned Scotland that if it rejoins the EU, it would lead to the **creation of a hard border between Scotland and Britain**.
- Before the 2014 referendum, the Economic Affairs Committee of Westminster had highlighted that retaining of sterling as Scottish currency would be problematic;
  - As the Monetary Policy Committee of the Bank of England, which forms policy for the U.K., could not entertain the interests of a separate country.
- It also said that Scotland would find it difficult to assume its share of U.K.'s public debt, which runs into billions.
- Besides, the **decommissioning of North Sea Oil** would also have economic and trade implications for Britain.

## Security issues on table as PM meets Bhutan King

Indian PM and Bhutanese king Wangchuck discussed the latest situation along the India-Bhutan border and progress particularly in **Doklam trijunction point**.

## Shared interests

- India and Bhutan remain in close touch and close coordination relating to our shared national interests including security interests.
- Bhutan's PM Lotay Tshering said that a demarcation line could be drawn on disputed areas to Bhutan's north with China within next round of talks.

## India - Bhutan

- The Bhutanese King's **Transformation Initiatives and Reforms Process** and India's support for Bhutan's development plans starts next year.
- **Bhutan is set to graduate from the list of Least Developed Countries** in 2023.
- Its 21st century **Economic Roadmap** aims to turn the Himalayan kingdom into a developed country with a per-capita income of \$12,000 in the next 10 years.
  - India has also agreed to extend **Bhutan a third additional standby credit facility**.
- India provided various reforms to Bhutan including;
  - Financial support for reforms and institutional capacity building



- infrastructure and connectivity projects
- energy cooperation including hydropower and solar energy projects
- Space cooperation including the recent launch of the India-Bhutan satellite.
- On hydropower, India has agreed to a long pending demand from Thimphu to **increase the power tariffs for the Chhukha hydro-electric project** began in 1986.
- India has also agreed to discuss buying power from the **Basochhu hydel project** that was built in 2008.
- Bhutanese citizens continue to receive national treatment in India on par with Indian citizens but both countries were looking for new ways to build on the partnership.

### Invented names

India has summarily rejected China's attempt to lay claim over areas of Arunachal Pradesh after it issued new official names for them.

### News highlight

- The Chinese Ministry of Civil Affairs said it would standardise 11 place names what China calls **South Tibet or Zangnan**, an area consistently controlled by India.
- The names in Mandarin, Tibetan and Pinyin with **latitude and longitude markings pertain to points in Arunachal**, including one close to capital Itanagar.
- The Ministry of External Affairs said that invented names will not alter the reality that **Arunachal Pradesh is an integral part of India**.
  - It mirrors what India had said in 2021 when China renamed 15 places; in 2017, there were six names.
  - The move in 2017 was seen as retaliation after the Dalai Lama's visit to Tawang.
- In 2021, with **China's new Land and State Border Law**, it virtually tries to reclaim territories claimed by China and seen as a way to reassert its claim.

### Chinas's motive

- There could be many factors behind the latest move:
  - A reaction after the Indian Army rebuffed a PLA attempt to take over a post at **Yangtse in the Tawang sector of the Line of Actual Control (LAC)**.
  - Response to New Delhi's decision to hold a G-20 engagement group meeting on Innovation technology in Itanagar which Chinese had boycotted.
- Until the government probes the reasons behind China's moves and the motivation for its persistent aggressions,
  - It will be hard to prepare for a future course of action even to counters China's false narrative.

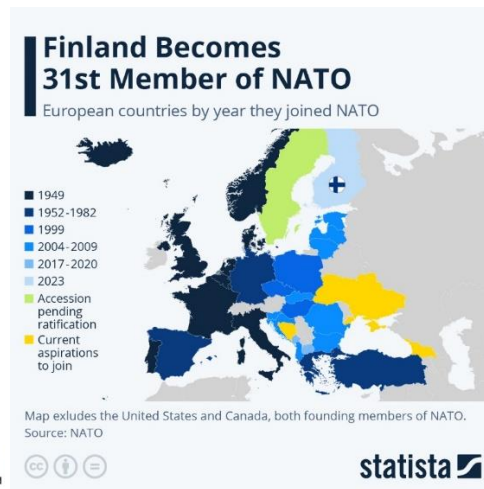
### Finland joins NATO bloc; Russia says move will escalate Ukraine conflict

- **Finland formally joined the North Atlantic Treaty Organisation** roughly doubling the length of the border that the alliance shares with Russia.
- The event marks the end of an era of military non alignment for Finland that began after it repelled an invasion attempt by the Soviet Union.



## Russia's response

- The Kremlin said Russia would be forced to take “counter-measures” to Finland’s accession.
  - The move raised the prospect of the conflict in Ukraine escalating further.
- Russia said it would strengthen its military capacity in its western and north-western regions in response to the move.



## India gets elected to UN Statistical Commission

- India has been elected to the highest statistical body of the United Nations for a four-year term beginning January 1, 2024.
- India secured 46 out of 53 votes in the election to the UN Statistical Commission election.

## UN Statistical Commission

- A Statistical Commission was established by the Economic and Social Council on 16 February 1946
- The Commission shall assist the Council:
  - (a) In promoting the development of national statistics and the improvement of their comparability;
  - (b) In the coordination of the statistical work of specialized agencies;
  - (c) In the development of the central statistical services of the Secretariat;
  - (d) In advising the organs of the United Nations on general questions relating to the collection, analysis and dissemination of statistical information;
  - (e) In promoting the improvement of statistics and statistical methods generally.

## Membership of UN Stat Commission

The Commission consists of 24 member countries of the UN elected by the UN Economic and Social Council on the basis of an equitable geographical distribution -

- (a) Five members from African States;
- (b) Four members from Asia-Pacific States;
- (c) Four members from Eastern European States;
- (d) Four members from Latin American and Caribbean States;
- (e) Seven members from Western European and other States.

The term of office of members is four years.

## Is the India-Bhutan relationship intact? Is the India-Bhutan relationship intact?

Bhutan King Jigme Khesar Namgyel Wangchuck's visited New Delhi, in which India announced a number of measures to support its neighbour's development plans.

## India-Bhutan relationship exemplary and unique

## Bhutan is not just a neighbour but a very important and strategic one.

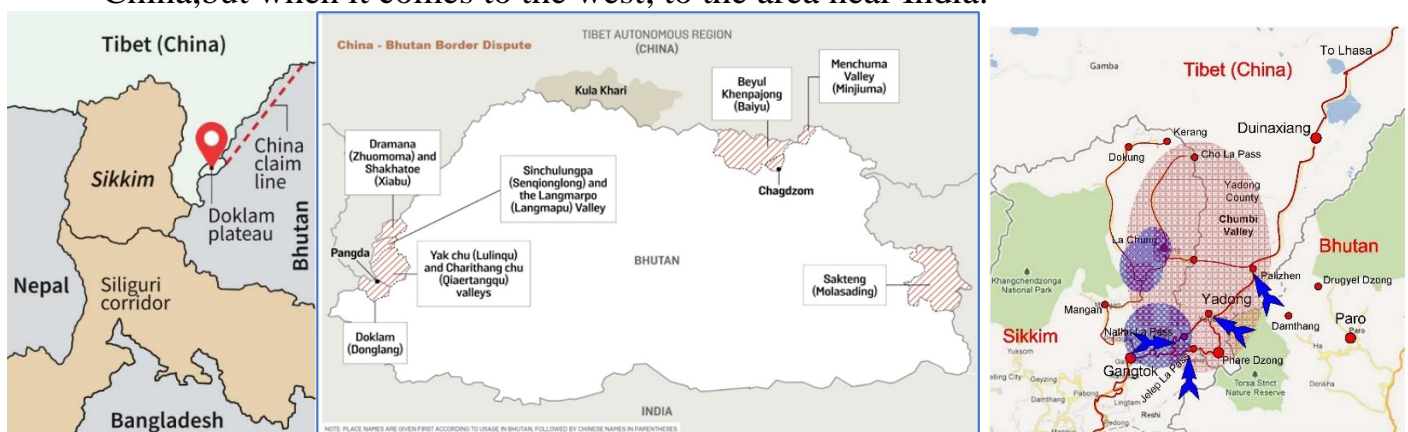
- Its border with India is over 600 km long and plays the role of a buffer between China and India.
- The **Big Brother syndrome** was not applied to Bhutan from 1958 when Nehru assured it of independence and sovereignty.
- India is Bhutan's biggest development partner and largest source of imports for Bhutan.
- India buys power generated in Bhutan and hydroelectricity has become one of the biggest revenue earners of Bhutan.
- Bhutan is the country with the highest per capita income in South Asia.
- There has been desire since the 17th century to identify Bhutan as distinct from Tibet.
- In the 17th century, when the Shabdrung Rinpoche broke away from Tibet, it is to India and not Tibet that Bhutan looked.
- In a sense, independent India continued a relationship that the British had built.

## Recent Statement by Bhutan King

- He signalled a possible breakthrough on boundary talks with China.
- Where Bhutan decides its boundary with China (to the west) is of exceptional relevance to India because that is a trijunction of the three countries.

## China-Bhutan-India

- Traditionally, a significant feature of **both countries relationship has been the regularity of high-level visits.**
  - Even when Modi became Prime Minister, the first country he visited was Bhutan.
- As per **2007 Treaty of Friendship**, India and Bhutan consult at a high level in order to be able to maximise or reinforce their mutual strategic interests.
- India will not talk about Bhutan-China negotiations publicly; however, when it comes to India's national security, there will be no compromise.
- India is also not concerned about a breakthrough on territory to Bhutan's north with China, but when it comes to the west, to the area near India.



## Way forward

- People in Bhutan especially above the age of 35 are conscious about the importance of the India relationship.
  - But younger Bhutanese need to be reached out to.
  - There are much of negative sentiments, wrong information about India on social media in Bhutan.
- The **Bhutan-India relationship** has survived mainly because it was built on mutual trust, which means Bhutan has equally driven the relationship.

- India has to keep up this relationship not just economically or through a transactional relationship but by reaching out to the new generation.
- Our ties are built on spiritual underpinnings and those are not going to go away and the imperatives of geography, economy, and connectivity all strengthen that.
- China is employing all kinds of tools, instruments, methodology to attract the Bhutanese through trade, their modern cities and scholarships.
- The key to strengthening for India is not to show any insecurity about this relationship but to pursue this relationship with trust and complete faith.

### **Why is Japan circumventing sanctions on Russian oil?**

Japan has been purchasing oil from Russia at a price above the \$60 per barrel price cap imposed by the West which has led to speculations.

#### **Price cap on Russian oil**

- The G-7 countries, the EU and Australia imposed a \$60 per barrel price cap on oil purchased from Russia starting 2023.
  - As a part of wider economic sanctions imposed by the West to punish Russia following its invasion.
- The West wants to restrict the amount of money that Russia can make by selling its oil but without severely affecting global oil supply.
- Since Russia contributes about 10% of global oil supply, any significant reduction in Russian oil supplies could send oil prices soaring.

### **Why is Japan breaking ranks with the West?**

- Japan purchased about 750,000 barrels of oil from Russia at a price of about \$70 per barrel which is of less significance to the overall production of Russia.
- Japan's decision to purchase oil above the price cap once again brings to the fore the strong incentives facing countries to subvert the West's \$60 per barrel price cap.
- When the price cap was first imposed, Japan had won an exception to purchase Russian oil from Sakhalin-2 in Russia's Far East to protect its energy security.

#### **Not the one country**

- Japan is not the only country that is undermining the West's \$60 price cap on Russian oil even India is paying more than \$60 per barrel to purchase oil from Russia.
- When buyers are willing to pay more than \$60 per barrel to secure supplies, oil traders will likely be happy to subvert sanctions and deliver supplies from Russia.
- Critics of the oil price cap had warned that implementing the price cap may be difficult because it works against strong economic incentives
  - And it may be impossible to keep track of all shipments in such a large, opaque oil market.

### **Will rising oil prices threaten the West's price cap?**

- OPEC and Russia decided to cut their oil output by 3.66 million barrels per day, sending oil prices soaring 6%.
- Russian Urals, the flagship crude oil sold by Russia also soared above \$60 per barrel, thus breaching the West's price cap.
- When the West first imposed its price cap, it had no effect on Russia's oil output or revenues as Russian Urals were trading well below \$60 per barrel.
  - The West now would hope that its price cap would keep Russia's oil revenues in check despite rising oil prices.

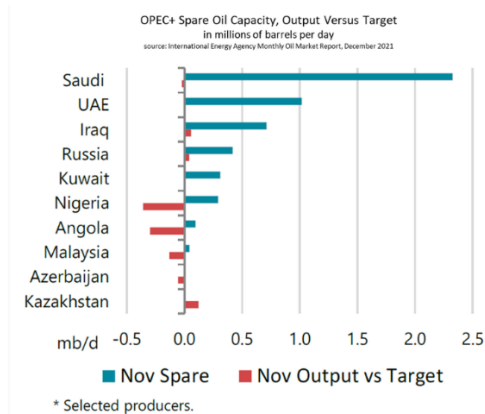
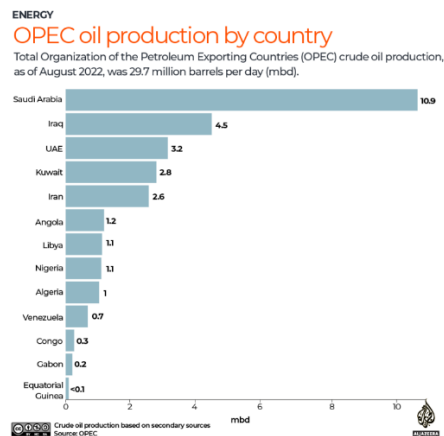


Russia which has seen its oil revenues drop due to subdued oil prices and West's will be hoping to turn the corner by bypassing Western sanctions and selling oil above the price cap.

## Why have key oil producers vowed output cuts?

### The story so far:

- The **Organization of the Petroleum Exporting Countries (OPEC)** has acknowledged the crude oil production cuts announced by major oil-producing countries like,
  - Saudi Arabia, Iraq, the United Arab Emirates and as well as Russia.
  - The announcement caused an instant uptick in prices of crude oil.
  - The new production cuts are in addition to those announced in Oct 2022.



## Why are OPEC+ countries cutting crude oil production?

- The OPEC+ countries include the **13 core members of OPEC and 10 other major oil producers**.
  - The decision to cut crude oil production was **aimed at supporting market stability**.
- The **G-7 bloc of advanced economies announced a price cap of \$60 per barrel** for Russian crude oil in December 2022.
  - The G7 and all EU Member States have taken this decision to hit Russia's revenues even harder and reduce its ability to wage war in Ukraine.
- Recent developments like the collapse of Silicon Valley Bank and the turmoil at Credit Suisse have fuelled the possibility of an incoming recession.
  - Experts believe that cutting production will lead to increase in costs of crude oil in the international market.
- According to Reuters, the production cut is also a **way of punishing short sellers who bet on oil prices declining**.

## Impact on India

- According to the **World Energy Outlook 2021 data**, India ranks third in the world in crude oil imports after China and the U.S. and
  - It ranks a distant 21 in crude oil production and 26 in natural gas production.
- The disparity in the two rankings shows the **country's increasing reliance on imports** to meet its energy needs.
- **India's crude oil import from Russia** touched new heights in February this year, reaching **1.6 million barrels per day**.
- This was more than the combined imports from conventional suppliers like Iraq and Saudi Arabia.
  - At the same time, supply from Iraq and Saudi Arabia touched a 16-month low.
- G7 countries decision not to buy crude oil from Russia in a bid to isolate the country however, provided **India with an opportunity to buy Russian oil at discounted rates**.

## Race to the bottom

China has frozen the visas of two Indian journalists that have shown how journalists have been dragged into rising geopolitical tensions between the neighbours.

### Behind the news

- Until 2016, reporters from both countries were on one-year visas and largely left to do their work.
- In 2017 China said, India had shortened the visas for India-based reporters to three months, down from the one year that is the norm in both countries.
- The troubles began when three Xinhua reporters were expelled after visiting a Tibetan settlement without permission from the Home Affairs Ministry.
- It is now entirely possible that there will be no reporters from the world's two largest countries covering the other worsening relations.

### Indian context

- India as G-20 host has highlighted the strength of its democracy but recent actions appear to show insecurity including its response to BBC documentary.
- While New Delhi is right to scrutinise non-journalistic activities of some Chinese reporters, restricting all of them will be counterproductive.
- On the spectrum of Chinese media coverage largely negative on India ground reports have been among the more multifaceted,
  - Showing sides of India that most Chinese usually do not get to see.

### Beijing's context

- Beijing meanwhile also stands to lose from its decision to restrict Indian media access.
- Last year's fake news of a coup in China, published in Indian websites, highlighted the absence of on-the-ground context.
- Moreover, reciprocity by freezing visas would also mean giving Indian organisations the kind of freedom that Chinese media enjoy in India.
- Even in the absence of Chinese employees, Xinhua and CGTN can continue to report with their Indian journalists.
- In contrast, Beijing bars foreign media organisations from hiring Chinese journalists except as assistants. In this race to the bottom, both sides stand to lose.

## 85% share of Hungary's gas needs supplied by Russia

- Hungary, a land-locked country and member of NATO has agreed with Russia to increase the share of gas it receives to be increased.
- Energy giant Gazprom would maintain an option for additional gas shipments this year on top of quantities shipped under a long-term deal.

## Saudi Arabia's quest for strategic autonomy

### The story so far:

- Kingdom of Saudi Arabia that adopted an aggressive foreign policy to expand its influence in West Asia has rolled back now following a dramatic course correction.
- It is reaching out to old rivals holding talks with new enemies and seeking to balance between great powers, all while trying to transform its economy at home.
- If the Saudi drive to autonomise its foreign policy and build regional stability through diplomacy holds, it can have serious implications for West Asia.

## Saudi and its neighbours

- For years, the main driver of Saudi foreign policy was its hostility towards Iran which has resulted in proxy conflicts across the region.
- In Syria, Iran's only state ally in West Asia, Saudi joined hands with its Gulf allies, Turkey and the West to bankroll and arm the rebellion against President Bashar al Assad.
- In Yemen, whose capital Sana'a was captured by the Iran-backed Shia Houthi rebels in 2014 and the Saudis started a bombing campaign in March 2015 which hasn't formally come to an end yet.
- One of the demands Saudi made to Qatar when it imposed a blockade on its smaller neighbour in 2017 was to sever ties with Iran.



## Changing policy now

- Last month, Saudi Arabia announced a deal after China-mediated talks to normalise diplomatic ties with Iran.
- There were reports that Russia was mediating talks between Saudi Arabia and Syria which could lead to the latter re-entering the Arab League before its next summit.
- All these moves mark a decisive shift from the policy adopted by Crown Prince Muhammad bin Salman after he rose to the top echelons of the Kingdom in 2017.
  - Aggressiveness makes way for diplomacy and loyal alliances make room for pragmatic realignments.
- While Saudi Arabia is also trying to balance between the U.S., its largest arms supplier, Russia, its OPEC-Plus partner and China, the new superpower in the region.

## Why are there changes now?

- To begin with, these changes do not mean that the structures of Saudi Arabia's relations with Iran are undergoing a transformation.
  - In fact, Iran would continue to drive Saudi Arabia's security concerns and strategic calculus.
  - But Saudi Arabia's response to the Iran problem has shifted from strategic rivalry and proxy conflicts to tactical de-escalation and mutual coexistence.
- The Kingdom's recent regional bets were either unsuccessful or only partially successful.
  - Syria backed by Russia and Iran, has won the civil war.
  - In Yemen, Saudi led coalition is now in fractured state and Houthis pose a serious security threat to Riyadh.
  - In parallel, the U.S.'s priority is shifting away from West Asia.
- When China, which has good ties with both Tehran and Riyadh, offered to mediate between the two, the Saudis found it as an opportunity and seized it.

## Is Saudi Arabia moving away from the U.S.?

- It is not. The U.S., which has thousands of troops and military assets in the Gulf, including its Fifth Fleet, would continue to play a major security role in the region.
- For Saudi Arabia, the U.S. remains its largest defence supplier.
- But at the same time, the Saudis realise that the U.S.'s deprioritisation of West Asia is altering the post-War order of the region.
- What Saudi Arabia is trying to do is to use the vacuum created by the U.S. policy changes to autonomise its foreign policy.

- The early sign of this autonomisation was visible in Saudi Arabia's recent decisions.

### **Saudi – U.S relations**

- Unlike most other American allies, Saudi Arabia refused to join anti-Russia sanctions.
- Despite protests from Washington, Saudi Arabia joined hands with Russia to effect oil production cuts twice since the Ukraine war began,
  - Aimed at keeping the prices high which would help both Moscow and Riyadh.
- It has also built stronger trade and defence ties with China and the Iran reconciliation deal, under China's mediation.
- At the same time, Saudi Arabia has placed orders for Boeing aircraft worth \$35 billion and entered into conditional talks with the U.S. on normalising ties with Israel.
- De-Americanisation of West Asia is not a Saudi goal.
  - Rather it is trying to exploit America's weakness in the region to establish its own autonomy by building better ties with Russia and China.

### **Implications in the region**

- Saudi Arabia's normalisation talks with Syria or its talks with the Houthis cannot be seen separately from the bigger picture of the Saudi-Iran rapprochement.
  - If Syria rejoins the Arab League, it would be an official declaration of victory by Mr. Assad in the civil war.
    - It would help improve the overall relationship between Damascus and other Arab capitals.
  - If the Saudis end the Yemen war through a settlement with the Houthis (which would probably split Yemen),
    - Riyadh would get a calmer border while Tehran could retain its existing influence in the Saudi backyard.
- Such agreements may not radically alter the security dynamics of the region but could infuse some stability across the Gulf.



### **Not a complete stable Gulf**

- While the Saudis are trying to build cross-Gulf stability, another part of West Asia remains tumultuous,
  - With Israeli raid at Jerusalem's Al Aqsa, Islam's third holiest place of worship.
- This triggered rocket attacks from Lebanon and Gaza and in return Israeli bombing of both territories and Israel also keeps bombing Syria with immunity.
- The impact of escalation of tensions between Israel and Iran on cross-Gulf stability remains to be seen.

### **FM urges G20 to unite on debt distress of middle-income countries**

- G20 Finance Ministers & Central Bank Governors (FMCBG) meeting on 12 Apr
- Finance Minister Nirmala Sitharaman expressed hope that the group could come together to address the debt distress of middle-income countries (MICs).
  - India's presidency is a great opportunity for India to prove and to work towards bringing all countries together on substantive issues.



## Troubled trio

- Three countries in India's neighbourhood — **Sri Lanka, Pakistan and Bangladesh** have sought help from the IMF.
- The G20's debt restructuring process, the **2020 Common Framework** has largely catered to poor countries but has been slow to act.
- Only countries such as Chad, Zambia, Ethiopia and Ghana to date have applied for debt restructuring through the framework.
- **China, a major creditor country for low-income countries** has been blamed for not playing ball on the issue of debt restructuring.

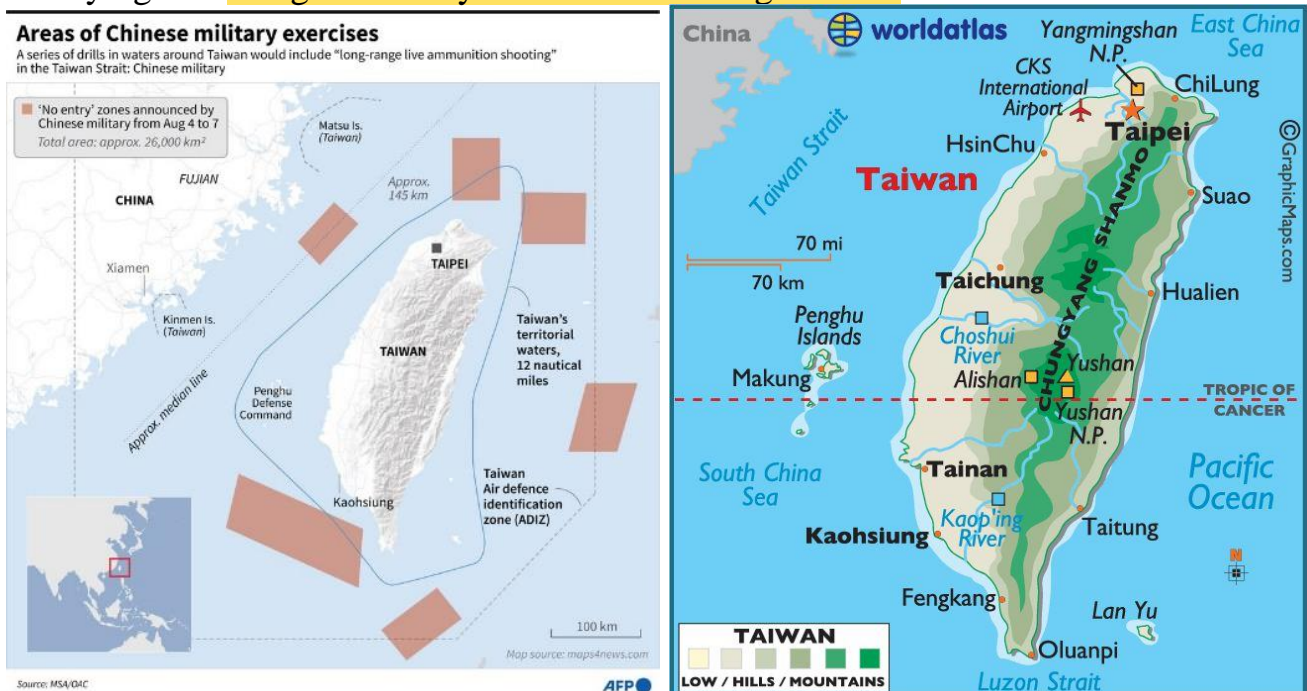
## Tejas, Rafale, Sukhoi to face off with U.S. fighter jets at Cope India 23

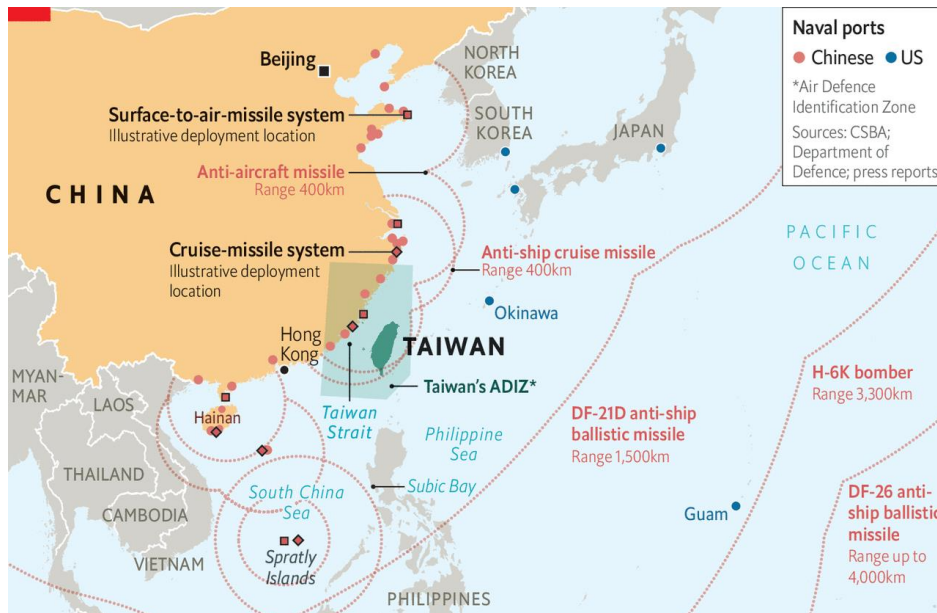


- The light combat aircraft **Tejas, Rafale, Su-30MKI and Jaguars** of the Indian Air Force (IAF) are all set to undertake manoeuvres with-
  - **F-15 fighters and B-1B long-range bombers** of the U.S. Air Force (USAF) under the second phase of the ongoing bilateral air exercise, Cope India 23.
- The exercise will be supported by aerial refuellers, Airborne Warning and Control System and Airborne Early Warning and Control aircraft of the IAF.
- This is the first time ever that U.S. bomber will be taking part in a military exercise in India. B-1B bombers had earlier done fly-bys during Aero India on two occasions.

## Macron wants status quo on Taiwan, insists France won't be a U.S. 'vassal'

- French President Emmanuel Macron stood by his controversial comments on Taiwan, saying that **being a U.S. ally did not mean being a vassal**.





The Economist

- Mr. Macron on state visit to the Netherlands during which he has also faced protests over pension reforms said **France still backed the status quo on Taiwan**.
  - And added that Paris supports the One China Policy and the search for a peaceful resolution to the situation.
- Mr. Macron has also visited China and said that French and European policy on Taiwan has not changed.

### India signs MoU with WFP for sending wheat to Afghanistan

- India signed a **Memorandum of Understanding with the World Food Programme (WFP)** paving the way for sending 10,000 tonnes of wheat for people of Afghanistan.
- The signing ceremony between officials was held in Mumbai.
- WFP had said it had the **required infrastructure on the ground to ensure speedy delivery of wheat** to the most vulnerable sections of the Afghan population.

### Brazil is back, says Lula during state visit to China

- **President Luiz Inacio Lula da Silva** has visited China as a state visit to meet his **counterpart Xi Jinping**.
- The visit is aimed at strengthening trade ties and winning support for his push for peace in Ukraine and seeking its reposition as a key global player.

### China - Brazil

- Both China and Brazil have positioned themselves as mediators in Ukraine conflict, despite Western concerns that they are overly cosy with Russian President.
- **China is Brazil's biggest export market**, buying tens of billions of dollars worth of soybeans, beef and iron ore.
- Ms. Rousseff, a former leader of Brazil will **head the New Development Bank**, a multilateral lender jointly set up by BRICS until 2025.



### India, Armenia will one day share a strategic partnership: envoy

Armenian envoy reached India and implicated the **need of political cooperation to be developed into long term institutionalised cooperation** between two countries.

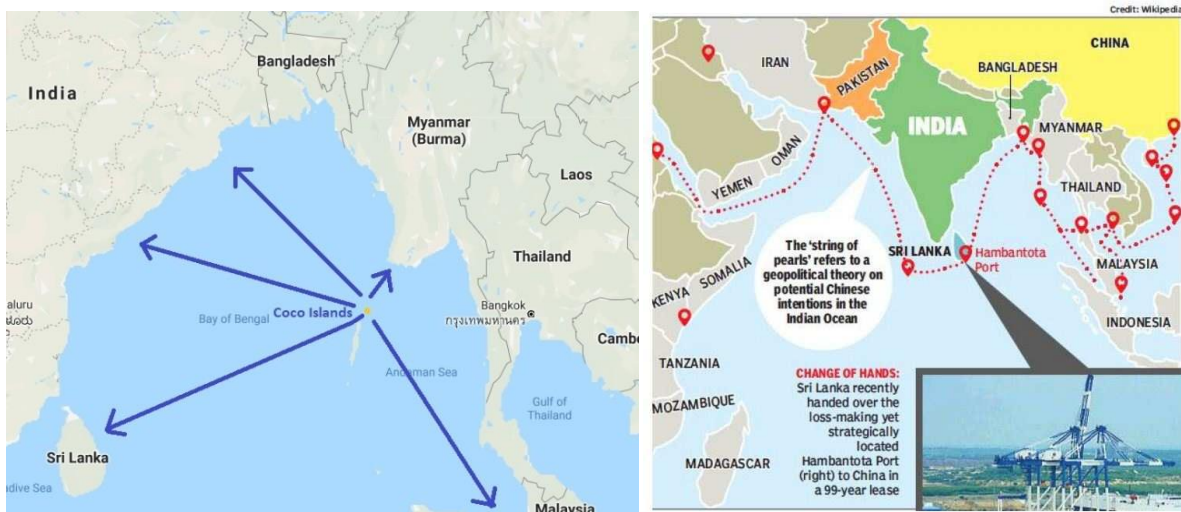




### India - Armenia

- Both countries have very long historical ties, common interests and now this will turn into a strategic partnership.
- Armenia recently signed a major defence deal with India for procurement of **Pinaka multi-rocket launch systems** and their ammunition among others.
- Armenia will soon have a **Defence Attaché (DA) at its embassy** and at present neither country has a dedicated DA in other country.
  - For India, its DA in Russia is also tasked to cover Armenia.

### Chinese dual-use facilities in Myanmar and Sri Lanka raise security concerns in India



- The construction of a **military facility on Coco Islands in Myanmar** and a proposed **remote satellite receiving ground station system in Sri Lanka**,
  - Both coming up with Chinese help have raised concern in India of possible surveillance across the region.
- Given their critical location, can be **used to spy on Indian assets and intercept sensitive information** and also across the region said sources.
  - The facility can always be used by the Chinese military when required.

### India's worry

- Noting that satellite tracking facilities are inherently dual use in nature, the Chinese civil space programme is known to work closely with the Chinese military.
- China's expanding ground stations in the region could potentially be used to intercept sensitive information about Indian assets.

- India's satellite launch facilities in Sriharikota and the integrated missile test range in Odisha could come under the scanner of ground station and launches from there could be tracked to obtain sensitive data.
  - Recent instance of Chinese research and survey vessel docking at Hambantota in Sri Lanka, stations are likely to work in coordination to gather information.

### Three dead as paramilitary and Army clash in Sudan

Three civilians died in battles between Sudanese paramilitaries and the regular Army launching air strikes, sparking global calls for calm in a country.

#### News highlight

- The paramilitaries said they were in control of the presidential place as well as Khartoum airport, claims denied by the Army.
  - And civilian leaders called for an immediate ceasefire to prevent Sudan's total collapse.
- Violence erupted after weeks of deepening tensions between military leader and paramilitary Rapid Support Forces (RSF) over integrations talks.
- It was a key element of talks to finalise a deal that would return the country to civilian rule and end the political and economic crisis sparked by their 2021 coup.



### Diplomacy, with a change in terms of reference

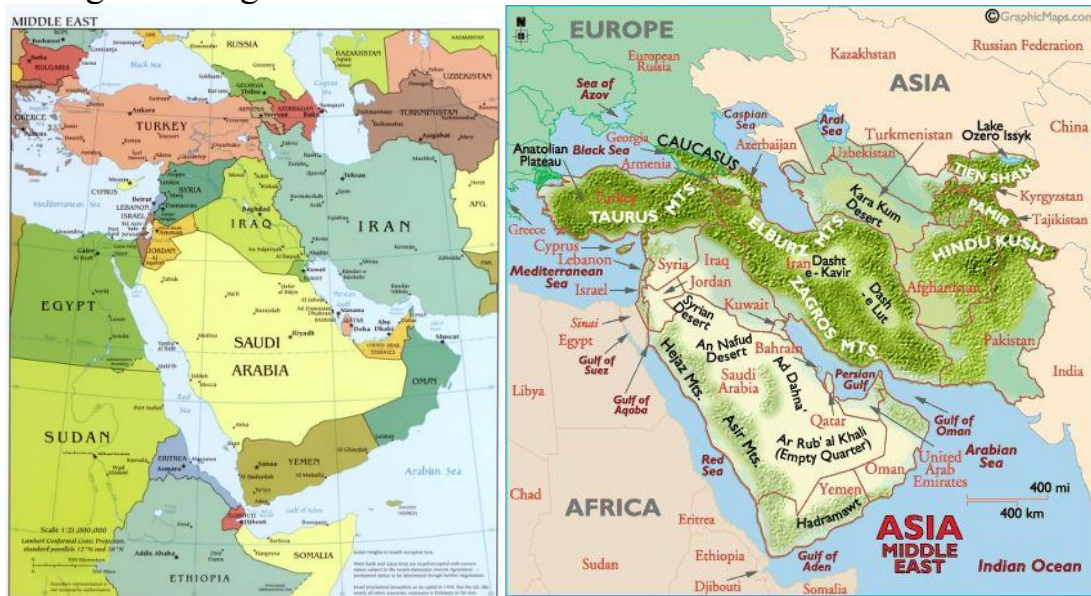
- Mediation is rarely a spontaneous act and figured in Article 33 of the United Nations Charter among means of Pacific Settlement of Disputes.
- A good instance of this was recently witnessed on the global stage in the region of west Asia or Middle east region.

### Dramatic changes in turmoil land

- In a joint statement Iran, Saudi Arabia, and China announced that an agreement has been reached between the Kingdom of Saudi Arabia(KSA) and Republic of Iran,
  - Covering a resumption of diplomatic relations between them and
  - Re-opening of their embassies & missions within a period not exceeding 2 months.
- The agreement affirmed their respect for the sovereignty of states, non-interference in the internal affairs of states and discusses means of enhancing bilateral relations.
- Iran depicted the event as 'One agreement and seven achievements';
  - it listed the latter as Tehran's willingness to engage in dialogue
  - failure of U.S.'s effort to isolate Iran
  - strengthening of the alliance of Islamic Countries
  - failure of Israeli efforts against this agreement



- failure of U.S. effort to show the Iranian public that it has no choice but to agree to the Joint Comprehensive Plan of Action (JCPOA) with America
- Beijing's successful entry in West Asian relations and failure of dreams of 'regime change'.



### American and Israeli reactions

- A Chinese academic observed that China's diplomacy as a major power is just getting started and may even result in some marked changes in the regional situation.
- U.S. reactions, apart from unconcealed surprise reflected the change in terms of reference in international diplomacy.
- Equally surprised was Israel, the other major player in the region, which saw it as a fatal blow to the effort to build a regional coalition against Iran.

### The background

- Bilateral efforts have been underway since early 2016 to ease tensions that had developed specifically between Tehran, Riyadh and Abu Dhabi;
  - And generally within the GCC in relation to Yemen and Syria.
- The Emir of Kuwait and the Sultan of Oman initiated steps that were responded to by Iran and talks were also held during Iranian President Visit to China.
- The official visit by China's President to Saudi Arabia in 2022 also saw him attending the first China-Arab States Summit and the China-GCC summit.
  - The theme of his address was 'Building on Past Achievements and Jointly Creating a Brighter Future of China-GCC Relations'.
  - An Action Plan for 2023-2027 was agreed with specific agreements and MoUs.
  - The two sides signed a harmonizing plan between the KSA's Vision 2030 and the BRI and China-GCC summit is being scheduled.

### The Indian stand

- India's reaction to this development has been restrained.
- Apart from historical linkages, the region is in India's proximate neighbourhood and within its security parameters.
- It is the principal source of hydrocarbon imports, increasingly of investments and an important destination for manpower exports apart from being a major trade partner.
- Given these priorities, India has consciously refrained from ventures in alternate security architectures apart from supporting security and freedom.

## Russia seeks to right 'huge' trade imbalance

Russia said that it was keen to import manufacturing equipment, including machinery from India to replace the West.

### IGC – India and Russia

- Russian delegates are in India to co-chair the 24th Russia-India Inter-Governmental Commission (IGC) meeting with External Affairs Minister S. Jaishankar.
- It is expected to review defence, energy and agriculture cooperation between the two countries that have seen issues on deliveries and payments due to war in Ukraine.

### Seeking balance

- Addressing the event MEA has said that payments, logistics and certifications are real concerns for both countries and payment issue has to be worked through.
- The bilateral effort is to identify new industrial points which will give additional impetus for trade as the balance is currently in favour of Russia.
- India needs to sell more than it purchase and to purchase more we have to concentrate in cooperation in machinery than traditional raw materials or agricultural products.
- At least 20 leading Russian banks have opened Special Rupee Vostro Accounts in authorised dealer banks in India to help fast track payments,
  - But remarks from the Russian side indicate that the initiative is yet to receive active official encouragement.

## What are the latest developments in Yemen?

### The story so far:

- Hundreds of prisoners captured during the war in Yemen were reunited with their families due to diplomatic efforts.
- The main warring sides in Yemen are the Iran-backed Houthis and the pro-Yemen government, Saudi-led coalition.
  - The two opposing sides had agreed to release 887 detainees after a ten-day meeting in Switzerland.
  - The large scale prisoner swap has given the people hope for a permanent ceasefire in Yemen.

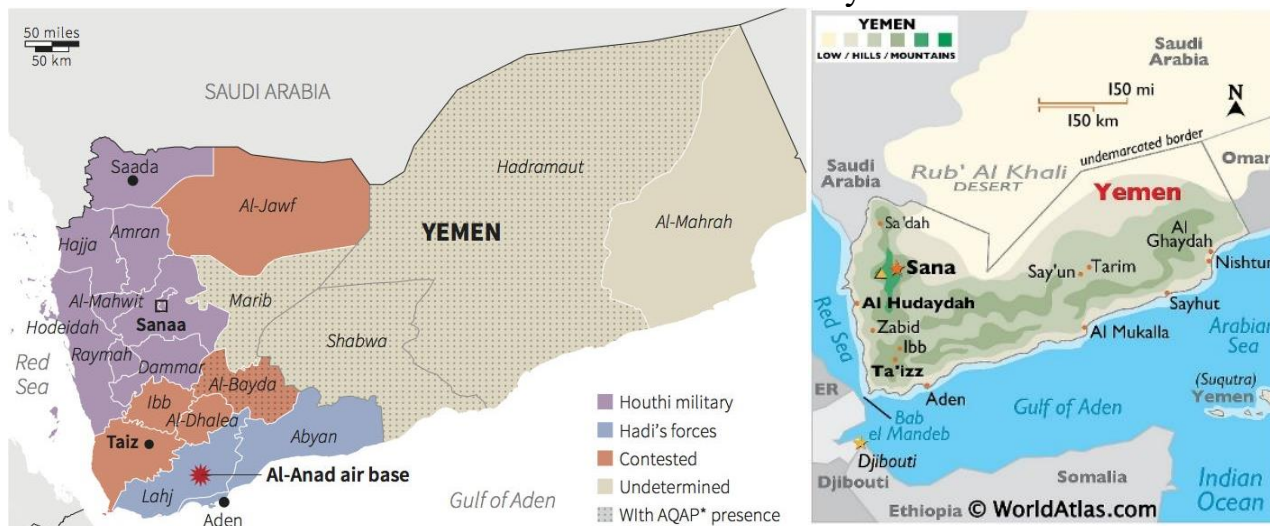
### The Stockholm Agreement

- The warring parties in control of parts of Yemen had signed the Stockholm Agreement in December 2018 whereby they had committed to freeing conflict-related detainees.
- The agreement brokered by the United Nations had three main components —
  - Hudayah agreement – included ceasefire in the city of Hodeidah and other clauses like no military reinforcements and strengthened UN presence.
  - The Prisoner exchange agreement
  - Taiz agreement- includes the formation of a joint committee with participation from civil society and the UN.

### How did the war in Yemen begin?

- The conflict in Yemen began in 2011 as part of the Arab Spring protests.
- President Ali Abdullah Saleh was forced to hand over power to his deputy, Abdrabbuh Mansour Hadi.
  - Mr. Hadi found himself faced with an insurmountable task of tackling Yemen's economic and security problems.
- The Houthis, backed by Iran took advantage of Mr. Hadi's weak control and captured the Saada province in the north and then Sana'a, the capital of Yemen, in 2014.

- Saudi Arabia then led a coalition that included other Arab countries and sent troops to Yemen in 2015.
  - However, they were unable to oust Houthis from Sana'a as well as from the north of the country.
- The war has continued since then and has only ceased once in April 2022, when the Houthis and Saudi-led coalition announced a two-month ceasefire ahead of Ramadan.
  - This was Yemen's first nationwide truce in six years.



### How has this affected Yemen?

- According to the UN, Yemen is now the largest humanitarian crisis in the world with 80% of its population dependent on aid and protection.
- Over 3 million people have been displaced from their homes since 2015 and public service sectors like healthcare, water and education have either collapsed or are in a dire situation.
- Economically, Yemen is in the trenches. It has lost \$90 billion in economic output and more than half of the country's population is living in extreme poverty.

### India-UAE cooperation to sow regional food security

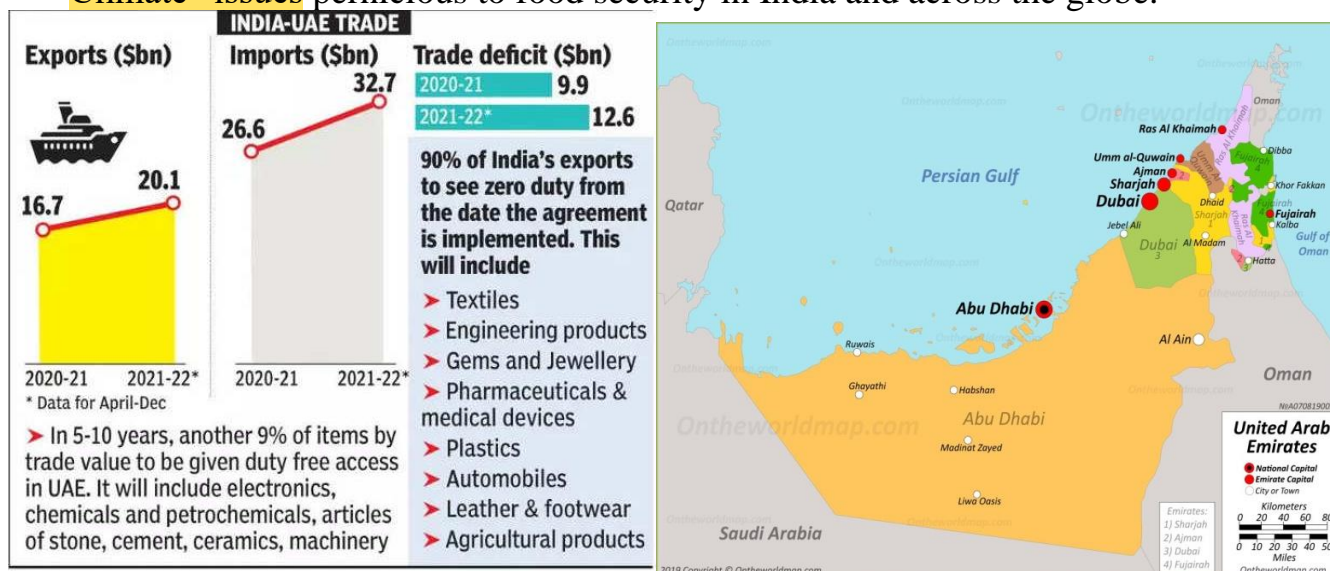
- The United Arab Emirates (UAE), whose food security has been built on imports from global markets is now focusing on
  - Twin objectives of food access and readiness to confront supply chain crises.
- India, the world's second-largest food producer, is an essential partner in the UAE's ambition to strengthen food security.

### Capabilities of India

- India has built its status as a global agri-export powerhouse using its vast tracts of arable land, favourable climate and a large growing production and processing sector.
- India has, in recent years, acted as a humanitarian provider of food to developing countries, demonstrating awareness in regional and global food security.
- India has also made major budgetary outlays towards setting up massive food parks, with emphasis on modern supply chain management from farm gate to retail outlet.
- In parallel, India runs the Public Distribution System, the world's largest food subsidy programme, providing nearly 800 million citizens with subsidised grains.
  - Providing its people with the reassurance of daily, affordable meals.
- Prime Minister's Overarching Scheme for Holistic Nutrition (POSHAN) Abhiyaan, the world's largest nutrition programme for children and women.
- As a part of its G-20 presidency, India is promoting the consumption and farming of millets- nutritious, drought-resistant, sustainable and crops that are resilient.



- India's G-20 presidency seeks to address the three Cs, of "Covid, Conflict, and Climate" issues pernicious to food security in India and across the globe.



### What the UAE brings to the table

- During the I2U2 (India, Israel, the UAE and the US) summit, UAE committed \$2 billion in investment towards constructing food parks in India.
  - While the signing of a food security corridor on the Comprehensive Economic Partnership Agreement (CEPA)'s sidelines.
- The corridor could potentially commence a route for foods made and processed in India, along the coast of Arabian Sea towards international markets.
  - Ensure unlocking greater productivity, efficiency and growth for its millions of workers and employees.
- For the UAE, it helps in maintaining and diversifying its food reserves and trade linkages to leverage its strategically placed location between Asia and Europe.

### Agriota

- The Dubai Multi Commodities Centre, UAE's largest free trade zone, launched Agriota, an agri-trading and commodity platform to link Indian farmers to food companies in the UAE.
  - Agriota gives millions of Indian farmers the opportunity to directly reach out to the UAE's food ecosystem and stock their products in Emirati stores.
  - Alongside this initiative, a consortium of UAE-based entities is investing in mega food parks, contract farming and sourcing of agro-commodities in India.
  - The initiative will include mega food parks, logistics and warehouse hubs, and fruits and vegetable hubs.

### The benefits

- There is much that India stands to gain from the UAE's private sector projects spanning its agricultural and food processing sector.
- Those projects will generate lakhs of non-farm agri-jobs, while enabling farmers to discover better prices for their products.
- Bolstered by the UAE's infrastructural capabilities, India's agricultural products will have more resilient and diversified pathways to the global marketplace.
- Multiple points of convergence will ensure that India is an essential partner in the plan of the United Arab Emirates to strengthen food security in the Global South.



## IAF to join multilateral exercise in Greece

- The Indian Air Force (IAF) will be participating in **Exercise INIOCHOS-23**, a multi-national air exercise hosted by the **Greece Air Force**.
- IAF is already participating in **Exercise Cope India** with the **U.S.** and multilateral **Exercise Orion** hosted by France and this will be its third in row.
- The exercise will be conducted at the Andravida Air Base in Greece and the IAF will be participating with four Su-30 MKI and two C-17 aircraft.



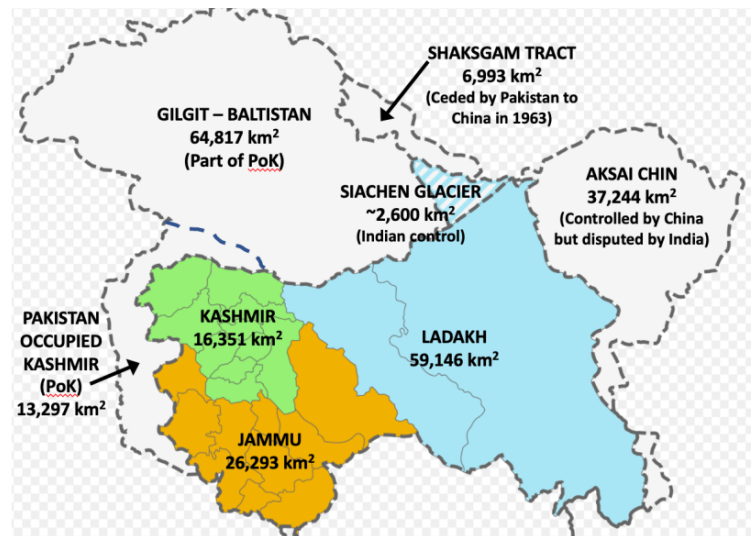
## The LoC agreement of 2007 deserves a relook

Former Spl Envoy Satinder Lambah recently confirmed that the agreement on LoC in Kashmir was about to be signed by

- Indian PM Manmohan Singh and Pakistan President General Musharraf in 2007
- But the Mumbai attacks, etc did not let it happen.

## A 'normal border'

- The agreement would seek “not to redraw borders, but make borders irrelevant” as per Pak envoys.
- But it is clear that India would never agree to give away any territory.



## India's Standpoint:

- Any settlement between two countries ensures a free flow of trade, less cross border terrorism,
- respect for human rights and bringing down military presence on both sides of LoC.

## Current Difficulties :

- While the **reorganisation of J&K in August 2019** and **Article 370's amendment** have made it difficult for any Pakistani leader to propose a restoration of ties.
- As a result, the optics is grim for the two land neighbours:
  - no political contact at any level, no trade,
  - no direct travel links by air, road or rail, and
  - no High Commissioners in each other's countries.

## Seeking engagement

No matter how much India-Pakistan ties rupture, the long arc of the relationship always veers towards engagement.

- While many Prime Ministers have worked to reconcile, Mr. Modi on the lines even visited Islamabad again in 2016 after setback in 2015.
  - Within a week terrorists attacked the **Pathankot airbase** and regardless of the emissary used then the back channel was put back in place.
- The two sides have also reportedly discussed a sequence of responses that would lead back to quasi-normalcy-restoration of statehood and elections in J&K.
- These would include initiatives such as the **Kartarpur Corridor** and **Sharda Peeth Corridor** across to temple in PoK's Neelum Valley is being thought of.

## Article 370

- One of the big changes from then to now was New Delhi's moves on August 5, 2019 which led Pakistan to snap trade and travel links and recall High Commissioners.
- To begin with, Article 370, which was always a temporary provision and diluted over the decades was never recognised by Pakistan.
- Article 35(A) redefining permanent residents of the State, has had little to no effect in changing demography and could only do so with consensus from every part of State.
- On gender parity in property inheritance, which the J&K High Court ruled against the provision taking away property rights of women who married outside the State.
- Downgrading the State to a Union Territory will be reversed according to the government once elections are held.
- More than the legal moves, is the focus on the means adopted to wrought those moves:
  - unjust arrests and a continuing security crackdown on politicians and civil society
  - Internet bans and a stringent lockdown and
  - Targeting of journalists as well as human rights violations.

Eventually, reversing these measures is part of any democracy's contract with its people and the longer New Delhi takes to ease restrictions, the more elusive normalcy will be.

## The LAC is the bigger challenge

- The truth is that despite the precariousness of the situation within J&K, the LoC has been more or less stable for more than half a century.
- Any military operation by either India or Pakistan to reclaim the other side is unlikely to make much headway and would undoubtedly unravel more.
- While Pakistani politicians have been heavily opposed to accepting any "status quo" solution to Kashmir,
  - Pakistan's own internal crises (political and economic) ensure that it is on a weak wicket.
- It is the threat to India from China at the Line of Actual Control that is more likely to continue to be India's bigger challenge.
- Hence India needs a more stable Line of Control and ensures that residents of J&K deserve a chance to prosper at the same time amid crisis.

A bilateral agreement would also end the false hope of independence the residents of the Valley have been beguiled with for far too long.

## Hakki Pikki: caught in Sudan's civil war

The story of how the Hakki Pikki or bird catchers of Karnataka got caught in a civil war in Sudan is a contemporary tale of migration, development, and the human desire to thrive.

## Hakki Pikki

- The Hakki Pikki of India is the latest group to arrive in Al Fashir, a region that has witnessed an influx of people because of the Darfur crisis.
- Hakki Pikki has remained beyond the circle of education and public welfare and the erosion of traditional life in the forest had pushed them to bottom of social status.
- However, they do not feature on the list of India's particularly vulnerable tribal groups (PVTGs).
  - They are like the Birhors of Jharkhand, as forests that sustained their lives have been taken over by 'development' or are simply dysfunctional.
- Today, the tribe is scattered across the capital city Khartoum and in the Darfur region in west Sudan.

## In news

- A few stranded members of the community said their total number in the African country is likely to be around 300, including women and children.
- With their traditional knowledge found a place in the post-pandemic world Africa has its own indigenous medicine and herbal healers to found acceptance.
- For Example, An informal tribal collective producing Neelambari Adivasi Herbal Hair Oil has seen prominent interest from international travellers.
  - They have been sending their representatives to sell hair oil in Africa.
  - After reaching Sudan, they found a ready market.
  - The Darfur conflict that left more than a million people displaced had wiped out basic amenities like hospitals.

### A warlord of his own

The Sudan Armed Forces (SAF), the regular Army, and the RSF had agreed on a time-bound transition into civilian rule. But the bonhomie didn't last long.

### History of rules in Sudan

- While Gen. Abdel Fattah al-Burhan, the SAF chief, was considered the most powerful man in the post-Bashir Sudan,
  - The real dark horse was Mr. Dagolo, popularly known as 'Hemedti' (Little Mohamed).
- He rose from the bloody civil war in Sudan's Darfur region, had its own command structure and when Bashir was gone, Hemedti emerged as a new power centre.
- When a transition government was formed in 2019, Hemedti became its second in command, after Gen. Burhan. He welcomed "the new Sudan".
- But the new Sudan he envisaged was a fiefdom that's loyal to his command.
- Hemedti then teamed up with Burhan to form a coup and expel the civilian leadership.
- The General and the warlord then agreed to share power in a delicate deal, but then began the bitter power struggle pushing the country of 45 million into civil war.
- The WHO says more than 400 people have already been killed and thousands more injured in the two years brinkmanship between Hemedti and Gen. Burhan.





## Hemediti

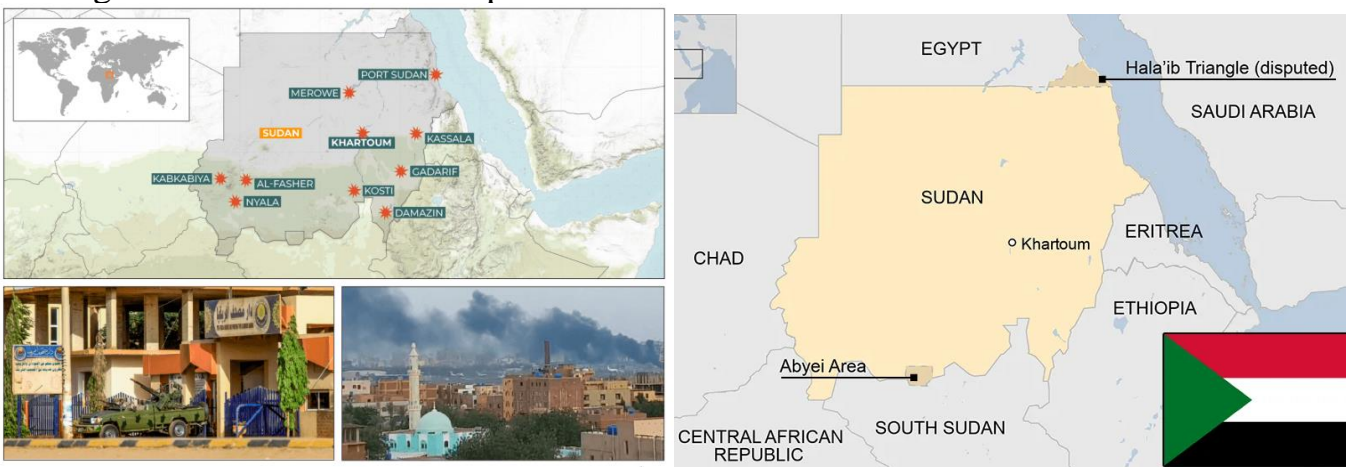
- Hemedti's rise from an outsider warlord to one of the most powerful men in the country is almost like a fairy tale in Sudan.
  - He was an 'emir' (commander) of the notorious Janjaweed Arab militia, the earlier avatar of the RSF.
  - The Janjaweed's roots go back to the civil war in neighbouring Chad, where former Libyan leader Gaddafi was seeking help.
- After the 1987 truce in Chad, the Arab militias retreated to Sudan's Darfur region, where Khartoum was also arming Arab nomads against local African tribes.
- These two Arab groups made up the Janjaweed (literally Spirit on the Horse), which in the following years would emerge as a paramilitary force backed by Khartoum.
- This period also saw Hemedti rising through the ranks of the Janjaweed. He became a commander of the Border Guards and security adviser to South Darfur's Governor.

## Bashir's plan

- When President Bashir decided to form the RSF in 2013, he picked Hemedti, then a young, loyal Arab warlord, as its commander.
- Bashir's plan was to build a parallel security organisation used to not just quell rebellions against his regime but also to protect it from potential coups from the Army.
- Hemedti drew mostly from the Janjaweed to build the new paramilitary force.
- Initially, it was under the command of the National Intelligence and Security Services .
- Within years, with Hemedti's quick rise as a confidant of Bashir, the RSF came directly under the President's command.
  - And it remained autonomous and acted as Bashir's feared private army.

## The battle of Generals

- When mass protests shook Sudan in 2019, Bashir turned to the RSF once again and Hemedti's forces attacked peaceful protestors.
- When the agitations threatened to take away the privileges they enjoyed, they decided to sacrifice the head of the regime to protect them.
- Bashir was ousted in what the Sudanese call a "revolution". But then Hemedti, was a warlord commanding paramilitary force in Sudan.
- But Gen. Burhan, the Army chief, was wary of Hemedti's rise and his growing regional clout. Hemedti has powerful friends.



## Power of Hemedti

- He is a close ally of Isaias Afwerki, the President of Eritrea, and Khalifa Haftar, the Libyan warlord who controls parts of the country.
- Hemedti had sent his RSF soldiers to Libya to fight alongside the forces of Gen. Haftar, who was backed by the UAE, against the Tripoli(Libya)-based government.



- The RSF was also dispatched to Yemen to fight alongside the Saudi coalition against the Shia Houthi rebels.
- Hemedti also provides security to the gold mines in Sudan that are linked to Yevgeny Prigozhin, the head of Russian private military company Wagner.
- On the other side, Gen. Burhan is a close ally of Abdel Fattah el-Sisi, the President of Egypt.

### Way ahead

- When Gen. Burhan and Hemedti fell apart, the former sought a tactical alliance with Sudan's civilian leadership.
- The military and protesters agreed to a two-year transition plan as part of which the RSF would be integrated into the regular military and commanded by Gen. Burhan.
- A final agreement was due to be signed in April.
- Sensing threats to his position, Hemedti demanded 10 years for the integration. .
- For Sudan's revolutionaries, who wanted a peaceful transition to civilian rule and democracy, the battle between the Generals is the last straw.
- They wanted to bury the old regime, but now, the old regime, with all its repressive organs, is back with two heads, with the promised revolution stuck between them.

### A new troika for India's northeast region

The region comprising India's eight north-eastern States (Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Tripura and Sikkim) is undergoing change.

### Changing nature

- It has overcome several security challenges and is now heading toward economic development with political changes being helpful.
  - Besides, Japan has emerged as a significant development partner for both India and Bangladesh.
- The third India-Japan Intellectual Dialogue hosted by Asian Confluence (ASCON) in Tripura was an ideal opportunity to assess the thinking of experts and policymakers.
- It shows that situations may produce path breaking changes in Northeast bringing the troika of Bangladesh, India and Japan closer.

### Vision and opportunities

- One of the most important projects is the development of Matarbari Deep Sea Port (DSP) on the southeastern coast of Bangladesh.
  - It is being constructed with Japanese assistance and is scheduled to be operational in 2027 catering the needs of Bangladesh and Northeast India.
- The long-term vision is for Bangladesh and the northeast to become a hub and key industrial corridor of this region, serving a population of 220 million.
- A joint focus on comprehensive connectivity and accelerating industrialisation in Bangladesh and the northeast is likely to be a priority.
- The northeast is blessed with vast natural resources. Its strategic location, sharing borders with Nepal, Bhutan, China, Bangladesh and Myanmar, is an asset.
- Creating value chains and manufacturing products should encompass diverse sectors such as,
  - Agro-processing, man-made fibres, handicrafts, assembly of two-wheelers and perhaps mobile phones, and pharmaceuticals.
  - The population, with its good education, already excels in the services sector drawing potential investor attention.

## The challenges

Of course, there are challenges that can be addressed by expanding policy convergence and taking people along.

- Japan as a single investor in the northeast is unworkable and Indian companies too must invest and ease restrictions on the flow of investments to Bangladesh.
- The three governments should also forge closer linkages of economic cooperation.
  - India can assist Bangladesh in becoming an integral part of the Act East Policy.
- The Bay of Bengal Initiative for Multi-Sectoral Technical & Economic Cooperation (BIMSTEC) has to be given attention in attaining regional cooperation and integration.
  - This must change so that the grouping progresses towards its vision of establishing the Bay of Bengal Community (BOBC).
- The goal of connecting a large part of South Asia with Southeast Asia requires an astute pilot and that can come from the triad of Bangladesh, India and Japan (BIJ).

## India and China hold 18th Corps Commander talks at Moldo

- Just ahead of the Shanghai Cooperation Organisation (SCO) Defence Ministers meeting in the national capital,
  - India and China held the 18th round of Corps Commander Talks at Moldo on the Chinese side in eastern Ladakh.
- The focus remains on disengagement from Demchok and Depsang Plains and to resolve the stand-off ongoing since May 2020.

## India braces to evacuate nationals from Sudan

India has started Operation Kaveri to evacuate its nationals from conflict-torn Sudan where nearly 3000 Indians are struck in various parts.

### Sudanese Crisis

- India had stationed two C-130J heavy-lift aircraft in Jeddah and sent *INS Sumedha* to Port Said (Egypt) for the operation.



- The evacuation acquired urgency in view of the total breakdown of essential services in Sudan. Food and water are in short supply and there is power outage.
- The political crisis in Sudan turned into a countrywide armed conflict after disagreement between the paramilitary (RSF) and the Sudanese Armed Forces (SAF)
  - Over the Security Sector Reform (SSR) spiralled into an armed confrontation between the commanders of the two wings.

- The fighting also enveloped the Indian Embassy in Khartoum forcing Indian diplomats to work remotely maintaining contact with members of Indian community stranded.
  - Embassy was in contact with all sides in the conflict and was urging them for a ceasefire to ensure speedy evacuation of Indians.
- India had maintained contact with Saudi Arabia, the UAE, the United States, the U.K., and Egypt over the evolving situation on the ground.

## The Wagner group's actions in Africa

After fighting erupted in Sudan's capital Khartoum, questions have been raised over the involvement of the Wagner group, which has been active in African countries for years.

### The Wagner group

- The Wagner group is a Russian paramilitary organisation headed by Yevgeny Prigozhin, which is reportedly engaged in counter-militancy operations in Africa.
- It has its influence in political, economic and military fields and involved in supplying arms, weapons and training regional forces in fighting jihadist threats.
- By siding with the domestic actors in a civil war situation, the group's actions have impacted the democratic process in Africa.
- Additionally, the West has been raising concerns over human rights violations and abuse of civilians related to the Wagner group's presence in Africa.

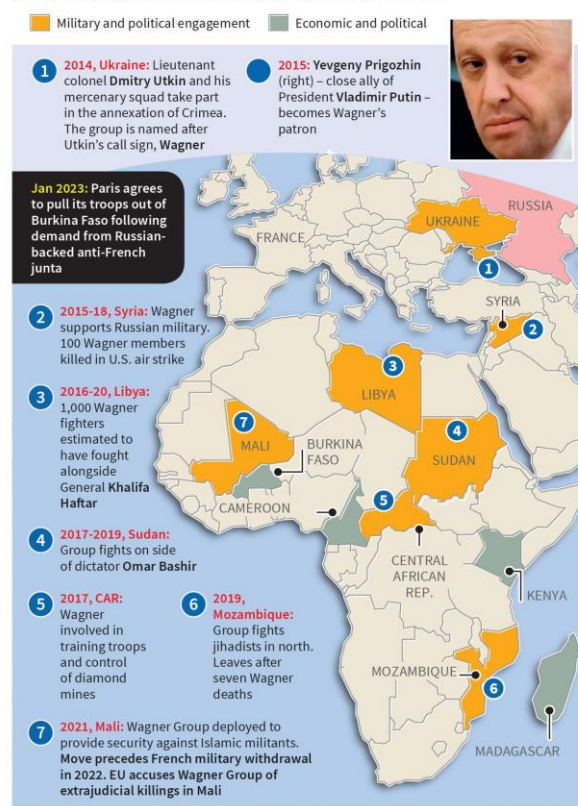
### How active is the Wagner group in Africa?

- The Wagner group has been active in Sudan, Mali, the Central African Republic, Mozambique and Libya in Africa.
- The activities include providing direct support to authoritarian governments, supporting rival leadership engaged in internal wars,
  - filling the void created by the withdrawal of the French military engagement, taking part in resource exploitation etc.
- The Wagner group presents itself as a security provider to a few governments, mostly authoritarian ones in Africa and supporting rival leaders in a civil war.
  - The group's tie with Sudan aimed at guarding gold mines and therefore supported Bashir's government against international opposition.
  - In Sudan, Russia has recently forged a strong relationship with the Rapid Support Forces (RSF) and its commander inducing violence in Sudan.
  - Besides, Russia is set to sign an agreement with Sudan to build a military base in Port Sudan on the Red Sea.
- In the Central African Republic, the Wagner Group is active beyond being engaged in security-related activities.

### What is the group's endgame in Africa?

#### Mercenaries in Africa

The Wagner group, a Russian paramilitary organisation, has been involved in multiple counter-military operations in Africa. While legally, the group is not a Russia-based private military company, it works closely with the Russian security apparatus





- The primary goal of the group is to gain access to natural resources and numerous reports suggest that Russia sees the Wagner group as an instrument of diplomacy.
- The Russian strategy in Africa comes with minimal cost economically but with heavy political returns and received 15 abstentions in UN resolution against Ukraine war.
- Finally, Russia's access to African mineral deposits is believed to be providing crucial financial support to continue war in Ukraine.
- For Russia, strong ties with African countries mean a pipeline of influence for Russia's war in Ukraine.

### **Implications for Africa**

- For African countries, increasing dependency on Wagner mercenaries implies more violence, intimidation and uncertainties.
  - A UN report said that private military groups, particularly the Wagner Group have violently harassed people and committed sexual violence.
  - France, the U.S. and international human rights organisations accuse the mercenaries of extrajudicial killings in the Central African Republic and Mali.
- Secondly, the group posits a threat to democratic governance in Africa.
  - The collapse of relations between the West and Sahel countries, especially Mali and Burkina Faso paved the way for Russia to position itself as an alternative.

However, deepening relations between African leaders and Russian mercenaries pose a significant threat to democratic values.

### **India calls UN system 'anachronistic'**

- With another year of meetings on reforming the United Nations particularly the question of the expansion of the Security Council coming to a close in June,
  - India lashed out at the UN system with its most scathing attack thus far.
- The Indian Permanent Representative called the UN Charter anachronistic and said it had failed handling the COVID-19, Ukraine war, terrorism and climate change.

### **Veto for all or none**

- India also called for expanding the Security Council's permanent membership and hit out at the veto power given to the P-5 countries.
  - This is the first time India has specifically criticised giving the veto to the P-5 and clarified its stand about veto be given to all members or none.
- This resulted due to the slow pace of the Inter-Governmental Negotiations (IGN) process and its determination to keep UN reforms at the top of global body's agenda.
- Significantly many joined India's voice of concern about the process and about the lack of representation for Africa, South America and Asia.
- India also called for review of UN Charter citing Article 109 that had said a review conference must be held within a decade of the original charter being adopted.

### **India sends third ship INS Tarkash to Port Sudan for evacuating citizens**

*INS Tarkash*, an Indian naval ship, reached Port Sudan to evacuate stranded Indians as part of Operation Kaveri to bring back Indians from war-torn Sudan.

### **Operation carried**

- The country was extremely grateful to Saudi Arabia for its support in the evacuation.
- *INS Sumedha* brought 278 Indian nationals and gone and re-docked with additional Indians.
- *INS Tarkash* is the third ship to join the evacuation, which is being supported also by *INS Sumedha* and *INS Teg*.



- The ships are being used to ferry stranded Indians from Port Sudan to the Saudi port of Jeddah from where they are being flown to India.
- India had set up control rooms in Jeddah and Port Sudan, and the evacuation had to deal with factors such as lack of diesel and buses.
  - And further extremely grateful to Saudi Arabia for its support in the evacuation.
- Describing the situation in Sudan as highly volatile and unpredictable, MEA said India is in touch with the **Rapid Support Forces and the Sudanese Armed Forces**.

### Tackling the threat

On the **70th anniversary of U.S.-South Korea alliance**, South Korean President sealed an important cooperation agreement with America to protect from nuclear attack by the likes of North Korea.

### Deal signed

- Under the new pact, **Washington Declaration** deals with;
  - **U.S. strategic assets will be deployed around the Korean Peninsula**
  - **A joint Nuclear Consultative Group** will share tactical information, engage in joint training, and coordinate military responses.
- The Washington will remain the sole authority deciding on whether or not to carry out a nuclear response in any such eventuality.
  - The administration will set up its contribution to symbolic deterrence against the North by sending nuclear-armed submarines to the region.
  - This is unlikely to be a permanent stationing of nuclear warfare in Korea.
  - U.S. tactical nuclear weapons stationed in South Korea were withdrawn from the region in 1991.



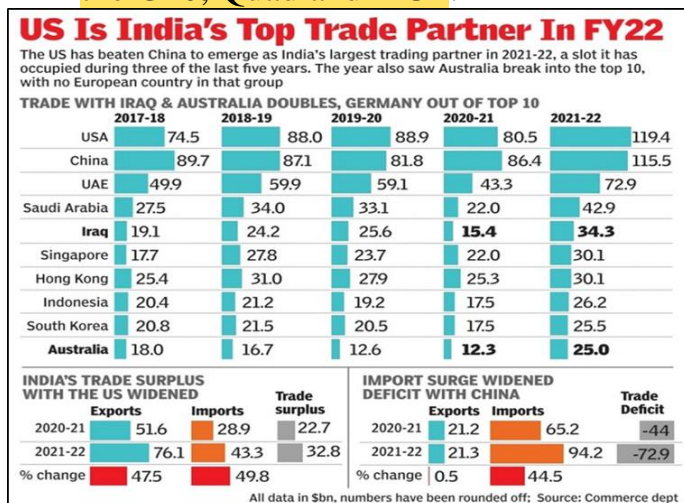
During early years after the **North first tested a nuclear bomb in 2006** there was less concern over Pyongyang launching a coordinated attack on South Korea or beyond,

- But in recent years, **North Korea has steadily added to its stock of ICBMs** capable of reaching U.S. cities,
  - Most recently testing a **solid-fuel ICBM** and altering its nuclear doctrine to include the option to carry out pre-emptive strikes.
- While the **“iron-clad” treaty between the U.S. and South Korea** will strengthen the nuclear umbrella extended by Washington across the Korean Peninsula,

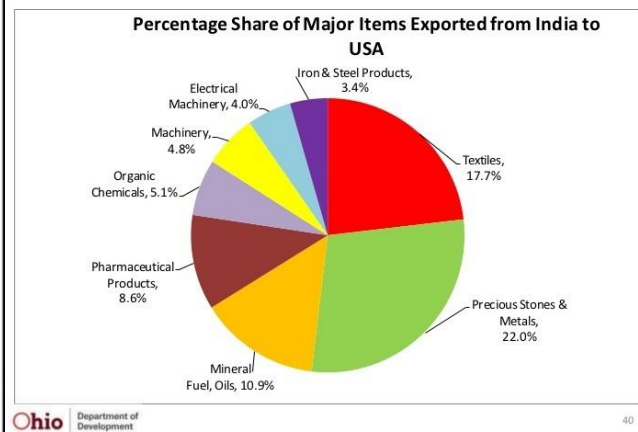
- The White House would be loath to risk any skirmish that could endanger U.S. citizens.

## A crucial six months for India-U.S. ties

- In March, the U.S. finally announced its next Ambassador to India, Eric Garcetti, after a gap of two years.
- PM Modi is likely to head to the U.S. in June and U.S. President Joe Biden is expected to visit India for the G20 summit later this year.
- There will also be greater engagement between the two countries on forums such as the G20, Quad and I2U2.



## US-India Bilateral Trade (US Imports)



## Divergence and convergence

- The appointment of Mr. Garcetti, signifies the potential for greater partnership, there are also differences in opinion to be overcome in the U.S.-India relationship.
- India is also the president of the Shanghai Cooperation Organization, a forum that includes China and Russia and NATO's overtures to India will be watched.
- India-U.S. Initiative on Critical and Emerging Technology launched in 2022 is to expand strategic technology partnership and defence industrial cooperation.
- The Indo-Pacific partnership is aimed at promoting security and economic growth, increase trade and investment, and enhance connectivity in the region.
  - It is based on the shared vision of a free, open, and inclusive Indo-Pacific region that is respectful of the sovereignty and territorial integrity of all countries.
  - Including joint military exercises, information-sharing on security issues and collaboration on economic and infrastructure development projects.
  - It also involves cooperation in areas such as counter-terrorism, cybersecurity, and maritime security.
  - One of the key objectives of the Indo-Pacific partnership is to counter the growing influence of China in the region.

## In relation to China

- The U.S. and India share concerns about China's aggressive actions in the South China Sea, its expanding military presence in the region and Belt and Road Initiative.
- India's growing consumer market makes it an attractive destination for U.S. businesses looking to expand their customer base.
- India has a relatively low-cost labour force and an abundance of skilled workers in sectors such as Information Technology, engineering, and manufacturing.
- The government has also implemented policies aimed at attracting foreign investment and promoting economic growth.

- Infrastructure, logistics and regulatory systems in India are not as well developed as those in China. India also has a complex legal and bureaucratic system.
- To address these challenges, the U.S. and Indian governments have taken steps to promote closer economic ties and facilitate investment.
  - For example, **U.S.-India Strategic Energy Partnership 2020** aims to enhance cooperation in areas such as energy security and access, and climate change.

### **Positives in relation**

The India-U.S. relationship has seen ups and downs over time.

- The nuclear deal, liberalisation of markets and the outsourcing of Indian techies for U.S. companies are a few key moments of the relationship.
- **Indian Americans** are among the **most successful immigrants in the U.S.** India needs the knowledge, skill and investment of the Diaspora to regain its global position.
- Previously, the **U.S.-aided Green Revolution** had transformed India from a shortage economy to one with surplus food.
- The U.S. also played an important role in making India an IT superpower and a large number of **persons of Indian origin are contributing to Silicon Valley companies.**
- The U.S. and India are also partners in combating climate change involving a wide range of initiatives including promoting renewable energy, joint research
  - And development projects, and investment in renewable energy infrastructure.
- The two countries are also aligned on the importance of space technology.

### **Certain down in relations**

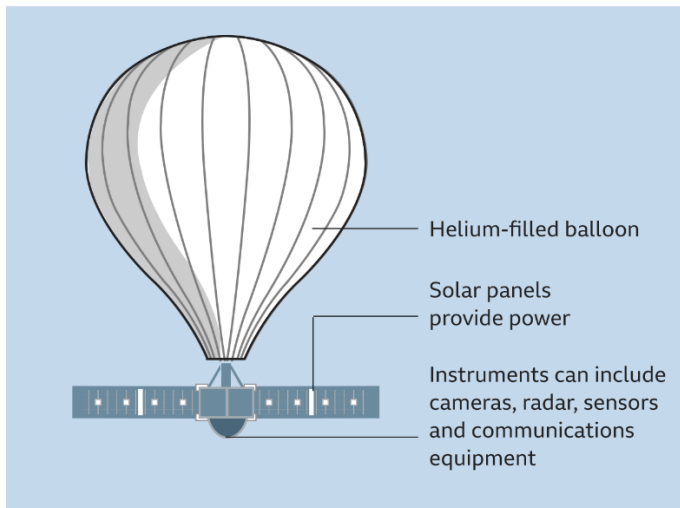
- In the past, there was a trust deficit between India and the U.S. and it is hoped that trust between the two nations will be enhanced in the coming months.
- Indians feel that the **U.S. has not always lent support to it and has instead pivoted to supporting Pakistan.**
- Moreover, the American pull-out from Afghanistan does not inspire confidence in the U.S. as a trusted partner.
- The U.S., on the other hand, has been flagging issues related to terrorism, human rights and democracy in India.
- Building on their strategic partnership, the two countries can slowly become stronger together.
- This is the time to take the relationship forward constructively and make it reach its potential as well as look for positive areas of collaboration.

### **Discussed shooting down of Chinese spy balloon with India, says American General**

- The U.S. has discussed the shooting down of a Chinese spy balloon with India and the challenges involved in it, said U.S. Pacific Air Forces.
  - In February, a **USAF F-22 shot down a Chinese spy balloon** off the coast of South Carolina that traversed across North America for several days.
  - Over India, there has been at least **one incident of a balloon sighting over the Andaman and Nicobar Islands.**
- One thing that should concern us that value free and open Indo-Pacific and anywhere else in the world is the sovereignty of the air space.
- Any country that violates the sovereignty of another country's air space and who is not abiding by international norms should cause concern for us.



## High altitude surveillance balloons



### How high do they fly?



Source: Reuters

BBC TIME

## Other balloon sightings

The alleged Chinese spy balloon that traversed the U.S. has brought out additional reports of similar objects in the sky from across the world



## Air exercise

- For the first time, two B-1 long range bombers of the U.S. Air Force (USAF) would join the **bilateral air exercise Cope India**.
- On Cope India, this was the first time that U.S. bombers were here specifically for an exercise and B1s had earlier done flyby during **Aero India** on two occasions.
  - Bombers are unique platforms and they have extremely long range and significant payload.

## As the Ukraine war grinds on, Russia, India seek ways to keep defence trade afloat

There are growing speculations about the ability of Russia, hit by heavy western sanctions & faced with dwindling exports, to continue to supply defence systems to India.

### Russia's ability

- Such concerns are largely rooted in payment problems that India and Russia are yet to resolve, according to sources in the Russian government, defence and banking sectors.
- There were media reports that India may not get the delivery of the two remaining **S-400 Triumf missile defence systems** that it had ordered in 2018 for around \$5.4 billion.

### Russia-India agreements

- Russian-Indian defence cooperation is developing steadily in accordance with previously reached agreements and signed documents,
  - Including the **S-400 systems and two Project 11356 frigates** and modernisation of existing **Sukhoi Su-30 MKI and upgrade of MIG-29s**.
- India's total imports from Russia rose by five times from \$8.5 billion in April 2022 to \$41.6 billion in February 2023, driven mainly by oil supplies.
- Almost the entire amount of this \$41 billion has now **accumulated in the vostro accounts opened by Russian banks with authorised dealer banks in India**.
  - The most **preferable way for Russia to get further payments would be roubles** something that India is not able to do.

### Two impediments

- Two key impediments in rouble payment:



- First the concerns of the Indian financial sector which is overall **slowly adopting new mechanisms** and second **lack of trust on the Russian rouble**.
- India is hesitant about the rouble after it experienced a serious shock last year and it is almost impossible to evaluate it correctly.
- Therefore, the **Indian side has no particular interest in trading in the Russian currency** and Delhi tried to rely on payments in the rupee.
- According to the latest report by the Stockholm International Peace Research Institute (SIPRI), a Swedish think tank,
  - **Russia's share of arms imports to India fell** from 69% in 2012-17 to **46% in 2017-21**, while Moscow still remained the key defence supplier to New Delhi.

### **85% share of Hungary's gas needs supplied by Russia**

- **Hungary, a land-locked country and member of NATO** has agreed with Russia to increase the share of gas it receives to be increased.
- Energy giant Gazprom would maintain an option for additional gas shipments this year on top of quantities shipped under a long-term deal.

### **Saudi Arabia's quest for strategic autonomy**

#### **The story so far:**

- **Kingdom of Saudi Arabia** that adopted an aggressive foreign policy to expand its influence in West Asia has rolled back now following a dramatic course correction.
- It is reaching out to old rivals holding talks with new enemies and seeking to balance between great powers, all while trying to transform its economy at home.
- If the **Saudi drive to autonomise its foreign policy and build regional stability** through diplomacy holds, it can have serious implications for West Asia.

#### **Saudi and its neighbours**

- For years, the main driver of Saudi foreign policy was its hostility towards Iran which has resulted in proxy conflicts across the region.
- **In Syria, Iran's only state ally in West Asia**, Saudi joined hands with its Gulf allies, Turkey and the West to bankroll and arm the rebellion against President Bashar al Assad.
- **In Yemen**, whose capital Sana'a was captured by the Iran-backed **Shia Houthi** rebels in 2014 and the Saudis started a bombing campaign in March 2015 which hasn't formally come to an end yet.
- One of the demands Saudi made to **Qatar** when it imposed a blockade on its smaller neighbour in 2017 was to sever ties with Iran.



#### **Changing policy now**

- Last month, Saudi Arabia announced a deal after **China-mediated talks to normalise diplomatic ties with Iran**.
- There were reports that Russia was mediating talks between Saudi Arabia and Syria which could lead to the latter re-entering the **Arab League** before its next summit.
- All these moves mark a decisive shift from the policy adopted by **Crown Prince Muhammad bin Salman** after he rose to the top echelons of the Kingdom in 2017.
  - Aggressiveness makes way for diplomacy and loyal alliances make room for pragmatic realignments.

- While Saudi Arabia is also trying to balance between the U.S., its largest arms supplier, Russia, its OPEC-Plus partner and China, the new superpower in the region.

### Why are there changes now?

- To begin with, these changes do not mean that the structures of Saudi Arabia's relations with Iran are undergoing a transformation.
  - In fact, Iran would continue to drive Saudi Arabia's security concerns and strategic calculus.
  - But Saudi Arabia's response to the Iran problem has shifted from strategic rivalry and proxy conflicts to tactical de-escalation and mutual coexistence.
- The Kingdom's recent regional bets were either unsuccessful or only partially successful.
  - Syria backed by Russia and Iran, has won the civil war.
  - In Yemen, Saudi led coalition is now in fractured state and Houthis pose a serious security threat to Riyadh.
  - In parallel, the U.S.'s priority is shifting away from West Asia.
- When China, which has good ties with both Tehran and Riyadh, offered to mediate between the two, the Saudis found it as an opportunity and seized it.

### Is Saudi Arabia moving away from the U.S.?

- It is not. The U.S., which has thousands of troops and military assets in the Gulf, including its Fifth Fleet, would continue to play a major security role in the region.
- For Saudi Arabia, the U.S. remains its largest defence supplier.
- But at the same time, the Saudis realise that the U.S.'s deprioritisation of West Asia is altering the post-War order of the region.
- What Saudi Arabia is trying to do is to use the vacuum created by the U.S. policy changes to autonomise its foreign policy.
- The early sign of this autonomisation was visible in Saudi Arabia's recent decisions.



### Saudi – U.S relations

- Unlike most other American allies, Saudi Arabia refused to join anti-Russia sanctions.
- Despite protests from Washington, Saudi Arabia joined hands with Russia to effect oil production cuts twice since the Ukraine war began,
  - Aimed at keeping the prices high which would help both Moscow and Riyadh.
- It has also built stronger trade and defence ties with China and the Iran reconciliation deal, under China's mediation.
- At the same time, Saudi Arabia has placed orders for Boeing aircraft worth \$35 billion and entered into conditional talks with the U.S. on normalising ties with Israel.
- De-Americanisation of West Asia is not a Saudi goal.
  - Rather it is trying to exploit America's weakness in the region to establish its own autonomy by building better ties with Russia and China.

### Implications in the region

- Saudi Arabia's normalisation talks with Syria or its talks with the Houthis cannot be seen separately from the bigger picture of the Saudi-Iran rapprochement.
  - If Syria rejoins the Arab League, it would be an official declaration of victory by Mr. Assad in the civil war.

- It would help improve the overall relationship between Damascus and other Arab capitals.
- If the Saudis end the Yemen war through a settlement with the Houthis (which would probably split Yemen),
  - Riyadh would get a calmer border while Tehran could retain its existing influence in the Saudi backyard.
- Such agreements may not radically alter the security dynamics of the region but could infuse some stability across the Gulf.

### **Not a complete stable Gulf**

- While the Saudis are trying to build cross-Gulf stability, another part of West Asia remains tumultuous,
  - With Israeli raid at Jerusalem's Al Aqsa, Islam's third holiest place of worship.
- This triggered rocket attacks from Lebanon and Gaza and in return Israeli bombing of both territories and Israel also keeps bombing Syria with immunity.
- The impact of escalation of tensions between Israel and Iran on cross-Gulf stability remains to be seen.

### **FM urges G20 to unite on debt distress of middle-income countries**

- G20 Finance Ministers & Central Bank Governors (FMCBG) meeting on 12 Apr
- Finance Minister Nirmala Sitharaman expressed hope that the group could come together to address the debt distress of middle-income countries (MICs).
  - India's presidency is a great opportunity for India to prove and to work towards bringing all countries together on substantive issues.

### **Troubled trio**

- Three countries in India's neighbourhood — Sri Lanka, Pakistan and Bangladesh have sought help from the IMF.
- The G20's debt restructuring process, the 2020 Common Framework has largely catered to poor countries but has been slow to act.
- Only countries such as Chad, Zambia, Ethiopia and Ghana to date have applied for debt restructuring through the framework.
- China, a major creditor country for low-income countries has been blamed for not playing ball on the issue of debt restructuring.



# Economy Agri & FPI

By Lectures Bureau



Economy, Agri & FPI



## Govt. vows swifter nod for exporters

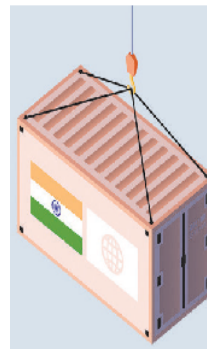
- Replacing the extant foreign policy that had been in place since 2015, the new policy kicks in from 2023-24.
- It aims to almost triple India's goods and services exports to \$2 trillion by 2030, from an estimated \$760 billion in 2022-23.

## India's exports

- The new policy will have **no sunset date** and will be tweaked based on the emerging world trade scenario and industry feedback.
- While the policy will be open-ended, the schemes sanctioned under it will be time bound.
- There are no major new schemes, barring a one-time amnesty under the existing **Advance Authorisation and Export Promotion Capital Goods (EPCG) schemes**,
  - That allows imports of capital goods subject to specified export obligations.
  - These two schemes will continue with process tweaks including a reduction in export obligations for some items pertaining to green energy development.
- Opening up a new area of potential exports, the policy has included **merchanting trade within its ambit**.
- Exporters in India can source goods from another country and send them to a third country without touching Indian shores and **enable exports of restricted goods**.

## Policy overhauled

Key highlights from India's updated Foreign Trade Policy:



- It focuses on lowering costs for smaller firms and offering swifter clearances
- It aims at tripling exports to \$2 trillion by 2030 from \$760 billion in 2022-23
- Policy allows for adjustments based on world trade and industry feedback
- Export promotion initiatives include encouraging international trade settlement in Indian currency

## Defence exports have touched all-time high of ₹15,920 cr.: Rajnath

The country's defence exports touched an all-time high of ₹15,920 crore in the FY 2022-23, a rise of over 10 times since 2016-17.

## Defence Exports

- Indian industry has shown its capability of design and development to the world with **100 firms exporting defence products at present**.
- In **Aero India 2023**, about 104 countries have participated indicating proof of India's growing defence capabilities.
- India exports major platforms such as;
  - Dornier-228, 155 mm Advanced Towed Artillery Guns, BrahMos missiles, Akash surface-to-air missiles, radars, simulators.
  - Mine-protected vehicles, armoured vehicles, Pinaka rocket launch systems, ammunition, thermal imagers, body armour and others.
- There is growing global demand of **Light Combat Aircraft (LCA)-Tejas**, Light Combat Helicopters, aircraft carrier, Maintenance, Repair and Overhaul activities.

## Undersea cable interests telcos, but is yet to solve Andaman's struggle with poor Internet

- The undersea cable between the **Andaman and Nicobar Islands and Chennai** is connecting the Union Territory to global Internet.
- It has received interest from telecom operators which have to buy bandwidth to be able to serve islanders on mobile and fixed line connections with fast Web access.

- According to **Universal Service Obligation Fund (USOF)**,
  - The BSNL alone has been allotted 40 GBPS in bandwidth in the largest segment between Port Blair and Chennai.
  - Airtel has bought 20 GBPS between Port Blair and Car Nicobar, Campbell Bay, Long Island, and Rangat.

### **Outcome of the project**

- The official data indicates that only two telcos have bought a small amount of bandwidth between the capital and other islands **reflects this inequality**.
- Tariffs listed on the BSNL website indicate that they exclude streaming subscriptions offered in other parts of the country and run up to 10 MBPS.

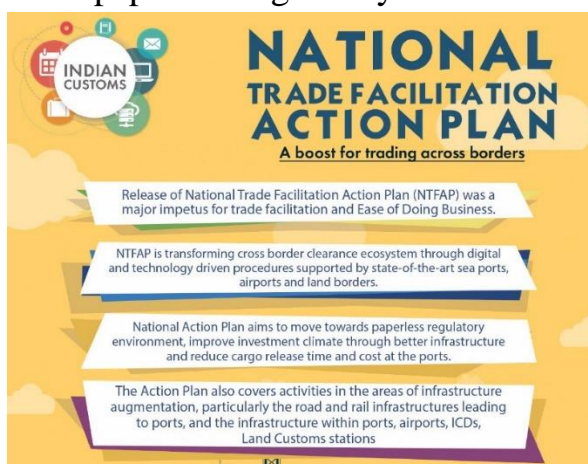
### **Long on intent**

#### **Foreign Trade Policy**

- The new policy announced has set an ambitious **target of reaching \$2 trillion in total exports (goods and services combined) by 2030**.
- The policy projects a near tripling in outbound shipments of goods and services over the course of seven years.

#### **The National Trade Facilitation Action Plan-**

- The last three years have been unprecedented, with first the COVID-19 pandemic and then Russia's invasion of Ukraine disrupting global trade momentum.
- The **National Trade Facilitation Action Plan** first launched for 2017-20 and then for 2020-23 lists aims to achieve that are essential and laudable but in no way novel:
  - an improvement in the ease of doing business through reduction in transaction cost and time
  - a reduction in cargo release time
  - A paperless regulatory environment.



#### **In compliance with WTO**

- India has almost shifted its incentives as per its nod to **WTO's obligations** most of these schemes including;
  - RoDTEP (Remission of Duties and Taxes on Exported Products)
  - RoSCTL (Rebate on State and Central Taxes and Levies)
  - AA (Advance Authorisation)
  - EPCG (Export Promotion Capital Goods)
- Still with global trade largely becalmed and the services sector facing headwinds of uncertainty in the key western markets,
  - The **FTP falls short in offering more substantive and sectorally targeted measures** as well as a well-defined road map to meet the 2030 export target.

## The Bharat 6G vision document: how India plans to lead telecommunication tech

PM Modi unveiled the **Bharat 6G Vision Document**, a starting point for policymakers and the industry to gear up for the **next generation of telecommunication**.

### Government's 6G vision document

- The government wants to **accelerate India's wireless data consumption and assume leadership in setting the standards for 6G in the coming years**.
  - This may involve everything from encouraging local manufacturing of telecom gear to supporting Indian companies and engineers in standardisation.
- Another key motivation is the **delay in previous generations of telecommunication technology rolling out in India**.
  - 5G started rolling out in India years after countries like South Korea and the U.S. had already connected.
- **Pure physics**: frequencies generally increase in newer generations of networks, but the lower the frequency the longer a cell signal can travel.
  - With increasing data usage lower frequencies in 4G networks may not physically be able to keep up with the demand for traffic.
- Beyond encouraging greater participation, it will **financially support research pathways** and said an apex body will be set up to shepherd these groups.

### How will 6G be different from 5G?

- For consumers, websites will load faster, videos will look better, and files will download faster.
- **Latency, which is the time taken for a data packet to move from one place to another is not far off from the speed of light itself on existing networks**.
- Businesses and governments are still on the verge of how best to leverage 5G to reap the benefits of high-precision low-latency applications with these new connections.
- Holograms and robotic surgery are already riding on 5G networks so 6G will also have to depend on group plans to use the spectrum like 5G.



### Growing influence globally

- According to the vision document, **satellite constellations will join telecom towers and base stations**, integrating networks and extending them to rural areas.
- Some of the innovations that the government envisions as 6G-powered connectivity boosters are solutions that already exist in other forms.
- For instance, satellite internet in remote areas is a solution that the government can instantly approve by granting firms like
  - Elon Musk's SpaceX and Bharti Airtel-backed OneWeb the administrative clearance to begin offering their services.

### Foreign Trade Policy brings 'strategic and economic interests' into trade transit ties

- Marking a significant shift in the country's stance on allowing transit of goods in and out of neighbouring countries,

- The new Foreign Trade Policy (FTP) has introduced an additional consideration in providing trade transit facilities for adjacent countries.

### **Provisions included**

- The changed language in provisions pertaining to transit facilities and a subtle shift in the stance on trade released by Minister of Commerce and Industry;
  - It could unnerve some land-locked countries around India such as Nepal and Bhutan that rely on goods transit through India.

### **FTP 2015-20:**

- Transit of goods through India from/or to countries adjacent to India shall be regulated in accordance with bilateral treaties with them.
- Also subject to such restrictions as may be specified by DGFT in accordance with international conventions.

### **Revised provision in Section 2.23 of the new FTP document**

- Transit of goods shall be regulated in accordance with strategic and economic interests of India as well as the bilateral treaties with them.”

### **Consequences:**

- Old policy issued instructions to promote trade and strengthen economic ties with neighbouring countries while new policy includes inclusive trade.
- It may have implications for India’s commitments at the WTO-
  - Freedom of transit to landlocked countries are guaranteed under Article V of the GATT.
  - Further, the WTO Agreement on Trade Facilitation of which India is a party to says that regulations in connection with traffic in transit imposed by Member shall not be applied in a manner that would constitute a disguised restriction.

### **Just 9.3% of loans under PM SVANidhi given to vendors from minority communities**

- A total of 42.7 lakh loans amounting to ₹5,152.37 crore has been disbursed to street vendors under the PM SVANidhi scheme.
- Out of which only 3.98 lakh or 9.3% were to hawkers from the minority communities said the Ministry of Housing and Urban Affairs.
- The State-wise disbursement of loans seemed to be aligned with its population, with Uttar Pradesh disbursing the maximum number of loans while Sikkim gave out one loan.

### **PM SVANidhi**

- Prime Minister Street Vendor's AtmaNirbhar Nidhi.
- A micro-credit scheme launched in 2020 to provide handholding support to street vendors to tide over the pandemic-induced economic stress.
- It facilitates collateral-free loans of ₹10,000, with subsequent loans of ₹20,000 and ₹50,000 with 7% interest subsidy.

### **Antitrust law gets more teeth, mergers to win swifter clearances**

- Parliament cleared the Competition (Amendment) Bill, 2023 which is to bring some significant changes to the country’s antitrust regime.

### **Competition Commission of India**

- It is the chief national competition regulator in India and a statutory body within Ministry of Corporate Affairs.
- It responsible for enforcing the Competition Act, 2002 to promote competition and prevent activities that have an appreciable adverse effect on competition in India.



## New changes

- The new law mandates that firms penalised by CCI must fork out at least 25% of the penalties levied on them for their appeals to be heard by an appellate tribunal.
- The **definition of turnover** has also been enlarged to mean global turnover from all products and services of a contravening enterprise.
- Moreover the CCI will have to frame a prima facie opinion within 30 days from the receipt of such notice.

## World Bank lowers India's growth forecast to 6.3%

The World Bank has forecast a 6.3% economic growth rate for India in the current fiscal year, which ends March 31, 2024, a downgrade of 0.7% since its October forecast.

### Primary forecast factors

- The primary reasons are **high borrowing costs and slower income growth** causing weaker consumption, as well as the government tightening fiscal expenditure.
- While India fared better than the rest of the South Asian region two major concerns were;
  - The **female labour participation rate** that dropped to below 20%
  - The **informal sector** neither becoming more productive nor shrinking.
- The Indian economy is expected to grow at 6.4% in FY 2024-25, an upgrade of 0.3 percentage points from the previous forecast.
- The South Asia region as a whole is expected to grow at 5.6% this calendar year.

## The NPCI's new circular on levy charges

### The story so far:

- The National Payments Corporation of India (NPCI) governing UPI has intimated banks that they can **now levy charges on merchant transactions**,
  - That is made through **Prepaid Instrument wallets using UPI**.
- NPCI has clarified that normal bank-to-bank UPI transactions will not be charged and that customers will not have to pay for transactions made via PPI on UPI.
- The new interchange charges are only **applicable for Prepaid Payment Instruments' (PPI) merchant transactions**.
- The interchange fee generally associated with card payments to cover the transaction cost has now brought PPI wallets also under its fold.

## PPIs

- Prepaid Payment Instruments (PPIs) are payment methods that can be used to purchase goods and services and send/receive money by **using the stored value in the wallet**.
- Users have to pre-load the wallet with a desired amount and can be loaded/reloaded against cash or debit to bank account or using credit/debit cards, UPI.
- **PPIs can only be used in Indian rupees**.
- PPIs can be in the form of mobile wallets, physical smart cards, secure tokens, vouchers or any other method that allows access to prepaid funds.

## PPI interoperability

- Previously, to use PPI at any merchant it was necessary that the concerned merchant was engaged directly by the specific PPI issuer (specific network).
- All PPIs with which the merchant did not have a direct tie-up would get rejected.
- The most prevalent form of PPI used in the country is the mobile wallet and customers of one specific mobile wallet could **spend only at specific merchant locations**.

- For example, if you had a Paytm or Mobikwik wallet, you could only use it at merchants that accepted Paytm or Mobikwik QR codes.
- To overcome this limitation of PPIs, the **RBI has mandated interoperability among different PPI issuers**.
  - Subsequently, PPI issuers tied-up with NPCI for issuing interoperable RuPay PPI cards or creating interoperable wallets on UPI rails.
- Prepaid instruments in the form of wallets can now be linked to UPI, thus creating interoperable wallets on UPI rails.

### **PPI interoperability through UPI work**

- After linking one's PPI wallet to UPI, customers can transact using Scan and Pay on **all UPI interoperable QR codes**.
- This will enable the use of PPI wallets at all merchant locations and users can also send/receive money to any other wallet user.
- Similarly, a merchant with any UPI QR code can now accept payments from any PPI issuer or mobile wallet.
- Officially **there are no charges to be paid by the customer**.
- However, merchants may pass on the additional burden to customers by way of price increase or some other means.

### **What is the open-source seeds movement?**

#### **The story so far:**

- **Farmers** have innovated and shared seeds **without any intellectual property rights (IPR)** for centuries and haven't sought exclusive rights over seeds and germplasm.
- However, with the emergence of global IPR regime over plant varieties there was a dire need to open-source seeds.

### **Plant-breeders' rights and patents**

- The advent of hybrid seeds, scientific plant-breeding and other factors conferred developers of new varieties with plant breeders' rights (PBR) and patents.
- In this regime, **rights-holders could demand royalty on seeds and legally enforce IPR** and can also restrict the unauthorised use of seeds to develop new varieties.
- In 1994, establishment of the **World Trade Organization cast a global IPR regime** over plant varieties.
  - The **Trade-Related IPR Agreement (TRIPS)** required countries to provide at least one form of intellectual property (IP) protection.

### **How is IP protected in agriculture?**

- Unlike Green Revolution spearheaded by public-sector institutions, the genetic revolution in agriculture was led by the private sector with strong IPRs.
- There are two major modes of IPR protection in agriculture — **plant-breeders' rights and patents**.
  - Both restrict farmer rights & freedom to develop new varieties using germplasm from IP-protected varieties and increased IP-protected plant varieties.
- The high prices of **genetically modified seeds and IP claims** triggered many problems and issues including the State's intervention in Bt cotton seeds in India.
- As public sector breeding declined and the private sector began to dominate the seed sector the need for alternatives became keenly felt.
  - This is when the success of open-source software inspired a solution.

## Open-source seeds

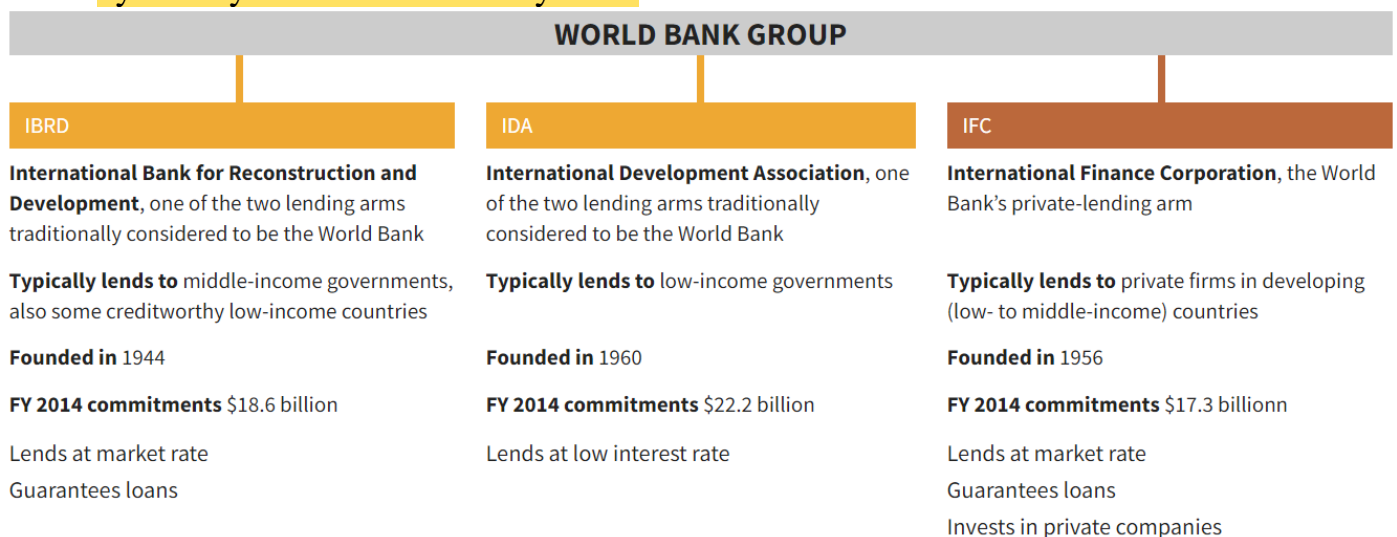
- Under **India's Plant Variety Protection and Farmers' Rights Act 2001**, farmers can register 'farmer varieties' if they meet certain conditions,
  - And have the right to reuse, replant, and exchange seeds.
  - However, they can't breed and trade in varieties protected under the Act for commercial purposes.
- In India, **Centre for Sustainable Agriculture (CSA), Hyderabad** developed a model that included an agreement between CSA and the recipient of the seed/germplasm.
- One potential application of the open-source approach is to use it in **farmer-led seed conservation and distribution systems**.
- There are many traditional-variety conservation and sharing initiatives in India involving farmers but are mostly site specific or have special features.
  - The model can also be used to promote farmer-led participatory plant-breeding exercises.
- Open-source principles can help overcome **challenges of quality for seed development and breeding** by facilitating testing, improvisation, and adoption.

## IFC says to stop funding new coal related infra projects

The **International Finance Corporation (IFC)**, the private sector arm of **The World Bank** has said it will not support investments in new coal related projects.

### IFC decision

- The IFC funds banks and other financial institutions that in turn lend to infrastructure and energy projects.
  - It has reportedly lent close to \$5 billion to almost 88 financial institutions in India.
- This move is a step towards **alignment with Paris Agreement ambition** under which it will ask its client to not originate and finance any new coal projects.
- The IFC had unveiled a policy requiring clients to **cut their exposure to coal projects by half by 2025 and to zero by 2030**.



## FTP opens doors for some second-hand goods imports

- **India's new Foreign Trade Policy (FTP)** has adopted a fresh approach to the import of second-hand goods,
  - Making it possible to **re-export old items after repairing** them in the country

- Also paves the way for the **import of used electronics and IT goods** with certain restrictions.

### **Unrestricted imports**

- The **import policy for second-hand goods in the FTP 2023** outlines a new category of unrestricted imports for goods brought into the country,
- It is for the purpose of repair, refurbishing, re-conditioning or re-engineering with intent to re-export them.
- Any waste generated during the repair or refurbishing process is treated as per domestic laws and environmental, safety and health norms.

### **Govt. tweaks gas pricing norms; CNG, PNG prices to come down**

- The **Cabinet Committee on Economic Affairs (CCEA)** revised the natural gas pricing guidelines for gas produced in the country.
- The Production Sharing Contract (PSC) provides for Government's approval of prices.
- This move would ensure **stable pricing regime** and provide **adequate protection to producers from adverse market fluctuation** with incentives for enhancing production.

### **The reforms**

- The reforms will lead to significant decrease in prices of **piped natural gas (PNG)** for households and **Compressed Natural Gas (CNG)** for transport.
- The reduced prices shall also lower the fertiliser subsidy burden and help the domestic power sector.
- It will incentivise ONGC and OIL to make additional long term investments and lead to greater **production of natural gas and reduced in import dependence.**

### **Some advice to India on the IFA negotiations**

- **Investment facilitation agreement (IFA)**
- Backed by more than 100 countries (it **does not include India**), the proposed IFA is meant to create legally binding provisions aimed at facilitating investment flows.
- The legal obligations *inter alia* will require states to **augment regulatory transparency and predictability of investment measures.**
  - This is known as **investor-state dispute settlement (ISDS).**

### **Fear of ISDS**

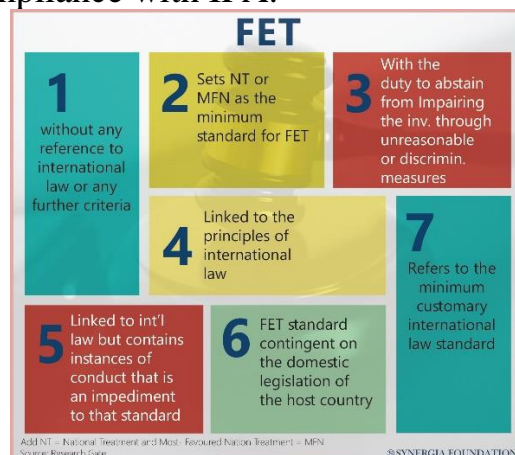
- One of the reasons India is not a party to IFA negotiations is the apprehension that **foreign investors could use a future IFA to bring claims under the existing BITs.**
  - They may use the **most favoured nation (MFN)** provision in BITs to borrow or import stipulations.
  - Investors may use the ubiquitous provision of **fair and equitable treatment (FET)** present in BITs to challenge non-compliance with IFA.

### **Most-favoured-nation treatment**

Cornerstone of the GATT and of the WTO trading system (exceptions).

No discrimination between like products and equality of opportunity to import or to export.

Discrimination *de jure* and *de facto* (origin-neutral measures) are prohibited.





- Another entry point for the provisions of the IFA into the ISDS mechanism can be the so-called ‘umbrella clause’ —
  - A BIT clause that allows contractual and other commitments owed to a foreign investor to be brought under the treaty’s protective umbrella.

### Mere presumptions

Even if a foreign investor brings such claims, the ISDS arbitration tribunal is unlikely to agree with the investor for the following reasons.

- First, many BITs exempt an economic integration agreement from the application of MFN.
  - Thus, the possibility of foreign investors successfully importing IFA provisions into the BIT is remote.
- Second, it is doubtful that ISDS tribunal will accept the argument that mere non-compliance with IFA breaches an investor’s legitimate expectations.
- Third, most new investment treaties avoid ‘umbrella clauses’ altogether.
  - This limits the possibility of investors suing states for non-compliance of IFA obligations as a breach of a BIT’s umbrella clause.

### Reforming BITs

- The IFA cannot bind an ISDS tribunal which will hear a claim brought by an investor under a BIT.
- For the ISDS tribunal, the IFA is just another international law instrument that must be interpreted and applied in accordance with the context of the relevant BIT.
- Countries can overcome this problem by amending their respective BITs to exclude the IFA from its scope and is not a mere theoretical possibility.
  - Given the sizeable number of 100-plus countries pushing for the IFA, these countries can agree among themselves to reform their BITs to reflect this will.
- The possibility of an audacious ISDS tribunal interpreting provisions broadly can never be ruled out.
- But this cannot be a basis to oppose international lawmaking interpreting the law wrongly cannot be the reason to cease domestic lawmaking.
- Thus, India should not be opposed to joining the IFA negotiations at the WTO due to fear of ISDS claims.

### Himachal considering legalising cultivation of cannabis, says CM

- Himachal Pradesh Chief Minister Sukhvinder Singh Sukhu said the State government was considering legalising the cultivation of cannabis.
- It would play a significant role in generating revenue for the State, beneficial to patients as it has many medicinal properties and industrial purposes as well.



### Cannabis

- Cannabis also known as marijuana is a psychoactive drug from the cannabis plant.
- Native to Central or South Asia.
- Used as a drug for both recreational and entheogenic purposes and in various traditional medicines for centuries.
- Tetrahydrocannabinol (THC) is the main psychoactive component of cannabis which can be used by smoking, vaporizing within food or as an extract.

### Committee and other examples

- The government is cautious about the potential increase in drug use and formed a committee to review.
  - The committee will visit areas where illegal cultivation of cannabis takes place and submit a report on basis which state will take decision.
- Neighbouring **Uttarakhand became the first State in the country** to legalise cannabis cultivation in 2017.
- **Controlled cultivation** is being done in some districts of **Gujarat, Madhya Pradesh and Uttar Pradesh**.
- Similarly, controlled cultivation of cannabis has been permitted in several countries such as Uruguay, Canada, the U.S., Austria, and Belgium

### **Drugmakers get more time to join 'Track and Trace' system for exports**

- Drug makers have got another extension up to August 1, to help implement the **Track and Trace system for export of pharmaceuticals consignments**.
  - This system was mooted as a measure **to address counterfeit and product recall challenges**.
  - It highlights how product traceability was a part of good manufacturing practices and secondary and tertiary packing will get included later.
- **Pharmaceuticals Export Promotion Council of India (Pharmexcil)** has ruled out the likelihood of any further delay in the roll out.

### **Centre plans revamp of livestock insurance scheme to raise coverage**

Centre is considering a **comprehensive livestock insurance scheme** modelled on the Prime Minister's Fasal Bima Yojana.

#### **The proposal**

- The Union Animal Husbandry Ministry's move is to roll out the scheme ahead of the 2024 Lok Sabha election.
- There are initial proposals to waive off premium for cattle rearers from Scheduled Caste (SC) and Scheduled Tribe (ST) communities.
- At present, **less than 1% of the country's cattle are insured** and the average yearly **premium is 4.5% of the insured amount**.
- The Animal Husbandry Ministry recently held a meeting with various insurance companies and other stakeholders about the scheme;
  - The scheme is functional in 100 districts of the country.
  - **The Centrally sponsored scheme is being managed by the respective State Livestock Development Boards**.
- The panel said in the report that not even a single animal was insured during 2022-23, whereas during 2021-22, about 1, 74,061 were insured.

#### **Cattle conditions in India**

- Officials said **high premium rate and general economic conditions of farmers** are reasons for lower enrolment in such schemes.
- The government considers subsidy on the premium **paid by socially marginalised farmers from SC-ST communities**.
- The Centre has stressed the importance of expanding the ambit of the scheme and decreasing the premium paid by the farmers.
- During the lumpy skin disease pandemic, about two lakh cattle died and farmers had demanded compensation from the government for the loss.

- Several farmers' organisations had also demanded comprehensive livestock and crop insurance in the background of pandemics such as lumpy skin disease.

### 6GHz spectrum pits wireless telcos against fixed-line broadband entities

- The **Broadband India Forum** has held an event sponsored by Meta which created a growing interest among tech giants and ISPs,
  - In gaining access to the **6 gigahertz (GHz) band**, this ranges from 5,925 to 7,125 megahertz (MHz).
- Both telecom operators and Internet Service Providers (ISPs) are in interest to claim to a band of spectrum that could enable the next generation of 5G.
- Delicensing the 6 GHz range would benefit fixed line broadband providers and software giants, as some of the latter try to get into the public Wi-Fi hotspot space.

### Spectrum worries

- Nokia estimate says that **India's mobile data consumption is growing** so rapidly having risen six fold in 5 years.
- It becomes essential to earmark further spectrum for licensed use on their networks and **newer Wi-Fi routers in India largely uses the 2.4GHz and 5GHz bands**.
- As frequency increases, the range of the signal drops but the bandwidth goes up significantly.
  - The **WiFi 6E** standard launched in 2020 uses 6 GHz enabling speeds upwards of 9.6 Gbps.
  - 6GHz spectrum supports multiple devices more harmoniously than the 5GHz band even on slower connections, enticing telecom providers and ISPs.

### India must board the Online Dispute Resolution bus

- At the **Delhi Arbitration Weekend**, Union Law Minister Kiren Rijiju emphasised the need for institutional arbitration to enhance the ease of doing business.
- India has shown tremendous improvement in the **World Bank's Ease of Doing Business report** rising from the 142nd rank in 2014 to 63rd in 2019.
- However, India is ranked 163rd in '**Enforcing Contracts**' which is a marginal improvement from the 186th rank in 2015 and 173rd in 2006.
- The report says it takes almost four years and 31% of the cost of the claim to enforce a contract in India as against just two years and costs 22% in **Brazil**.
  - In **Mexico** it is 341 days and 33% of claim value and **Vietnam** 400 days and 29% of claim value.

### Setting things right

- Although India introduced its first piece of legislation on arbitration and conciliation, it acquired a reputation of **being 'arbitration-unfriendly'**.
- The **Srikrishna Committee** pointed out in 2017 for several reasons —
  - lack of institutional arbitration over ad hoc arbitration
  - frequent interference from the judiciary from the appointment of arbitrators to the enforcement of awards
  - setting aside of arbitral awards on grounds of 'public policy'
- **India is not a preferred arbitration destination**, even for disputes between Indian businesses who still seek arbitration abroad.
  - **Singapore's International Arbitration Centre** (the Singapore International Arbitration Centre) has emerged as a global arbitration hub.
  - It is ranked first in terms of 'Enforcing Contracts'.

## Technology as advantage

- India can still make use of its strengths in technology and emerge a frontrunner in Online Dispute Resolution (ODR).
- ODR which is about resolving disputes in a virtual environment has several advantages.
  - It can reduce the burden on the courts, save time and costs and provide effective resolutions.
  - ODR involves more than just audio/video conferencing and enables integrating tools such as multi-channel communication, blockchain etc.
- Private platforms in India are already resolving lakhs of disputes through ODR and many corporates have migrated to ODR to resolve small-value disputes.
- NITI Aayog has claimed that India is uniquely positioned to emerge as the epicentre for developments in ODR due to -
  - The need for an efficient dispute resolution system and advancements in technology.

## Steps to consider

Three key measures can be considered.

- Incentivise use of ODR by way of legislative measures such as setting ODR as a default dispute resolution tool for categories of disputes-
  - Arising out of online transactions, fast-tracking enforcement of ODR outcomes, and exempting or reducing stamp duty and court fees.
- Solve infrastructural challenges, curb the digital divide, and catalyse ODR's growth by optimising existing setups such as Aadhaar kendras to also function as ODR kiosks.
  - Each court can have an ODR cell along with supplemental technical and administrative support.
  - In line, Finance Minister has allocated ₹7,000 crore for the third phase of the e-Courts project in the Union Budget 2023.
- Government departments should explore ODR as a grievance redress mechanism proactively.
  - This will increase trust in the process and ensure that citizens have access to a convenient and cost-effective means of resolving disputes with the government.

## Way ahead

- At a time when pendency is gnawing into the very administration of justice, ODR has the potential to ensure justice for all at everyone's fingertips.
- India may have missed the bus to become an arbitration hub, but it can still catch up and overtake them all — all online.

## What is 'Dabba trading' and how does it affect the economy?

### The story so far:

- Recently, the National Stock Exchange (NSE) issued a string of notices naming entities involved in 'dabba trading'.
- It cautioned retail investors to not subscribe using any of these products offering indicative/assured/guaranteed returns in the stock market as they are prohibited by law.

### Dabba trading

- **Dabba (box) trading** - informal trading that takes place outside the purview of the stock exchanges.

## **Parallel Market**

### **Why people book dabba trades?**

<b>TO SAVE</b> on statutory levies, taxes exchange charges & higher broking commission	<b>NO KYC</b> needed; references will do
<b>LOWER MARGIN</b> requirements	<b>UNREGULATED MARKETS</b> , cash dealings allowed
<b>JEWELLERS, SPOT</b> commodity traders use the dabba market to hedge inventories cheaply	



- Traders bet on stock price movements without incurring a real transaction to take physical ownership of a particular stock as is done in an exchange.
- In simple words, it is **gambling centred around stock price movements**.
  - For example, an investor places a bet on a stock at a price point, say ₹1,000.
  - If the price point rose to ₹1,500, he/she would make a gain of ₹500.
  - However, if the price point falls to ₹900, the investor would have to pay the difference to the *dabba* broker.
- This is done to **stay outside the purview of the regulatory mechanism and transactions are facilitated using cash** and operated using unrecognised software terminals.
- It could also be facilitated using *kaccha* (rough) records, *sauda* (transaction) books, challans, DD receipts, cash receipts alongside bills/contract notes as proof of trading.

### **Where does it become particularly problematic?**

- Since there are no proper records of income or gain, it helps *dabba* traders escape taxation and they would not have to pay,
  - Commodity Transaction Tax (CTT) or Securities Transaction Tax (STT) on their transactions.
- The use of cash also means that they are outside the purview of the formal banking system and results in loss to the government exchequer.
- In *dabba* trading, the primary risk entails the possibility that the **broker defaults in paying the investor or the entity becomes insolvent or bankrupt**.
- Being outside the regulatory purview, the **investors are without protections** such as dispute resolution mechanism and grievance redress mechanism.
- Since all activities are facilitated using cash and without any auditable records, it could potentially **encourage the growth of black money perpetuating a parallel economy**.
  - This could potentially translate to risks entailing money laundering and criminal activities.
- ‘*Dabba* trading’ is recognised as an **offence under Section 23(1) of the Securities Contracts (Regulation) Act (SCRA), 1956** and
  - Upon conviction can invite imprisonment for a term extending up to 10 years or a fine up to ₹25 crore or both.

### **Those criticising MUDRA scheme don't understand power of microfinance: PM**

- PM Modi said that those who facilitated loans for big corporate houses by calling up banks were making fun of MUDRA, the microfinance scheme of the government.
- He said people who call themselves economists underestimated the importance of microfinance while addressing the **National Rozgar Mela**.

### **Women beneficiaries**

- He added that ₹23 lakh crore worth of bank guarantee-free loans have been disbursed under the scheme and **more than 70% of beneficiaries are women**.
- This scheme has created 8 crore new entrepreneurs and these are the people who have started their business for the first time with the help of Mudra Yojana.
- He highlighted the **power of microfinance in energising the economy at the grassroots level**.

### **e-invoice: 7-day limit set for select firms**

- Businesses with turnover of ₹100 crore & above will have to upload their electronic invoices on the **Invoice Registration Portal (IRP) within 7 days of issue** of such invoice with effect from May 1, said **GST Network**.

- Currently, businesses upload such invoices on Invoice Registration Portal (IRP) on the current date, irrespective of the date of issue of such invoice.
- This new requirement will provide sufficient time for taxpayers to comply and will apply to invoice and there will be no time restriction on reporting debit/credit notes.

### India's forex reserves rise \$6.3 bn to \$584.75 bn

- India's forex reserves increased by \$6.306 billion to \$584.755 billion for the week ended April 7, said RBI.
- It can be noted in October 2021, reserves reached an all-time high of \$645 billion.
- Reserves have been declining as the central bank deployed the kitty to defend the rupee amid pressures caused by global developments.

### Rakhi, critical drugs imports eased

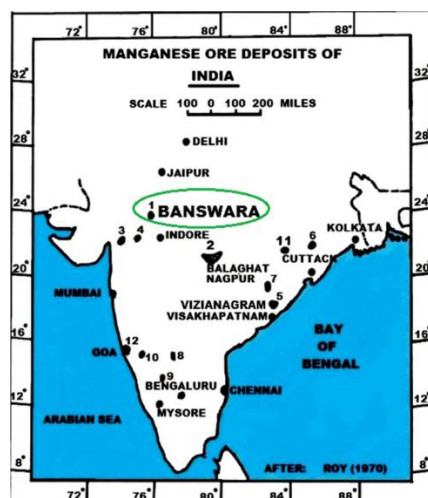
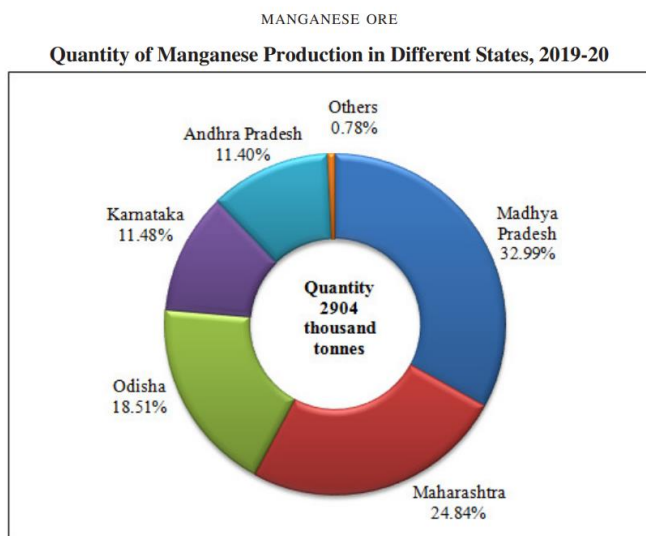
- India's new Foreign Trade Policy (FTP) has eased the provisions to receive Rakhis and life saving drugs from abroad.
  - But it has tightened provisions for other gifts from overseas including those purchased from global e-commerce portals.
- As per the 2015-20 trade policy, import of gifts was free in case of goods that are otherwise freely importable under India's foreign trade classification norms.
  - Any other imports required an authorisation from the DGFT
- Import of goods as gifts with payment of full applicable duties is allowed now as per the new policy.
- Rakhis as gifts will attract zero customs duty where the relevant levy is ₹100 or less.

### Misuse of gift category

- In the past, gifts were being misused in a few instances, to import goods without any duty payment and this was resulting in leakages and lower customs duty collection.
- However, the policy doesn't define life-saving drugs, so further clarity may be needed and defining a threshold would be imperative.

### IBM flags illegal transport of manganese ore in Odisha

- The Indian Bureau of Mines (IBM) has flagged the issue of illegal transportation of manganese ore leading to massive loss of revenue in Odisha.



- The mining lease holders in Odisha were dispatching manganese ore as low grade from their mines to the traders operating from West Bengal,

- And it subsequently sells **chromites and manganese ores** as high-grade without any processing.
- It had recommended the State to come up with a **Standard Operating Procedure to prevent the loss of revenue.**

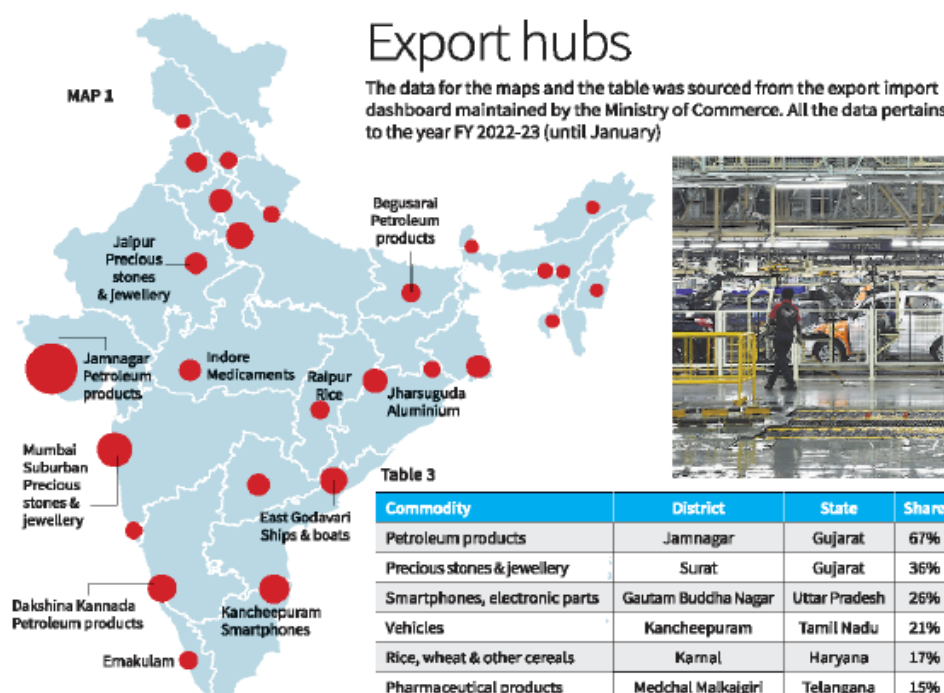
### **Problems associated**

- **Under reporting of grades of minerals** is a serious issue and causes loss to State exchequer by way of lower collection of various payments.
- As per Section 23C of MMDR Act, **State governments are empowered** to make rules for preventing illegal mining, transportation and storage of minerals.
- It is the responsibility of State governments to establish the correct grade of mineral and change action premium, royalty and other payments on correct grade of mineral.

### **Jamnagar to Kancheepuram: Mapping India’s export hotspots**

- **Jamnagar in Gujarat is the top exporting district in India** and formed about 24% of India’s exports in value terms in FY23(till January).
- **Surat in Gujarat and Mumbai Suburban in Maharashtra** feature second and third by a distance, forming only about 4.5% of the country’s exports in the period.
- The other districts in the top 10 are,
  - Dakshina Kannada (Karnataka), Devbhumi Dwarka, Bharuch and Kachchh (Gujarat)
  - Mumbai (Maharashtra), Kancheepuram (Tamil Nadu) and Gautam Buddha Nagar (Uttar Pradesh).

### **Data finding**



**Map 1** shows the **district that formed the highest share of a State’s exports in FY23.**

**Table 3** shows the share of the top exporting commodity of the top exporting district in India’s total exports.

- For instance, Kancheepuram formed 33% of Tamil Nadu’s exports, the highest share among all the districts in the State.
  - Some top exporting districts formed only around 20% of a State’s exports.
- On the other hand, most top exporting districts in the **north-eastern States** formed as much as 90% of a State’s exports.

- Gomati (Tripura), Ri Bhoi (Meghalaya) and East Sikkim (Sikkim) formed over 90% of their State's exports.
- Districts such as Dakshina Kannada, Gautam Buddha Nagar and Ernakulam formed about 40-50% of their respective State's exports.
- In the map, the size of the circle corresponds to the value of exports. The bigger the circle, the higher the exports.
- Some of the major exports attributed to are such as;
  - Jamnagar's surging petroleum exports
  - Kancheepuram's most exported commodity was smartphones.
  - Kamrup, Assam's top exporting district, exported tea the most
  - Gautam Buddha Nagar in Uttar Pradesh exported smartphones the most
  - Raipur in Chhattisgarh exported parboiled rice the most
  - Mumbai Suburban in Maharashtra exported diamond the most.

## World's largest producer of milk hits a dry patch

### Prices across the nation

- In March 2022, a full-cream packet of Amul milk cost ₹60/litre. The one-litre pouch now costs ₹66.
- Since 2021, milk prices in India have been on a boil.
- Prices have been hiked across brands and the recent hike in February 2023 was Amul's fifth increase since 2021.
- Now the average price for a litre of milk in India was ₹57, which is about 12% higher than ₹51 in April 2022.
- The Central Bank's monetary policy committee said in a statement that high inflation in milk was one of the reasons driving retail inflation.
- While retail inflation slowed to 5.66% in March, milk inflation continued to tread higher.
- In the same month, milk inflation was at 9.24%, close to the levels last seen in February 2015.

### Stagnant production on other side

- At the same time, there have been concerns over the country's stagnant milk production in FY23.
- In FY22, India produced 221 million tonnes of milk, about 5.3% higher than in FY21 but the y-o-y growth has slowed.
- Multiple factors have resulted in the stagnation of the country's milk production.
  - Initially, dairy farmers faced a demand slump due to COVID-19.
  - Outbreak of lumpy skin disease hit the cattle and buffalo herd, resulting in lower milk yields.
  - High prices of fodder have also raised the cost of production.
- While India continues to import whey, butter, cheese and curd in relatively higher quantities, the share of milk in India's import basket is significantly lower.

**Chart 1:** The chart shows the average retail price for a litre of milk in the month of April for the past six years

	2018	2019	2020	2021	2022	2023
Average	42	43	46	49	51	57
Srinagar						
Shimla	30				50	55
Gurugram						56
Delhi	42		46		50	53
Jaipur						50
Patna						52
Lucknow				51	58	66
Kolkata						
Guwahati	56			62		65
Ahmedabad	48					58
Mumbai	43					58
Bhopal						58
Hyderabad						52
Bengaluru						43
Chennai						40
Ernakulam					47	56

**Chart 2:** The chart shows the retail inflation and inflation in milk since January 2015 (in %)





### Govt. brings back windfall tax on oil

- The government has brought back the **windfall profit tax on domestic crude oil** after international prices firmed up while the levy on export of diesel has been cut to nil.
  - The levy on crude oil is now ₹6,400 per tonne as against international oil prices dipped below \$75 per barrel.
  - Alongside, the government cut the tax on the export of diesel to nil from ₹0.50 per litre.
- There was a moderation in crude oil prices in March 2023. Hence, **the special additional excise duty (SAED)** was reduced to nil on April 04, 2023.
  - However conditions may vary depending upon the global scenario and OPEC+ countries agenda.

### Steel PLI scheme to attract ₹30,000-cr. investment: Scindia

- Union Minister for Civil Aviation and Steel said that the ministry has signed 57 MoUs with 27 companies for specialty steel under the PLI scheme,
  - This will create more than 60,000 jobs and help India to become the third-largest economy by 2030-31.
- India emerged as the **second largest steel producer in the world** with per capita steel consumption going up from 57 kilos to 78 kilos in recent times.
- The **Vehicle Scrappage Policy for circular economy** will help the steel industry to get maximum scrap and will increase production of green steel.

### No small change

- Indian households' financial surpluses parked in **small savings schemes operated by banks and post offices** got a significant fillip this quarter,
  - With the **government raising the returns** on most such schemes **by 0.1 to 0.7 percentage points**.
- This constituted the third successive hike in the rates but the breadth of the schemes covered was wider than on the last two occasions.
- These increases came after a long pause in rates since April 2020.

### Changes brought in schemes

- The **widening gap between extant rates and rates prescribed by the panel** gap stood at 44 to 77 basis points (bps).
- Now, that gap is zero or marginal on six schemes but for five schemes, it is still at 5 bps to 82 bps.
  - These include the **Public Provident Fund (PPF)**, whose rates have been frozen at 7.1% for three years now has not seen hike.
  - Government mandarins indicate they are not inclined to hike the PPF rate as its returns are tax-free, unlike in the case of other schemes.
- Yet, the returns on **the Sukanya Samriddhi Account Scheme**, which are also tax-free, were hiked to 8% this quarter.
  - Its only ostensible difference with the 1960s-origin PPF is it was launched by the current government **to encourage savings for the girl child**.
- The **General Provident Fund** rate for government employees has also been retained at 7.1%, but their dearness allowance has been hiked.
- That several States vote this year and the general election looms in 2024 may have influenced the latest hikes as a feel-good device.

An even-handed and transparent policy approach rather than quinquennial bouts of relief for small savers would inspire more confidence.

### **Batting for borrowers**

The Reserve Bank of India's recent draft circular on penal charges on loan accounts is a welcome move that should give respite to individual borrowers.

- The RBI has emphasised that it wants to ensure that lenders do not seek to unduly profit from borrowers' defaults in servicing their loans.
  - Even as it allows the credit provider to reprice the loan in case a borrower's credit risk profile has changed.
- The central bank's draft guidelines on Fair Lending Practice are aimed at obviating a practice where lenders have levied a penal interest over and above the contracted rate of interest when borrowers delay repayment or default.
- RBI had in practice turned the penal interest into a revenue enhancement tool observing the credit discipline among borrowers.
- Supervisory reviews had found that some entities were in fact charging excessive rates of penal interest, leading to hardship to the borrowers and disputes.
- Lenders had also been capitalising the penal interest, thereby increasing the principal amount that the borrower would ultimately have to repay.

### **Regulation brought**

- The banking regulator has now laid down that penal charges should be recovered separately and must not be added either to the principal outstanding or the rate of interest charged on the loan.
- Lenders could, however, still follow the normal process for compounding the outstanding primary interest, it clarified.
- The RBI's decision to step in to ensure a fair and transparent approach to credit pricing has to be seen in the context of the sharp uptick in retail lending in recent years.
  - The industry's share of outstanding bank credit had shrunk to about 24% as of February 2023, from over 43% in 2014-15.
  - The omnibus category of personal loans had surged to 30%, from just 19% eight years ago, making it the largest credit category.
- The penal charges so levied on individual borrowers cannot be at a rate higher than a similar charge applicable to corporate borrowers.
  - And it must be communicated upfront when finalising every loan and unflinchingly reiterated to the borrower in every loan repayment remainder.
- Small borrowers are sure to heave a sigh of relief as the RBI has made clear it will not brook any usury.

### **Vibrant Villages plan to be merged with PM Gati Shakti**

- The Centre's ambitious Vibrant Villages Programme (VVP) aims to develop infrastructure and open up villages along the China border to tourists.
- It will now be integrated with the Prime Minister's Gati Shakti mega project which includes Railways, Highways and other ministries together for,
  - Integrated and coordinated implementation of infrastructure connectivity projects and allows departments to break operational silos.

### **Satellite images**

- The Bhaskaracharya National Institute for Space Applications and Geoinformatics (BISAG-N) in Gujarat has been roped in,

- To provide satellite images and GIS mapping of the projects that will be taken up under the scheme.
- It will be tracking the infrastructure and other land-use changes in the border villages for real-time monitoring.
- One of the objectives of the Vibrant Villages Programme is to stop migration of border population and motivate them to continue stay there.

### **Govt. will not tolerate ‘cheating’ by e-commerce firms: Goyal**

- The government is not against discount offers and flash sales on e-commerce platforms but will not tolerate cheating where marketplaces sell their wares,
  - Through such sales even though the foreign direct investment (FDI) policy does not allow them to sell directly to consumers.
- Ministry of commerce and industry has directed all e-commerce players as well as large corporate like ITC and HUL to join the government-backed
  - Open Network for Digital Commerce (ONDC) platform and mooted setting a deadline for such players to come onboard.
- Objection is to limit practices like what China did to India by dumping goods at predatory prices for long time and killing domestic production.

### **The ambiguities in the nuclear liability law**

The issues regarding India’s nuclear liability law continue to hold up the more than a decade-old plan to build six nuclear power reactors in Maharashtra’s Jaitapur,

- The world’s biggest nuclear power generation site under consideration at present.

### **Laws governing nuclear liability in India**

- Laws ensure that compensation is available to the victims for nuclear damage caused by a nuclear incident or disaster and set out who will be liable for those damages.
  - The international nuclear liability regime consists of multiple treaties and was strengthened after the 1986 Chernobyl nuclear accident.
- The umbrella Convention on Supplementary Compensation (CSC) was adopted in 1997 with the aim of establishing a minimum national compensation amount.
  - Even though India was a signatory to the CSC, Parliament ratified the convention only in 2016.
- India enacted the Civil Liability for Nuclear Damage Act (CLNDA) in 2010, to put in place a speedy compensation mechanism for victims of a nuclear accident.
  - CLNDA provides for strict and no-fault liability on the operator of the nuclear plant where it will be held liable for damage regardless of any fault on its part.
  - Operator will have to shell out for damages caused at ₹1,500 crore and requires the operator to cover liability through insurance or other financial security.
  - In case the damage claims exceed ₹1,500 crore, the CLNDA expects the government to step in and provide amount about ₹2,100 to ₹2,300 crore.
  - The Act also specifies the limitations on the amount and time when action for compensation can be brought against the operator.
- All the existing reactors in India are operated by the state-owned Nuclear Power Corporation of India Limited (NPCIL).

### **What does the CLNDA say on supplier liability?**

- The international legal framework on civil nuclear liability is based on the central principle of exclusive liability of the operator of a nuclear installation and no other person.

- In the initial stages of the nuclear industry development, foreign governments and the industry agreed that excessive liability claims against,
  - Suppliers of nuclear equipment would make their business unviable and hinder the growth of nuclear energy.
  - And it became an accepted practice for national laws of countries to channel nuclear liability to the operators of the plant with only some exceptions.
- Two other points of rationale were also stated while accepting the exclusive operator liability principle —
  - One was to avoid legal complications in establishing separate liability in each case and second was to make just one entity in the chain,
  - That is the operator to take out insurance, instead of having suppliers, construction contractors and so on takes out their own insurance.
- However, India going beyond these two conditions, for the first time introduced the concept of supplier liability over and above that of the operator's in its civil nuclear liability law, the CLNDA.

### **Issue with supplier liability concept**

- Foreign suppliers of nuclear equipment from countries as well as domestic suppliers have been wary of operationalising nuclear deals with India
  - As it has the only law where suppliers can be asked to pay damages.
- Concerns are prevalent about getting exposed to unlimited liability under CLNDA and how much insurance to set aside for damage claims.
  - Section 46 provides that nothing would prevent proceedings other than those which can be brought under the Act, to be brought against the operator.
  - This is not uncommon as it allows criminal liability to be pursued where applicable.
- However, in the absence of a comprehensive definition on the types of 'nuclear damage' being notified by the Central Government,
  - Section 46 potentially allows civil liability claims to be brought against the operator and suppliers through other civil laws such as the law of tort.
- While liability for operators is capped by the CLNDA, this exposes suppliers to unlimited amounts of liability.

### **What is the government's stand?**

- The central government has maintained that the Indian law is in consonance with the CSC.
- About Section 17(b), it said that the provision permits but does not require an operator to include in the contract or exercise the right to recourse.
- This effectively means that the supplier can be sued if defective equipment provided or if it can be established that the damage resulted from an act of intent.
- And it would not be sound public policy if the NPCIL, a government entity, entered into a contract with a supplier and waived its right to recourse in the contract,
  - despite the fact that the law provides for such recourse.
- However, private sector players were not convinced and experts point out that what would be considered is enshrined in statute and not discussed in Parliament.

### **Centre tells States to scrap levies on power generation**

The Centre issued warning to States against resorting to tax levies on electricity generation including through imposition of a water cess.

- Noting that there were no provisions in the Constitution that enabled States to do so.



- Ministry of Power and New and Renewable Energy underlined this as illegal and unconstitutional.
- Some States have imposed taxes/duties under the guise of levying a cess on the use of water for generating electricity.
- Though the State may call it a water cess, it is actually a tax on the generation of electricity and collected from residents in other states as well.

### **Not by 'Vande Bharat' alone**

- The launch of Train 18, the precursor to Vande Bharat train was heralded by the initiation of vigilance investigations against some of the top architects of the project.
  - The Train 18 project was one that was wholly conceived, planned and executed by team of Railway professionals of the Integral Coach Factory, Perambur, Chennai, with minimum official support.
- Today it seems it is raining Vande Bharat trains all over the country a unique example of the success of a purely local initiative driving policy at the highest level.
- Amid the consensus it is easy to lose sight of the larger picture and the serious issues confronting the Indian Railways.
- With the elimination of a separate Railway Budget and its merger with the General Budget from 2017 onwards,
  - There has been ramping up investments in the Indian Railways, both via increased budgetary support from the General Exchequer.
  - And through institutional borrowings, aimed at creating additional rail transport capacity ahead of demand.

### **Needed, more relevant metrics**

- Accordingly, the Annual Plan outlay of the Indian Railways has ballooned with an increase of 137% in the Budget for 2023-24.
- Unless these investments translate into concrete progress towards capacity building, the outcomes serve no purpose and we need more relevant metrics to evaluate it.
- The National Rail Plan 2030 (NRP) envisages raising the rail share in freight traffic vis-à-vis roadways from 27% to 45% by 2050.
  - And raising the average speed of goods trains to 50 kilometres per hour from the present 25 kmph and concurrent reduction in tariff rates for freight by up to 30%.
  - It may be mentioned that the rail share of freight carried reduced from 51.5. % in 2008-09 to 32.4% in 2018-19 for leads over 300 km.

### **The subject of punctuality, other core issues**

- On the passenger front, perhaps the single most important operational index is punctuality.
  - If stations in the Indian Railways network can be remodelled to international standards, perhaps it is time to aim for punctuality of trains as well.
  - Japanese Railways reckon the punctuality of their high speed trains in seconds and Indian Railways must at least aim to be within five minutes.
- When an exercise was undertaken to plot the status of all passenger trains on the move in the Indian Railways network on real time basis,
  - The punctuality of all passenger-carrying trains at any given time hovered around 60%.
- It is high time to move away from the traditional concept of destination punctuality and evolve an index of punctuality.

- With developments in IT and data analytics this can be made possible and should aim for 90% of punctuality at least for all mail/express trains.

### **Have an annual report**

- Articles suggest that the government should consider tabling an annual report on the performance of the Railways in Parliament, on the lines of annual Economic Survey.
- This report should be an internal performance audit that serves as a valuable resource for policymakers, serious students and also researchers in the field of rail transport.
- But with the huge sums already invested and proposed to be invested in the future in the rail sector,
  - The nation cannot let the performance of its largest public undertaking to be judged by merely on the basis of number of Vande Bharat trains introduced.

### **Das urges lenders to continually assess risks, bolster capital buffers**

- Flagging the recent financial instability in some advanced economies, Reserve Bank of India (RBI) Governor Shaktikanta Das has urged Bank Boards -
  - To continually assess the financial risks and build enough capital buffers to remain resilient and sustain growth.
- He stressed that as a consequence of measures taken by the RBI and the banks, the Indian banking system had remained resilient.
- And had not been affected adversely by the recent sparks of financial instability seen in some advanced economies.
- Banks' asset quality had improved and the Gross NPA ratio for scheduled commercial banks (SCBs) was 4.41% at end December, down from 5.8% .

### **Safety concerns over e-pharma put Centre in a spot**

- Union Health Ministry sources say that they are in no mood to give the e-pharma platforms a free run, calling the move far too dangerous.
- Consumer safety is the primary focus and the main concerns includes;
  - unlimited accessibility to medicines through e-pharmacy,
  - sale of sub-standard, habit-forming medicines,
  - profiling of patients and buyers and illegal data collection
  - distributing illegal or unethical or counterfeit or substituted medicines
- The parliamentary panel also expressed concern over the possible misuse of online pharmacies in the absence of regulation.

### **Ever-rising market**

- According to 'E-pharmacy Market in India 2022-2027', e-pharmacy has emerged as a superior and more practical strategy for addressing consumer problems and delivering excellent customer solutions.
- While there are talks in Health Ministry about a complete ban on e-pharmacy, the Drug Controller General of India (DCGI) sent show-causes notices to,
  - 20-odd e-pharmacies including Tata 1mg, NetMeds, Practo etc. for selling drugs that weren't allowed for retail sale and lack of proper prescription.
- The Drugs and Cosmetics Act of 1940 regulates the import, manufacturing and distribution of drugs in India.
  - Stringent laws and strong e-pharmacy code of conduct will help this market rather than shutting down e-pharmacy.

## How have recent weather events affected wheat crop?

- The unusual rise in mercury in February, followed by an untimely spell of rain along with gusty winds and hails during month of March,
  - In parts of the country's key grain-producing States- Punjab, Haryana, Madhya Pradesh, Uttar Pradesh, Rajasthan, Bihar and Gujarat.
  - It has left wheat-growing farmers worried as they anticipate a drop in yield (productivity), output (production) and quality.

## How will the rains affect wheat crop?

- According to India Meteorological Department (IMD), fairly widespread rains along with stormy winds between 40-50 kilometers per hour lashed several parts,
  - Under the influence of consecutive western disturbances.
- Rain spells accompanied by winds are not a good sign for the crop's health if they are close to ripening and harvesting stage and water logging in the fields.
  - There are instances of crop flattening in fields besides water logging which could be detrimental for the ready-to-harvest wheat crop.
- Wheat, a key Rabi (winter) crop is sown between late October till December; it nears the ripening stage in the month of mid-March.
  - And harvesting of the early sown varieties usually commences by the end of March itself.



## The estimated output

- Agriwatch, an agri-commodity research firm has reported that owing to untimely rains, the country's wheat production in the agriculture year 2022-23 is likely to be less.
- The Centre estimated the wheat production would be close to 112 MT on account of an increased acreage of wheat and better yield,
  - Despite a slight production loss due to recent adverse weather conditions.

## 6GHz spectrum pits wireless telcos against fixed-line broadband entities

- The Broadband India Forum has held an event sponsored by Meta which created a growing interest among tech giants and ISPs,
  - In gaining access to the 6 gigahertz (GHz) band, this ranges from 5,925 to 7,125 megahertz (MHz).
- Both telecom operators and Internet Service Providers (ISPs) are in interest to claim to a band of spectrum that could enable the next generation of 5G.
- Delicensing the 6 GHz range would benefit fixed line broadband providers and software giants, as some of the latter try to get into the public Wi-Fi hotspot space.

## Spectrum worries

- Nokia estimate says that India's mobile data consumption is growing so rapidly having risen six fold in 5 years.
- It becomes essential to earmark further spectrum for licensed use on their networks and newer Wi-Fi routers in India largely uses the 2.4GHz and 5GHz bands.
- As frequency increases, the range of the signal drops but the bandwidth goes up significantly.
  - The WiFi 6E standard launched in 2020 uses 6 GHz enabling speeds upwards of 9.6 Gbps.
  - 6GHz spectrum supports multiple devices more harmoniously than the 5GHz band even on slower connections, enticing telecom providers and ISPs.



# Environment and DM

By Lectures Bureau



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Environment

## **Bandipur completes 50 years as Project Tiger reserve, traces legacy to Maharajas**

Bandipur completed 50 years on April 1, 1973, when the then PM Indira Gandhi launched the flagship conservation programme to arrest the big cat's dwindling population.

### **Bandipur TR**

- There were 12 tigers in Bandipur when Project Tiger was launched now it has been pegged at 126.
- But much before the Wildlife Conservation Act, 1972 was passed the erstwhile rulers of Mysuru had realised the imperatives of conserving the flora and fauna.
- *The Mysore Gazetteer* has recorded that several forest areas were not only preserved as Game Reserves but Tiger Blocks were identified and restrictions imposed on shooting.
- In 1941, the Venugopal Wildlife Park was constituted of which 82 sq. miles was known as Bandipur Sanctuary within the park.
  - The boundary extended from Moyar River forming the southern border towards the Nilgiris.

## **Can countries be sued over climate change?**

The United Nations General Assembly has passed a resolution that asked the International Court of Justice at The Hague to provide an opinion on obligations toward climate change.

### **About the Resolution**

- The resolution has been passed by consensus pushed by one of the smallest countries in the world, the Pacific Island of Vanuatu.
  - An island that was devastated in 2015 by the effects of Cyclone Pam.
  - That has been spurred by climate change, wiped out 95% of its crops and affected two-thirds of its population.
- The draft resolution (A/77/L.58) invoked article 96 of the UN Charter to ask the ICJ to deliberate on two questions:
  1. The obligations of states under international law to ensure the protection of climate for present and future generations.
  2. The legal consequences for states where they, by their acts and omissions have caused significant harm to the climate system.
    - Particularly for Small Island Developing States (SIDS) and for people who are harmed.
- The resolution refers to several international protocols including the Paris Agreement (2015), the UNCLOS and the Universal Declaration of Human Rights.

### **India's position**

- India has thus far been cautiously silent about the move though it generally supports the need for climate justice and holding the developed world accountable.
- However, it is significant that India did not join the overwhelming majority of countries that co-sponsored the draft resolution.
- In the neighbourhood, the list of co-sponsors included Bangladesh, Maldives, Nepal, Sri Lanka, and a number of island countries in the Indian Ocean Region (IOR).
- India is also watching how global powers like the U.S. and China respond to the resolution as without their support, it will be hard to implement.
- Many other countries are likely to voice their opinion as the process gathers momentum in the months ahead.

### **Need of sponsors of the resolution**

- A legal opinion from the ICJ is expected to bolster the efforts under UNFCCC to ensure all countries work towards,

- Mitigating climate change and global warming to the suggested 1.5-2°C limit.
- According to the latest IPCC “Synthesis report”, global climate levels have already increased 1.1 degrees since pre-industrial levels in the past century.
  - And deep cuts in greenhouse gas emissions reductions, as much as by a half are required by 2030 to keep this goal.
- The UNGA route adopted by Vanuatu and its supporters also appears to have been more inclusive than the attempts made by;
  - Small Island States asked advisory opinion to International Tribunal for the Law of the Sea in 2022.
  - Colombia and Chile in 2023 asked for an Advisory Opinion on human rights obligations for countries pertaining to the climate emergency.

### Is the advisory opinion of the ICJ binding?

- The ICJ is being asked for an “advisory opinion” which by definition would not be legally binding as an ICJ judgment.
- However, its clarification of international environmental laws would make the process more streamlined particularly as;
  - The COP (Conference of the Parties) looks at issues like climate finance, climate justice, and recently agreed to loss and damages fund at the COP27 in Sharm El-Sheikh last year.
- The ICJ carries legal weight and moral authority and gave an advisory opinions on the Palestinian issue (Construction of the Wall) and nuclear threats in the past.

### In a first, Eravikulam National Park gets a fernarium

- The Eravikulam National Park (ENP) in Kerala, the natural habitat of the Nilgiri tahr in Munnar has a new attraction, a fernarium set up inside the park.
- According to officials, this is the first time such a fern collection is being set up in the hill station.



### Biodiversity area

- The ENP is one of the rich biodiversity areas with 104 varieties of fern and this aims to provide visitors with awareness of the park’s biodiversity.
- **Ferns:** Ferns are part of the Epiphytic family.
  - They grow naturally in a soilless condition.
  - The plants obtain water and nutrients through leaching from trees.
- This park is also famous for Nilgiri Tahr and during its breeding ground the park is closed for visitors.

### Why was the month of March in Mumbai relatively cooler?

The month of March in Mumbai was relatively cooler and drier than normal wherein the winds tend to flow from West Asia to Mumbai,

- Signalling the beginning of a sweltering heat and humidity build-up through May, before the rains arrive in June.

### Reason for the changes

- West Asia has been warming more rapidly than other tropical land regions and in result northern Arabian Sea has also been warming.
- The combination of this land and ocean warming has enhanced the duration, frequency and intensity of heat waves over India in the pre-monsoon season.



## Meteorological study

- Meteorologists have also blamed the northern Arabian-Sea warming for the increase in heavy rainfall events over northwest India in the monsoon season.
  - Rapid warming over West Asia produces low sea-level pressure locally, which sets up a northward pressure gradient over the Arabian Sea from the equator.
  - This gradient pulls winds northward, disrupting those that should actually be flowing east from West Asia towards Mumbai.
  - So the winds came to Mumbai from the north-northwest, bringing cooler and drier air instead of the usual hot and humid air from the desert.

## Effect on monsoon

- These wind changes created an unusual anticyclone over the Arabian Sea that would rise the sea surface temperatures by over 1° C.
  - A warmer Arabian Sea in the pre-monsoon season tends to favour a good monsoon.
- On the other hand, 2023 is expected to be an El Niño year and it tends to suppress the monsoon especially when it follows a La Niña winter, which was the case in 2022.
  - But before the monsoon, we still need to get through the summer heatwave season.
  - As seasonal land-heating continues into April and May, the south-westerly winds will set out from the equator into the central Arabian Sea.
  - The normal eastward winds from West Asia towards Mumbai should also get stronger and will bring heat into India.
  - Winds also sweep in from the northwest over the mountains of Afghanistan and Pakistan, setting up heat waves.
- The evolution of winds and sea surface temperatures clearly show a rapid warming of the North Indian Ocean which augurs even more heat events.

## Consequences

- Unseasonal rain and hail leading to devastating crop damages in the northwest in terms of heat waves and heavy rain over these parts has been reported.
- Since only about 50% of El Niño years have so far produced a drought over India, we may end up with a normal monsoon.
- Warming over West Asia plus the Arabian Sea is going to once again produce heavy rainfall events over northwest India and Pakistan.
- Climate models seem confident that there will be an El Niño starting during the monsoon season.
- The caveat is that an El Niño forecast this early in the year tends to be inhibited by the spring predictability barrier:
  - That is tropical weather tends to be noisy in the spring months, making the prediction noisy as well.

## Time to put a price on carbon emissions

- In absence of a price for the use of natural resources, environmental destruction has been part of every country's recipe for boosting GDP growth.
- It is time, starting with the biggest economies of the G-20 to agree on valuing nature including by pricing carbon effluents.

## Ways of pricing

- Three ways of pricing carbon are:
  - The establishment of a carbon tax domestically as in Korea and Singapore



- Use of an emissions trading system (ETS) as in the EU and China
- The application of an import tariff on the carbon content as the EU is proposing.
- The International Monetary Fund has proposed price floors of \$75, \$50, and \$25 a ton of carbon for the United States, China, and India, respectively.
- It believes this could help achieve a 23% reduction in global emissions by 2030.
- Carbon pricing will help in making investment in renewable energy such as solar and wind, which has huge prospects in India more attractive.

### **Impact on India**

- Among the three ways of pricing, India could find carbon tax appealing as it can directly discourage fossil fuels.
  - While raising revenues which can be invested in cleaner sources of energy or used to protect vulnerable consumers.
- India fiscal policy has set in place the basic structures needed to implement a carbon tax that can be woven into road fuel taxes and extended to industry and agriculture.
- Policymakers have to choose the tax rate, which varies widely from Japan's \$2.65 a ton of CO<sub>2</sub> to Denmark's \$165 a ton set for 2030.
- India could start with the IMF figure of \$25 a ton
- The main obstacle is the argument by industrial firms about losing their competitive advantage to exporters from countries with a lower carbon price.
- Therefore, for all high, middle and low-income countries should set the same rate within each bracket.
- It might also make sense to allow companies to use high-quality international carbon credits to offset up to a certain percentage of their taxable emissions.

### **Communication is important**

- Any type of carbon pricing faces stiff political opposition.
- Sweden may have handled these political constraints by presenting carbon tax as part of a bigger fiscal package that lowers other taxes and includes new social safety nets.
- A high enough carbon tax across China, the U.S., India, Russia, and Japan alone with complementary actions could have a notable effect on global effluents and warming.
- India as president at the G-20 summit can play a lead role by tabling global carbon pricing in the existential fight against climate change.

### **What was discussed at the UN water conference?**

#### **The story so far:**

- The United Nations 2023 Water Conference held on March 2023 was the first such meeting in 46 years.
- The report entitled 'Water for Sustainable Development 2018 – 2028' says that we are not on track to meet the 2030 Sustainable Development Goal for Water.

#### **Water Conference**

- The water sector is prone to fragmentation because water problems tend to be local and need local solutions to address it globally.
- The last UN Water Conference held in 1977 was groundbreaking as it resulted in the first global Action Plan recognising the water as a basic need.
- This declaration led to several decades of global funding and concerted effort to lower the population without access to safe drinking water.

#### **Current challenges**

- Extending services to underserved populations is relatively uncontroversial: it comes down to finding the money to pay for it.

- This is already occurring in India through programmes such as the **Swachh Bharat Mission and the Jal Jeevan Mission**.
- Many drinking water projects have failed because they drew too much groundwater or were contaminated, leaving communities again with no access to water.
- **Groundwater over-abstraction is mostly driven by agricultural pumping** and is prevalent in heavily irrigated places like Punjab, so they should go pump less.
  - This would need a policy change which requires many agencies and ministries to cooperate.

### **The key commitments**

- This year's conference committed by philanthropic donors, governments, corporations, and NGOs includes;
  - \$50-billion commitment from India to improve rural drinking water services under the **Jal Jeevan Mission**.
  - The **W12+ Blueprint, a UNESCO** platform hosting city profiles and case studies of programs to address common water security challenges.
  - An effort called **'Making Rights Real'** offered to help marginalised communities and women understand how to exercise their rights.
  - The **Water for Women Fund** offered mechanisms for more effective and sustainable water, sanitation, and hygiene outcomes for women.

### **Pelicans, mangroves, and salt marshes**

- The **island of Sriharikota** serves as a **barrier** shielding a brackish water lagoon that we call the **Pulicat Lake** and is mostly off-limits to tourists as it is an **ISRO launch site**.
- This area has about 76 species of water birds and is nearly 60km long, depth of only one metre.

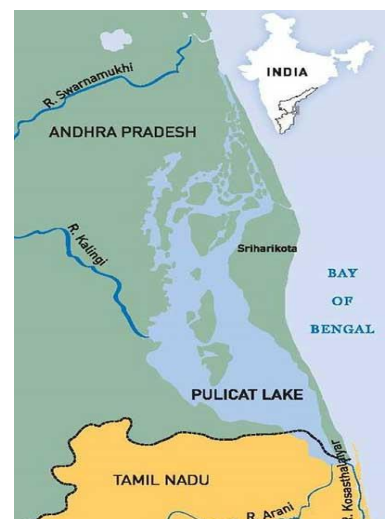
### **Spot-billed pelican**

- Famous site for the **Spot-billed pelican** which is classified as **Near Threatened** in the IUCN red list.
  - Adult spot-billed pelicans weigh 4.5-5 kg
  - It has **pouch called the gular for catching fish** and in breeding season it may bring home 2 kg of fish in one catch.
  - Spot-billed pelicans form stable colonies along with other water birds.
  - Nests are built on trees and two-three eggs are laid. When they are about a month old, the chicks destroy the nests.
  - Birds do not fear humans and the villagers use the droppings of the spot-billed pelican **as a fertilizer**.
  - After the breeding season, pelican populations scatter over a very large area as they forage for food.



### **Breeding site**

- **Andhra Pradesh** has recently lost a large breeding colony of the bird at the **Kolleru Lake** where aquaculture has contributed to a total degradation of the ecosystem.
- **The Pulicat Lake, now a salty marsh was a thick mangrove forest** in the 16th century.



- Wetland ecosystems lock up carbon dioxide from the atmosphere, as ‘Blue Carbon’ and mangroves can sink 1,000 tonne of carbon per hectare.

### Ramsar sites

- Wetlands of global importance are called Ramsar sites, after the city in Iran where the Treaty on Wetlands was signed.
- India has 75 Ramsar sites, of which 14 are in Tamil Nadu including three added last year:
  - ✓ Karikili bird sanctuary
  - ✓ Pallikaranai Marsh Reserve Forest
  - ✓ Pichavaram mangrove.

### India’s tiger population tops 3,000, shows census

India has at least 3,167 tigers, according to estimates from the latest tiger census made public an increase from the census of 2018.

### Record status

- The numbers are not strictly comparable as a key calculation to compute the maximum and minimum range of the tiger population is yet to be done.
- There were 2,967 tigers recorded in 2018 and 2,226 in 2014.
- The tiger population numbers were made public by PM Modi at the International Big Cat Alliance conference and the 50th anniversary of Project Tiger.

### Trend of growth and decline

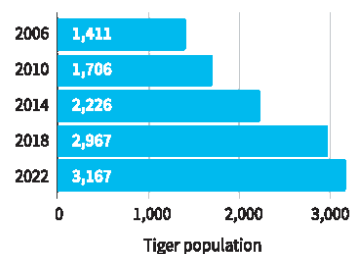
- The tiger population has grown the most in the Shivalik hills and the Gangetic flood plains,
  - Central India > Northeastern hills > Brahmaputra flood plains > Sundarbans.
- There was a decline in the Western Ghats numbers, though major populations were said to be stable.

### Method of calculation

- In four-year estimates, the scientists provide a range of the estimated tiger population and the mean value is highlighted as the latest tiger population.
- Nearly all of the five major tiger-zones face challenges to the growth of tiger population due to the increasing demands from infrastructure development.
- Since 1973 when Project Tiger was established, the number of dedicated tiger reserves has grown from 9 to 53 reserves in about 2.3% of India’s land area.
- Experts have said that most of the country’s tigers are focused within a handful of reserves which are fast approaching their peak carrying capacity.
- Unless new regions are developed as reserves, it may be a challenge to ensure further growth in numbers.
- Following the translocation of cheetahs from Africa, India is now looking at international initiatives to translocate tigers into other locations.

#### Big cat count

According to the data released by the PM, the number of tigers in India increased by 200 in the past four years. A look at the tiger population



### NISAR satellite to map Himalayas’ seismic zones

- NISAR, jointly developed by the Indian Space Research Organisation (ISRO) and the National Aeronautics and Space Administration (NASA) of the U.S.
- NISAR is expected to cost approximately \$900 million and will use two frequency bands:



- L-band and S-band to image the seismically active Himalayan region that will every 12 days create a deformation map.
- These two frequency bands will together provide high-resolution, all-weather data from the satellite.
- And is expected to follow a sun-synchronous orbit and will be launched in January 2024.

### Benefits of screening

- This satellite will map the most earthquake-prone regions in the Himalayas with unprecedented regularity.
- The data this will generate can potentially give advance warning of land subsidence, as recently observed in Joshimath, Uttarakhand.
- Scientists from the Geological Survey of India in 2021 published a “strain map” of the Himalayas based on data from 1,252 GPS stations along the Himalayas.
  - It identified regions that had the greatest odds of generating earthquakes of magnitude above 8 and their extent.

### Seismic Zone Map of India: -2002

About 59 percent of the land area of India is liable to seismic hazard damage

Zone	Intensity
Zone V	Very High Risk Zone Area liable to shaking Intensity IX (and above)
Zone IV	High Risk Zone Intensity VIII
Zone III	Moderate Risk Zone Intensity VII
Zone II	Low Risk Zone VI (and lower)

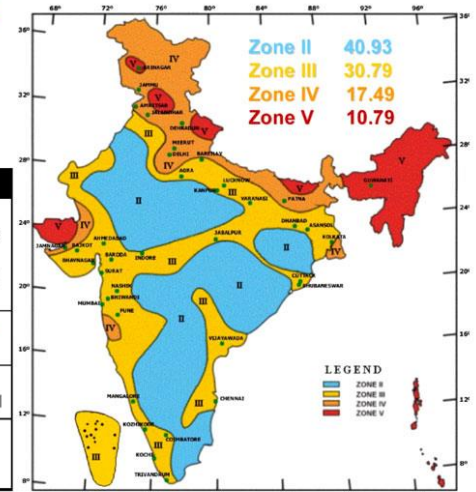


Fig. 1 Seismic zonation and intensity map of India

### Pink flamboyance

- Flamingos started gathering in Navi Mumbai and recent findings suggest that they have shown a remarkable ability to adapt to changing environment.
- Every winter, thousands of greater and lesser flamingos fly into Mumbai, forming a sea of pink against a backdrop of skyscrapers, bridges and oil refineries.
- These migratory birds generally fly from Kutch in Gujarat and the Sambhar Lake in Rajasthan to Mumbai during winter around mid-November.
- Due to prolonged rain and other climate factors, their arrivals can be delayed. But when they do come, they stay here till the start of monsoon.

### Flamingoes

- Flamingos feed on the algae that dwell in the mudflats at Navi Mumbai, Airoli and Thane Creek.
- It is the Carotenoid pigment in algae that gives flamingos their pretty pink colour.
- Flamingos use their beaks to strain out algae and small crustaceans from water and theory says that they pull one leg close to the body to conserve the heat.





- Wildlife experts feared that construction activities and other such projects would pose threat to the ecosystem and numbers of flamingos who migrate would come down. But surprisingly, the flamingos have adapted to the conditions much better than expected.

### G-7 Ministers commit to work for carbon-free electricity by 2035

- Climate & Energy Ministers from G-7 countries committed to work towards ensuring carbon-free electricity production by 2035 and accelerating the phase-out of coal.
- This was part of an agreement by the countries at the end of a two-day conference in Sapporo, Japan, ahead of the G-7 summit in Hiroshima this year.

### Meeting's outcome

- A proposal to have a 2030 deadline for phasing out coal was shot down as the final text gives leeway for continued investment in gas.
  - India being invited as a guest, in the context of its presidency of the G-20 had participated in the meeting.
- At UN COP meeting in Glasgow in 2021, India had objected to language in the agreement to “phase out” and pushed instead for a “phase down” of coal.
  - At the COP meeting in Sharm el Sheikh last year, India pushed for a proposal to phase out all fossil fuel sources, including coal and gas.
- India and China are significantly dependent on coal for electricity, whereas countries like the United States, Japan, Canada and Europe are reliant on gas reserves.

### Other agreements

- The participants agreed on accelerating solar and wind energy investments to produce 1000 GW by 2030 from solar and 150 GW of wind power from off-shore platforms.

### As Berlin shuts its nuclear reactors, Finland opens Europe's largest one

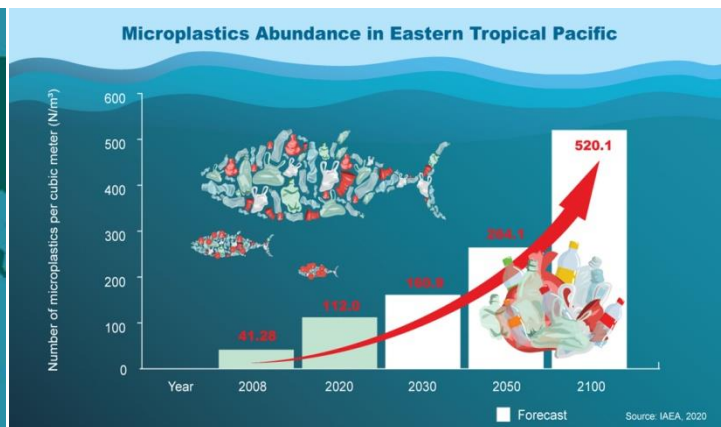
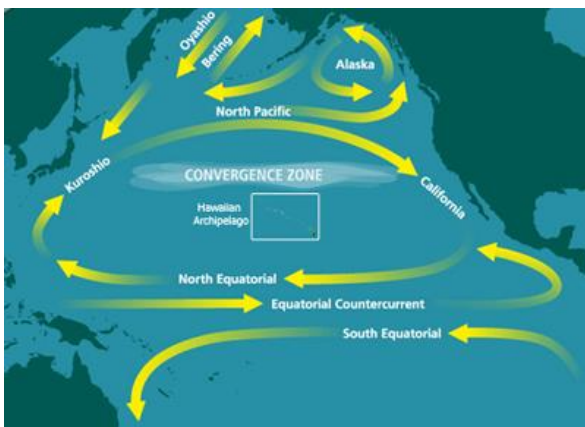
- Finland's next-generation Olkiluoto 3 nuclear reactor, the largest in Europe has gone into regular production after months of delay after Germany ended its nuclear era.
- Olkiluoto 3, now producing around 14% of the country's power is expected to remain operational for at least the next 60 years.

### How coastal species are living on plastic debris in the ocean

In a study published, researchers from Canada, the Netherlands, and the U.S. have reported that coastal life forms have colonised plastic items in the Great Pacific Garbage Patch.

### The Great Pacific Garbage Patch

- There are some water currents in the ocean that are driven by winds and the Coriolis force, form loops. These are called gyres.



- The **North Pacific Subtropical Gyre (NPSG)** is one such, located just north of the equator in the Pacific Ocean.
  - It consists of the **Kuroshio, North Pacific, California, and North Equatorial currents** and **moves in a clockwise direction**.
- These currents flow adjacent to 51 Pacific Rim countries and any trash that enters one of these currents from any of these countries could become part of the gyre.
- Inside this gyre, just **north of Hawai'i**, lies a **long east-west strip** where some of the debris in these currents has collected over the years.
- **The eastern part of this is the Great Pacific Garbage Patch**.
  - It is, per one estimate, 1.6 million sq. km big and more than 50 years old.
  - It contains an estimated 45,000-1, 29,000 metric tonnes of plastic predominantly in the form of **micro plastics**.
  - More visible objects that haven't yet broken down into smaller particles accounted for 92% of the plastics in 2018.

### **The study**

- The **tsunami off the Japanese coast in 2011** contributed to the debris in this garbage patch and researchers reported life forms in shores of America originally from Japan.
- Based on studying them, they reported that **98% of the debris items had invertebrate organisms**.
- They also found that **pelagic species** (species of the open ocean) were present on 94.3% of them and coastal species on 70.5% and crustaceans were common.
- According to the paper, nearly all taxa were of Northwest Pacific origin including Japan and reported a **strong positive correlation between reproduction and mobility**.

### **The relevance of the findings**

- **Anthropocene Epoch** – named by some scientists characterised by the influence of one species on the planet's geology, ecosystems and its fate of *Homo sapiens*.
- Yet the greatest contender is the **creation of plastic trash** which is abundant in our urban refuse, rivers and forests from slopes of peaks to depths of trenches.
- Reports also suggest that polyethylene films had chemically bonded with rocks in China and also in many places similar trend is found;
  - anthropoquinas" of Brazil (sedimentary rocks embedded with plastic earrings)
  - plastiglomerates" of Hawai'i (beach sediment + organic debris + basaltic lava + melted plastic).
- With growing competition for growth, GDP, trade and military surplus people are forgetting the basic need for sustenance – Nature.

### **Conservationists in Sri Lanka slam plan to export monkeys to China**

Zoologists and conservationists in Sri Lanka slammed a recent government proposal exploring the export of monkeys to China.

#### **The proposal**

- This was termed as an ad-hoc, illegal, and short-sighted response to a long-standing human-animal conflict.
- Government was studying a proposal from a Chinese company to purchase **Sri Lankan toque macaques**, a **golden brown-coloured monkey endemic to the country**.
  - While China sought interest in breeding this monkey while Sri Lanka wanted to get rid of crop-destroying species.
- Sri Lanka's farmers have been voicing concern over crop damage and consequent financial losses, owing to frequent attacks by monkeys in their areas.

- However, the government's announcement came abruptly which shocked the farmers as well as they had not demanded such an ad-hoc solution.

### Concerns associated

- Further, the conservationists said they were worried that the monkeys could end up in testing laboratories abroad.
- If the monkeys are exported to Chinese labs, they would be tested and their skin and eyes could be burnt. They will effectively be tortured and killed.
- Challenging the official estimates of 3 million toque macaques, after a large scale enumeration was undertaken now it has only about 6 lakh toque macaques.

### UN reports 'off the charts' melting of glaciers

- UN reports indicated that climate change indicators once again hit records high as the world's glacier is melting at a dramatic speed.
- The last eight years have been the warmest ever recorded, while concentrations of greenhouse gases such as carbon dioxide hit new peaks.
- Antarctic sea ice fell to its lowest extent on record and the melting of some European glaciers was literally off the charts said the WMO.
- Sea levels are also at a record high, having risen by an average of 4.62 millimetres per year between 2013 and 2022 — double the rate it was between 1993 and 2002.
  - Record high temperatures were recorded in the oceans where around 90% of the heat trapped on Earth by greenhouse gases ends up.
- The 2015 Paris Agreement saw countries agree to cap global warming at below 2° C above average levels measured between 1850 and 1900 and 1.5° C if possible.

### Network of sensors to monitor groundwater quality

- The Jal Shakti Ministry is working to deploy a vast network of groundwater sensors that will continuously relay information on groundwater levels
  - And the degree of contamination down to the taluk level.
- Currently, such information is only measured a handful of times a year and communicated via reports of the Central Groundwater Board.
- Establishing a network that will continuously measure groundwater quality, feed data into the centralised National Water Informatics Centre.
  - And make it available for monitoring would make groundwater visible much the same way as air quality and meteorological variables.

### Recordable units

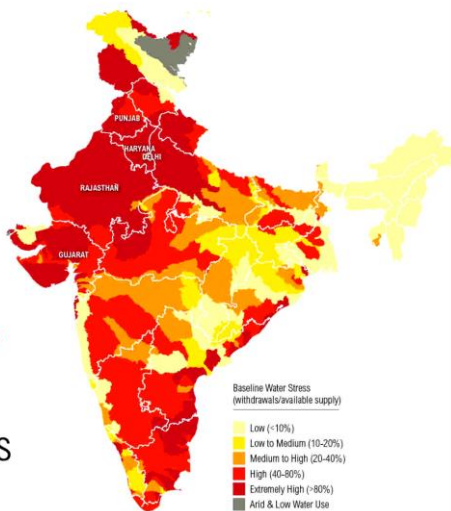
- The Central Groundwater Board currently relies on a network of about 26,000 groundwater observation wells that require technicians to manually measure.
- Under the new initiative, around 16,000 to 17,000 digital water level recorders will be connected to piezometers in the wells.
  - Piezometers measure groundwater levels; the recorders will transmit the information digitally.
- When combined with similar networks possessed by other institutions, India will have 67,000 digitally recordable units to monitor groundwater dynamics.
- The CGWB is in charge of the National Aquifer Mapping Programme (NAQUIM) that has mapped the country's aquifers and expected to increase resolution.



## Latest assessment

- In the latest **Ground Water Resource Assessment-2022**, the total annual groundwater recharge in the country has been assessed as 437.60 billion cubic metres (BCM).
- The average stage of groundwater extraction for the country is about 60.08% and **anything above 70% is considered critical**.
  - In regions around Punjab, Haryana, Delhi and Rajasthan the blocks are with over 100% extractions.
- Reports over the years suggest that **85% of rural India uses groundwater for drinking and domestic purposes**.
- In cities with a population of over 10 lakh, about 40% have seen water levels in monitored wells either stay stable or drop.
- **Groundwater contamination is mostly geogenic (natural)** and hasn't significantly changed. However nitrate, arsenic and fluoride contamination has been observed.

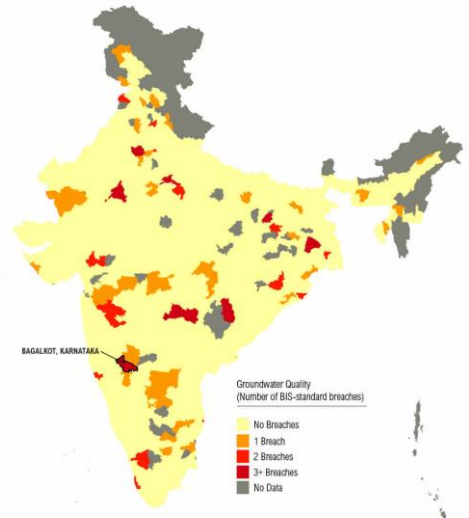
**54%**  
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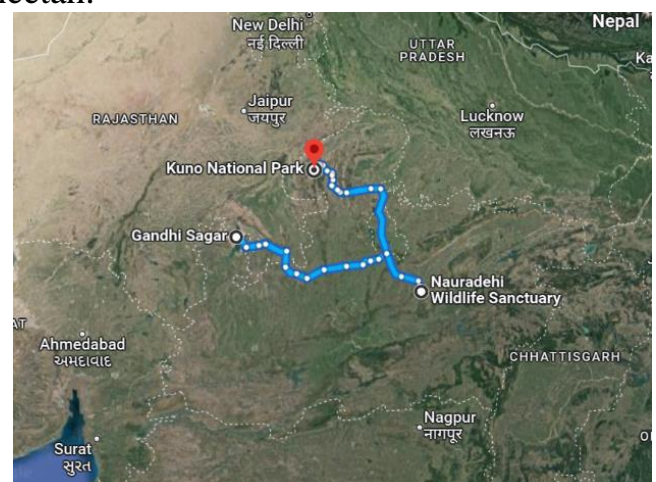
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## After death of two cheetahs, M.P. seeks new site for the felines

The Madhya Pradesh Forest Department has asked the Central government for an alternative site for cheetahs currently introduced at the Kuno National Park (KNP).

### Death of cheetahs

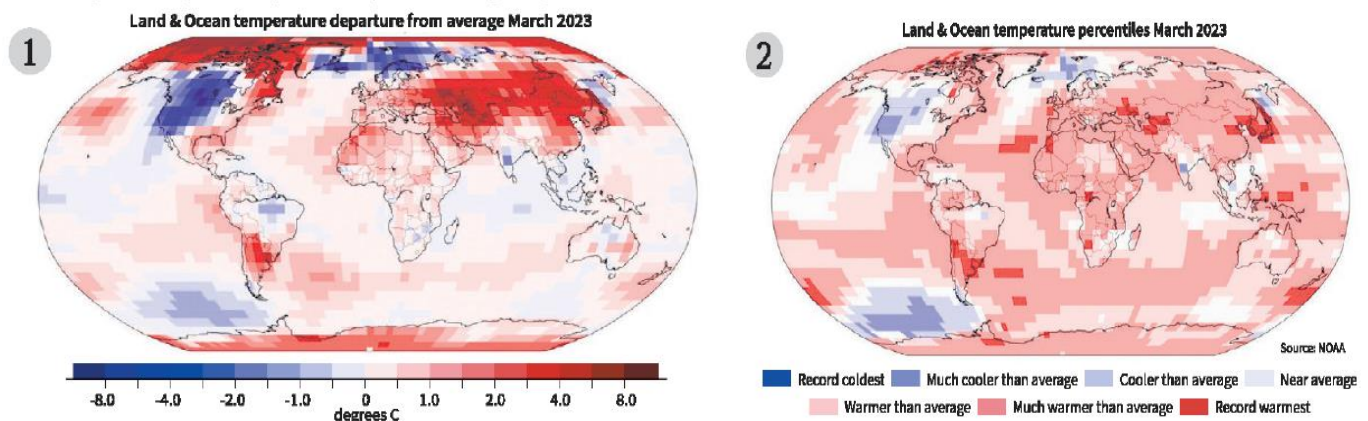
- After its introduction in the park, it has seen the **death of two felines** in less than a month which was factored in the Project Cheetah.
- Officials say that they **do not have enough logistical support** for the upkeep of the cheetahs brought in two batches of 8 and 12 **from Namibia and South Africa**.
- While the existing population of cheetahs would remain within the larger Kuno landscape, the exact cause of the feline's death has not been identified yet.
- Experts noted that at KNP the reintroduction is likely to affect because it has core area of 748 sq. km and buffer zone of 487 sq. km.
  - Plans are being discussed for shifting cheetahs to Gandhi Sagar or the Nauradehi in M.P. as alternate sites.





## Understanding temperature anomalies

Map 1 shows the distribution of temperature deviations for March 2023 from the baseline long-term average March temperature. Map 2 shows the percentile ranking of temperature anomalies



- Reports say that **March 2023 was the second warmest March** record and the first warmest March occurred in 2016 triggered by biggest El Niño.
- Each year's March can be warmer or cooler than the year before **due to natural climate variability** causing temporarily spike temperatures.
- In India, we expect March to be the beginning of the scorching summer season. But sometimes it may be cooler due to some other climatic factors such as La Niña.
- A year is an **'El Niño year'** if warmer water spreads in a band from west to east over the equatorial Pacific Ocean.
- In a **'La Niña year'**, cooler water spreads east to west in the same region and both phenomena have distinct and significant effects on the global climate.

## Why is context important?

- India has witnessed differing climatic variations such as **cooler march over Mumbai, excess pre-monsoon rains over Northwest and scorching heat waves** in Kerala and Odisha.
- The **Arabian Sea has also warmed more than expected** this March and we need to look if it can favour a stronger monsoon but may also enhance cyclogenesis.
- The global distribution of temperature anomalies is due to **land-ocean-atmosphere processes** that dynamically determine the weather and climate.
  - Global warming does not mean each month or each year will be warmer than the previous month or the previous year.
  - Instead, it would be better by averaging the weather over a decade which clearly shows that humans are ensuring the warming up.
- **2023 is expected to be an El Niño year** and El Niños tend to produce weaker monsoons.
- Climate scientists need to provide the proper context that will help the people at large better understand global warming and its effects.

## SC modifies order on ESZ around protected forests

SC recently **modified its judgment** to have **mandatory eco-sensitive zones (ESZ) of a minimum 1 km** around protected forests, national parks and wildlife sanctuaries .

## News behind

- The Bench reasoned that ESZ cannot be uniform across the country and has to be **"protected area-specific"**.
- The Centre and several States including Kerala seeking the court for modification in the June 2022 judgement saying,

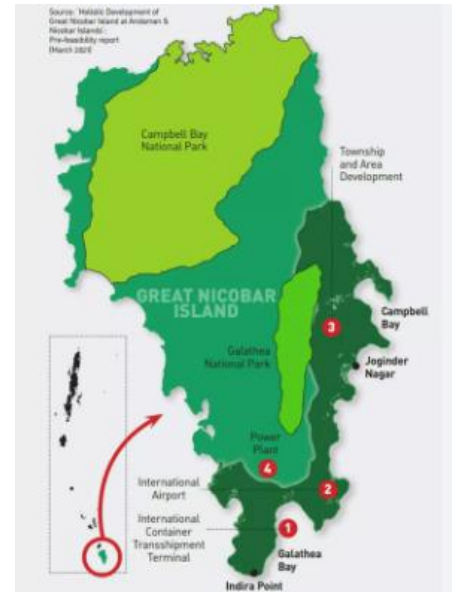
- It has affected hundreds of villages on the peripheries of the forests and affects the day-to-day activities of the citizens residing in ESZs.
- The court said a stringent observance of the June 2022 judgment would cause more harm than good like man-animal conflict would only increase rather than abate.
- However, the court made it clear that **mining within national park, wildlife sanctuary and within an area of 1 km** from the boundary shall **not be permissible**.

### **Nicobar project violates tribal rights: ST panel**

The **National Commission for Scheduled Tribes (NCST)** has alleged discrepancies with respect to the forest clearance granted for **the Great Nicobar Island (GNI) Project**.

### **Allegations against the project**

- Citing alleged violations under the **Forest Rights Act (FRA), 2006**, the panel issued notice to district authorities on the Andaman and Nicobar islands on grounds that,
  - The project will significantly **affect the rights of local tribal people** and that the NCST was not consulted.
- Earlier the **National Green Tribunal ordered a stay** on the project and constituted a committee to revisit the environmental clearance.
- And the island administration has neither recognised nor granted ownership of any forest land to tribespeople under the FRA,
  - A requisite step under the **Forest Conservation Rules, 2017**, before Stage I clearance is granted.
- According to FCA rules, any diversion of forest land would **first require the District Collector to recognise and vest rights to local people under the FRA**.



### **The project**

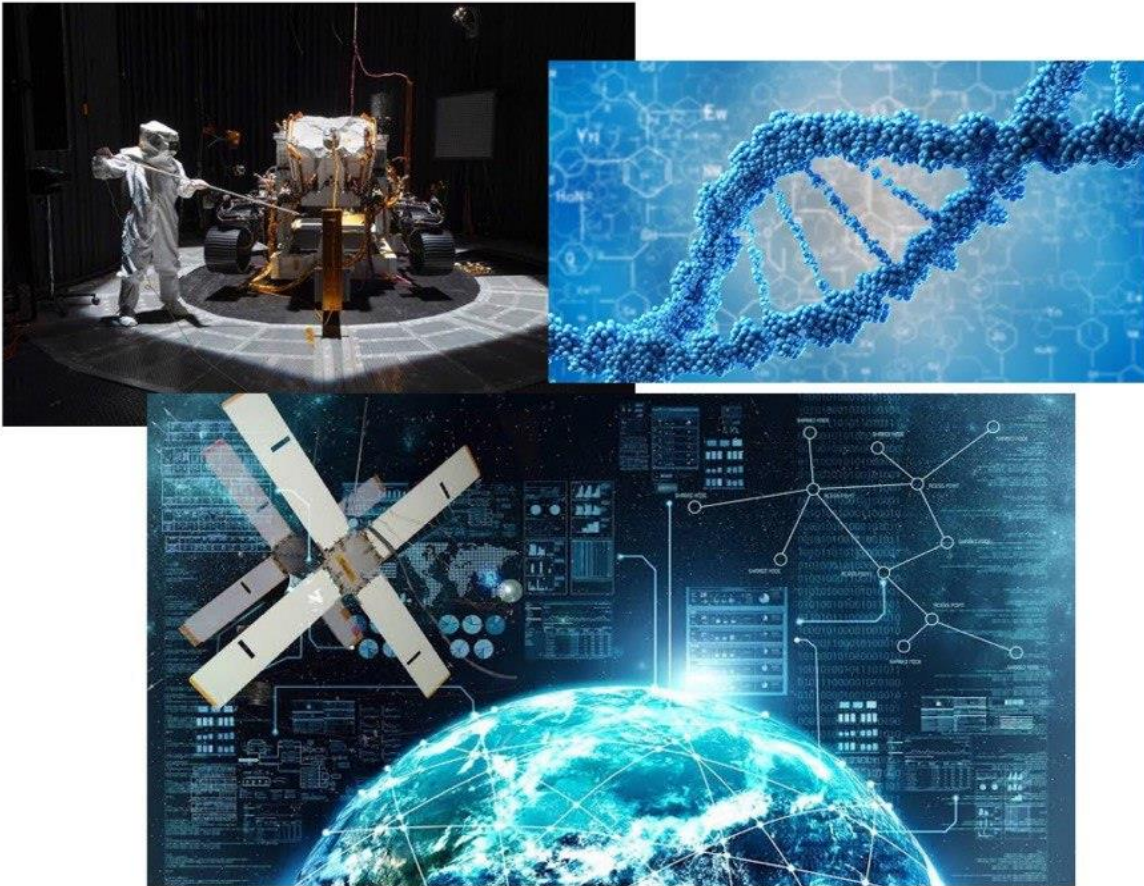
- The project is being implemented by the Andaman and Nicobar Islands Integrated Development Corporation and includes;
  - A **transshipment port, airport, power plant and Greenfield township**.
- The government has assured that the **Shompen Tribes** will not be displaced for the project, where tribal reserve forest land for the project is chosen.
- The NCST has sought a detailed action-taken report on the alleged procedural lapses within 15 days.
  - **Constitution has also mandated** that the government consult the NCST or any matters involving the rights of tribes people.

### **Over 64% of elephant habitat lost across Asia since 1700**

- Habitats suitable for Asian elephants across Asia have decreased by over 64% equating to 3.3 million square kilometres of land, since 1700.
- Researchers estimated the change in the fragmentation and spread of Asian elephant ecosystems in 13 countries.
- They suggest that **China, India, Bangladesh, Thailand, Vietnam, and Sumatra** have each **lost more than half of their suitable elephant habitat range**,
  - with the greatest **declines in China (around 94%) and India (around 86%)**.

# Science and Technology

By Lectures Bureau





## Novel catalyst offers to make hydrogen more viable as fuel

Researchers at the Indian Institute of Technology (IIT), Mandi have developed a novel carbon-based catalyst to make water electrolysis more efficient.

### Basis for hydrogen fuel cells

- The electrolysis of water — to split it into its constituent atoms using electricity consumes a lot of energy.
- The traditional solution is to use a catalyst to induce the water molecules to split at a lower energy.
  - Common catalysts are based on **Iridium and Ruthenium**, which are expensive and in great demand in other sectors.
- Now a **porous carbon material containing nitrogen** that functions both as a **catalyst and as anode in electrolyzers** and could substitute the metal-based catalysts was found.
- The researchers produced this material called **'laser carbon'** by exposing a sheet of a polyimide polymer to a laser beam and leaving the remainder rich in nitrogen.
- In an electrolyser, nitrogen atoms drew electron clouds towards themselves encouraging nearby carbon atoms to bond with atoms or molecules containing electron pairs.

### Oxygen evolution reaction (OER)

- OER is a stumbling block in electrolysis that has many intermediate steps and proceeds slower than the rest of the reaction cycle thus reducing the energy efficiency.
- **Laser carbon intervenes by reducing the OER over potential:**
  - The difference between the voltage at which the OER takes place in reality and the minimum voltage at which it can take place.
  - Lowering the over potential allows OER to proceed vigorously.

### Benefits of this new technology

- The laser carbon is cheaper to produce, simpler to synthesise.
- It can be batch-manufactured with a laser in an environmentally friendly process, unlike other carbon-based catalysts.
- The material's catalytic activity is inferior to that of metal-based catalysts but it can be improved in the fabrication process and use of other polymers.

## IACS's novel compound treats drug-resistant kala-azar infection

- Experimental work in mice has shown a **novel quinoline derivative** to be effective in reducing the **load of Kala azar or Black fever**.
- Founded by researchers at the Kolkata-based Indian Association for the Cultivation of Science (IACS).

### DNA architecture

- The quinoline derivative is a **potent inhibitor of an enzyme called topoisomerase 1 (LdTop1)**.
- This enzyme is essential for maintenance of DNA architecture in the parasites and is distinct from the one found in humans.
- Poisoning of LdTop1 imparts a significant level of **cytotoxicity to both *Leishmania* parasites** found in,

#### Studies in mice show promise

Kala-azar is endemic in four Indian States – Bihar (33 districts), Jharkhand (4 districts), West Bengal (11 districts), and Uttar Pradesh (six districts)



**The culprit:** Kala-azar is a vector borne (sand fly) neglected tropical disease caused by the protozoan parasites of the genus *Leishmania*.

**1** The current treatment regimens against Kala-azar still use formulations that are toxic and induce high levels of drug-resistance

**2** The novel inhibitor was identified by screening them against recombinant *Leishmania* topoisomerase 1 enzyme

**3** In all, 21 derivatives were evaluated for their antileishmanial activity, and one of them was found to be effective

**4** The derivative was found to generate persistent and less reversible DNA breaks compared with the camptothecin inhibitor (discovered in 1966)

**5** The derivative has greater efficiency in clearing even the antimony-resistant parasites present in the spleen, liver, and blood of infected mice

**6** Further studies are needed to test the drug-resistance potential prior to undertaking clinical trials



- Gut of Sand fly vectors (promastigotes)
- And the form found in infected humans (amastigotes) of both the wild type and the antimony-resistant isolates.

### **Kala Azar**

- A **vector borne (sandfly) neglected tropical disease** caused by the protozoan parasites of the genus *Leishmania* that affects world's poorest populations in over 90 countries.
- More than 95% of cases reported to WHO are from India and other tropical countries most importantly co-infection with HIV.
- The **four States endemic for kala-azar in India** are: Bihar, Jharkhand, West Bengal and Uttar Pradesh.
- The current treatment regimens against kala-azar use formulations that are toxic and induce high levels of drug-resistance.

### **Antileishmanial activity**

- The novel inhibitor targeting the *Leishmania* parasites was identified by screening them against **Leishmania topoisomerase 1 enzyme**.
  - Out of 21 derivatives analysed only one was found to be effective.
- The derivative was found to generate persistent and less reversible DNA breaks compared with the camptothecin inhibitor (discovered in 1966).
- Even after the novel inhibitor identified by the IACS-led team was removed from the culture medium leading to enhanced parasite killing.
  - The novel inhibitor not only clears the parasite burden from the infected mice but also confers a host protective immune response.
- The latter effect is achieved by up-regulating the **Th1 cytokines facilitating parasite clearance**.

### **Marburg virus outbreak in two African countries**

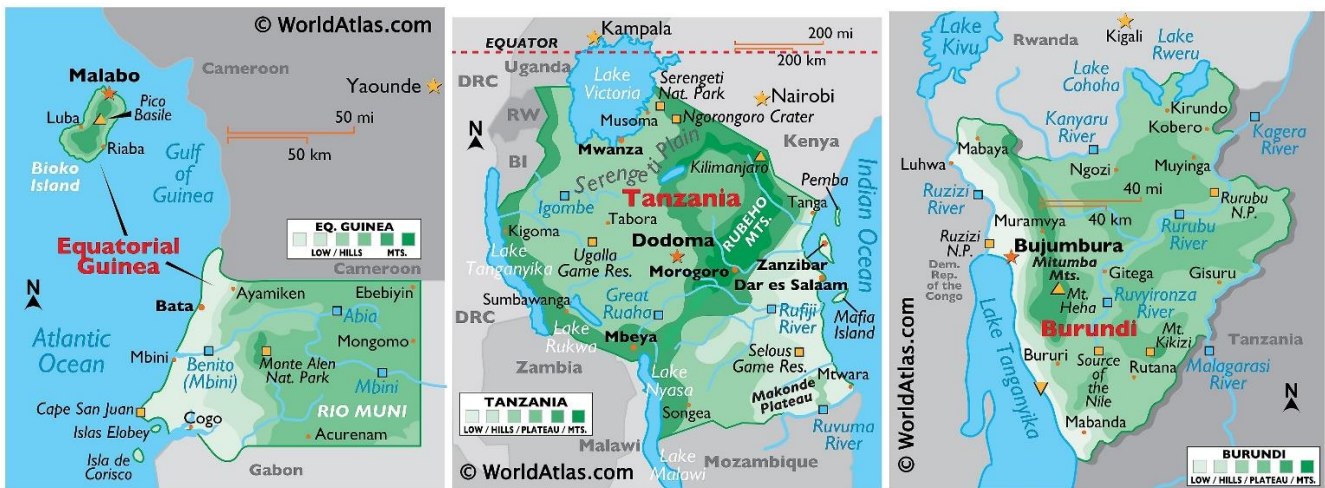
**Equatorial Guinea and Tanzania** reported outbreaks of Marburg virus disease (MVD), the first-ever outbreak of the disease in these countries.

### **Marburg Virus**

- First identified in 1967 during outbreaks in Germany and Serbia.
- **Haemorrhagic fever virus** of *Floviridae* family affecting humans.
- The virus is closely related to another deadly virus Ebola and is rated as a **high-risk pathogen by the WHO**.
- Transmitted to humans through contact with **infected animals such as fruit bats** and further human to human transmission through direct contact with bodily fluids.
- **African countries being the most affected** and often with high fatality rates up to 90% depending on the early access to quality care.

### **Treatment**

- There are **no approved vaccines, antivirals or monoclonal antibodies** for this virus and supportive care to manage symptoms and prevent complications forms the mainstay.
- The WHO aims to accelerate trials of some investigational vaccines and detection through contact tracing, molecular diagnosis and quarantine in managing disease.
- **Burundi** has made surveillance of emerging viral diseases to help early detection, circulation, evolution and develop effective diagnostics, prevention and control measures.
- It is only natural that the **concept of One Health is increasingly taking centre-stage**.



**ISRO’s Reusable Launch Vehicle landing test successful**

ISRO carried out the experiment of **Reusable Launch Vehicle-Technology Demonstration (RLV-TD)** programme at the Aeronautical Test Range in Challakere, Chitradurga.

**News highlight**

- An Indian Air Force (IAF) Chinook helicopter was used to drop the RLV-TD from an altitude of 4.5 km and ISRO executed the landing experiment as planned.
  - It is first time in world a winged body has been carried to an altitude of 4.5 km by a helicopter and released for carrying out autonomous landing on a runway.
- the configuration of RLV-TD is similar to that of an aircraft and combines the complexity of both launch vehicles and aircraft.
- During this mission the vehicle landed on a **hypothetical runway over the Bay of Bengal.**

### WHAT THE FUTURE HOLDS FOR ISRO

The reusable launch vehicle (RLV) will touch Mach 5 (five times the speed of sound), re-enter atmosphere and land on water

► RLV is a winged vehicle that will take off like a rocket and glide back to land like a plane

► A developed version of RLV can be used for manned missions in future

► In the experiment, RLV will land on water as India does not have a runway of the requisite length of 5km. The longest runway in the country is 2km

**CONVENTIONAL ROCKET**  
Today, using a conventional rocket, it costs **\$5,000** to put 1kg of payload in orbit.

**REUSABLE LAUNCH VEHICLE**  
A reusable vehicle can do the same for **\$500** per kg of payload

**₹300 cr**  
India's current annual spend for satellite launches

► Exclusive use of RLVs will bring down this cost **10 times**

### WHAT IS REUSABLE LAUNCH SYSTEM ?

- A Reusable Launch System (RLS) is a space launch vehicle which can be used for several space missions.
- A Reusable Launch System is the space analog of the aircraft. The main objective is to return the first stage/boosters of a launch vehicle at the launch site.
- The main advantage of RLS is that it can be used multiple times, hopefully with low servicing cost. A successful RLS will decrease the missions cost and make space travel more accessible.

### HISTORY

- The thought of RLS was proposed in 1950's, but serious attempts of RLS started at 1990's with the space shuttle programme.
- Space shuttle was an reusable launch vehicle (RLV) which flew into the space with the help of two rocket boosters and then used to glide back down like an aircraft.
- It was intended to reduce launch costs below those of expendable launch systems, but instead ended up being more expensive. The last Shuttle was retired in 2011.

### TODAY

- SpaceX is a recent player in private launch market succeeding in converting its falcon 9 expandable rocket into partially reusable rocket by returning the first stage of reuse in 2015.
- Blue Origin New Shepard rocket became the first proven Vertical Take-off Vertical Landing (VTVL) which can reach space upto 100.5 km.
- Government space agencies such as NASA, ISRO, ESA and ROSCOSMOS are also developing in field of RLS for future space missions which will make it more affordable.



## Dial-up Internet is now history in India: TRAI

The last dial-up Internet connection was switched off in India in March 2021 said Telecom Regulatory Authority of India (TRAI).

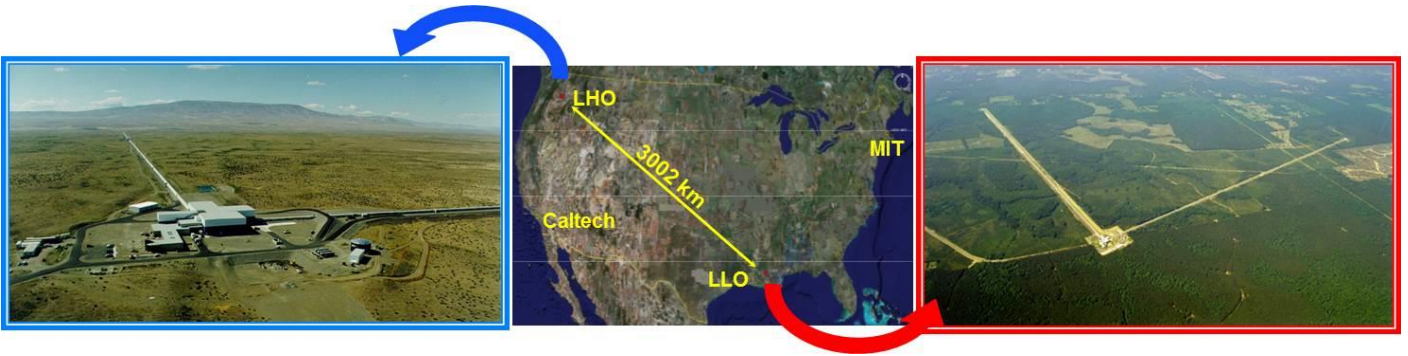
### Dial-up Network

- Dial-up Internet access is a form of Internet access that uses the facilities of public switched telephone network (PSTN);
  - To establish a connection to an Internet service provider (ISP) by dialing a telephone number on a conventional telephone line.
- The dial-up service was the only service available for accessing low speed internet and is capable of reaching maximum speed of 56 kilobits per second.
- Only BSNL was reporting the dial-up subscribers until March 2021 and now it has confirmed that it no longer has any dialup users in India.

	Distribution Method	Speed (compared to 56Kbps modem)	Drawback
Dial-up (PSTN)	ISPs use household telephone lines to transmit data from the Internet. A modem converts the data and the PC displays the information.		Limited speed. Old phone cables tend to be less reliable.
DSL	DSL turns digital signals of computers into sound waves and zaps them through the phone network.	More than 10 times faster	Residents farther than 4.25 kilometers from a central phone office probably can't get service.
ISDN	Phone line has multiple channels. It can accommodate a combination of 3 to 31 voice calls and/or Internet connections depending on the configuration <sup>4</sup> .	2 to more than 20 times faster	Phone line will not work during power interruptions. It has two bills-one for the phone and another for the Internet connection. An ISDN modem is expensive.
Cable Modems	Data from the Net flows over the same coaxial cable that carries TV signals. A modem splits the Internet data from TV data and directs the data to the PC and the TV correspondingly.	10 to 20 times faster	An expert is needed to set up the system. Subscribers using the Internet at the same time and using the same feeder line have to split the bandwidth amongst themselves.
Satellite	Satellites that beam TV signals also transmit Internet data. The Internet signals are collected on dishes, split off from TV signals, and routed to the PC.	4 to 8 times faster	Most satellite services are only one way. Many customers need a complex setup to send data back to the Net over their regular phone line. Two-way services are slower.
Fixed Wireless	The same airwaves used to beam wireless phone calls can be used to transmit Internet data. The signals are delivered from wireless towers, collected on dishes attached to the home, and routed to the PC.	2 to 10 times faster	Requires a clear and direct line of sight between the tower and a customer's home.

## Science for all

- Union Cabinet's approval to set up a gravitational-wave detection facility in Maharashtra is one that will consist of a detector called,
  - The Laser Interferometer Gravitational-wave Observatory (LIGO).
  - It is to be built in the image of twin LIGO instruments already operational in United States.
  - Their detection of gravitational waves in 2016 launched a new era of astronomy.
- A third detector is being built in India as part of LIGO-India collaboration to improve the detectors' collective ability to pinpoint sources of gravitational waves in the sky.
- The LIGO "observatory" is made up of two identical and widely separated interferometers –
  - LIGO Hanford in Washington State
  - LIGO Livingston, 3002 km away in Louisiana.
- LIGO-India is a collaboration between the LIGO Laboratory (operated by Caltech and MIT) and three Institutes in India:
  - Raja Ramanna Center for Advanced Technology (RRCAT, in Indore)
  - Institute for Plasma Research (IPR in Ahmedabad)
  - Inter-University Centre for Astronomy and Astrophysics (IUCAA, in Pune)



### Issues associated

- These projects need large land tracts with inevitable implications for land-use change and contest over land rights.
- It is against the backdrop of sustainable use of natural resources, carbon sequestration targets, just transitions and human rights.
  - An example is Hawaii's Thirty Meter Telescope, to be built on land the locals hold sacred.
- A similar criticism has trailed experimental Big Science undertakings, including the INO in the economically developing world.

### India's opportunity

- To build a facility that contributes to the communities from which it requires sustenance and knowledge
- Engage in good faith on concerns about access to land and other resources
- Conduct public outreach on a par with the international LIGO Scientific Collaboration.

### Gravitational waves (GW)

- Gravitational waves are ripples in space-time, the 4-D fabric of the Universe, caused by massive objects in motion.
- Sources of GW are objects such as neutron stars or black holes orbiting around each other at ever increasing speeds until they merge, or stars that blow themselves up.
- These were first predicted by A.Einstein soon after he formulated the theory of General Relativity in 1915.
- Hence they are also called 'messengers of Einstein'

### In pursuit of a magic number, physicists discover new uranium isotope

- Physicists in Japan discovered a previously unknown isotope of uranium, with atomic number 92 and mass number 241, i.e. uranium-241.
- The discovery of a new neutron-rich uranium isotope is the first since 1979.
- The arrangement of protons and neutrons in an atomic nucleus follows some rules and this finding enhances the understanding of nuclear physics.

### The new element

- The researchers accelerated uranium-238 nuclei into plutonium-198 nuclei at the KEK Isotope Separation System.
- The resulting nuclear fragments contained different isotopes and this is how they identified uranium-241 and measured the mass of its nucleus.
- Theoretical calculations suggest it has a half-life of 40 minutes and used time-of-flight mass spectrometry to estimate the mass of nucleus.

### Database on 10,000 genomes to be ready for research access

- The Genome India Project, a Centre-backed initiative to sequence 10,000 Indian human genomes and create a database is about two-thirds through.



- About 20 institutions across India are involved in the project and is done out of the Centre for Brain Research, IISc, Bangalore.

### Importance to India

- The Indian population of 1.3 billion consists of over 4,600 population groups and many of them are endogamous.
  - Thus the Indian population harbours distinct variations and often many disease-causing mutations are amplified within some of these groups.
- Therefore findings from population-based or disease-based human genetics research from other populations of the world cannot be extrapolated to Indians.
- This means that researchers anywhere can learn about genetic variants that are unique to India's population groups and use that to customise drugs and therapies.



### Awaiting lift-off into the Second Space Age

- The Space Age began in 1957 with the launch of satellite Sputnik 1 and in 1961 cosmonaut Yuri Gagarin became the world's first person in space.
  - Neil Armstrong made history by walking on the moon in 1969. The First Space Age became reality.
- Today, the Second Space Age is here. Though there is no precise date for its beginning, the contrast in today's space domain is stark.
- Last year, there were 180 rocket/space launches, 61 by Elon Musk's Space X; 90% of global space launches since 2020 are by and for the private sector.

### India's space journey

- India made a modest entry into the First Space Age in the 1960s.
  - 1963- first sounding rocket, a U.S. supplied Nike-Apache, was launched at Thumba (Kerala)
  - 1969- the Indian Space Research Organisation (ISRO) was set up
  - Satellite Instructional Television Experiment (SITE) involved leasing a U.S. satellite in 1975-76 for educational outreach across 2,400 villages
- Satellite technology was a new mass communication tool.
  - This led to the INSAT series in the 1980s.
  - GSAT provided the backbone for the country's tele-communication and broadcasting infrastructure.
- Then came the remote sensing capability development.
  - The use of space-based imagery for weather forecasting, resource mapping of forests, analysing agricultural yields, groundwater and watersheds
  - It has gradually expanded to cover fisheries and urban management.
  - Following remote sensing grew the Oceansat and Cartosat series.
- The development of field of satellite-aided navigation .
  - GAGAN, a joint project between ISRO and the Airports Authority of India
  - It is to augment Global Positioning System (GPS) coverage of the region to improve air traffic management over Indian airspace.

- This has now been expanded to a regional navigation satellite system called **Navigation with Indian Constellation (NavIC)**.
- In parallel came the **development of satellite launch capabilities**.
  - **SLV-1** began in the 1980s; it took a decade before ISRO developed the **PSLV** series that has become its workhorse with over 50 successful launches.

### **Space potential**

- The origins of the **Second Space Age** can be traced to the **Internet**.
  - Today, more than half the transponders beaming into Indian homes are on foreign satellites.
  - The age of mobile telephony, followed by smart phones has shown the world what a data-hungry and data-rich society India is.
  - Broadband, OTT and now 5G promise a double-digit annual growth in demand for satellite-based services.
  - **Indian global space economy is growing to \$600 billion by 2025**.
- The reason is that in terms of the end-user revenue, **only a fifth is generated by the government**.

### **Private sector globally**

- A similar trend can be seen in developed countries and the reason is that India has been an early adopter of digital app-based services.
- The growing role of the private sector is also evident in the numbers and ownership of satellites.
- According to the United Nations Office for Outer Space Affairs (UNOOSA), there are 8,261 satellites in orbit of which nearly 5,000 are active.
  - Today, Starlink operates a constellation of over 3,500 satellites and has a million paying customers.
  - Both Starlink and OneWeb (in which Airtel has a stake) project constellations of 40,000 satellites each. And Jeff Bezos of Amazon has launched **Project Kuiper** to bring low-latency broadband connectivity around the globe.

### **Creating an enabling environment**

- Today, **ISRO manages four to five launches annually** along with missions such as Chandrayaan, Gaganyaan etc.
- For private sector companies, space technology related work is a small part of their revenue stream and need different relationship with ISRO and government.
- ISRO today is the operator, user, service provider, licensor, rule maker and also an incubator.
  - In 2017, the government introduced the **first draft Space Activities Bill** in Parliament but it lapsed in 2019.
- **There has been talk of commercialising the PSLV and SSLV launch services and NewSpace India Limited (NSIL) was set up to replace Antrix**.
- The **Indian National Space Promotion and Authorization Centre (IN-SPACe)** was set up in 2020 as a single-window-clearance for the private sector.
- However, it is unclear whether it will emerge as the licensing authority or a regulator. An Indian Space Association (ISpA) was created as an industry association.

### **Indian-American C.R. Rao wins Nobel Prize equivalent in statistics at the age of 102**

- The Indian-American statistician Callyampudi Radhakrishna Rao has been awarded the **2023 International Prize in Statistics**, the equivalent of the Nobel Prize for statistics.

- It is awarded once every two years to an individual or team for major achievements using statistics to advance science, technology and human welfare.

### **Rao score test**

- One of Professor Rao's papers in 1948 offered a novel generic approach to testing hypotheses, now widely known as the "Rao score test".
- This along with other tests developed by Jerzy Neyman, E. S. Pearson and Abraham Wald are called as Holy Trinity of Statistics branch.
- Professor Rao also contributed to orthogonal arrays, a concept in combinatorics used to design experiments whose results are qualitatively good.

### **A beginner's guide to the Large Hadron Collider, its functions and its future**

- The Large Hadron Collider (LHC) was built by the European Organization for Nuclear Research (CERN).
- It is on the energy frontier of physics research, conducting experiments with highly energised subatomic particles.
- The LHC is of three things;
  - First, it is large so large that it is the world's largest science experiment.
  - Second, it is a collider. It accelerates two beams of particles in opposite directions and smashes them head on.
  - Third, these particles are hadrons.

### **The functioning of the LHC**

- A hadron is a subatomic particle made up of smaller particles and LHC typically uses protons which are made up of quarks and gluons.
- It energises the protons by accelerating them through a narrow circular pipe that is 27 km long which encircles D-shaped magnetic fields by almost 9600 magnets.
- There is a proton at the 3 o'clock position and is made to move to 9 o'clock position in clockwise motion by turning on one hemisphere and turning off the other.
- Once it reaches the 9 o'clock position, the magnetic polarity is reversed by turning off the first hemisphere and turning on the second.
- This causes the proton to move in an anticlockwise direction from 9 o'clock back to the 3 o'clock position and thus protons can be accelerated through the beam pipe.
- Eventually, the protons move at 99.999999% of the speed of light. In the process they accrue a tremendous amount of energy according to the special theory of relativity.

### **The effects of collision**

- When two antiparallel beams of energised particles collide head on, the energy at the point of collision is equal to the sum of the energy carried by the two beams.
- Thus far, the highest centre-of-mass collision energy the LHC has achieved is 13.6 TeV (teraelectron-volts).
- At the moment of collision, a lot of energy is available and parts of it coalesce into different subatomic particles under the guidance of the fundamental forces of nature.
- Which particle takes shape depends on the amount and flavour of energy available and which other particles are being created or destroyed around it.
- Some particles are created very rarely while some particles are quite massive and need a lot of the right kind of energy to be created.
- Some particles are extremely short-lived and the detectors studying them need to record them in a similar timeframe or be alert to proxy effects.

### **The findings of the LHC**

- Every year, the detectors generate 30,000 TB of data worth storing and even more.



- Physicists pore through this data with the help of computers to identify and analyse specific patterns.
  - This is how the **ATLAS and CMS detectors** helped discover the **Higgs boson** in 2012 and confirmed their findings in 2013.
- The LHC specialises in accelerating a beam of hadronic particles to certain specifications and delivering it and scientists can choose to do different things.
- For example, they have used the LHC to energise and collide lead ions with each other and protons with lead ions.
- Using the data from all these collisions, they have tested the predictions of the Standard Model of particle physics, the reigning theory of subatomic particles;
  - observed exotic particles like **pentaquarks and tetra quarks**
  - checked if their properties are in line with theoretical expectations
  - and pieced together **information about extreme natural conditions** like those that existed right after the Big Bang.

**CERN's Large Hadron Collider**  
Accelerates two beams of protons around a 27km ring and smashes them together at 99.99% the speed of light. Its 9,300 magnets guide the particles through a vacuum, recreating conditions moments after the big bang

**Big Bang machine in search for smallest particle**  
The Large Hadron Collider (LHC) will accelerate two beams of protons around a 27km ring and smash them together at 99.99% the speed of light. Its 9,300 magnets will guide the particles through a vacuum at minus 271 degrees Centigrade, recreating conditions in deep space moments after the Big Bang

**Higgs boson: the missing piece of the Standard Model of physics**

**Building blocks of matter on earth**  
Things on earth are constructed using three of the basic particles, Up and Down Quarks and Electrons

**Particles and the years they were discovered**

Up 1994	Charm 1973	Top 1994	Photon 1900
Down 1977	Strange 1947	Bottom 1977	Gluon 1979
Electron 1897	Muon 1937	Tau 1975	W 1983
Electron neutrino 1956	Muon neutrino 1962	Tau neutrino 1975	Z 1983

**Bosons**  
Three of the four fundamental forces of the universe - the weak, strong, and electromagnetic - are carried between matter particles by these force carriers

**Higgs boson**  
Standard Model theorises it exists but has yet to be identified. Theorises that after the big bang all particles had no mass until they interacted with Higgs boson

**ALICE**  
Will study quark-gluon plasma, form of matter that is believed to have existed 10-25 seconds after the Big Bang, some 14 billion years ago. Scientists: 1,000-plus

**ATLAS**  
Will search for elusive Higgs boson, sub-atomic particle that is thought to give mass to all matter. Key missing particle could link electromagnetic, strong and weak nuclear forces of standard model with gravity. Scientists: 1,700-plus

**CMS - Compact Muon Solenoid**  
Will search for new particles using magnetic field 100,000 times stronger than that of Earth. Scientists: 2,000-plus

**LHCb**  
Will study particles called B mesons and investigate differences between matter and antimatter. Scientists: 650

**Particle tracks**  
Reveal size, mass, how particles interact, and their role in standard model. Some 600 million collisions will take place every second

## Aurora of the sea in Vizag

A stretch of the beach at Bheemili near Visakhapatnam glowed recently due to a natural phenomenon called **bioluminescence**.

## Glowing seashore

- Bioluminescence occurs due to the presence of **single-celled organisms called dinoflagellates** that produce light when they are disturbed.
- This bioluminescence on the beach is a natural phenomenon and is being reported for the first time in this beach stretch on East Coast of India.



## JWST near-infrared imaging reveals a compact galaxy

- New James Webb Space Telescope (JWST) imaging and spectroscopy observations have revealed a **gravitationally-lensed galaxy at redshift 9.5**
  - Corresponding to 510 million years after the Big Bang as predicted.



- The researchers report near-infrared imaging from the JWST of a distant galaxy magnified by gravitational lensing.
- They obtained spectral information with strong nebular emission lines that reveal some of the galaxy's physical properties like the abundance of oxygen and hydrogen.

### New study challenges the canonical theory in East Africa

- Canonical theory states that East Africa was mostly forest 20 million years ago and grasslands appeared 10 million years later.
- But studies reveal that savannah grasses existed in East Africa over 10 million years earlier than predicted.
- It describes how those grasses led to open landscapes that drove skeletal adaptations in hominoids during the early Miocene.
- Savannahs and lowlands are usually home to grasses that photosynthesize via the C<sub>4</sub> carbon fixation pathway .
- C<sub>4</sub> grasses survive better in direct sun than their shade-loving predecessors, C<sub>3</sub> grasses.
- Past research has indicated that C<sub>4</sub> grasses appeared less than 10 million years ago but now this has been challenged.

### Magnetoresistance: one more thing graphene does differently

Researchers in the U.K. have discovered another property of Graphene— a single-atom-thick layer of carbon atoms bonded in a honeycomb pattern.

#### GMR

- Graphene displays an anomalous giant magneto resistance (GMR) at room temperature
- GMR is the result of the electrical resistance of a conductor being affected by magnetic fields in adjacent materials.
- It is used in hard disk drives and magneto resistive RAM in computers, biosensors, automotive sensors, and medical imagers.

#### Graphene-based device

- GMR-based devices are particularly used to sense magnetic fields.
- The new study found that a graphene-based device, unlike conventional counterparts would not need to be cooled to a very low temperature to sense these fields.
- A conductor is sandwiched between two ferromagnetic materials (metals attracted to magnets, such as iron).
- When the materials are magnetised in the same direction, the electrical resistance in the conductor is low and in opposite to each other resistance increases.
- The magneto resistance observed in the graphene-based device was almost 100-times higher than that observed in other known semimetals in this magnetic field range.

#### Neutral plasma

- In their study, the magneto resistance in monolayer graphene at 27° Celsius held between two layers of boron nitride increased by 110% under a field of 0.1 tesla.
- To compare, the magneto resistance in these condition increases by less than 1% in normal metals.
- The team attributed this to the presence of neutral plasma and the electrons mobility.
  - Plasma is usually a gas of charged particles.
  - But in the experiment, the plasma consists of equal numbers of thermally excited electrons and holes.
- A 'hole' is a site where an electron is supposed to be but isn't, thus behaving as if it is positively charged and researchers had tuned graphene to have many holes.

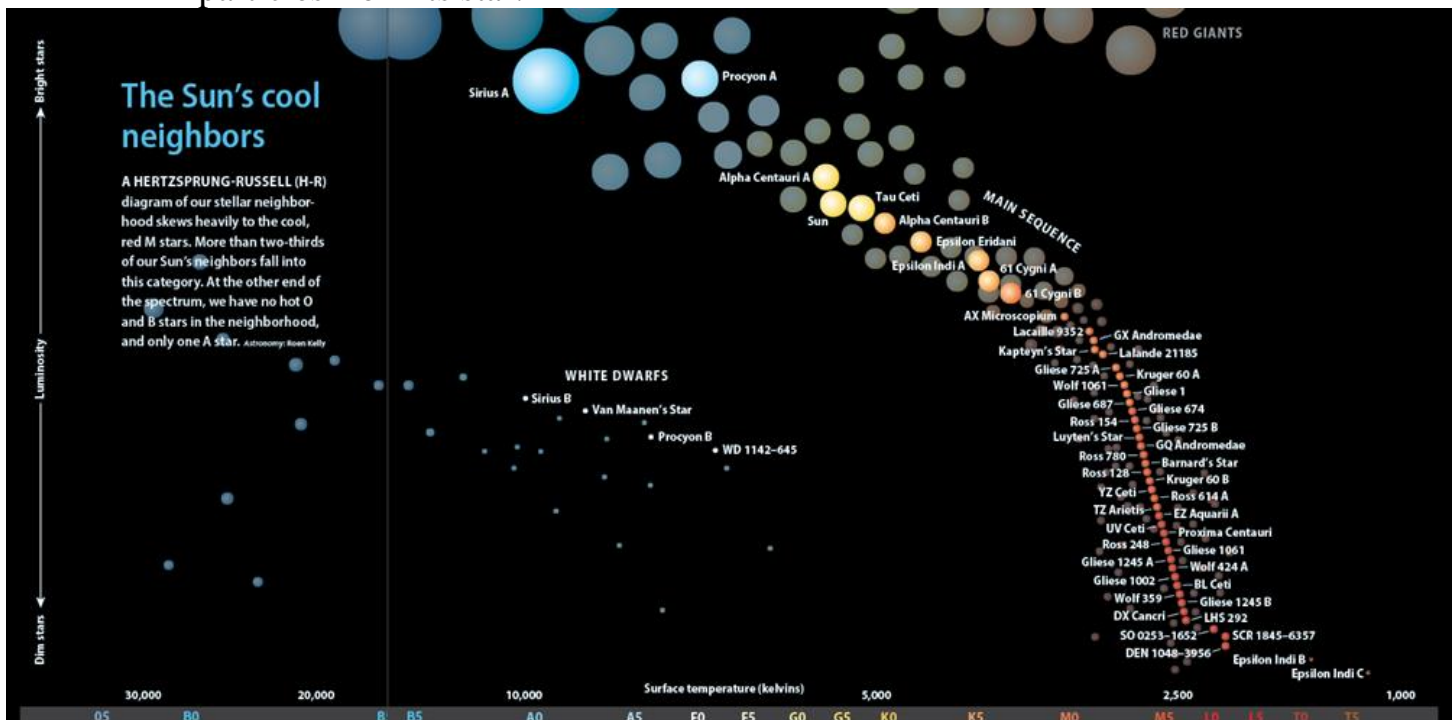
- And the researchers used an extremely clean setup and graphene without any defects and electrons were not scattered by vibrations in atomic lattice either.
- Together, the electrons in the material had “anomalously high” mobility at room temperature.

### Why is a star-planet pair emitting radio signals?

- An alien world called YZ Ceti b has suddenly become the cynosure of astronomers.
  - YZ Ceti b is a rocky, earth-sized exoplanet rotating around a small red dwarf star, YZ Ceti, barely 12 light-years from Earth.
- Astronomers have detected a repeating radio signal from this exoplanet, suggesting the presence of a magnetic field, one of the prerequisites for a habitable planet.

### Why does the magnetic field matter?

- Just as energy surges from the sun sometimes disrupt telecommunications on earth and damage orbiting satellites, intense bursts of energy from exoplanet exchange
  - Produce spectacular auroral lights which are seen in the form of radio emission we receive.
- These radio waves, strong enough to be picked up on earth confirmed the existence of an exoplanetary magnetic field.
- Such signals can only be produced if the exoplanet orbits very close to its parent star and have its own magnetic field to influence the stellar wind and generate the signals.
- This is important because the survival of a planet’s atmosphere may well depend on its having or not having a strong magnetic field,
  - Since the field protects its atmosphere from being eroded by the charged particles from its star.



### What does this mean for YZ Ceti b?

- YZ Ceti b has a small orbit — astronomers determined that the planet takes just a couple of earth-days to circle its star.
- Since the mid-1990s, astronomers have found hundreds of planets orbiting stars similar to the sun.
- To have an atmosphere and sustain water, a planet has to be at a certain distance from its star (“Goldilocks zone”) or it will get burnt.

- Earth, for example, would have been a lot more like Venus if it had been just a little closer to the sun or cold like Mars if it had been any farther.
- Astronomers believe nearly 30% of all star systems discovered could potentially have “Goldilocks zones”.

## Union Cabinet gives nod for ₹6,003 crore Quantum Mission

Union Cabinet has approved **National Quantum Mission (NQM)** that will fund research and development of quantum computing technology and associated applications.

The presentation slide is divided into four panels, each featuring the Prime Minister's portrait and the mission title. The top-left panel (1/4) states the total cost of Rs. 6003.65 crore from 2023-24 to 2030-31 and lists four key objectives: developing magnetometers and atomic clocks, supporting quantum materials design, developing single-photon sources, and implementing the mission through a partnership between the Department of Science & Technology and other departments. The top-right panel (2/4) lists three deliverables: developing intermediate-scale quantum computers, satellite-based secure quantum communications, and long-distance secure quantum communications. The bottom-left panel (3/4) lists three deliverables: a multi-node quantum network, four thematic hubs (T-Hubs) in academic and R&D institutes, and specific focus areas like quantum computing, communication, sensing, and materials. The bottom-right panel (4/4) lists three benefits: seeding and scaling R&D, creating a vibrant ecosystem, and accelerating economic growth to make India a leading nation in quantum technology.

## Quantum computers

- Quantum computers which exploit the properties of the atom are only explained by the principles of quantum mechanics.
- These work **several times faster than the speediest machines** of today and also facilitate exponentially secure communication networks with wide applications.
- The plan involves developing **intermediate scale quantum computers** with
  - 20-50 physical ‘qubits’ in three years



- 50-100 physical qubits in five years and
- 50-1,000 physical qubits in eight years.
- Just like bits (1 and 0) are the basic units by which computers process information, ‘qubits’ or ‘quantum bits’ are the units of process by quantum computers.

### Navigation systems

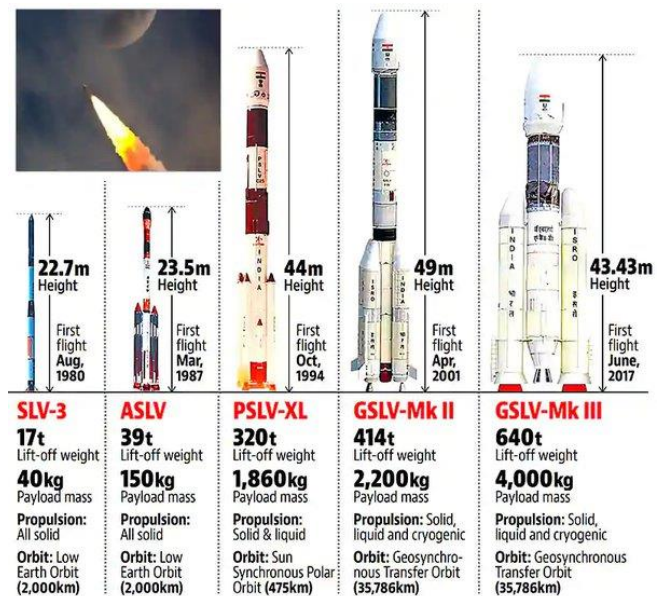
- The mission will help develop magnetometers with high sensitivity in atomic systems, atomic clocks for precision timing, communications and navigation.
- Fabrication of quantum materials such as superconductors, novel semiconductor structures and topological materials for fabrication of quantum devices.
- Four Thematic Hubs (T-Hubs) would be set up on the domains of quantum computing, quantum communication, quantum sensing and metrology and quantum devices.

### PSLV-C55 mission: ISRO to carry out in-orbit scientific experiments using spent PS4

- ISRO is scheduled to launch the (PSLV-C55) mission this year.
- It will carry out in-orbit scientific experiments by using the spent PS4 (fourth and final stage of PSLV) as an orbital platform.

### PSLV-C55

- The PSLV-C55 will have Singapore’s TeLEOS-2 as primary satellite and Lumelite-4 as a co-passenger satellite.
- It has PSLV Orbital Experimental Module (POEM), where the spent PS4 of the launch vehicle would be utilised as an orbital platform
  - To carry out scientific experiments through non-separating payloads.
- This is the third time that PS4 will be used after satellite separation as a platform for experiments.



### Benefits of the launch

- The ISRO said that the TeLEOS-2 satellite is developed under a partnership between DSTA (representing the Govt of Singapore) and ST Engineering.
- Once deployed and operational, it will be used to support the satellite imagery requirements of various agencies within the Government of Singapore.
- The TeLEOS-2 will be able to provide all-weather day and night coverage, and be capable of imaging at 1m full-polarimetric resolution.

### ISRO launches PSLV-C55 with two Singapore satellites

- ISRO has launched the (PSLV-C55) carrying two Singapore satellites,
  - TeLEOS-2 as primary satellite and Lumelite-4 as co-passenger.
- This is the 57th flight of PSLV and 16th mission using the PSLV Core Alone configuration (PSLV-CA).
- PSLV-C55 is a dedicated commercial PSLV mission of NewSpace India Limited (NSIL), for an international satellite customer from Singapore.

### Details of the launch

- TeLEOS-2 carries a Synthetic Aperture Radar payload while Lumelite-4 is a technology demonstration nano-satellite.



- It will be able to provide all-weather day and night coverage and capable of imaging at 1 metre full polarimetric resolution.
- **Lumelite-4** is an advanced I2U satellite developed for the technological demonstration of the High-performance Space borne VHF Data Exchange System (VDES).
  - It aims to augment Singapore's e-navigation maritime safety and benefit the global shipping community.

### **'Optimistic' space policy lays out plans to privatise sector**

The **Centre's updated Space Policy**, cleared by the Union Cabinet before made public has drawn measured optimism from India's budding private sector start-up space.

### **Indian Space Policy-2023**

- The policy creates four distinct but related entities that will **facilitate greater private sector participation in activities**,
  - That has usually been the traditional domain of ISRO.
- The aim of this policy is,
  - To augment space capabilities
  - enable, encourage and develop a flourishing commercial presence in space;
  - use space as a driver of technology development and derived benefits in allied areas
  - Pursue international relations, and create an ecosystem for effective implementation of space applications among all stakeholders.

### **IN-SPACe (Indian National Space Promotion and Authorisation Centre)**

- It will be a **single window clearance and authorisation agency** for space launches, establishing launch pads, buying and selling satellites and disseminating high-resolution data among other things.
- It will also develop space industry standards, promote identified space activities and work with academia to widen space ecosystem and enable industry-academia linkages.
- It will also share technologies, products, processes and best practices with NGEs (non-government entities) and government companies.

### **Other entities**

- **New Space India Limited (NSIL)** that has already executed a few commercial space launches and ISRO's beleaguered **Antrix** will be responsible for,
  - commercialising space technologies and platforms created through public expenditure
  - Manufacture, lease, or procure space components, technologies, platforms and other assets from private or public sector.
- **The Department of Space** will provide overall policy guidelines and be the **nodal department for implementing space technologies**.
  - To co-ordinate international cooperation and coordination in global space governance and programmes in consultation with Ministry of External Affairs.
  - It will also create an appropriate mechanism to resolve disputes arising out of space activity.
- While **private sector participation** has been highlighted as one of the main draws of the new policy, **they will be limited to Indian companies**.
- And the question of whether foreign direct investment via the "automatic" route will be permitted in space is as yet unresolved and pending government approval.

### **Role demarcation**

- Experts told that overall, the clear demarcation of roles among various entities, meant sowing the seeds for a burgeoning private sector space industry.
- Much as India's telecom sector is now dominated by private companies unlike a few decades ago, similarly the space sector too was following the path.
- These included directions on new entities actively demanding goods and services from private start-ups and clarity on whether IN-SPACe would take on regulatory roles.
- In enabling **open satellite data access**, satellite images with a ground sample distance (GSD) greater than five metres would be freely available, the new policy states.
- However those with a GSD less than 30 cm required IN-SPACe authorisation due to national security considerations, the policy noted.

### Ctenophora neural net shows the origin of nervous system

- The evolution of the nervous system may have followed multiple paths and risen independently in two early lineages of animals.
- As per a study of ctenophores — **marine invertebrates** that contain an elaborate nerve net nervous system, commonly known as **comb jellies**.
- Nerve net of ctenophores is different than nerve nets found in species from other animals, providing new insights into the complex origins of the nervous system.

### Genome sequencing and the Genome India Project

#### The story so far:

- The exercise undertaken by the Department of Biotech to **sequence 10,000 Indian human genomes and create database** under Genome India Project is ~66% complete.
  - About 7,000 Indian genomes have already been sequenced of which 3,000 are available for public access to researchers.

### Genome Sequencing

- **Human Genome** – It is the entire **set of DNA** residing in the nucleus of every cell of the human body.
  - It **carries the complete genetic information** responsible for the development and functioning of an organism.
  - The DNA consists of a **double-stranded molecule built up by four bases**.
  - While the sequence of base pairs is identical in all humans, there are differences in the genome of every human being that makes them unique.
  - The process of **deciphering the order of base pairs, to decode the genetic fingerprint of a human is called genome sequencing**.
- In 1990, a group of scientists began to work on determining the whole sequence of the human genome under the Human Genome Project.
  - The Project released its latest version of the complete human genome in 2023, with a 0.3% error margin.
  - This shows that genomic sequencing has now evolved to a stage **where large sequencers can process thousands of samples simultaneously**.
- The process of **whole-genome sequencing** now facilitates the reading of a person's individual genome to identify differences from the average human genome.

### Applications of Genome sequencing

- Genome sequencing is used to **evaluate rare disorders, preconditions for disorders and even cancer** from the viewpoint of genetics, rather than as diseases of certain organs.

- Nearly 10,000 diseases including cystic fibrosis and thalassemia are known to be the result of a single gene malfunctioning.
- In public health, however, sequencing has been used to read the codes of viruses.

### **How did it help during the pandemic?**

- In January 2020, at the start of the pandemic, Chinese scientist sequenced the genome of a novel pathogen causing infections in the city of Wuhan.
- After this, virologists began evaluating the sequence, understand, track the mutating variants and their intensity and spread and came up with vaccine.
- Genomic sequencing became important in understanding the purpose of genome sequencing in the role of certain mutations in increasing the virus's infectivity.
- India also put in place a sequencing framework the Indian SARS-COV-2 Genomics Consortia (INSACOG).
  - This was tasked with scanning corona virus samples from patients and flagging the presence of variants known to have spiked transmission internationally.

### **Genome India Project**

- India's 1.3 billion-strong population consists of over 4,600 population groups, many of which are endogamous.
- Thus, the Indian population harbours distinct variations with disease-causing mutations often amplified within some of these groups.
  - India lacks a comprehensive catalogue of genetic variations and creating a database allows researchers to learn genetic variants unique to it.

### **New study finds a way to massively decarbonise steelmaking**

India is the world's second largest steelmaker, having produced 118.2 million tonnes in 2021 and making one tonne of steel releases 1.8 tonne of CO<sub>2</sub>.

### **Chemical reaction**

- Making the sector's decarbonisation plans is integral for the country's ability to achieve its climate commitments.
- One way is to use hydrogen in the chemical reaction that separates iron from iron oxide. But currently Carbon is used and that is the problem.
  - But hydrogen cannot be substituted directly because doing so makes the separation reaction very slow, for previously unknown reasons.
- Strong steel consists of less than 1% of carbon. To achieve this, iron oxide is heated with coke at 1,700°C inside a blast furnace and it removes oxygen forming CO<sub>2</sub>.

### **Microfracture structure**

- To this end, the researchers have proposed creating a micro fracture structure on the feedstock to increase reduction kinetics and improve metallisation, as per the paper.
- There are several challenges to the widespread application of hydrogen direct reduction production such as reduction kinetics and the high cost of hydrogen reactants.

### **H5N1 kills 50 million birds, spreads to mammals**

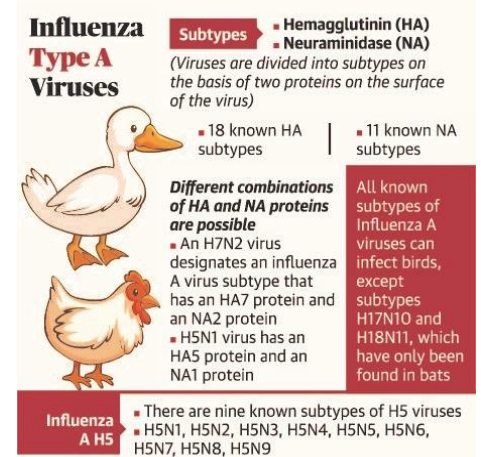
- This year, the world has been witnessing one of the worst-ever documented outbreak of the highly pathogenic avian influenza H5N1 killing millions of birds.
- The virus, which is known to cause severe disease and death in birds, has also been detected in mammalian species and also in humans.



- This has put health authorities on high alert regarding the implications of the large outbreak on public health.

### High mortality in birds

- Although avian influenza has different subtypes, H5N1 is a highly pathogenic subtype that **causes mortality in birds**.
  - Since 2022, the virus has infected over 100 million birds across the globe, resulting in the deaths of over 50 million and culling of millions of poultry.
- Unlike previous outbreaks of influenza, H5N1 is heavily impacting wild bird species, including many on the verge of extinction and critically endangered species.
- The impact of H5N1 on wild bird populations depends on factors such as level of exposure, geographical locations and migratory patterns of the affected species.
- H5N1 has also killed a large number of **bald eagles and Caspian terns** in the U.S. since January 2022, along with thousands of cranes in Israel.
- Last year, H5N1 hit a colony of the **endangered African penguins in South Africa**, killing at least 30 penguins.



### Spread to animals and humans

- The H5N1 virus also occasionally gets spillover from birds to animals **through direct or indirect contact with infected birds or their droppings**.
- There have been reports of virus affecting mammals including sea lions, minks, foxes, wild bears and skunks apart from domestic animals such as dogs and cats.
- The transmission from birds to mammals is rare. When it occurs it can cause concern, as the virus could accumulate mutations and acquire ability to initiate human outbreaks.
- H5N1 has a **high mortality rate of over 60% in humans** and is primarily transmitted to humans through contact with infected birds or animals,
  - Either through handling infected poultry or exposure to contaminated environments.
- Since the virus does not yet transmit efficiently among humans, the **World Health Organization (WHO) has assessed the risk of H5N1 to humans to be low**.

### Japanese spacecraft crash lands on surface of the Moon

- A lunar spacecraft developed by the **Japanese firm ispace**, appears to have crash-landed and is still unclear what exactly happened.
- Mission control lost contact with the 2.3-metre-tall lander and maybe it could have run out of fuel prematurely.
- The **lander was carrying the UAE's Rashid rover**, which was to investigate the geological properties of the Moon's surface.

## Tasmanian devil facial tumours hint about evolution

- A comprehensive genetic analysis of the facial tumours that have plagued Tasmanian devils has opened a window onto the contagious cancer's evolution in action.
- Geneticists discovered that the first devil facial tumour (DFT1) emerged in 1986 and a second, faster-mutating tumour, DFT2 arose in 2011.
- Tasmanian devils are becoming resilient to facial tumours but the recent emergence of DFT2 is concerning.



## Core of Mars

### Is the core of Mars solid or liquid?

- Scientists observed seismic waves travelling through Mars' core for the first time and confirmed model predictions of the core's composition.
- The researchers used seismic data acquired by the NASA InSight lander to directly measure properties of Mars's core.
  - Founded a completely liquid iron-alloy core with high percentages of sulphur and oxygen.
  - The team also estimated the density and compressibility of material the waves travelled through it.
- The team tracked the progression of two distant seismic events on Mars; one caused by a mars quake and other by a large impact and detected the waves.
- The researchers' results indicated that Mars most likely has a completely liquid core.

# Internal Security ML & Cyber

By Lectures Bureau



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Internal Security, ML & Cyber Issues

## CERT-in may be exempted from giving information under RTI Act, says Centre

The **Indian Computer Emergency Response Team (CERT-in)** may soon be exempted from responding to queries under the Right to Information Act.

### News highlight

- The **Department of Personnel and Training** has reviewed a proposal from the Ministry of Electronics and Information Technology to include,
  - CERT-in in the Second Schedule to the RTI Act, which deals with exempted organisations like the CBI and the Border Security Force.
- The exemption would allow CERT-in to reject any application for information, even on policy related matters.
- This is significant as the body had issued directions that required Virtual Private Network (VPN) providers and cryptocurrency firms to preserve data on all users.

### CERT-in

- CERT-in coordinates with public and private organisations in India when cyber incidents like data breaches and ransom ware attacks are reported.
- It works under MeitY in tackling cyber issues.
- It also issues advisories for software vulnerabilities as guidance for organisations.

## The moratorium call on ChatGPT's successor

Elon Musk and a group of AI experts signed a moratorium on developing artificial intelligence (AI) systems that are more powerful than OpenAI's GPT-4.

### Context of the development

- Future of Life Institute FLI's open letter comes amid rapid development and deployment of AI technology in several industries.
- Since **OpenAI dropped its generative pre-trained (GPT) chatbot** allowing people to freely interact with **ChatGPT**, there has been a rise in adoption of AI by many firms.
- The Microsoft-backed chatbot wowed people that it could correct software codes and explain almost everything on the Internet.
  - Enterprise version of the chatbot, called ChatGPT Plus, has already been integrated by Snapchat, Unreal Engine and Shopify in their applications.
  - The **Alphabet-owned company launched Bard**, a version of its **Lamda language model**.
  - In China, Internet giant **Baidu has launched Ernie**, an AI-powered chatbot than can summarise financial statements.
  - The Massachusetts Institute of Technology's media lab has **developed ELSA**, an AI bot that can act as a **psychotherapy counsellor**.

### Will it have the desired impact?

- According to developers and tech entrepreneurs, GPT-5 could be indistinguishable to humans and the language model could achieve AGI by the end of this year.
- Currently, **governments do not have any policy tools to halt work in AI development**.

## Govt. amends rules regulating online real money gaming

- The MeitY has released an amendment to the IT Rules, 2021 to **regulate online real money games in which users have to risk money to play**.
- Ministry of Information & Broadcasting issued a fresh advisory warning media entities & online intermediaries against airing advertisements of betting and gambling.
  - It took strong exception to mainstream English and Hindi newspapers carrying advertisements and promotional content of betting websites.



- The government would be constrained to take appropriate legal action against any non-compliance.

### Real money gaming

- The IT Ministry's Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Amendment Rules, 2023
  - Requires real money gaming platforms to register with a self-regulatory body (SRB) that will determine whether or not the game is permissible.
  - There will now be more government oversight over how SRBs function.
  - Video games where money is not involved need not approach an SRB.
- If games are not deemed permissible, they will not get the protection and States may be able to take action against them for being betting or gambling platforms.
- As such, games that are deemed permissible will be allowed to operate legally even if they involve deposits against an expectation of winnings.



### Common medical devices face risk of malware attacks

#### News highlight

- Common medical devices such as oximeters, hearing aids, glucometers and pacemakers can be turned into spyware and malware, says experts.
  - Such devices can even leak your medical data if not layered with adequate cyber protection.
- Industry experts are now seeking urgent Central government intervention to recognise this threat and immediately put in place measures to plug any possible drain.
  - Recent incidents of ransom ware attacks suffered by India's top tertiary care hospitals leading to the siege of millions of medical records.

#### Connected to cloud

- Experts warn that many personal use medical technology devices contain software as medical device (SaMD) and software in medical devices (SiMD),
  - And are usually connected to the internet, mobile phones, servers and the cloud.
- If not given adequate cyber protection, these devices can be turned into spyware and malware and can even breach data.
- Currently, there are no guidelines on the regulation of SaMD and SiMD and India currently lacks any centralised data collection mechanism.
- These need to connect with IT networks which expose them to an organisation's entire threat landscape and create new opportunities for cyber criminals.

#### Data governance

- WHO - Data protection requires legal and technical artisanship, allocation of adequate resources and training of all professionals involved in the processing of personal data.
- It advocates for continuous effort that is based on an institutional vision, a governance concept and a willingness to be accountable.

### Will platforms have to take down 'fake news'?

- The Ministry of Electronics and Information Technology has amended the IT (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021.
- The amendment empowers the Union Government to designate an official fact checker for misinformation and 'fake news'.

- And also to regulate the online real money gaming industry which comprises apps like fantasy sports sites, rummy and poker.

### **What does the amendment say on fake news?**

- The fact check unit of the Press Information Bureau (PIB) will be notified as the official fact checker for the Union Government.
- Whenever any news is notified as fake, social media companies will lose their safe harbour for such content, opening them up to lawsuits or other legal action.
- Safe Harbour- Social media companies have traditionally enjoyed legal immunity for content posted by users as the IT Act, 2000 treats them as intermediaries.
  - They lose this status if they don't have a grievance officer for India or don't address user complaints on time.
  - Now with this amendment they will lose their safe harbour immunity for posts that have been flagged by the government as misinformation.

### **Concerns of the amendment**

- The government claims to have conducted consultations with stakeholders before notifying this particular part of the amendment.
- The fact check unit could effectively issue a takedown order to social media platforms and even other intermediaries across the internet stack.
- This amendment did not constitute censorship and would only remove social media firms' immunity when they choose to leave fake news that is declared as such.

### **What does the amendment say on real money online games?**

- The amendment requires real money gaming services to get them certified as permissible by a Self-Regulatory Body (SRB) consisting of experts and industry members.
  - To distinct legally whether an app facilitates betting or gambling has been left to the SRBs.
- The definition of betting and gambling for which administrative authority rests with States and this amendment would invoke some states opposition.

### **Telecom authorities block 120 sender IDs for bulk messaging over China link**

Telecom authorities have blocked as many as 120 headers operated by a group linked to a Chinese entity based on information provided by the Union Home Ministry.

#### **Header scam**

- A header also known as sender ID, is a unique combination of characters or numbers representing the brand or company name of the message sender.
- Headers are used by banks, marketing companies, utility providers and even government offices to send bulk messages (SMS) to consumers and customers.
- An investigation by the Indian Cyber Crime Coordination Centre (I4C) under the Ministry found that the headers were hosted from China.
  - Recently, the header of West Bengal State Electricity Distribution Company Ltd. was compromised and taken over by a Chinese host.
  - The header was misused to dupe consumers who received messages pertaining to outstanding electricity bills.

#### **Indian Cybercrime Coordination Centre (I4C)**

- I4C was started in 2010 under Ministry of Home Affairs.
- To provide a framework and ecosystem for Law enforcement Agencies for dealing cybercrime in a coordinated and comprehensive manner.

- The Threat Analytical Unit (TAU) of the I4C analyses the pattern of financial crimes and frauds and sends reports to central agencies such as,
  - National Investigation Agency (NIA), Enforcement Directorate or State police forces.
- Based on I4C report, Telecom Regulatory Authority of India has issued directions to block all unregistered headers and message templates in 30 and 60 days respectively.

### Directing AI for better and smarter legislation

- Artificial Intelligence (AI) is attracting the attention of entrepreneurs, political leaders, and policymakers the world over.
- Most mature democracies are now using AI tools for better pieces of legislation and parliamentary procedures.
- AI tools can assist parliamentarians in preparing responses for legislators, enhancing research quality, obtaining information about any Bill,
  - Preparing briefs, providing information on particular House rules, legislative drafting, amendments, interventions, etc.
- They can also empower legislators to make informed decisions by having access to insights into citizen grievances, media opinions, etc.

### Many obstacles

For AI to work in India, we first need to codify our laws.

- The current challenges are they are opaque, complex and there is a huge translation gap between law-making, law-implementing and law-interpreting organisations.
- The Indian government has done well to set up the India Code portal, but it cannot be entirely relied upon as a single source of truth.
  - For example, in measures related to COVID-19, centre issued over 900 notifications while State issued over 6,000 notifications on the subject.
- We need to make laws machine-consumable with a central law engine which can be a single source of truth for all acts, legislation, gazettes, compliances and regulations.
- For example, AI can tell us if an entrepreneur wants to open a manufacturing unit in Maharashtra and what acts and compliances are applicable.
  - If a citizen wants to check the eligibility for welfare schemes, AI can recommend which schemes are eligible based on details provided by citizens.

### Assisting legislators

- Compared to western democratic nations in India, parliamentarians manage constituencies with a huge population.
- AI can analyse citizens' grievances and social media responses and flag issues and priorities that need immediate attention and also assists parliamentarians.
- Many Parliaments across the world are now actively experimenting with AI-powered assistants and House of Representatives is US has also introduced.
  - The Netherlands has implemented the Speech2Write system which converts voice to text and also translates voice into written reports.
  - Japan's AI tool assists in the preparation of responses for its legislature and also helps in automatic selection of relevant highlights in parliamentary debates.
  - Brazil has developed an AI system called Ulysses which supports transparency and citizen participation.
  - India has also introduced parliamentary activities digital such as the 'One Nation, One Application' and the National e-Vidhan (NeVA) portal.

- While doing all this, it needs to be ensured that the use of AI must be encouraged in an open, transparent, and citizen-friendly manner.
- AI is a powerful tool, but at the end of the day we should be mindful of the fact that it is a means to an end and not an end in itself.

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- **AI is a powerful tool**, but at the end of the day we should be mindful of the fact that it is a means to an end and not an end in itself.

### **We are seeing militarisation of space, steady progress towards weaponisation: CDS**

- The very nature of warfare being witnessed is **militarisation of space and steady progress towards weaponisation**, said Chief of Defence Staff (CDS).
  - Space is being used to **enhance combat capabilities in land, sea and cyber domains**.

### **Change in tactics**

- India should develop dual-use platforms with special focus on **incorporating cutting edge technology and expand our NAVIC constellation**.
- In development of new kinetic weapons resulting in war in space becoming a reality stressed the need to build India's own offensive and defensive means in space.
- Under **'Mission Def-Space'**, 75 challenges have been identified for development by the industry in association of space and satellite companies.
  - This covers all requirements upstream, mid-stream and down-stream challenges.
- DRDO has started increasing focus on critical space domain with focus on space-based surveillance, space situational awareness, protecting our space-based assets.

### **Is the current regulatory system equipped to deal with AI?**

The growth of Artificial Intelligence (AI) technologies and their deployment has raised questions about privacy, monopolisation and job losses.

### **Should we fear AI? Is AI any different from other disruptive technologies?**

- Technological change **improves aggregate productivity and the output of society** goes up as a result.
- People today are vastly better off than they were because of technology and is nothing special or different this time around AI.
- The primary risks emerging from AI happen to be the same risks we have seen with other digital technologies, such as how political systems integrate those technologies.
- For instance, AI is used today in **facial recognition in airports in India and also by law-enforcement agencies**.
- There needs to be a greater level of critical thought, study and understanding of the social and economic impact of any new technology.
- For instance, ChatGPT is just one big glorified database of everything that has been written on the Internet.
  - And it should not be mistaken for the genuine human capability to think, to invent, to have a consciousness, and to wake up with the urge to do something.

### **Privacy and competition threats arising from AI**

- In the field of technology policy in India, there is one big concern about the use of modern computer technology and legibility of lives.
- **Beyond the policy conversation, we also need laws for the deployment of AI-based systems to comply with Supreme Court requirements under the right to privacy**.
- A lot of police departments and State governments are using AI technology and it comes with error rates that have very different manifestations.
  - This may result in exclusion, harassment, etc., so there needs to be a level of restraint.
- There is nothing to worry about competition as we can see OpenAI and Microsoft collaborating on one line of attack.

- ChatGPT has raised a new level of competitive dynamics around Google Search which is the giant and potentially the best in the game.
- The tech landscape is dominated by Big Tech and it's because they have a computing power advantage, a data advantage, and a geopolitical advantage.
- It is possible that when AI is going to unleash the next level of technology innovation, the pre-existing firms Microsoft, Google, Meta, etc., may deepen their domination.

### AI replacing the job opportunities

- As a card-carrying economist, experts say we should always focus on the word 'productivity'.
- It's good for society when human beings produce more output per unit hour as that makes us more prosperous and people will see job in other areas.
- For example; there used to be over one million STD-ISD booths in India, each of which employed one or two people with 1-2 million jobs in that field.
  - And then mobile phones came and millions of people lost their jobs but at the end productivity of the country went up.
- The labour market does this every day, prices move in the labour market and then people start choosing what kind of jobs they want to do.

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### Why did Twitter allegedly block access to tweets with Substack links?

Recently, users of the digital newsletter platform Substack reported they could not like or retweet Twitter posts with Substack links.

### Substack

- Substack launched in 2017, is an online publishing platform that lets writers and podcasters publish and share content directly with their target audience.
- The platform allows content creators to generate income directly from subscribers on their terms.
- For readers and listeners, the platform provides an easy way to access content and support individual creators based on users' needs and preferences.
- Its recently launched Substack Notes has caused the privacy and competition with Twitter creating obstacles in cyber control.

### Substack's connection to Twitter

- Substack content creators look to social media platforms to create additional engagement with readers and listeners and also help them grow their audience base.
- Creators post links on Twitter, Facebook and other prominent social media for interested users to subscribe to and follow posts regularly.
  - These links are used to redirect users to content published on Substack, driving online traffic toward the original content published on the platform.
- Substack alleged that embeds and authentication of links had stopped working on Twitter and meanwhile Twitter marked Substack as possibly 'unsafe'.

### Why did Twitter block its links?

- Though their business models differ, Twitter has been trying hard to get more subscribers to its own Blue subscription since its launch in November 2022.
- Meanwhile, according to Statista, Twitter's own monthly active user base as of December 2022 stood at 368 million worldwide.
  - And the platform is expected to witness a drop in its monthly active user to around 335 million users in 2024.
  - This comes at a time when Twitter's revenue from top advertisers has fallen sharply in recent months following its takeover by Elon Musk.

- Twitter reportedly witnessed a drop of 40% year-over-year in both revenue and adjusted earnings and a decline of 71% in advertising.
- It seems that Twitter does not want users to migrate to other platforms through links shared via tweets or retweets.
- It wants to ensure users spend more time on the platform which in turn boosts its position to increase advertising revenue.

### Does Twitter allow sharing links?

- While Twitter has not been against sharing links to other platforms, things seem to have changed since Elon Musk took over the company's reins in October 2022.
  - And said it would no longer allow users to promote their presence on other social media platforms.
  - These included Facebook, Instagram, Mastodon, Truth Social, Tribel, Nostr, and Post.
- Twitter also said that while any type of cross-posting was not a violation of the policy, even from prohibited sites, it would allow paid advertisements and promotions for any of the prohibited social media platforms.
- Twitter after facing backlash, reversed the policy within 2 days of being implemented with an apology from the CEO. Twitter later deleted the link announcing the policy.

## Data Protection Bill in Monsoon Session

### Background news

- The Digital Personal Data Protection Bill, 2022, to enforce individual privacy in online space was ready said the Centre.
- The new Bill will be tabled in the Monsoon Session of Parliament in July.
  - It will replace the current IT (Reasonable Security Practices and Procedures and Sensitive Personal Data or Information) Rules, 2011.

### Privacy as right

- The Supreme Court had recognised privacy as a fundamental right in 2017 and highlighted the need to protect online personal data from prying eyes.
- And the Information Technology Ministry had initiated a stakeholder consultation exercise on the draft Bill and invited comments from the public.
- The purpose of the Bill is to provide for the processing of digital personal data in a manner that recognises both;
  - The right of individuals to protect their personal data
  - Need to process personal data for lawful purposes.

### Definition of data

- 'Data' under the new Bill is defined as a representation of information, facts, concepts, opinions or instructions in a manner suitable for communication.
- The Bill separately defines;
  - Data fiduciary as persons who determined the purpose and means of processing of personal data.
  - Data principal as the individual to whom the personal data related to

### New privacy Bill

India plans for a new Digital Personal Data Protection Bill to bolster online privacy. A lowdown:



■ The Digital Personal Data Protection Bill 2022 was announced by the government aiming to enforce individual privacy online

- The new Bill will replace the existing Information Technology Rules
- The Bill aims at balancing the right of individuals to protect their personal data and the need to process it for lawful purposes
- Definitions of data fiduciary, data principal, and data processor are outlined within the Bill to provide clarity



- **Data processor** as any person who processes personal data on behalf of a data fiduciary.

## Promoting impunity

### Background

- In what was later described as a case of mistaken identity, six workers returning home in a vehicle from a coal mine in Assam **were gunned down by the security forces**.
- Seven more villagers were shot dead later following a scuffle with villagers who had found the bodies in an Army vehicle.
- Recently Union government said that it is unable or unwilling to do anything about impunity in insurgency-hit states and cannot prosecute army men responsible.

### Changes needed

- Prior sanction to prosecute Army personnel is necessary under **Section 6 of the Armed Forces (Special Powers) Act (AFSPA)**.
- A Special Investigation Team of the Nagaland Police completed its probe in March 2022, and filed a charge sheet in the case.
- Meanwhile, the Army also ordered a court of inquiry, but its outcome is not known and on petitions by the wives of army personnel SC stayed the proceedings.
- The Centre has been quite keen on **reducing the areas covered by the law giving special powers in disturbed areas to the armed forces**.

### Reducing powers of AFSPA

- In recognition of the significant improvement in security situation in northeastern region, centre has reduced the notified areas in Nagaland, Assam and Manipur in recent years.
- On the political side, it has been **working towards peace accords and getting insurgents and extremists to lay down arms**.
- Prosecution of armed forces personnel involved in excesses is quite rare, leading to the widespread impression that AFSPA is used to promote impunity.
- The **government must demonstrate its commitment to peace in the region and justice for the victims** by either granting sanction for their prosecution,
  - or taking exemplary action based on the findings of the military court of inquiry.

## To cut at root of narcotics, Centre plans drive against poppy, cannabis

As the Centre intensifies its crackdown against drugs, **cultivation of poppy and cannabis** in area the size of over 89,000 football fields has been destroyed in the past three years.

### Drugs in India

- Aiming to **make India “drug-free” by 2047**, MHA plans to link recovery and usage of narcotics and banned substances in areas with appraisal report from DSP.
- According to the **Narcotics Control Bureau (NCB)**, in the past three years many acres of poppy cultivation and cannabis have been destroyed across the country.
- States where crops are cultivated includes Arunachal Pradesh, Assam, Manipur, Jharkhand, Madhya Pradesh,
  - Himachal Pradesh, Jammu and Kashmir, Gujarat, Maharashtra, Odisha, Tripura and Telangana.

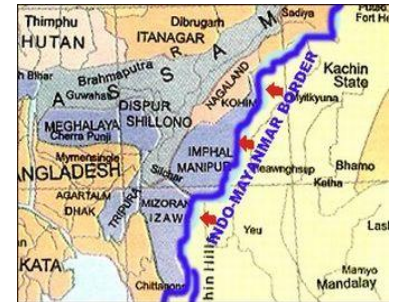
### Use of drones

- The Ministry has constituted a study group to analyse the use of drones in destruction of illegal crops in remote areas.
- NCB also shares satellite images with the affected States and has arrested many.

- The ministry is encouraging the liberal application of the **Prevention of Illicit Traffic in Narcotic Drugs and Psychotropic Substances (PITNDPS) Act, 1988**,
  - That includes a provision to detain an individual for up to two years without a court's intervention.
- The NCB said the use of the **dark net and crypto currency in illegal drugs** is increasing, and the counter-terrorism portal **the Multi Agency Centre**,
  - Has been created to share inputs on the use of the dark net and cryptocurrency for trade in narcotics.

### Murugan visits village along the India-Myanmar border

- Union Minister L. Murugan became the first Central Minister to visit **Avangkhu, a village along the India-Myanmar border in Phek district of Nagaland**.
- He announced projects to strengthen infrastructure and recalled the Centre's commitment towards developing the northeast including the border areas.



### The EU's new crypto-legislation

- The European Parliament, the legislative body of the 27-country block European Union, has approved the world's first set of comprehensive rules,
  - To **bring largely unregulated cryptocurrency markets** under the ambit of **regulation by government authorities**.
  - The regulation called the **Markets in Crypto Assets (MiCA)**, will come into force after formal approval by member states.

### Why regulation?

- Comprehensive framework like MiCA will give EU a **competitive edge in its growth** compared to US or UK which laced regulatory clarity.
- More importantly, 2022 saw some of the biggest failures and wipe outs in the crypto industry involving bankruptcies and fraud scandals.
- The liquidity shortage caused by these shocks led other crypto lending platforms to halt customer transfers and withdrawals before filing for bankruptcy.

### What kind of assets will MiCA cover?

- The MiCA legislation will apply to crypto assets, defined in the text as a digital representation of a value or a right that uses cryptography for security.
- This definition implies that it will apply not only to traditional crypto currencies like Bitcoin and Ethereum but also to newer ones like stable coins.
- It will **not regulate digital assets** that qualify as transferable securities and function like shares and other cryptoassets that qualify as financial instruments under existing regulation.
- It will also for the most part, **exclude Nonfungible tokens (NFTs)**.



- MiCA will also **not regulate central bank digital currencies** issued by the European Central Bank and digital assets issued by national central banks of EU members.

### **How is crypto regulated in India?**

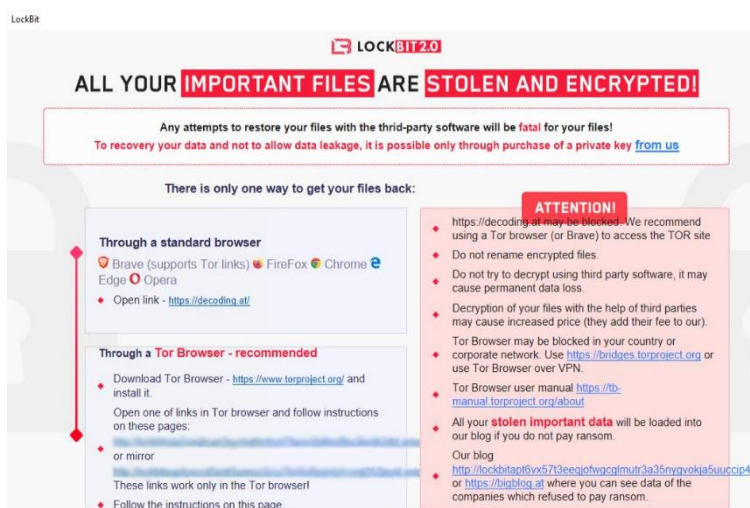
- India is yet to have a comprehensive regulatory framework for crypto assets. Draft legislation on the same is reportedly in the works.
- A full-fledged regulation aside, the Indian government has taken certain steps to bring crypto currencies under the ambit of specific authorities and taxation.
- In the Union Budget 2022, Finance Ministry has imposed a **30% tax on income from the transfer of any virtual digital assets**.
- Recently the government placed all transactions involving virtual digital assets under the purview of the **Prevention of Money Laundering Act (PMLA)**.

### **What is LockBit ransomware and how is it specifically targeting Apple computers?**

Reports emerged that LockBit ransomware was found to be targeting Mac devices, making this the first major ransomware operation to target Apple computers.

### **LockBit ransomware**

- First reported in September 2019 and **dubbed the “abcd” virus** the LockBit ransomware is designed to infiltrate victims’ systems and encrypt important files.
- The **virus is categorised as a “crypto virus”** due to its requests for payment in cryptocurrency to decrypt files on the victim’s device.
  - It is deployed against victims who feel hindered enough by the disruption to pay sums in exchange for access to files and can afford to do so.
- The gang behind the LockBit ransomware reportedly **maintains a dark web portal to recruit members and release data of victims** who refuse to meet their demands.
- LockBit ransomware has been used to target enterprises and organisations in the U.S., China, India, Ukraine, and Indonesia and parts of Europe.



### **Why is LockBit targeting macOS?**

- Historically, ransomware has targeted Windows, Linux, and VMware ESXi servers. Now LockBit is now working to create **encryptors targeting Macs for the first time**.
- It was rather put together as a test and after multiple attacks the gang is developing tools to target macOS and increase the scope of attack.

### **How does LockBit ransomware work?**

- It works as a **self-spreading malware**, not requiring additional instructions once it has successfully infiltrated a single device with access to an organisational intranet.
- It is also **known to hide executable encryption files** by disguising them in the .png format, thereby avoiding detection by system defences.
- Attackers use **phishing tactics and other social engineering methods** to impersonate trusted personnel or authorities to lure victims into sharing credentials.
- Sometimes, the ransomware has **also used brute force to gain access to the intranet server and network of an organisation**.

### **Working route**

- Once it has gained access, the ransomware prepares the system to release its encryption payload across as many devices as possible.
- It then disables security programs and other infrastructures that could permit system data recovery.
- The goal is to ensure that data recovery without assistance from the LockBit gang is impossible.
- After this, the ransomware places an encryption lock on all system files, which can **only be unlocked via a custom key created by the LockBit gang**.
- The process leaves behind a ransom note with instructions to restore the system, and has reportedly also included threatening blackmail messages.
- Victims are then left with no choice but to contact the gang and pay up for the data, which the **gang may sell on the dark web either paid or not**.

### **Actions taken and ways to protect**

- Due to its ransomware-as-a-service model, the LockBit gang has been on the authorities' radar and a dual Russian and Canadian national with suspected links were arrested.
- There are **no fool-proof ways of protecting against ransomware attacks**, organisations and individuals can take certain steps to increase resilience against such cyber threats.
  - The **use of strong passwords**, with strong variations of special characters, not easy to guess along with multi-factor authentication should be implemented.
  - Organisations can also **undertake training exercises to educate** employees on the use of phishing attacks and their identification.
  - Old and unused user accounts should be deactivated and closed as they can become weak links in the security apparatus.
  - Additionally individuals should have an **understanding of cybersecurity** threats and vulnerable points that may be exploited by cybercriminals.

### **Warless Punjab**

The news of the arrest of Amritpal Singh, a self-appointed campaigner for a separate nation for the Sikhs, was received by the public of Punjab with a sense of relief.

### **News behind**

- He faces charges under the National Security Act (NSA) and FIRs as well and shifted to jail in Assam to avoid any potential turmoil.
- Mr. Amritpal led a mob that had stormed a police station with swords and guns to free compatriots from custody showing state government in bad light.
  - Khalistan propagandist appears to have supporters and handlers within and outside India.
- The State of Punjab is on the border with Pakistan that has sought to instigate a section of the population into violence and is active among the Sikh diaspora too.
- Though the instigator is now behind bars, his call for violence and brazen communalism has **triggered memories of the polarisation between Hindus and Sikhs**
  - caused by separatist terrorism that had pulverised Punjab for long.
- The Centre and States should work closely to get their **administrative actions and political messaging correct** and keep Punjab peaceful and less secessionism.



## Virtual digital assets, India's stand and the way ahead

- Rulemaking is an arduous task and can be particularly challenging in the case of emerging technologies where change is rapid and constant.
- **For example:** The infamous **Red Flag Act** introduced by the United Kingdom introduced at the advent of motorcars.
  - It mandated every motorcar to have three drivers; one at the wheel, second a fellow passenger and third on foot holding flag to alert horse-drawn carriages.
  - Later it had to be repealed and led to development of motor industry in UK

## A considered approach for Virtual Digital Assets

- It is therefore heartening to see India taking similar Red Flag approach
- Union Finance Ministry's notification has extended the following activities under the **Prevention of Money Laundering Act (PMLA) 2002**,
  - exchange between virtual digital assets and fiat currencies
  - exchange between one or more forms of virtual digital assets
  - transfer of virtual digital assets
  - safekeeping or administration of virtual digital assets or instruments enabling control over virtual digital assets
  - and participation in and provision of financial services related to an issuer's offer and sale of a virtual digital asset.
- This means virtual digital assets platforms carrying out the said activities will now **have to register as a reporting entity with the Financial Intelligence Unit-India**.
  - The unit is the national agency to strengthen India's efforts against money laundering and terror financing.
- Extending them to virtual digital assets provides virtual digital assets platforms with a framework **to diligently monitor and take actions against malpractices**.
- A standardisation of such norms will go a long way in making the Indian virtual digital assets sector transparent.
- It will also **build confidence and assurance in the ecosystem** and give the government more oversight on virtual digital asset transactions, which will be a win-win for all.

## Reconsider tax rates

- Such risk-mitigation measures are in line with global guidelines put forward by the **International Monetary Fund and the Financial Action Task Force (FATF)**.
- FATF in fact, has a comprehensive definition of **Virtual Asset Service Providers (VASPs)** —
  - An extensive list covering intermediaries, brokers, exchanges, custodians, hedge funds, and even mining pools.
  - It also acknowledges the role VASPs play in regulating and monitoring the virtual digital assets ecosystem.
- VASPs are the most efficient bridges and eyes for regulators to effectively implement Anti-Money Laundering/Countering/Combating the Financing of Terror principles.
- This could also be the basis for India to reconsider its tax treatment of virtual digital assets, which is an outlier, both domestically and internationally.
- With PMLA notification now mitigating the most critical money laundering and terror financing risks,
  - There is little reason for the tax rates to be as prohibitively high as they are.

## Using the G-20 platform

- This is also significant, given India's presidency of the G-20 and also as an **opportunity to consider the steps taken by other G-20 nations**.

- The finance track of the G-20 is spearheading critical discussions on establishing a global regulatory framework for virtual digital assets.
- In Asia, Japan and South Korea have established a framework to licence VASPs, while in Europe, the Markets in Crypto-Assets (MiCA) regulation has been passed by the European Parliament.

### The third-gen web is about public good


- Reports by the U.S. - India Strategic Partnership Forum states that the third-gen web will be crucial for India to realise its \$1.1 trillion digital asset opportunity by 2032.
- From a policy perspective, the next-gen web is complex and hard to comprehend.

#### Web 3.0 Simply Explained

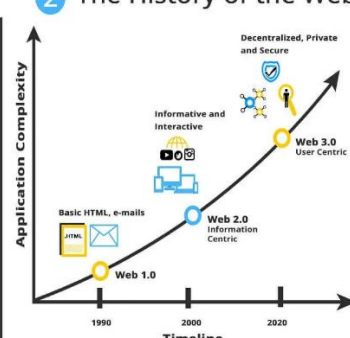
**1 What is Web 3.0?**

Web 3.0 is the 3rd generation of the internet where the devices are connected in a decentralized network rather depending on server-based databases.

The new internet is a user-centric, more secured, private and better connected.



**2 The History of the Web**



**3 Web 3.0 Benefits**

Anti-monopoly and Pro-privacy

Secure Network

Data Ownership

Interoperability

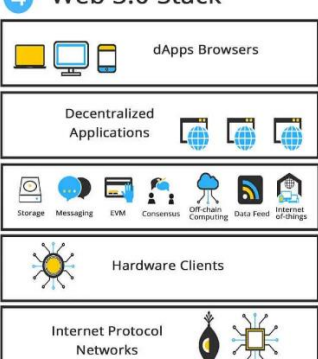
No interruption in service

Permissionless blockchains


Semantic Web

Ubiquity


**4 Web 3.0 Stack**




**101 Blockchains**  
Created by 101blockchains.com




**web 1.0**  
read-only  
decentralized



**web 2.0**  
participatory  
centralized



**web 3.0**  
no intermediary  
decentralized



### Web 3 is not Web 3.0

- Both Web3 and Web 3.0, is a decentralised, privacy-oriented, block chain-driven and crypto asset friendly.
  - Web 3.0 upholds the property of semantic web which is powered by Artificial Intelligence.
  - It has ability to recombine information available on different websites to generate new content and knowledge that are authentic and creative.
- Of the two variants, Web3 seeks to radically transform the manner in which data is generated, monetised, shared and circulated.
- Further, it advocates decentralised data storage systems with the objective of unshackling the oligopolistic grip of technology behemoths over data.
  - It has Inter-Planetary File System which is cryptographically protected, more secure and capable of functioning off internet and off block chains.
  - It assigns non- custodial wallets that function as digital passports for users to access blockchain-enabled transaction platforms.

## Accessibility of Web3

- Web3 seeks to replace micro-economic organisations with decentralised autonomous organisations (DAOs).
- And Web3 platforms would serve to raise the efficiency of peer-to-peer transactions and enable users to access life support services.
- Web3 systems also seek to generate fungible digital assets to reward local providers of data storage capacity for their services.
- Asset tokens that are native to the new-gen web have the potential to function as capital mobilisation tools for Web3 projects.
- The NFTs of Web3 are more dynamic as they seek to incorporate improvements brought in by incremental innovations.

## How India can benefit

- India's handcraft industry is renowned for design-related innovations, many of which are not protected by Intellectual Property rights.
  - The digital tokens minted by Web 3 platforms would enable our handcraft enterprises to secure their innovations.
- Web 3-based instruction tools enable the rapid dissemination of innovations which would improve the economic fortunes of craftsmen and artisan communities in India.
  - India's push and the large scale deployment of Internet of Things (IoT) in rural areas offers better ways for deploying Web 3 in rural areas
- For example, in Atal Bhujal Yojana resource of groundwater and aquifers remains largely untapped for want of data analytics capabilities at community level.
  - This limitation can be overcome by Web3's analytics system.
- Web 3.0 can also yield insights from large volumes of community data, generated by IoT-enabled development programmes such as the Jal Jeevan Mission.
- Similarly, early warning systems for floods will improve with Web 3.0 due to data analytics facilities being obtained and transforms regionally disadvantaged areas.
- Indeed, India's National Blockchain Strategy 2021 proposes to explore tokenisation and apply blockchains solutions for development programmes.
  - It will be a natural progression for India to craft a third-gen web strategy that optimises public interest.

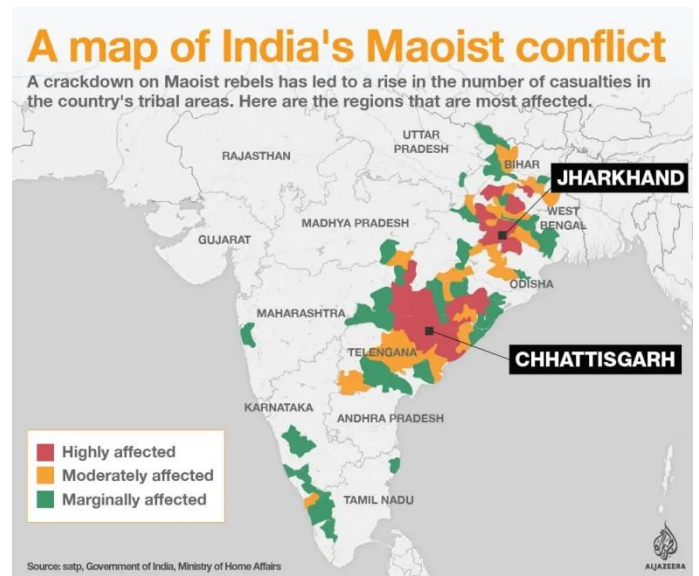
## Mindless violence

- Union Home Minister Amit Shah in a report said that the influence of the Maoists had reduced from 96 districts in 10 states in 2010 to 41 by 2021.
  - Despite the decline, they were still active in South Bastar, the Andhra-Odisha border or in some districts of Jharkhand.
  - And recent killing of District Reserve Guard team of Chhattisgarh police is reflective of the threat and points to a possible intelligence failure.

## Reasons behind

- The killings suggest a failure in anticipating such an attack and are incumbent upon the government to investigate the incident, plug security and bring justice.
- But it is a task that is easier said than done as this is tough terrain in a region which could be the last stronghold of the Maoists.
- The Maoists use a violent guerrilla-based movement that utilises the remote and inaccessible forested terrain of Central India and home to Tribal communities.
- It is largely because of their incoherent and outdated ideology that has found few takers even among the most marginalised of communities.

- Yet, it is not just the terrain and topography that have acted as the obstacles in defeating the Maoists in south Bastar.
  - The alienation of a section of tribal caught between security forces and Maoists has allowed them to tap into discontent and to retain a presence in the area.



### Way forward

- In the years of counter-insurgency, hard-edged strategies of creating wedges among the tribal population to defeat the Maoists have been counter-productive.
- The government must continue to try to win the support and confidence of the tribal people of south Bastar as that is the surest way of defeating the Maoist movement.
- Any military action that is hastily put together for retribution and which could target innocent tribals will only exacerbate the problem.

### Dimasa rebel group signs peace pact with Centre, Assam govt.

- An Assam-based insurgent group, Dimasa National Liberation Army (DNLA)/ Dimasa People's Supreme Council (DPSC)
  - Operating in Dima Hasao district, signed a peace agreement with the State government and Centre in the presence of Union Home Minister and CM.
- This signing of the memorandum of understanding (MoU) will put a complete end to insurgency and there are no more armed groups in Assam as of now.
- Under the agreement, the DNLA representatives have agreed to give up violence, surrender including the surrender of arms and ammunition,
  - Disband their armed organisation, vacate all camps occupied by DNLA cadres and join the mainstream.
- Dimasa Welfare Council will be set up by the Assam government to protect, preserve and promote a social, cultural and linguistic identity-
  - To meet political, economic and educational aspirations and will ensure speedy and focused development of the Dimasa people residing outside the Council.



### We are seeing militarisation of space, steady progress towards weaponisation: CDS

- The very nature of warfare being witnessed is militarisation of space and steady progress towards weaponisation, said Chief of Defence Staff (CDS).
  - Space is being used to enhance combat capabilities in land, sea and cyber domains.

### Change in tactics

- India should develop dual-use platforms with special focus on incorporating cutting edge technology and expand our NAVIC constellation.



- In development of new kinetic weapons resulting in war in space becoming a reality stressed the need to build India's own offensive and defensive means in space.
- Under 'Mission Def-Space', 75 challenges have been identified for development by the industry in association of space and satellite companies.
  - This covers all requirements upstream, mid-stream and down-stream challenges.
- DRDO has started increasing focus on critical space domain with focus on space-based surveillance, space situational awareness, protecting our space-based assets.

# Culture and Facts

By Lectures Bureau



Culture & Facts

## Famed U.S. museum to repatriate 15 stolen Indian artefacts

The Metropolitan Museum of Art, New York, is returning 15 antiquities to the Government of India after having learned that these were “illegally removed” from India.

### Indian artefacts

- All the sculptures were sold at one point by Subhash Kapoor, a dealer who was arrested in Germany in 2012 by the Idol Wing CID.
- Museums and art galleries across the world have been handing over artworks sold by him to Indian authorities.
  - A 1<sup>st</sup>-century BCE ceramic pot from Chandraketugarh (archaeological site near Kolkata)
  - A stone bust of Kamadeva, the God of Love, from the second half of the 8<sup>th</sup> century CE
  - A Svetambara-enthroned Jina, with attendant Yaksha and Yakshi, belonging to the 11<sup>th</sup> century CE, are also part of the antiquities.



## No idols, no arms: the Pattanam mystery

### Archaeological site

- The only multicultural archaeological site on the south western coast of the Indian subcontinent is located in the village of Pattanam in central Kerala.
  - Often referred to as the first emporium of the Indian Ocean, Muziris of which Pattanam is part is an example of the Greco-Roman classical age.

### Findings

Excavations so far that have unearthed less than 1% of the site, point to a startling fact:

- No evidence of institutionalised religion existed in ancient Pattanam.
- No indication of the graded inequality embodied in the caste system.
- The technological, metallurgical, literary, and artistic advances of this phase bear witness to rigorous cultural and commercial exchanges.
- Also excavated the seal of a sphinx, native to the ancient Greek city of Thebes.
  - This confirms the existence of an urban centre from the 5th century B.C. till the 5th century A.D.
- Archaeologists have neither found idols of gods and goddesses nor the remains of grandiose places of worship.
- This is in sharp contrast with some Pattanam-contemporary sites such as Berenike in Egypt and Khor Rori in Oman.

## ICCR to build ambassador programme among foreign students in India

The Indian Council for Cultural Relations (ICCR) is aiming to expand the country’s artistic and creative footprint globally by tapping the experiences of foreign students studying here.

### The ambassador programme

- More than 48,000 foreign students in India will be brand ambassadors of the national heritage, tourist destinations, textiles, yoga, ayurveda and craft.
- ICCR will start E-3 or ‘exit engagement evenings’ with foreign students beginning three or four months before they finish their courses.
  - It has joined with Khadi Commission, Indian Tourism Development Corporation and Department of Ayush to hold these evenings with the students.

- The idea is that they bring back some business to this country, besides maintaining their Indian linkages.
- It will include visits to places of national importance and this Soft Diplomacy will spread India's story to the foreign countries.

### **Data related**

- According to All India Survey on Higher Education (AISHE), the number of foreign students enrolled in Indian higher education institutions was 48,035 in 2020-21.
- The ICCR also launched a website called the India Alumni Portal to connect with the foreign students around the world who have studied in India.

### **Mission to map rural India's cultural assets covers over one lakh villages**

#### **News context**

- To harness the unique cultural heritage of rural India, government has identified and documented distinctive features of more than one lakh villages across the country.
- In this cultural asset mapping, villages have been broadly divided into seven-eight categories based on whether;
  - they are important ecologically, developmentally or scholastically
  - if they produce a famous textile or product
  - If they are connected to some historical or mythological events such as the Independence struggle or epics like the *Mahabharata*.
- The ecological and developmental category for example includes;
  - Bishnoi village near Jodhpur in Rajasthan, which is a case study for living in harmony with nature
  - Uttarakhand's Raini village, which is famous for the Chipko movement.
  - Modhera in Gujarat, which is the first solar-powered village in India
  - Suketi in Himachal Pradesh, Asia's oldest fossil park
  - Pandrethan in Kashmir, the village of Shaivite mystic Lal Ded, are also classified for their historical importance.

#### **Scheme initiative**

- The entire exercise has been carried out under the *Mera Gaon Meri Dharohar* (My Village My Heritage) programme of National Mission for Cultural Mapping (NMCM).
  - It aims to develop a comprehensive database of art forms, artists and other resources across the country.
- The Indira Gandhi National Centre for Arts (IGNCA) has undertaken the cultural asset mapping of these villages through field surveys.
- The survey process involves a CSC Village Level Entrepreneur (VLE) conducting meetings with locals and then uploading interesting facts about their village,
  - Its places of interest, customs and traditions, famous personalities, festivals and beliefs, art and culture etc., on to a special application.

### **India to bridge language gap with neighbours**

India is planning to create a pool of experts in languages spoken in countries such as Myanmar, Indonesia to facilitate better people-to-people exchanges.

#### **ICCR- Indian Council for Cultural Relations**

- It has envisaged a special project called 'The Language Friendship Bridge', which plans to train five to 10 people in the official languages of each of these countries.
- As of now, the ICCR has zeroed in on 10 languages:



- Kazakh, Uzbek, Bhutanese, Ghoti (spoken in Tibet), Burmese, Khmer (spoken in Cambodia)
- Thai, Sinhalese and Bahasa (spoken in both Indonesia and Malaysia).

### **Shared heritage**

- In India, the focus till now has been on learning European languages such as Spanish, French and German along with major Asian languages such as China and Japan.
- Though a number of universities and institutes offer courses in these languages, only a handful teach any of the 10 languages on the ICCR list.
  - Sinhala for example, is taught at Banaras Hindu University and the School of Foreign Languages (SFL) under the Ministry of Defence.
  - The SFL also has courses in Bahasa, Burmese and Tibetan.
- India requires translators, interpreters and teachers in the languages of these countries with which it shares a cultural history
- The idea is to enable India to translate its epics and classics as well as contemporary literature into these languages so that people can read them.

### **India to host summit on Buddhism**

India will host an international summit on Buddhism here on April 20 and 21 and PM Modi is to open the conclave in the capital New Delhi.

### **Delegates invited around the world**

- The delegates include prominent scholars, monks, diplomats and members of Buddhist organisations across the globe.
- Over 170 delegates from countries such as Mexico, Cambodia, Laos, Thailand and Japan and 150 from India will participate in the summit.
- The largest number of delegates is from Sri Lanka (20) and Vietnam (30).
- The maiden conference is organised by the Union Culture Ministry and International Buddhist Confederation to discuss contemporary Buddhist related global issues.
- Tibetan spiritual leader, the Dalai Lama is unlikely to attend the two-day conclave due to health issues and China has not responded as well.

### **Theme**

- Title: Responses to contemporary challenges from philosophy to praxis
- Discussion will be under four themes;
  - Buddha Dhamma and peace,
  - Buddha Dhamma: environmental crisis, health and sustainability,
  - Preservation of Nalanda Buddhist tradition
  - Buddhist pilgrimage, living heritage and relics.

### **Buddhist meeting at Dalai Lama's first halt in 1959**

Zemithang, the first stop of the 14th Dalai Lama during his flight from China-occupied Tibet in 1959, hosted a major Buddhist conference.

### **Zemithang – a look**

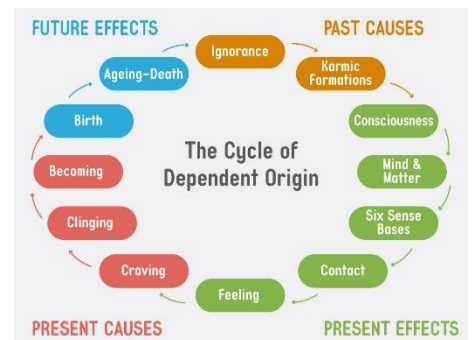
- The conference was organised by the Indian Himalayan Council of Nalanda Buddhist Tradition (IHCNBT) in Gorsam Stupa at Tawang district of Arunachal Pradesh.
- Zemithang is the last Indian border through which His Holiness the 14th Dalai Lama entered India in 1959.
- Zemithang or Zimithang means Sand valley is located in Pangchen Valley and the last circle headquarters bordering Bhutan and Tibet.



- It is on the bank of **Nyamjang Chu (river)** and the people of the area are referred to as Pangchenpa meaning “people who gave up sin”.
- **Beijing contests the Zemithang circle’s border** with Tibet along the Namka Chu and Sumdorong Chu valleys.

**Dalai Lama attends First Global Buddhist conference in Delhi**

- The **Dalai Lama participated in a global Buddhist conference** hosted by India on the second day and addressed the summit.
- The Union Culture Ministry and the International Buddhist Confederation are the organisers of the conference
- Dalai Lama focused on the concepts of compassion, wisdom, and dependence origination as espoused by the Buddha.



**The night of Bhoota Kola**

The **ancient art form of Bhoota Kola**, which gained mainstream popularity after the film *Kantara*, inspires anticipation and hope in **Dakshina Kannada, Udupi and Kasaragod**.

**About the colourful Kola**

- Bhoota Kola is an **oracle and prayers** to it are believed to bring them fortune and relieve them of their problems.
- The trained Bhoota kola performer in a possessed state provides the answers to the community and is reversed as the manifestation of God himself.
- Performed in the open air, the Bhoota Kola comes in the **forms of Panchuruli, Kallurutti, Koragajja and so on**.

- The performance starts at night and goes on till the early hours and in this period, the performer dons several costumes like boar etc.
- The Tuluvas, the people who speak the Tulu language, believe in animism and the Bhoota Kola is performed to invoke these spirits of Nature.
- The traditional right to perform the *kola* belong to the Nalike and Parava tribes of the region and the season starts in January and extends to May.

### Similarity with Theyyam

- Originally from Dakshina Kannada and Udupi districts of Karnataka and northern parts of Kasaragod, the Bhoota Kola has striking similarities with Kerala's Theyyam.
- The Bhoota Kola performer is bedecked in attire entirely made of intricately woven palm leaves and the elaborate face painting is similar to Theyyam.
- The incantations the performer utters are in Tulu. The *nema* or *kola* usually involves a fierce dance accompanied by drums, music and other rituals.



### PM lauds 'shared history' of Saurashtra and Tamil Nadu

- PM Modi lauded the shared history of Saurashtra and Tamil Nadu and said such cultural links assure the intrinsic power to innovate even in difficult circumstances.
- He attended the Saurashtra Tamil Sangamam and described it as the festival of confluence of nationalist fervour of Sardar Patel and Subramania Bharati.
- The Gujarat government organised the Sangamam in which many people in the southern state with roots in Saurashtra visited the place of their ancestors.
  - Centuries ago, many people had migrated to Tamil Nadu from Saurashtra .

This celebration of the country's unity is also fulfilling the dreams of freedom fighters to see *Ek Bharat, Shreshtha Bharat* [One India, Best India].

### Around the world with a titanium spine: Abhilash Tomy's incredible maritime quest

Former Naval Commander Abhilash Tomy will finally set foot on land, 236 days after setting sail in pursuit of history,

- In what is considered the toughest, most dangerous and craziest of endeavours — the Golden Globe Race (GGR).

### Golden Globe Race

- Started in 1968, Sir Robin Knox-Johnston won it becoming the first person to achieve a single-handed non-stop circumnavigation, in 1969.
- To put things in perspective: around 6,000 people have summited Mount Everest; 600 have gone into space
  - But only 180 have ever managed a solo, non-stop circumnavigation and Abhilash is the only Indian.
- In 2013, Abhilash became the first Indian to solo circumnavigate non-stop under the Indian Navy's Sagar Parikrama 2 project.