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**Summary of The Hindu & The Indian Express
along with News Background**

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Polity and Governance

1. The Delhi dual governance conundrum

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Relevant for GS Prelims & Mains Paper II; Polity & Governance

How did the Constitution Bench of the Supreme Court rule on the powers of the Delhi govt. vis-a-vis the Lieutenant Governor? What followed this?

Delhi has been the flashpoint of innumerable power struggles but 2015 was a momentous year in the history of the metropolis. The country's two main political parties failed miserably in an election to see who controls the National Capital Territory. The Aam Aadmi Party swept the election, winning 67 of the 70 seats. However, in the absence of statehood for Delhi, there has been a prolonged confrontation on the relative powers of the territorial administration and the Union government.

Dilemmas of dual governance

The status of Delhi being a Union Territory under Schedule 1 of the Constitution but christened the 'National Capital Territory' under Article 239AA, engrafted by the Constitution (Sixty-ninth Amendment) Act, 2014, put the dynamics of the relationship between the elected Council of Ministers in Delhi and the Central Government under severe strain. The Administrator of Delhi, renamed as the Lieutenant Governor (L-G) under the aforementioned amendment, crossed swords with the elected government on multiple issues, including control over agencies, namely the Anti-Corruption Bureau, the Civil Services and the Electricity Board. The issues pertaining to the power to appoint the Public Prosecutor in Delhi and to appoint a Commission of Enquiry under the Commissions of Enquiry Act, etc., were vexed legal questions necessitating interpretation of the Constitution.

Though the Delhi High Court decided in favour of the Central Government relying on the status of Delhi as a Union Territory, on appeal by the NCT, the Supreme Court referred the matter to a Constitution Bench to decide on the substantial questions of law pertaining to the powers of the elected government of Delhi vis-a-vis the L-G.

The five-judge Bench opened a new jurisprudential chapter in the Administration of NCT by invoking the rule of purposive construction to say that the objectives behind the Constitution (Sixty-ninth Amendment) Act shall guide the interpretation of Article 239AA and breathed the principles of federalism and democracy into Article 239AA, thereby finding a parliamentary intent to accord a sui generis status in distinction from other Union Territories.

The Court declared that the L-G is bound by the "aid and advice" of the Council of Ministers, noting that the Delhi Assembly also has the power to make laws over all subjects that figure in the Concurrent List, and all, except three excluded subjects, in the State List. The L-G ought to act on the "aid and advice" of the Council of Ministers, except when he refers a matter to the President for a final decision.

Regarding the L-G's power to refer to the President any matter on which there is a difference of opinion between L-G and the Council of Ministers, the Supreme Court ruled that "any matter" cannot be construed to mean "every matter", and such a reference shall arise only in exceptional circumstances. L-G shall act as a facilitator rather than anointing himself as an adversary to the elected Council of Ministers. At the same time, the Court ruled that the National Capital Territory of Delhi cannot be granted the status of a State under the constitutional scheme.

Split verdict on services

After the Constitution Bench laid down the law on the broad issues involved, the contested questions were listed before a two-judge Bench. The Court unanimously held that while the Anti-corruption Bureau belongs to the province of the Centre, the Electricity Board under Government of NCT is the Appropriate Authority under the Electricity Act of 2003. While it held that only Central Government has the power to constitute enquiry Commission under the 1952 Act, the power to appoint Public Prosecutor is vested with Government of NCT. While one Judge found that services were totally outside the purview of the Government of NCT, the other held that officers below the rank of joint secretary are under the control of the Government of NCT.

Back to the Constitution Bench?

This split has resulted in the present hearing before a three-Judge Bench presided over by the Chief Justice, in the course of which the Solicitor General sought reference to a Constitution Bench. This has been opposed by the Government of the NCT of Delhi, whose counsel argued that forming another Constitution Bench to decide the matter would amount to a “review” of the earlier Constitution Bench ruling. The 3-Judge Bench has reserved its orders on the question.

It is germane to remember the observation of Justice Ashok Bhushan penned as part of the Constitution Bench decision on NCT (2018) that, “From persons holding high office, it is expected that they shall conduct themselves in faithful discharge of their duties so as to ensure smooth running of administration so that rights of all can be protected.”

Unless the stakeholders recognise this axiomatic precept, Delhi would continue to be under administrative and political distress.

The 2021 amendment to the Government of National Capital Territory of Delhi Act, 1991, is a pointer to the possibility that the tug-of-war will not end. The aforementioned amendment is also under challenge before the Supreme Court.

Source: The Hindu

2. The debate on the national language

Relevant for GS Prelims & Mains Paper II; Polity & Governance

What were the Constituent Assembly debates about Hindi being made the ‘national’ language? What happened in 1965?

Remarks by a Hindi actor to the effect that Hindi is the national language of India sparked a controversy recently over the status of the language under the Constitution. Many were quick to point out that there is no national language for India, and that Hindi is the official language of the Union. The official language issue was hotly debated in the Constituent Assembly, and the provisions relating to it were formulated only after a compromise that English shall continue to be used for 15 years.

What is the status of Hindi?

Under Article 343 of the Constitution, the official language of the Union shall be Hindi in Devanagari script. The international form of Indian numerals will be used for official purposes.

The Constituent Assembly was bitterly divided on the question, with members from States that did not speak Hindi initially opposing the declaration of Hindi as a national language. Proponents of Hindi were insistent that English was the language of enslavement and that it should be eliminated as early as possible. Opponents were against English being done away with, fearing that it may lead to Hindi domination in regions that did not speak the language.

There were demands to make Sanskrit the official language, while some argued in favour of ‘Hindustani’. There were differences of opinion over the script too. When opinion veered towards accepting Hindi,

proponents of the language wanted the 'Devanagari' script to be adopted both for words and numerals. Some advocated that the Roman script be adopted, as it would facilitate faster learning of Hindi. The predominant opinion was in favour of adopting 'international numerals' (the Arabic form used and understood throughout the world) instead of Hindi numerals.

Ultimately, it was decided that the Constitution will only speak of an 'official language'. And that English would continue to be used for a period of 15 years. The Constitution said that after 15 years, Parliament may by law decide on the use of English and the use of the Devanagari form of numbers for specified purposes.

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What is the Eighth Schedule?

The Eighth Schedule contains a list of languages in the country. Initially, there were 14 languages in the schedule, but now there are 22 languages. There is no description of the sort of languages that are included or will be included in the Eighth Schedule. There are only two references to these languages in the text of the Constitution. One is in Article 344(1), which provides for the formation of a Commission by the President, which should have a Chairman and members representing these scheduled languages. The purpose of the Commission is to make recommendations for the progressive use of Hindi for official purposes of the Union and for restricting the use of English.

The second reference, found in Article 351, says it is the Union government's duty to promote the spread of Hindi so that it becomes "a medium of expression for all elements of the composite culture of India" and also to assimilate elements of forms and expressions from Hindustani and languages listed in the Eighth Schedule.

What were the 1965 protests about?

The Official Languages Act, 1963 was passed in anticipation of the expiry of the 15-year period during which the Constitution originally allowed the use of English for official purposes. Its operative section provided for the continuing use of English, notwithstanding the expiry of the 15-year period. This came into force from Jan 26, 1965, a date which marked the completion of 15 years since the Constitution was adopted.

Jawaharlal Nehru had given an assurance in 1959 that English would remain in official use and as the language of communication between the Centre and the States. The Official Languages Act, 1963, did not explicitly incorporate this assurance, causing apprehensions in some States as the January 1965 deadline neared. At that time, Prime Minister Lal Bahadur Shastri reiterated the government's commitment to move towards making Hindi the official language for all purposes.

In Tamil Nadu, then known as Madras, the prospect of the use of Hindi as the medium of examination for recruitment to the Union public services created an apprehension that Hindi would be imposed in such a way that the future employment prospects of those who do not speak Hindi will be bleak. With the Congress government in the State taking the view that the people had nothing to fear about, protests broke out in January 1965. It took a violent turn after more and more student activists joined the protest, and continued even after key Dravida Munnetra Kazhagam (DMK) leaders were arrested. More than 60 people died in police firing and other incidents as the protests went on for days. The agitation died down later, but by then the Congress at the Centre realised the sensitivity of the language issue among Tamil-speaking people. When the Official Language Rules were framed in 1976, it was made clear that the Rules apply to the whole of India, except Tamil Nadu.

What is the three-language formula?

Since the 1960s, the Centre's education policy documents speak of teaching three languages — Hindi, English and one regional language in Hindi-speaking States, and Hindi, English and the official regional language in other States. In practice, however, only some States teach both their predominant language and Hindi, besides English.

In States where Hindi is the official language, a third language is rarely taught as a compulsory subject. Tamil Nadu has been steadfastly opposing the three-language formula and sticks to teaching Tamil and English. It argues that those who need to know Hindi can learn on their own.

Source: The Hindu

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3. Weighing the evidence: On SC's order against forcible vaccination

Relevant for GS Prelims & Mains Paper II; Polity & Governance

Can State make vaccination compulsory?

The Supreme Court in a decisive order has laid out a fine balance between individual liberty and the state's right to impose restrictions in the interests of public safety. An individual had the right to refuse vaccination and though the Government could "impose limitations" on rights of individuals, it had to be "reasonable and proportionate" to the extent that it achieved the objective, in this case, containing the spread of the coronavirus.

Rationale by Supreme Court

The current evidence, the Court reasoned, suggested that unvaccinated individuals were no more likely to spread the virus than those vaccinated and, therefore, people could not be denied access to public places, services and resources for being unvaccinated. However, this was no blanket order, and if infection rates increased and vaccines demonstrably reduced susceptibility to infections, the Government was within its rights to impose restrictions.

The order underscores scientific reasoning and that the pandemic also continues to pose tough, science conundrums that generate new knowledge and challenge received wisdom. Last year, this time, India was besieged by the second pandemic and also woefully short of vaccines. The central policy then was to rationalise access to vaccines because demand outstripped supply. While availability was a key factor, it was also because scientific evidence showed vaccination stemmed progression to severe disease and the priority was to save lives.

Reluctance of people for booster dose

Close to 75% of Indians have had at least one vaccine shot and a good proportion have hybrid immunity. Newer, highly transmissible variants and the West's experience, of infections being rife despite triple-shots, have all depressed demand for boosters in India. While last year, before the second wave, vaccine hesitancy was ascribed to the low uptake, it is quite likely now that people are exercising their option of waiting for more kinds of the vaccine. The current attitude is foregrounded in the ground reality that daily infections are low despite a complete opening up of normal life. In the first year of the pandemic, when vaccines were in a nascent stage and the virus was raging, the scientific wisdom was that lock-downs and vaccination of two thirds of the population would end the pandemic — an idea that has not come to pass.

Thus, it could very well be that newer kinds of vaccines (proven to curb transmission), may change the understanding of the best possible means to contain the blight. The suppression of individual liberty for the greater good is perhaps among the oldest and toughest questions that democracies grapple with; and beyond the orders, it is judicial reasoning that influences policy and future discourse when the facts on the ground change. The authorities must keep scientific evidence at the forefront when they take decisions that affect individual choice.

Source: The Hindu

4. A national body may be better placed to plan upgradation of judicial infrastructure

Relevant for GS Prelims & Mains Paper II; Polity & Governance

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National Judicial Infrastructure Corporation

It is unfortunate that the proposal by the Chief Justice of India (CJI) for a national judicial infrastructure corporation with corresponding bodies at the State level, did not find favour with many Chief Ministers at the recent joint conference of Chief Justices and Chief Ministers.

A special purpose vehicle, vested with statutory powers to plan and implement infrastructure projects for the judiciary, would have been immensely helpful in augmenting facilities for the judiciary, given the inadequacies in court complexes across the country. However, it is a matter of relief that there was agreement on the idea of State-level bodies for the same purpose, with representation to the Chief Ministers so that they are fully involved in the implementation.

Addressed concerns of State executive

The CJI, N.V. Ramana, who had mooted the proposal some months ago, sought to dispel the impression that a national body would usurp the powers of the executive, and underscored that it could have adequate representation of the Union/States. He had flagged the gulf between the available infrastructure and the justice needs of the people. If his proposal had been accepted, the available funding as a centrally sponsored scheme, with the Centre and States sharing the burden on a 60:40 ratio, could have been gone to the national authority, which would allocate the funds through high courts based on need. It is likely that Chief Ministers did not favour the idea as they wanted a greater say in the matter.

Given the experience of allocated funds for judicial infrastructure going unspent in many States, it remains to be seen how far the proposed State-level bodies would be successful in identifying needs and speeding up implementation. It will naturally require greater coordination between States and the respective High Courts. Union Law Minister Kiren Rijiju has promised assistance from the Centre to the States for creating the required infrastructure, especially for the lower judiciary. While it is a welcome sign that the focus is on infrastructure, unmitigated pendency, chronic shortage of judges and the burgeoning docket size remain major challenges. CJI Ramana flagged some aspects of the Government's contribution to the burden of the judiciary — the failure or unwillingness to implement court orders, leaving crucial questions to be decided by the courts and the absence of forethought and broad-based consultation before passing legislation. While this may be unpalatable to the executive, it is quite true that litigation spawned by government action or inaction constitutes a huge part of the courts' case burden. The conversation between the judiciary and the executive at the level of Chief Justices and Chief Ministers may help bring about an atmosphere of cooperation so that judicial appointments, infrastructure upgradation and downsizing pendency are seen as common concerns.

Source: The Hindu

5. What changes to J&K constituencies mean**Relevant for GS Prelims & Mains Paper II; Polity & Governance**

On Thursday, a commission set up by the Centre submitted its final report for the delimitation of Assembly and parliamentary constituencies in Jammu and Kashmir. The changes have been opposed by all political parties barring the BJP.

Why was the commission set up?

Delimitation became necessary when the Jammu and Kashmir Reorganisation Act, 2019 increased the number of seats in the Assembly. The erstwhile J&K state had 111 seats — 46 in Kashmir, 37 in Jammu, and four in Ladakh — plus 24 seats reserved for Pakistan-occupied Kashmir. When Ladakh was carved out as a Union Territory, J&K was left with 107 seats, including the 24 for PoK. The Reorganisation Act increased the seats to 114 — 90 for Jammu & Kashmir, besides the 24 reserved for PoK.

In the erstwhile state, delimitation of parliamentary constituencies was governed by the Constitution of India and that of Assembly seats was carried out by the then state government under the Jammu and Kashmir Representation of the People Act, 1957. After abrogation of J&K's special status in 2019, the delimitation of both Assembly and parliamentary seats is governed by the Constitution.

The Delimitation Commission was set up on March 6, 2020. Headed by retired Supreme Court Justice Ranjana Prakash Desai, it has the Chief Election Commissioner and J&K's Chief Electoral Officer as members, and J&K's five MPs as associate members. The time given to the panel, initially one year, was extended several times as the National Conference's three MPs initially boycotted its proceedings. The first draft recommendations on January 20 suggested an increase of six Assembly seats for Jammu and one for Kashmir; on February 6, it submitted its second draft report.

Next step: Assembly polls

With the final order now notified, all eyes will be on the EC and the Union government regarding the timing of Assembly elections. Though mainstream parties in the Valley have criticised the report, it is likely that this will make space for political engagement in the UT.

Why has the exercise been controversial?

Constituency boundaries are being redrawn only in J&K when delimitation for the rest of the country has been frozen until 2026. The last delimitation exercise in J&K was carried out in 1995. In 2002, the then J&K government led by Farooq Abdullah amended the J&K Representation of the People Act to freeze the delimitation exercise until 2026, as in the rest of the country. This was challenged in the J&K High Court and then the Supreme Court, both of which upheld the freeze.

Again, political parties in Jammu and Kashmir have been pointing out that the Delimitation Commission is mandated by the Reorganisation Act, which is sub judice.

Also, while delimitation as a rule is carried out on the basis of Census population, the Commission said it would take certain other factors into consideration for J&K, including size, remoteness and closeness to the border.

What changes have been made?

ASSEMBLY: The Commission has increased seven Assembly seats — six in Jammu (now 43 seats) and one in Kashmir (now 47). It has also made massive changes in the structure of the existing Assembly seats.

LOK SABHA: The Commission has redrawn the boundaries of Anantnag and Jammu seats. Jammu's Pir Panjal region, comprising Poonch and Rajouri districts and formerly part of Jammu parliamentary seat, has now been added to Anantnag seat in Kashmir. Also, a Shia-dominated region of Srinagar parliamentary constituency has been transferred to Baramulla constituency, also in the Valley.

KASHMIRI PANDITS: The Commission has recommended "provision of at least two members from the community of Kashmiri Migrants (Kashmiri Hindus) in the Legislative Assembly. It has also recommended that Centre should consider giving representation in the J&K Legislative Assembly to the displaced persons from Pakistan-occupied Kashmir, who migrated to Jammu after Partition".

What do the changes in Assembly seats mean?

While the basis for delimitation is the 2011 Census, the changes mean that 44% of the population (Jammu) will vote in 48% of the seats, while the 56% living in Kashmir will vote in the remaining 52% of the seats. In the earlier set-up, Kashmir's 56% had 55.4% of the seats and Jammu's 43.8% had 44.5% of the seats.

Of the six new seats in Jammu, four have a predominantly Hindu population. Of the two new seats in Chenab region, comprising Doda and Kishtwar districts, Muslims are a minority in Padder seat. In Kashmir, the one new seat is in Kupwara, the stronghold of the People's Conference that is seen as close to the BJP.

Reservation of seats for Kashmiri Pandits and displaced persons from PoK, too, would help the BJP. The Commission did not specify whether the seats for Kashmiri Pandits should be reserved from among the existing seats, or whether they should be given additional seats,

And what do the changes in parliamentary seats mean?

The restructuring of Anantnag and Jammu will change the influence of various demographic groups in these seats. Page | 7

The Commission has reserved nine Assembly seats for Scheduled Tribes. Six of these are in the redrawn Anantnag parliamentary seat, including in Poonch and Rajouri, which has the highest ST population. Opposition parties anticipate that the parliamentary seat, too, would be reserved for ST.

The erstwhile Anantnag seat had a small ST population, but the outcome of the redrawn seat would be decided by Poonch and Rajouri. Political parties in the Valley see it as reducing the influence of ethnic Kashmiri-speaking Muslim voters.

On the other hand, had Poonch and Rajouri remained in Jammu Lok Sabha seat, it might have been required to be declared an ST-reserved Lok Sabha seat. Transferring out Rajouri and Poonch can potentially help the BJP consolidate the Hindu vote here.

Parties in the Valley expect that Baramulla's restructuring will consolidate the Shia votes. That could help Imran Reza Ansari, a Shia leader in Sajad Lone's Peoples Conference.

Source: The Indian Express

6. Politics over process in Bagga arrest: Why this can set a bad precedent

Relevant for GS Prelims & Mains Paper II; Polity & Governance

Politics trumping process — this lies at the heart of the row over the arrest of Delhi BJP spokesperson Tajinder Pal Singh Bagga. Inter-state arrests are routine and they mandate cooperation between the local police where the arrest is made and the police where the offence is said to have taken place. The cooperation, as stated by courts, extends to prior intimation and involvement in the arrest.

The CrPC guides both letter and spirit.

But the Bagga case has shown how bitter politics transforms a routine procedure into a full-blown inter-state row and sets a disturbing precedent for states to prevent arrest by another state or the Centre.

Article 22 (2) of the Constitution states that "Every person who is arrested and detained in custody shall be produced before the nearest magistrate within a period of twenty-four hours of such arrest excluding the time necessary for the journey from the place of arrest to the court of the magistrate, and no such person shall be detained in custody beyond the said period without the authority of a magistrate."

Ordinarily, the "nearest magistrate" is assumed to be the magistrate in whose jurisdiction the FIR is registered if the individual can be produced within 24 hours. The crucial 24-hour rule allows police to skip obtaining a transit remand from a local magistrate where the arrest is being made.

In 2018, the Delhi High Court, ruling in Anand Agarwal v Union of India, upheld the CBI's decision to not obtain a transit remand for the arrest of an individual in Raipur "since the CBI did not anticipate that more than 24 hours after his arrest would be needed to produce the Petitioner before the jurisdictional Court in Delhi."

A transit remand is a magistrate's order to transfer or grant custody of an arrested person so the police can shift the person in custody from the place of arrest to the place where the matter can be investigated and tried. A hearing for transit remand before a magistrate allows an opportunity for the arrested to seek bail and contest the transfer before it happens. In contrast, producing before a magistrate in a new state, even within 24 hours could make it difficult for the arrested individual to engage a lawyer and seek bail.

From Disha Ravi's arrest in Bengaluru in 2021 to Jignesh Mevani's arrest in Gujarat last month, several arrests, high profile or otherwise, have been made without a transit remand.

"The power to arrest arises from the FIR which means it rests with the police in whose jurisdiction the offence is committed. If it is a cognisable, non-bailable offence, the person can be arrested without a warrant, provided he is produced before a magistrate within 24 hours," an advocate said.

"Arrest without intimating local police is at best irregular but not illegal if the person is produced before a magistrate," a senior advocate said.

A legal question for determination will be whether the local police can compel the police from another state to produce the arrested person before a local magistrate before transfer. Ultimately, the determination of whether an arrest is valid or not is made by a magistrate and not the police.

What also raises questions is the unusual manner in which Haryana police intercepted the police convoy of another state and took custody of the arrested individual, all without the intervention of a magistrate.

The blocking of the Punjab police convoy also violates the law which states that a public servant cannot be prevented or detained for discharge of official duties when believed to have been done in good faith. The Delhi Police's registration of an abduction case, after being intimated of an arrest by the Punjab police, also raises questions of overstepping the law.

Legal experts expressed apprehension that the Bagga case could set a new precedent for states to prevent arrests by Opposition-ruled states, raising questions on a state's powers in a federal structure in a fraught political environment.

Most Central agencies such as the Enforcement Directorate and CBI already routinely file cases involving those in Opposition-ruled states in Delhi, and not in the respective states to ensure arrest is not risked.

Source: The Indian Express

7. Gujarat MLA Jignesh Mevani convicted, what is the case against him?

Relevant for GS Prelims & Mains Paper II; Polity & Governance

A magisterial court in Mehsana on Thursday (May 5) convicted Vadgam MLA Jignesh Mevani and nine others in connection with a criminal case of unlawful assembly, registered against them for holding a rally from Mehsana town in July 2017 without police permission. The court sentenced them to three months imprisonment and a fine of Rs 1,000 each.

What is the case against Jignesh Mevani?

On July 12, 2017, to mark one year of the public flogging of Dalits in Una by 'gaurakshaks', an incident that had led to a large-scale agitation across the state, Mevani and his associates led a seven-day march of 'Azadi Kooch' from Mehsana to Dhanera of Banaskantha district.

Youth leader Kanhaiya Kumar and then Patidar quota stir leader Reshma Patel had also joined the march, which was held to demand physical possession of agricultural lands granted to Dalits under statutory provisions.

One of Mevani's associates, Kaushik Parmar, had sought permission for the rally under the banner of Rashtriya Dalit Adhikar Manch, an organisation founded by the Independent MLA, from the Mehsana executive magistrate and it was granted initially. Even though it was revoked by the authorities later, the rally was held by the organisers.

Hundreds of people attended the rally, which was preceded by a public meeting. But minutes after the march began, it was stopped by the police. Participants, including Mevani, were detained. Kanhaiya and Reshma, who had left for Ahmedabad by then, were also detained at a restaurant near Mehsana.

The Mehsana police registered an FIR for the offences of unlawful assembly against 17 persons under provisions of Indian Penal Code (IPC) Section 143.

A chargesheet against 12 persons, including Mevani, Kanhaiya and Reshma, was later submitted before a magisterial court in Mehsana.

In April 2021, the court framed charges against 10 of the accused. It decided to hold a separate trial for Kanhaiya. Another accused had died by this time, thus abating the trial against him.

How did two trial cases emerge from the same incident?

Kanhaiya was not present in court during the framing of charges against the accused in April 2021. As a result, the magistrate court passed an order to hold a separate trial against him in the case after framing charges. This was because the trial court was required to follow directions of the Supreme Court issued on a writ petition to try and dispose of cases against Members of Parliament and Members of Legislative Assembly speedily.

At the time of the incident, Mevani was not an MLA — he was elected as an Independent MLA from Vadgam months later in December 2017.

So, will this disqualify Jignesh Mevani as an MLA?

No. Section 8 of the Representation of the People Act provides for disqualification of an MP or MLA for sentences of imprisonment of two years or more, except for some specific types of offences under IPC as well as special laws, such as Foreign Exchange (Regulation) Act, NDPS Act, Prevention of Corruption Act etc. Mevani has said he will appeal against the verdict.

Is this kind of conviction commonplace?

National Crime Records Bureau (NCRB) data show Gujarat registered 196 cases under unlawful assembly in 2019 and 163 such cases in 2020, pegging the incidence rate of such crimes anywhere between 0.1 to 0.3 per cent in the state.

Across India, NCRB 2019 and 2020 reports show that pendency of cases have only gone up (from 41.2 per cent to 44.5 per cent).

In 2019, unlawful assembly cases standing trial across India, which included trials pending from previous years as well, were 42,835. This increased to 47,814 in 2020.

In 2020, 1,105 cases saw court convictions and 1,236 cases saw acquittals across India. In 2019, the numbers were 1,805 and 2,070, respectively. The conviction rate for unlawful assembly in 2020 went down to 44 per cent from 44.3 per cent in 2019.

Source: The Indian Express

8. What is the debate around star ratings for food packets mooted by FSSAI?

Relevant for GS Prelims & Mains Paper II; Polity & Governance

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The Food Safety and Standards Authority of India (FSSAI) is expected to issue a draft regulation for labels on front of food packets that will inform consumers if a product is high in salt, sugar and fat. It is expected to propose a system under which stars will be assigned to a product, which has earned the ire of public health experts and consumer organisations who say it will be misleading and ineffective. Health experts are demanding that the FSSAI instead recommend the “warning label” system which has proven to have altered consumer behaviour.

Why do we need front-of-package labelling?

In the past three decades, the country's disease patterns have shifted. While mortality due to communicable, maternal, neonatal, and nutritional diseases has declined and India's population is living longer, non-communicable diseases (NCDs) and injuries are increasingly contributing to the overall disease burden. In 2016, NCDs accounted for 55% of premature death and disability in the country. Indians also have a disposition for excessive fat around the stomach and abdomen which leads to increased risk of cardiovascular disease and type 2 diabetes. According to the National Family Health Survey-5 (2019-2021), 47.7% of men and 56.7% of women have high risk waist-to-hip ratio. An increased consumption of packaged and junk food has also led to a double burden of undernutrition and overnutrition among children. Over half of the children and adolescents, whether under-nourished or with normal weight, are at risk of cardiovascular diseases, according to an analysis by the Comprehensive National Nutrition Survey in India (2016-2018).

Reducing sugar, salt, and fat is among the best ways to prevent and control non-communicable diseases. While the FSSAI requires mandatory disclosure of nutrition information on food packets, this is located on the back of a packet and is difficult to interpret.

What decision has FSSAI taken?

At a stakeholder's meeting on February 15, 2022, three important decisions were taken on what would be the content of the draft regulations on front-of-package labelling. These included threshold levels to be used to determine whether a food product was high in sugar, salt and fat; that the implementation will be voluntary for a period of four years before it is made mandatory; and that the health-star rating system would be used as labels on the basis of a study commissioned by the FSSAI and conducted by IIM-Ahmedabad. The food industry agreed with the FSSAI's decision on the issue of mandatory implementation and use of ratings, and sought more time to study the issue of thresholds. The World Health Organization representative said the thresholds levels were lenient, while the consumer organisations opposed all three decisions.

The biggest contention is over the use of a health-star rating system that uses 1/2 a star to five stars to indicate the overall nutrition profile of a product. Despite objections, FSSAI CEO Arun Singhal told The Hindu that he stands by the IIM-A study as it is based on a survey of 20,500 people. He said stakeholders could share their comments once the draft regulations were made public. The FSSAI's scientific panel will then take that into consideration.

Why is there opposition to the rating system?

In a health-star rating system, introduced in 2014 in Australia and New Zealand, a product is assigned a certain number of stars using a calculator designed to assess positive (e.g., fruit, nut, protein content, etc) and risk nutrients in food (calories, saturated fat, total sugar, sodium). Scientists have said that such a system misrepresents nutrition science and the presence of fruit in a fruit drink juice does not offset the impact of added sugar. Experts say that so far there is no evidence of the rating system impacting consumer behaviour. The stars can also lead to a ‘health halo’ because of their positive connotation making it harder to identify

harmful products. Over 40 global experts have also called the IIM-Ahmedabad study flawed in design and interpretation.

There are many other labelling systems in the world, such as “warning labels” in Chile (which uses black octagonal or stop symbols) and Israel (a red label) for products high in sugar, salt and fat. The ‘Nutri-Score’, used in France, presents a coloured scale of A to E, and the Multiple Traffic Light (MTL), used in the U.K. and other countries depict red (high), amber (medium) or green (low) lights to indicate the risk factors. Global studies have shown a warning label is the only format that has led to a positive impact on food and beverage purchases forcing the industry, for example in Chile, to reformulate their products to remove major amounts of sugar and salt.

What happens next?

The FSSAI is expected to make its draft regulations on front-of-package public soliciting comments from all stakeholders. The FSSAI's scientific panel comprising independent experts will study these comments and make its proposal. Following this, it will go to a scientific committee, the FSSAI and the Health Ministry before the regulations are tabled before Parliament.

The debate on front-of-package labelling has once again raised questions on the influence of the industry on the food regulator. According to George Cheriyan, Director of CUTS International and member of FSSAI as a special invitee, stakeholder meetings are dominated by the industry. Many others, too, have called for the need for “insulating” policy decisions from the industry.

Source: The Hindu

9. What are India's plans to avert a wheat crisis?

Relevant for GS Prelims & Mains Paper III; Economics

On May 4, the government lowered its wheat production estimates by 5.7% to 105 million tonnes (MT) from the projected 111.32 MT for the crop year ending June. The production is expected to fall on account of unusually warm weather conditions that persisted during March to April in most parts of the key grain-producing States of Punjab, Haryana, Madhya Pradesh as well as Uttar Pradesh. Till May 4, wheat procurement in the ongoing winter (rabi) marketing season too had seen a drop, with the Centre procuring 17.5 MT of wheat, which is likely to touch 19.5 MT when the season ends. In the last marketing year, the government had purchased 43.3 MT of wheat from farmers, and this year it had set a target of 44.4 MT. The announcement came around the same time as a report by the World Food Programme, which said the “unfolding war in Ukraine” was likely to “exacerbate the already severe 2022 acute food insecurity forecasts” in countries.

Why has wheat production dwindled?

India is the second-largest producer of wheat in the world, with China being the top producer and Russia the third-largest — Ukraine is the world's eighth-largest producer of wheat. After five straight years of a bumper wheat output, India has had to revise downwards its estimated production. Unprecedented heatwaves across the north, west and central parts of the country, and March and April being the hottest in over 100 years, have caused substantial loss to the yield at 6%, with 20% of the wheat grain shrivelling up.

Some estimates have pegged the shrivelling as high as 80% of the crop purchased by the government. For instance, according to crop cutting experiments, conducted by the Punjab Agriculture Department every year, the State's yield per hectare could have fallen 5-10% compared to last year's yield.

Food Secretary Sudhanshu Pandey attributed the lower estimates to “early summer” affecting the crop yields in States, especially Punjab, Haryana and Uttar Pradesh.

What about government procurement?

This year the government's wheat purchase has seen a dip owing to several reasons from lower yield to higher market prices being offered by private traders. A large quantity of wheat was being bought by traders at a higher rate than the minimum support price (MSP). Private traders have been prompted to buy more wheat from farmers as the price of wheat at the international level has shot up and is expected to rise due to the ongoing conflict between Russia and Ukraine. In Madhya Pradesh, Uttar Pradesh, Rajasthan and Gujarat, farmers are selling to traders-exporters at prices (₹21-24 per kg), which is better than the MSP (rate of ₹20.15 per kg).

Also, farmers are holding on to some quantity of wheat, expecting higher prices for their produce in the near future. Mr. Pandey admitted that the substantially low procurement was due to market prices of wheat being higher than the MSP being offered by the government. He gave two other reasons for the low procurement: stocks being held by farmers and traders in anticipation of further price rises, and lower production.

How will this impact the public distribution of grain?

Wheat procurement is undertaken by the state-owned Food Corporation of India (FCI) and other agencies at MSP to meet the requirements under the Public Distribution System (PDS) and other welfare schemes such as the Pradhan Mantri Garib Kalyan Anna Yojana (PMGKAY) introduced during the pandemic.

The government has revised the grain allocation under PMGKAY for May to September 2022. According to the new guidelines, the FCI will fill the gap left by wheat with an increased allocation of rice. An additional 5.5 MT rice is being allocated to the States to fill the gap in supplying wheat grain. Mr. Pandey said rice procurement last year was about 60 MT and this year a similar quantity is expected. Under the National Food Security Act (NFSA), he said the annual requirement is roughly about 35 MT. Pointing out that from next year, fortified rice will be distributed to the entire Public Distribution System (PDS), he said with surplus rice stocks, the country is in a comfortable situation.

Will domestic wheat prices be hit?

As government wheat procurement has dipped, concerns are being raised about the stability of prices in the country and the availability of grain for internal consumption, which many agri-experts argue should be a priority. An agriculture domain expert and a former member of the Uttar Pradesh Planning Commission, Sudhir Panwar, points out that the government has to ensure that the market price for the domestic consumer is not determined by private players — “this can happen if one or two big business houses are buying chunk of the wheat crop.” The key question, according to Mr. Panwar, is in a scenario where private traders start dictating the price in the domestic market, will the buffer stock be used under the Open Market Sale Scheme to control the market price or will it be used for the NFSA and other welfare schemes.

The government has dismissed concerns about both prices and stocks, asserting that India is in a comfortable situation with the overall availability of grains and stocks expected to be higher than the minimum requirement for the next one year. Mr. Pandey stated that after meeting the requirement of welfare schemes in the year ahead, on April 1, 2023, India would have stocks of 8 MT of wheat, well above the minimum requirement of 7.5 MT.

Will farmers benefit?

Farmers will certainly benefit from the scenario as they are being offered a price above the MSP. Amid the Russia-Ukraine crisis, new markets in countries like Israel, Egypt, Tanzania and Mozambique have opened up for India.

However, on the other hand, if private traders continue to buy above MSP, eventually that could stoke inflation. Dr. M.J. Khan, Chairman of the Indian Chamber of Food and Agriculture, an apex agribusiness services body, opines that more private buying of wheat will help India expand the agri-export basket to new countries, riding the current crisis situation. This trade relationship will stay even when the global crisis is over, which means farmers will get about 10%-15% extra price as market prices are ruling above MSP.

What about export plans?

Till now, 4 MT of wheat has been contracted for export and about 1.1 MT has been exported in April 2022. After Egypt, Turkey has also given approval for the import of Indian wheat. India has been eyeing deals with new export markets in European Union countries too. Compared to record wheat exports of 7.85 MT in the fiscal year 2021-22, the Centre had estimated exports of 12 MT for 2022-23, to cash in on the market rally in global prices following the Ukraine crisis.

Global wheat prices rose nearly 50% since the start of this year as supplies from Russia, the number one wheat exporter, and Ukraine, number six, were hit. Despite the crop loss and revision of the output estimate, the Centre maintained that no curbs would be placed on wheat exports and that it was facilitating traders. Market observers estimate exports will be lower than projected earlier at about 10 MT amid low or damaged output.

How is the global supply situation shaping up?

In order to meet the gap created by reduced Russian and Ukrainian exports, importers are turning to alternative markets, while wheat-producing countries like India are looking to increase exports. According to the United States Department of Agriculture (USDA), the export estimates of Brazil, which is traditionally an importer of wheat, is pegged at 2.5 MT, nearly three times its total last year. The South American country has even found new markets, with its wheat exports to West Asian nations jumping over 400%, according to Reuters. Argentina, traditionally a big exporter of wheat, too saw a further rise in exports despite lower than usual production.

The USDA, however, says that these increased exports will not be enough to make up for the nearly 30% of global exports hit by the Ukraine crisis.

Source: The Hindu

10. Why, according to UIDAI, Aadhaar data can't be used in police investigations

Relevant for GS Prelims & Mains Paper II; Polity & Governance

The Unique Identification Authority of India (UIDAI) has opposed a petition by Delhi Police seeking directions from the High Court that would allow investigators to match a suspect's picture and chance prints (latent fingerprints) from the crime scene with the Aadhaar database to help identify the accused in a case of murder. The UIDAI, which issues the unique Aadhaar number to residents of India, is prohibited by law from sharing any core biometric information with police. The statutory authority has also said it is not technologically feasible to accede to the request of the police.

The Delhi Police plea

In a first-of-its-kind case, Delhi Police approached Delhi High Court in February under Section 33(1) of The Aadhaar Act, according to which a judge of a High Court can order the disclosure of information on identity in certain cases. This section says "nothing contained in sub-section (2) or sub-section (5) of section 28 or sub-section (2) of section 29 shall apply in respect of any disclosure of information, including identity information or authentication records, made pursuant to an order of a court not inferior to that of a Judge of a High Court". Sections 28(2) and 28(5) of The Aadhaar (Targeted Delivery of Financial and Other Subsidies, Benefits and Services) Act, 2016 say that UIDAI "shall ensure confidentiality of identity information and authentication records of individuals", and that no UIDAI employee can, either during service or later, "reveal any information stored in the Central Identities Data Repository or authentication record to anyone".

The case at hand

The case under investigation dates to June 12, 2018, when a jeweller, Hemant Kumar Kaushik, was murdered by alleged robbers in his shop in Adarsh Nagar in northwest Delhi. While two suspects robbed the shop, a third waited on a stolen motorcycle. When Kaushik tried to grab one of the men, he was shot.

The police recovered 14 chance prints from the spot and footage from CCTV cameras in the area showing one of the suspects. The chance impressions and pictures did not match with any of the data already available with the police. Investigators now wants to cast the net wider, using Aadhaar's biometric database.

Data UIDAI collects

The authority collects demographic and biometric information of residents at the time of enrolment. Demographic information includes name, address, date of birth, gender, mobile phone number, and email address; biometric information includes 10 fingerprints, two iris scans, and the resident's photograph. The unique 12-digit Aadhaar issued after successful enrolment is a proof of identity to obtain a subsidy or service.

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Confidentiality of data

The Aadhaar Act requires the UIDAI to ensure confidentiality and security of the identity information it collects. According to UIDAI, the Delhi Police's prayer is contrary to Section 29 of the Act, which prohibits it from sharing core biometric information — fingerprint, iris scan or any such biological attribute — with any agency "for any reason whatsoever".

The UIDAI has also said that no Aadhaar data can be shared by any individual or entity with anyone without the consent of the resident or holder of the Aadhaar.

Section 33, the provision under which Delhi Police has approached the court, allows the disclosure of only identification information including photograph or authentication records, but no core biometric information. Also, the court cannot pass the order "without giving an opportunity of hearing to the Authority [and the concerned Aadhaar number holder]".

There is also a national security exception — an officer not below the rank of the Secretary to the central government can order disclosure of information including identity information or authentication record in the interest of national security.

Tech impediment

While opposing the Delhi Police petition in February, the UIDAI had told the court that no "1:N" sharing of data was possible, it had to be done on a 1:1 basis only. "The Aadhaar technology only permits biometric authentications which are done on a 1:1 basis for which it is necessary to have the Aadhaar number of an individual," the UIDAI has said in its written reply.

UIDAI has also said it does not collect biometric information — iris scans and fingerprints — based on technologies, standards or procedures suitable for forensic purposes. "Therefore using the biometric data for random matching purposes may not be technologically feasible and shall be beyond the purview of the Act," it told the court.

According to UIDAI, for Aadhaar based authentication, it was essential to have both "live biometrics" and the Aadhaar. The authority can establish the identity of an individual only through the Aadhaar number — if that is not possible, it is technically not feasible to even provide the photograph of an unknown accused, the authority has said.

"The technological architecture of UIDAI or its mandate for Aadhaar based authentication does not allow for any instance of 1:N matching wherein finger prints including latent and chance fingerprints are matched against the other finger prints in the UIDAI database, except for generation of Aadhaar number," the authority has said.

Source: The Indian Express

11. The Jammu and Kashmir Delimitation report

Relevant for GS Prelims & Mains Paper II; Polity & Governance

After multiple objections and extensions, the J&K Delimitation Commission submitted its final report on May 5, 2022, two years after it was appointed to redraw the electoral boundaries in Jammu and Kashmir as per the mandate set by the Jammu & Kashmir Reorganisation Act, 2019. In its order, a notification of which was published in the Gazette of India, the three-member panel carved out additional six Assembly seats for the Jammu region and one for the Kashmir valley as per the Act. The final order of the Commission has set the stage for elections in the erstwhile State that last held Assembly polls in 2014.

What is delimitation?

Delimitation is the process of redrawing boundaries of the Lok Sabha or Assembly constituencies, the Election Commission of India states. The process is carried out in accordance with changes in the demographic status of a State or Union Territory. Delimitation is done by a Delimitation Commission or Boundary Commission. The orders of the independent body cannot be questioned before any court. In the past, Delimitation Commissions were set up in 1952, 1963, 1973, and 2002. Before the abrogation of Article 370 that accorded a special status to J&K, delimitation of its Assembly seats was carried out by the Jammu and Kashmir Constitution and the Jammu and Kashmir Representation of the People Act, 1957. The delimitation of Lok Sabha constituencies, meanwhile, was governed by the Constitution.

What is the J&K Delimitation Commission?

The last time a delimitation exercise was carried out in Jammu and Kashmir was in 1995, based on the 1981 Census. Jammu and Kashmir was under President's rule at that time. There was no Census in 1991 in J&K due to the tense situation in the valley. In 2001, the Jammu and Kashmir Assembly passed a law to put the delimitation process on hold till 2026. The Centre set up a Delimitation Commission in March 2020, six months after the State of Jammu and Kashmir was bifurcated and reorganised as the Union Territories of Jammu and Kashmir and Ladakh. The Commission, headed by retired Supreme Court judge Ranjana Prakash Desai, was tasked with delimiting the Assembly and Lok Sabha constituencies in the UT of J&K based on the 2011 Census and in accordance with the provisions of the Jammu and Kashmir Reorganisation Act, 2019 and the Delimitation Act, 2002.

The panel was given a year to complete the delimitation plan but was given two extensions. After considering submissions and considering factors like "geographical features, communication means, public convenience and contiguity of areas", the Delimitation Commission released its final report on May 5.

What are the key takeaways from the final report?

First, J&K is split into two divisions, with Jammu having 37 Assembly seats and Kashmir 46. After the Commission's final draft, six additional Assembly seats are earmarked for Jammu (revised to 43) and one for Kashmir (revised to 47). The total number of Assembly seats in the UT will increase from 83 to 90.

Second, the Commission has recommended the Centre to nominate at least two Kashmiri Pandits to the Legislative Assembly.

Third, the panel has proposed nine seats for the Scheduled Tribes (STs). These will include six in Jammu (Budhal, Gulabgarh, Surankote, Rajouri, Mendhar, Thanamandi) and three in the valley (Gurez, Kangan, Kokernag). Seven seats have been reserved for the Scheduled Castes (SCs) in the Jammu region.

Fourth, the Commission has also recommended that the government consider giving displaced persons from Pakistan-occupied Jammu and Kashmir representation in the Assembly through nomination.

Fifth, in its final order, the Commission has noted that it has considered the "Jammu & Kashmir region as one single Union Territory", and merged Rajouri and Poonch (from Jammu division) with the Anantnag constituency in the Kashmir region. The new constituency has been renamed as Kishtwar-Rajouri.

Sixth, the Commission has said it renamed 13 constituencies considering public sentiment in the region. The order shows that in Kashmir, the names of Gulmarg (from Tangmarg), Hazratbal, Zadibal, Lal Chowk, Eidgah have been restored. In the Jammu region, the name of the Gulabgarh constituency has been restored.

The final order of the Delimitation Commission for Jammu and Kashmir holds a lot of political significance. The completion of the delimitation exercise will pave the way for Assembly elections — a crucial step in the possible restoration of statehood for Jammu and Kashmir. Union Home Minister Amit Shah had stated earlier this year that the statehood of Jammu and Kashmir will be restored “once the situation becomes normal”.

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The Commission has added seven more Assembly seats, keeping the 2011 census as the basis. With this, Jammu with a population of 53 lakh (43% of the total population of 1.22 crore) will have 47% seats, while Kashmir which has a population of 68 lakh (56%) will have 52% of the seats.

The new constituency has five ST Assembly segments from the Jammu region. In J&K, Gujjar and Bakarwals form the ST community which is 11.9% of the total population, as per the 2011 census. This restructuring is likely to have an electoral impact.

Who criticised the Commission?

Regional political parties in Jammu and Kashmir, barring the Bharatiya Janata Party (BJP), have slammed the Commission for acting as an “extension of the BJP”. Rejecting the recommendations, former J&K Chief Minister Mehbooba Mufti termed the proposal as another means to disempower the people of J&K. Ms. Mufti’s Peoples Democratic Party had boycotted both visits of the Commission to the UT. Her party colleague, Naeem Akhtar, alleged that elections have been rigged even before voting. “It’s another sad chapter of history written by the rulers sitting in New Delhi,” he told The Hindu.

The National Conference (NC) claimed that the final order was an attempt to help the BJP get an advantage in elections. The NC has been critical of the Commission and had boycotted it before the intervention of the Prime Minister Narendra Modi.

The Peoples Conference and Communist Party of India-Marxist (CPI-M) have also expressed their disappointment. The Congress said the proposal of six additional seats to Jammu and one to Kashmir “smacks of pre-determined erroneous assessment”. The BJP, meanwhile, has said it is happy with the panel for “doing a great job”.

What lies ahead?

The Delimitation Commission for Jammu and Kashmir has issued a notification of its final order in the Gazette of India. As per rules, the report has been published in newspapers.

The Centre will now fix a date from which the delimitation order will come into effect. Chief Election Commissioner Sushil Chandra told The Hindu that the EC will then rationalise the polling stations and revise the electoral rolls. This will pave the way for the much-awaited first Assembly polls in Jammu and Kashmir after being stripped of its special status in 2019.

Source: The Hindu

12. What is the law on marital rape, and what has the Delhi High Court ruled?

Relevant for GS Prelims & Mains Paper II; Polity & Governance

A two-judge Bench of the Delhi High Court on Wednesday (May 11) delivered a split verdict in a batch of petitions challenging the exception provided to marital rape in the Indian Penal Code (IPC).

Justice Rajiv Shakdher held that the exception under Section 375 (which deals with rape) of the IPC is unconstitutional, while Justice C Hari Shankar held that the provision is valid. Details of the judgment were awaited.

What happens next, and what does this verdict mean for the conversation on marital rape?

What was the case about?

The court was hearing a clutch of four petitions challenging the constitutionality of the exception to Section 375. Apart from the petitioners, who include the All India Democratic Women's Association (AIDWA), the court heard several intervenors, including a men's rights organisation and amicus curiae senior advocates Rajshekhar Rao and Rebecca John.

What is the marital rape exemption?

Section 375 defines rape and lists seven notions of consent which, if vitiated, would constitute the offence of rape by a man. However, the provision contains a crucial exemption: "Sexual intercourse or sexual acts by a man with his own wife, the wife not being under eighteen years of age, is not rape."

This exemption essentially allows a marital right to a husband who can with legal sanction exercise his right to consensual or non-consensual sex with his wife.

The exemption is also under challenge before the Gujarat High Court on the grounds that it undermines consent of a woman based on her marital status. Separately, the Karnataka HC has allowed the framing of marital rape charges against a man despite the exemption in law.

Headed to top court

The split verdict by the Delhi High Court paves the way for adjudication by the Supreme Court. It also provides breathing room to the Centre, possibly until the proposed reforms in criminal law come into force.

What was the government's stand?

Like in the ongoing case before the Supreme Court challenging the constitutionality of Section 124A IPC (sedition), the Centre initially defended the rape exception and later changed its stand and told the court that it was reviewing the law, and that "wider deliberations are required on the issue".

Solicitor General Tushar Mehta brought to the court's notice a 2019 committee set up by the Ministry of Home Affairs to review criminal laws in the country.

The Delhi government argued in favour of retaining the marital rape exception. The government's arguments spanned from protecting men from possible misuse of the law by wives, to protecting the institution of marriage.

What happens when a split verdict is delivered?

In case of a split verdict, the case is heard by a larger Bench. This is why judges usually sit in Benches of odd numbers (three, five, seven, etc.) for important cases, even though two-judge Benches or Division Benches are not uncommon.

The larger Bench to which a split verdict goes can be a three-judge Bench of the High Court, or an appeal can be preferred before the Supreme Court. The Delhi High Court has already granted a certificate of appeal to move the Supreme Court since the case involves substantial questions of law.

What is the broad takeaway from Wednesday's verdict?

Even though the court has delivered a split verdict, its intervention moves the needle in favour of doing away with the marital rape exemption in law. Justice Shakdher's opinion takes the conversation forward on the subject, and sets the stage for a larger constitutional intervention before the Supreme Court.

On May 10, the Supreme Court refused to stay the Karnataka High Court order that for the first time put a man on trial for marital rape. The SC's refusal to stay the order indicates that the higher judiciary is willing to carry out a serious examination of the colonial-era provision.

What was the Karnataka HC ruling?

The Karnataka High Court was hearing an appeal by a husband against a sessions court decision to frame rape charges brought against him by his wife. Along with charges under Section 376 of the Indian Penal Code that punishes rape, the man was charged with Sections 377 (unnatural offences), 506 (criminal intimidation), 498A (domestic cruelty), and 323 (assault) of the IPC, and Section 10 of the Protection of Children from Sexual Offences Act, 2012 for alleged sexual abuse against his minor daughter.

The man sought the quashing of the FIR, especially the charge of rape, since Section 375 specifically carves out an exception for marital rape. But the single-judge Bench of Justice M Nagaprasanna refused to interfere with the sessions court order.

While the High Court did not explicitly strike down the marital rape exception, it allowed the married man to be put on trial on rape charges brought by his wife. The husband had moved the High Court after the trial court took cognizance of the offence under Section 376 (punishment for rape).

What is the law on marital rape elsewhere?

The marital rape immunity is known to several post-colonial common law countries. Australia (1981), Canada (1983), and South Africa (1993) have enacted laws that criminalise marital rape.

In the United Kingdom, the House of Lords overturned the exception in 1991. In their landmark decision in the case known as *R v R*, the Lords took the view that the time had "arrived when the law should declare that a rapist remains a rapist subject to the criminal law, irrespective of his relationship with his victim". They also said that the verdict was not creating a new offence, rather only removing a common law fiction that has its roots in ecclesiastical law.

It was argued that the House of Lords decision amounted to a retrospective change in criminal law, which would amount to a breach of the European Convention on Human Rights. The European Court of Justice reviewed the ruling and upheld the decision of the Lords as a "foreseeable evolution" of the law.

Subsequently, in 2003 marital rape was outlawed by legislation in the UK.

Source: The Indian Express

13. What is the sedition law, and why Supreme Court's fresh directive is important

Relevant for GS Prelims & Mains Paper II; Polity & Governance

The Supreme Court Wednesday directed the Centre and states to keep in abeyance all pending trials, appeals, and proceedings with respect to the charge framed under Section 124A of the Indian Penal Code (IPC), which deals with the offence of sedition, till the central government completes the promised exercise to reconsider and re-examine the provision.

The central government had initially defended the colonial provision, but later told the apex court it was reviewing it.

What is the sedition law?

Section 124A defines sedition as: "Whoever, by words, either spoken or written, or by signs, or by visible representation, or otherwise, brings or attempts to bring into hatred or contempt, or excites or attempts to

excite disaffection towards, the Government established by law shall be punished with imprisonment for life, to which fine may be added..."

The provision also contains three explanations: 1- The expression "disaffection" includes disloyalty and all feelings of enmity; 2- Comments expressing disapprobation of the measures of the Government with a view to obtain their alteration by lawful means, without exciting or attempting to excite hatred, contempt or disaffection, do not constitute an offence under this section; 3- Comments expressing disapprobation of the administrative or other action of the Government without exciting or attempting to excite hatred, contempt or disaffection, do not constitute an offence under this section.

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What are the origins of the sedition law?

Although Thomas Macaulay, who drafted the Indian Penal Code, had included the law on sedition, it was not added in the code enacted in 1860. Legal experts believe this omission was accidental. In 1890, sedition was included as an offence under section 124A IPC through the Special Act XVII.

The punishment prescribed then, transportation "beyond the seas for the term of his or her natural life", was amended to life imprisonment in 1955.

The provision was extensively used to curb political dissent during the Independence movement. Several pre-independence cases involving Section 124A of the IPC are against celebrated freedom fighters, including Bal Gangadhar Tilak, Annie Besant, Shaikat and Mohammad Ali, Maulana Azad and Mahatma Gandhi. It is during this time that the most notable trial on sedition — Queen Empress v. Bal Gangadhar Tilak — took place in 1898.

Courts largely followed a literal interpretation of the provision holding that "... the disapprobation must be 'compatible' with a disposition to render obedience to the lawful authority of the Government and to support the lawful authority of the Government against unlawful attempts to subvert or resist that authority."

The Constituent Assembly debated including sedition as an exception to the fundamental right to freedom of speech and expression, guaranteed in the Constitution, but several members vehemently disagreed and the word is not included in the document.

Legal challenges to IPC Section 124A

As early as 1950, the Supreme Court in *Romesh Thapar v State of Madras* held that "criticism of the government exciting disaffection or bad feelings towards it, is not to be regarded as a justifying ground for restricting the freedom of expression and of the press, unless it is such as to undermine the security of or tend to overthrow the state." Justice Patanjali Shastri cited the Constituent Assembly's deliberate omission of the word sedition from the Constitution for the liberal reading of the law.

Subsequently, two high courts — the Punjab and Haryana High Court in *Tara Singh Gopi Chand v. The State* (1951), and the Allahabad High Court in *Ram Nandan v. State of Uttar Pradesh* (1959) — declared that Section 124A of the IPC was primarily a tool for colonial masters to quell discontent in the country and declared the provision unconstitutional.

However, in 1962, the issue came up before the Supreme Court in *Kedarnath Singh v State of Bihar*.

The Kedar Nath ruling on sedition

A five-judge Constitution Bench overruled the earlier rulings of the high courts and upheld the constitutional validity of IPC Section 124A. However, the court attempted to restrict its scope for misuse. The court held that unless accompanied by an incitement or call for violence, criticism of the government cannot be labelled sedition. The ruling restricted sedition only insofar as seditious speech tended to incite "public disorder"- a phrase Section 124A itself does not contain but was read into it by the court.

The court also issued seven “guidelines”, underlining when critical speech cannot be qualified as sedition.

In its guidelines on using the new, restrictive definition of sedition law, the court said not all speech with “disaffection”, “hatred,” or “contempt” against the state, but only speech that is likely to incite “public disorder” would qualify as sedition.

Following the Kedar Nath verdict, “public disorder” has been considered a necessary ingredient for the commission of sedition. The court has held that mere sloganeering unaccompanied by any threat to public order would not qualify as sedition.

This ruling in Balwant Singh v. State of Punjab (1995), reiterated that the real intent of the speech must be taken into account before labelling it seditious. The petitioners were accused of sedition for raising slogans of “Khalistan Zindabad, Raj Karega Khalsa, Hinduan Nun Punjab Chon KadhKeChhadange, Hun Mauka Aya Hai Raj Kayam Kar” (Hindus will leave Punjab and we will rule) etc. in a public space.

In subsequent rulings — Dr. Vinayak Binayak Sen v. State of Chhattisgarh (2011), — the court also held that a person can be convicted for sedition even if she is not the author of the seditious speech but has merely circulated it.

In 2016, in Arun Jaitley v State of Uttar Pradesh, the Allahabad High Court held that criticism of the judiciary or a court ruling — former Union minister Arun Jaitley in a blog post had criticised the Supreme Court’s 2016 ruling declaring the National Judicial Appointments Commission unconstitutional — would not amount to sedition.

Successive reports of the Law Commission of India and even the Supreme Court, have underlined the rampant misuse of the sedition law. The Kedar Nath guidelines and a textual deviation in law puts the onus on the police who register a case to distinguish between legitimate speech from seditious speech.

Just last year, in Vinod Dua v Union of India, the Supreme Court quashed FIRs with charges of sedition against the journalist for criticising Prime Minister Narendra Modi’s handling of the Covid-19 crisis and cautioned against unlawful application of the provision.

What is the fresh challenge to sedition law?

The Supreme Court has agreed to hear a fresh challenge against the provision after a batch of petitions were filed by journalists, KishorechandraWangkhemcha, Kanhaiya Lal Shukla; and Trinamool Congress MP Mahua Moitra, among others. This would involve a seven-judge bench considering whether the Kedar Nath ruling was correctly decided.

Although the government initially defended the provision arguing that “isolated incidents of misuse” do not necessitate removal of the provision itself, it has now told the court that it is mulling a fresh review of the colonial law.

The petitioners have argued that the restricted Kedar Nath definition of sedition can be addressed through several other laws, including stringent anti-terror laws such as the Unlawful Activities Prevention Act.

The court’s intervention is crucial because in case it strikes down the provision, it will have to overrule the Kedar Nath ruling and uphold the earlier rulings that were liberal on free speech. However, if the government decides to review the law, either by diluting the language or repealing it, it could still bring back the provision in a different form.

Sedition laws in other countries

In the United Kingdom, the sedition law was officially repealed under Section 73 of the Coroners and Justice Act, 2009, citing a chilling effect on freedom of speech and expression. The common law on sedition, which is

traced to the Statute of Westminster, 1275, when the King was considered the holder of Divine right, was termed "arcane" and "from a bygone era when freedom of expression wasn't seen as the right it is today."

In the United States, sedition is a federal felony under the Federal Criminal Code, Section 2384, and is now being used against rioters involved in the January 6 attack on the Capitol. Despite the First Amendment that forbids any restrictions on free speech, "conspiracy to interfere directly with the operation of the government" and not just speech is considered sedition.

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Australia repealed its sedition law in 2010, and last year, Singapore also repealed the law citing that several new legislations can sufficiently address the actual need for sedition law without its chilling effects.

Source: The Indian Express

14. Supreme Court puts colonial sedition law on hold

Relevant for GS Prelims & Mains Paper II; Polity & Governance

Suspension of Court Proceedings under Section 124A

The Supreme Court on Wednesday suspended pending criminal trials and court proceedings under Section 124A (sedition) of the Indian Penal Code while allowing the Union of India to reconsider the British-era law.

"All pending trials, appeals and proceedings with respect to the charge framed under Section 124A of the IPC be kept in abeyance," a three-judge Bench led by Chief Justice of India N.V. Ramana ordered. It was argued in court that about 13,000 people were already in jail under the sedition provision.

However, adjudication with respect to other Sections of law, if any, would proceed if the court concerned was "of the opinion that no prejudice would be caused to the accused".

Restraints expected by Centre and States

The court also made it clear that it "hopes and expects" the Centre and States to restrain from registering FIRs, continuing investigations or take coercive measures under Section 124A while the "reconsideration" of the colonial provision was on.

Adding a fail-safe to protect civil liberties against any future misuse of Section 124A while it was under the Union's microscope, the court ordered that the persons accused in fresh cases were free to approach courts, which would consider their cases taking into account the order of the Supreme Court and the "clear" stand of the Union that the provision was abused and needed "re-examination".

The court, meanwhile, gave the Union of India liberty to issue a directive to States and authorities to prevent the continued misuse of the sedition law.

The Bench, also comprising Justices Surya Kant and Hima Kohli, said the court's directions would hold until further orders.

Powerful message

The apex court order would act as a powerful message against the rampant misuse of the sedition law by governments to silence dissent and violate personal liberty. Undertrials booked under Section 124A can now use the order to seek bail.

Hair-trigger cases | National Crime Records Bureau (NCRB) report says 356 cases of sedition under Section 124A of the Indian Penal Code had been registered and 548 people arrested between 2015 and 2020, with just six convictions. **A look at a few recent cases:**



Voice of reason: A protest in Karnataka against a sedition case slapped on a school in January 2020 over a play performed by students. ■ AP

Disha Ravi: The 21-year-old Bengaluru-based environment activist was arrested by the Delhi Police on February 14, 2021 for allegedly creating and disseminating a 'toolkit' on the farmers' protests. Granting her bail on February 23, 2021, a Delhi court said "the offence of sedition cannot be invoked to minister to the wounded vanity of the governments"

Kashmiri students: Three of them studying in Agra were arrested on October 28, 2021 for allegedly posting a WhatsApp status praising Pakistani players after their victory against India in a T20 cricket match. They were

languishing in prison till April 26 this year even after securing bail on March 30 from the Allahabad High Court due to the non-availability of local guarantors, a high-security amount and police verification

Sharjeel Imam:

The JNU student leader had allegedly made inflammatory speeches at Jamia Millia Islamia on December 13, 2019, and at Aligarh Muslim University on December 16, 2019 during the anti-CAA stir. A court has framed charges against Imam, who has been in judicial custody since 2020,

for sedition and other charges



Kanhaiya Kumar:

In 2016, a group of students from Jawaharlal Nehru University held a poetry session to mark the third anniversary of the hanging of 2001 Parliament attack case convict Afzal Guru. The Delhi Police later charged the then JNU student union president Kanhaiya Kumar, Umar Khalid and others with sedition

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Views of Union Government

The court listed the sedition case for the third week of July. The order came after the Centre, represented by Solicitor General Tushar Mehta, acknowledged that the law was not in tune with the current times. The government had urged the court to pause its hearing of a batch of petitions challenging Section 124A until the government completed its "reconsideration process" of the sedition provision."

It is clear that the Union of India agrees with the prima facie opinion expressed by this court that the rigours of Section 124A of the IPC is not in tune with the current social milieu, and was intended for a time when this country was under the colonial regime. In light of the same, the Union of India may reconsider the provision of law," the Supreme Court observed in its 10-page order.

The Bench, however, did not give a deadline for the reconsideration exercise, aware that it may involve legislative process.

A balancing act

The court's interim order is expressly a balancing act. "This court is cognisant of security interests and integrity of the state on one hand, and the civil liberties of citizens on the other. There is a requirement to balance both sets of considerations, which is a difficult exercise," it observed.

The court recounted how the petitioners had argued that the provision dated back to 1898 and even predated the Constitution.

It also referred to Attorney General of India K.K. Venugopal's submissions about "glaring instances of abuse of Section 124A" like the recent booking of persons under sedition for chanting the Hanuman Chalisa.

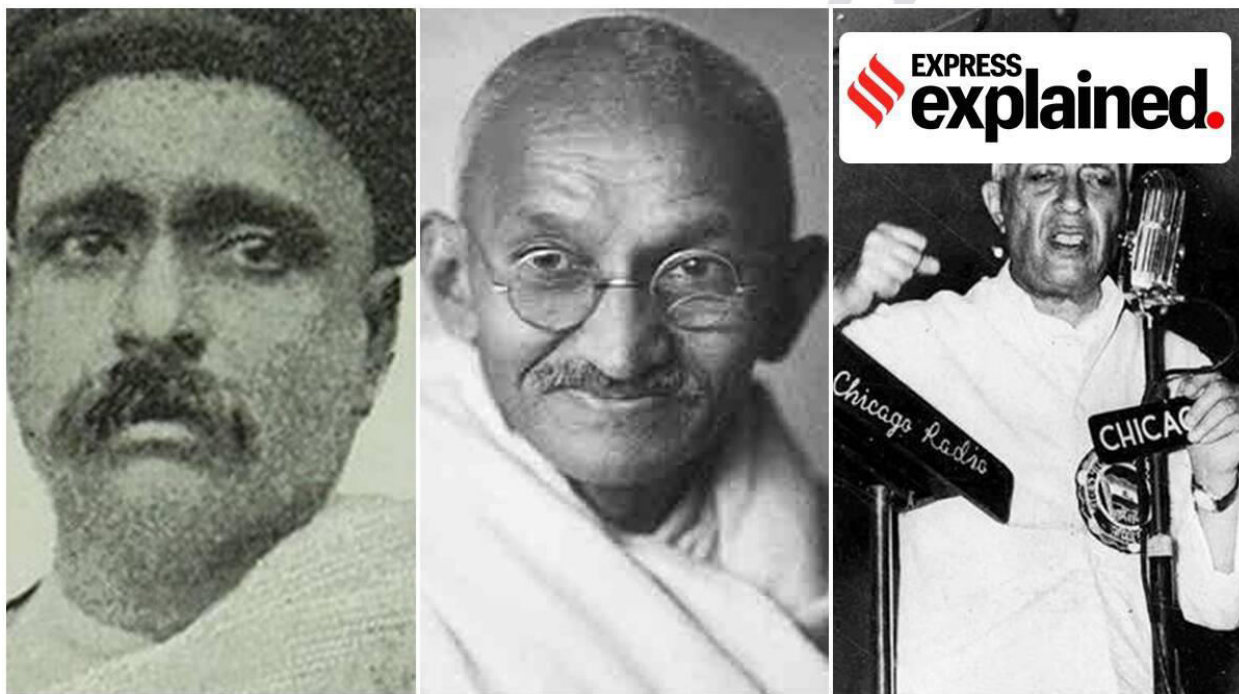
"Therefore, we expect that, till the re-examination of the provision is complete, it will be appropriate not to continue the usage of the provision by the governments," the court reasoned.

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Source: The Hindu

15. What Tilak, Gandhi and Nehru said about IPC Section 124A, the law on sedition

Relevant for GS Prelims & Mains Paper II; Polity & Governance



While Bal Gangadhar Tilak was charged with sedition thrice, Mahatma Gandhi and Jawaharlal Nehru, too, were tried under the law. (Express Archive)

On Wednesday (May 11), the Supreme Court stayed all pending trials, appeals, and proceedings relating to Section 124A, which deals with the charge of sedition, until the Union government completes its exercise to review the colonial era provision.

The court is hearing a batch of petitions to strike down the law, which was used by the British against several leaders of India's freedom struggle. Senior Advocate Kapil Sibal on Tuesday quoted statements made by Mahatma Gandhi and Jawaharlal Nehru on Section 124A, and said they had wanted the provision to be struck down.

What were some of the main sedition cases filed against nationalist leaders by the colonial government, and what did they say about the law?

Bal Gangadhar Tilak

The Lokmanya was tried for sedition three times and was imprisoned twice.

In 1897, he was charged with sedition for “exciting and attempting to excite feelings of disaffection to Government by the publication of certain articles...in (his newspaper) the Kesari in its issue of the 15th June 1897”.

The government also claimed that a speech delivered by Tilak, in which he referred to the killing of the Adilshahi general Afzal Khan by Shivaji in 1659, had instigated the assassination of the plague commissioner of Poona, Walter Rand, by the revolutionary Chapekar brothers in 1897.

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In April 1908, the teenage revolutionaries Khudiram Bose and Prafulla Chaki accidentally killed two European women in Muzaffarpur in a bomb attack targeting the British magistrate Douglas Kingsford. Chaki shot himself before he could be arrested; Bose was arrested and hanged. Tilak published a strong defence of the revolutionaries in Kesari and was promptly arrested on charges of sedition.

In July of the same year, Tilak was accused of “bringing into hatred and contempt, and exciting disloyalty and feelings of enmity toward His Majesty and the Government ” through his writings in Kesari.

He had written, “This, no doubt, will inspire many with hatred against the people belonging to the party of rebels. It is not possible to cause British rule to disappear from this country by such monstrous deeds. But rulers who exercise unrestricted power must always remember that there is also a limit to the patience of humanity.”

Tilak refused a lawyer and chose to plead his own case. During his defence, he vociferously attacked the charge of sedition. He argued that as a British subject he was entitled to certain legal rights, such as freedom of expression which were being denied to him. “The point is whether I was within my rights, and whether a subject of His Majesty in India can or cannot enjoy the same freedom which is enjoyed by British subjects at home and Anglo-Indians out here,” he told the court.

He pointed out that the prosecution had been unable to prove either that he had criminal intentions in his writing or that these criminal intentions had been able to influence society at large. Tilak was found guilty and sentenced to six years’ imprisonment with transportation.

Mahatma Gandhi

In March 1922, Gandhi was charged with sedition for writing three articles in his weekly journal Young India. Shankarlal Banker, the proprietor of the newspaper, was also charged under Section 124A of the IPC.

Rather than plead innocent to the charge of spreading disaffection (sedition), Gandhi declared that since he had no affection for the colonial government, it was his moral duty to disobey unjust laws. Sibal recalled that Gandhi had described Section 124A as “the prince among the political sections of the Indian Penal Code designed to suppress the liberty of the citizen”.

Gandhi also said, “Affection cannot be manufactured or regulated by law. If one has no affection for a person or system, one should be free to give the fullest expression to his disaffection, so long as he does not contemplate, promote, or incite to violence. But the section under which Mr Banker and I are charged is one under which mere promotion of disaffection is a crime. I have studied some of the cases tried under it (Section 124A) and I know that some of the most loved of India’s patriots have been convicted under it. I consider it a privilege, therefore, to be charged under that section.”

Gandhi, therefore, inverted the moral and political association of sedition, announcing that the spreading of disaffection against an immoral government was necessary for those who considered themselves nationalists. In his article published in 1921, ‘Tampering with Loyalty’, Gandhi wrote, “...Sedition has become the creed of the Congress. Every non-co-operator is pledged to preach disaffection towards the Government established by law. Non-cooperation, though a religious and strictly moral movement, deliberately aims at the overthrow of the Government, and is therefore legally seditious in terms of the Indian Penal Code.”

Jawaharlal Nehru

Nehru was charged with sedition in 1930. Like Gandhi, he too did not defend himself in court and pleaded guilty to Section 124A. He told the magistrate: "There can be no compromise between freedom and slavery, and between truth and falsehood. We realized that the price of freedom is blood and suffering — the blood of our own countrymen and the suffering of the noblest in the land — and that price we shall pay in full measure..." (Quoted in Chitranshul Sinha: 'The Great Repression: The Story of Sedition in India', Penguin Viking, 2019)

Despite being used by the colonial state to target nationalist leaders, the sedition law continued to exist in independent India. However, Nehru did understand the problems with it, and told Parliament that "the sooner we get rid of it the better".

During the debate on the First Amendment that imposed "reasonable restrictions" on the fundamental right of freedom of speech and expression guaranteed under Article 19(1)(A), he said: "Take again Section 124A of the Indian Penal Code. Now so far as I am concerned that particular section is highly objectionable and obnoxious and it should have no place both for practical and historical reasons, if you like, in any body of laws that we might pass. The sooner we get rid of it the better."

Source: The Indian Express

16. On the question of notifying minorities

Relevant for GS Prelims & Mains Paper II; Polity & Governance

A public interest litigation (PIL) under the consideration of the Supreme Court of India challenges the power of the Centre to notify minority communities at a national level.

Who is a minority and who decides that?

The PIL specifically questions the validity of Section 2(f) of the National Commission for Minority Educational Institutions or NCMEI Act 2004, terming it arbitrary and contrary to Articles 14, 15, 21, 29 and 30 of the Constitution. Section 2(f) says "minority," for the purpose of this Act, means a community notified as such by the Central Government." Section 2(c) of the of National Commission for Minorities (NCM) Act, 1992 also gives the Centre similar powers.

In 2005, the Congress-led United Progressive Alliance (UPA) at the Centre notified five communities — Muslims, Christians, Sikhs, Buddhists and Parsis — as minorities at the national level. In 2014, the Manmohan Singh government notified followers of Jainism as a minority community, making them the sixth on the national list.

What does the PIL argue?

The petitioner argues that the Centre's decision was arbitrary since the SC had held, in the T. M. A. Pai Foundation vs State Of Karnataka case of 2002 that, "for the purpose of determining minority, the unit will be State and not whole India." The petitioner argued that the Centre's notification has created an anomalous situation in which the communities declared as minorities by the Centre enjoy the status even in States/UTs where they are in majority (Muslims in Jammu and Kashmir and Christians in Nagaland for instance) while followers of Hinduism, Judaism and Bahaism who are minorities are not accorded the same status under the Act.

The petition seeks the SC to curtail the Centre's power to notify national minorities or direct the Centre to notify followers of Hinduism, Bahaism and Judaism as minorities in States/UTs where they are actually fewer in numbers; or direct that only those communities that are "socially, economically and politically non-dominant" besides being numerically smaller in States/UTs be allowed the status of minorities.

How has the Centre responded?

The Centre filed two affidavits in the case, the second one on May 9, suppressing its first affidavit that was filed on March 25. In both, the Centre said it had the power to notify minority communities. In the first, the Centre categorically defended the concept of minorities at the national level; in the second, it remains silent on that specific question. In other words, the Centre has not taken a position, one way or the other, about continuing the national list of minorities while it reiterated its power to notify communities as minorities under Central Acts. In the first affidavit, the Centre had pointed out that it had concurrent powers with States to take measures for the welfare of minorities. States could have minorities notified as such within their jurisdiction, and it even cited the examples of Maharashtra recognising Jews as a minority community and Karnataka recognising speakers of several languages as linguistic minorities. In the second affidavit there is no such elaboration. While it says the power is vested in it, the affidavit does not go as far as questioning the powers of the State on this question.

In the first affidavit, the Centre said the pleas made by the petitioner must be rejected; in the second, the Centre said the PIL dealt with 'vital' issues and sought time to consult with all stakeholders before it could take a position. In the first instance, the Centre went on to defend the constitution of the new Ministry of Minority Affairs and the Sachar Committee that studied the backwardness of Muslims in India — both UPA measures, criticised by the Opposition Bharatiya Janata Party then. In the second affidavit on May 9, the Centre did not defend these decisions of the previous Congress regime.

The May 9 affidavit, in fact, leaves all questions open, other than the emphatic claim that the Centre has the power to notify minorities under the two Acts.

What next?

The Centre's second affidavit leaves its own stand on the entire issue ambiguous, and perhaps it was intended that way. The Centre has said it would come back to the apex court "after consideration of several sociological and other aspects." It said "any stand without detailed deliberations with stakeholders may result in an unintended complication for the country." Though the power is vested with the Central government, it would consult the States and other stakeholders.

Source: The Hindu

17. The India hypertension control initiative

Relevant for GS Prelims & Mains Paper II; Polity & Governance

A project called the India Hypertension Control Initiative (IHCI) finds that nearly 23% out of 2.1 million Indians have uncontrolled blood pressure.

What is the IHCI?

Recognising that hypertension is a serious, and growing, health issue in India, the Health Ministry, the Indian Council of Medical Research, State Governments, and WHO-India began a five-year initiative to monitor and treat hypertension. Hypertension is defined as having systolic blood pressure level greater than or equal to 140 mmHg or diastolic blood pressure level greater than or equal to 90 mmHg or/and taking anti-hypertensive medication to lower his/her blood pressure.

India has committed to a "25 by 25" goal, which aims to reduce premature mortality due to non-communicable diseases (NCDs) by 25% by 2025. One of the nine voluntary targets includes reducing the prevalence of high blood pressure by 25% by 2025.

The programme was launched in November 2017. In the first year, IHCI covered 26 districts across five States — Punjab, Kerala, Madhya Pradesh, Telangana, and Maharashtra. By December 2020, IHCI was expanded to

52 districts across ten States — Andhra Pradesh (1), Chhattisgarh (2), Karnataka (2), Kerala (4), Madhya Pradesh (6), Maharashtra (13), Punjab (5), Tamil Nadu (1), Telangana (13) and West Bengal (5).

How many have been enrolled in the programme?

As of December 2021, 101 districts across 19 States had commenced project activities. The project districts enrolled almost 21 lakh patients across 13,821 health facilities. In the 26 initial districts, one fifth of the expected patients were enrolled. State wise proportions were Maharashtra (27%), Kerala (22.6%), Madhya Pradesh (18.7%), Telangana (18.6%) and Punjab (14.2%).

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Managing blood pressure for 2.5 crore individuals can prevent up to five lakh deaths due to cardiovascular disease in the next 10 years.

What has the IHCI found so far?

Its most important discovery so far is that nearly one-fourth of (23%) patients under the programme had uncontrolled blood pressure, and 27% did not return for a follow-up in the first quarter of 2021. There were an estimated 20 crore adults with hypertension in the country. To achieve India's target of a 25% relative reduction in the prevalence of raised blood pressure, approximately 4.5 crore additional people with hypertension need to get their blood pressure under control by 2025.

Of a million patients registered in five phase I and three phase II States till Dec 2020, 7.4 lakhs were under care between April 2020 to March 2021. Nearly half (47%) of the registered patients under care had blood pressure under control during the most recent visit in the first quarter of 2021. Drug availability improved in all phase I States with at least one-month refills for key blood pressure drugs. Punjab, Madhya Pradesh and Telangana had stocks for nearly six months for protocol drugs. Kerala had only one month stock and Maharashtra had two months stock available in May 2021. Availability of drugs was a challenge in most phase II States and procurement process took nearly one year from planning.

There weren't enough validated high-quality digital blood pressure monitors in several health facilities, which affected accuracy of hypertension diagnosis. In phase I States, dedicated nurses were insufficient except in Telangana and Maharashtra. In phase II States, most districts did not have dedicated NCD nurses at public health care centres level except Chennai.

How prevalent is the problem of hypertension?

Southern States have a higher prevalence of hypertension than the national average, according to the latest edition of the National Family Health Survey. While 21.3% of women and 24% of men aged above 15 have hypertension in the country, the prevalence is the highest in Kerala where 32.8% men and 30.9% women have been diagnosed with hypertension.

Kerala is followed by Telangana where the prevalence is 31.4% in men and 26.1% in women.

About one-fourth of women and men aged 40 to 49 years have hypertension. Even at an earlier age, one in eight women and more than one in five men aged 30 to 39 years have hypertension. The prevalence of hypertension is higher among Sikhs (37% for men and 31% for women), Jains (30% for men and 25% for women), and Christians (29% for men and 26% for women) than the rest.

Source: The Hindu

18. Pardon and remission, and who grants them

Relevant for GS Prelims & Mains Paper II; Polity & Governance

The Supreme Court has reserved orders on the question whether a Governor can refer the State government's advice for granting remission to life convicts to the President for a decision. The court is examining a petition

from A.G. Perarivalan, one of the life convicts in the Rajiv Gandhi assassination case, questioning the delay in his release even after the Tamil Nadu government, in 2018, recommended the release of all seven convicts in the case under Article 161 of the Constitution. The Governor, instead of acting on the recommendation, referred it to the President. In the course of the arguments, the Additional Solicitor-General of India K.M. Nataraj contended that only the President, under Article 72 of the Constitution, could consider a claim for pardon or remission, and not the State Governor, if the offence involved was based on a parliamentary law.

What is the scope of the pardon power?

Both the President and the Governor have been vested with sovereign power of pardon by the Constitution, commonly referred to as mercy or clemency power. Under Article 72, the President can grant pardons, reprieves, respites or remissions of punishment or suspend, remit or commute the sentence of any person convicted of any offence in all cases where the punishment or sentence is by a court-martial, in all cases where the punishment or sentence is for an offence under any law relating to the Union government's executive power, and in all cases of death sentences. It is also made clear that the President's power will not in any way affect a Governor's power to commute a death sentence.

Under Article 161, a Governor can grant pardons, reprieves, respites or remissions of punishment, or suspend, remit or commute the sentence of anyone convicted under any law on a matter which comes under the State's executive power.

What is the difference between statutory power and constitutional power?

The Code of Criminal Procedure (CrPC) provides for remission of prison sentences, which means the whole or a part of the sentence may be cancelled. Under Section 432, the 'appropriate government' may suspend or remit a sentence, in whole or in part, with or without conditions. This power is available to State governments so that they may order the release of prisoners before they complete their prison terms. Under Section 433, any sentence may be commuted to a lesser one by the appropriate government. However, Section 435 says that if the prisoner had been sentenced in a case investigated by the CBI, or any agency that probed the offence under a Central Act, the State government can order such release only in consultation with the Central government.

In the case of death sentences, the Central government may also concurrently exercise the same power as the State governments to remit or suspend the sentence.

Even though they appear similar, the power of remission under the CrPC is different from the constitutional power enjoyed by the President and the Governor. Under the CrPC, the government acts by itself. Under Article 72 and Article 161, the respective governments advise the President/Governor to suspend, remit or commute sentences. Despite the fact that it is ultimately the decision of the government in either case, the Supreme Court has made it clear that the two are different sources of power.

In *Maru Ram etc. vs Union of India* (1980), the Supreme Court said: "Section 432 and Section 433 of the Code are not a manifestation of Articles 72 and 161 of the Constitution but a separate, though similar, power." In this case, a Constitution Bench upheld the validity of Section 433A of CrPC, which was introduced in 1978, to prevent the premature release of some life convicts before they spend 14 years in jail. It said that in cases in which the death punishment was available in law, but a person was only given a life term, and in cases in which death sentences were commuted to life, such a prisoner cannot be released unless he had completed 14 years.

The court also reiterated that life sentence meant imprisonment for life until the last breath, unless remitted by the government. This was also a landmark decision in that it declared that the President and Governor do not independently exercise their power when disposing of mercy petitions or pleas for remission or commutation, but only on the advice of the appropriate governments. This principle was reiterated in *Kehar Singh* (1988).

What is the issue in the Rajiv Gandhi assassination case?

Seven persons were convicted by the Supreme Court in its May 1999 final verdict in the Rajiv Gandhi assassination case. Of these, four — Sriharan alias Murugan, Nalini, Perarivalan and Santhan — were given the death penalty. The other three — Robert Payas, Jayakumar and Ravichandran — were sentenced to life terms.

In 2000, the Governor commuted the death sentence of Nalini to one of life, based on a recommendation by the Cabinet. The remaining three remained on death row and their mercy petitions were pending with the President. In 2014, the Supreme Court commuted the sentences of Sriharan, Perarivalan and Santhan to life terms. Immediately, the then Chief Minister Jayalithaa decided to remit their sentences. The State government wrote to the Centre, seeking its opinion within three days. It had to do so as under Section 435 of the CrPC, the State had to consult the Centre, as it was a case probed by the CBI.

However, the Centre challenged the State government's decision in the Supreme Court and obtained a stay. Questions arising from the controversy were settled by a Constitution Bench, which said the State government could not release them without the Centre's concurrence as the Union government's opinion had primacy in the matter. Also, it made it clear that its opinion was limited to statutory remission proceedings under the CrPC, and that "the constitutional power under Articles 72 and 161 will remain untouched." The Union Home Ministry formally rejected the plea for remission in June 2018.

In September 2018, the State government decided to invoke Article 161 of the Constitution. It advised the Governor that the remainder of the life term of the seven convicts be remitted so that they could be released. However, in the absence of a time-frame for the Governor to act, nothing was known about it for a long time. Nearly three years later, it became known that the Governor has referred the question to the President. The immediate constitutional question is whether the Governor can make such a reference to the President. The other issue that arises is whether the primacy accorded to the Centre's opinion under the CrPC in this particular case can be extended even to remission that may be granted by the Governor under Article 161.

Source: The Hindu

19. What is INSACOG, India's network of labs to sequence the genome of the Covid-19 coronavirus?**Relevant for GS Prelims & Mains Paper II; Polity & Governance**

Prime Minister Narendra Modi announced on Thursday (May 12) that the Indian SARS-CoV-2 Genomics Consortium (INSACOG) would be extended to India's neighbouring countries.

"India has developed low-cost mitigation technologies for testing, treating, and data management. We have offered these capabilities to other countries. India's genomic consortium has contributed significantly to the global database on the virus. I am happy to share that we will extend this network to countries in our neighbourhood," Modi said at the opening session of the second global Covid virtual summit.

The network

INSACOG was established in December 2020 as a joint initiative of the Union Health Ministry of Health and Department of Biotechnology (DBT) (under the Ministry of Science and Technology) with the Council for Scientific & Industrial Research (CSIR) and Indian Council of Medical Research (ICMR) to expand the whole-genome sequencing of SARS-CoV-2, the coronavirus that causes the Covid-19 disease, across India with the aim of understanding how the virus spreads and evolves.

INSACOG started out with the participation of 10 national research laboratories of the central government, and gradually expanded to a network of 38 labs, including private labs, operating on a hub-and-spoke model.

The 10 INSACOG Genome Sequencing Laboratories handhold the new laboratories, and the pan-India consortium works to monitor genomic variations in SARS-CoV-2 by a sentinel sequencing effort which is facilitated by the National Centre for Disease Control (NCDC), involving the Central Surveillance Unit (CSU) under the central government's Integrated Disease Surveillance Programme (IDSP).

How it helps

The data from the genome sequencing laboratories is analysed as per the field data trends to study the linkages, if any, between the genomic variants and epidemiological trends. This, the INSACOG website says, helps to understand super spreader events and outbreaks, and strengthen public health interventions across the country to help break chains of transmission.

Linking this data with IDSP data and the patient's symptoms helps to better understand viral infection dynamics, and trends of morbidity and mortality. The data can be linked with host genomics, immunology, clinical outcomes, and risk factors for a more comprehensive outlook. Sequencing assumes added significance as the incidence of reinfections and vaccine breakthroughs increases.

INSACOG is also working to establish a systematic correlation between genome sequencing and clinical outcomes. The consortium is working towards establishing a hospital network across the country with the aim to study clinical correlations in mild vs severe cases of Covid-19, and to carry out a longitudinal study to understand long-term post-Covid complications and change in immunity. INSACOG is also looking to expand to sewage surveillance as an early detection tool, and to assess the spread of variants in hotspot localities.

Source: The Indian Express

20. What is the Places of Worship Act, and what are its provisions?

Relevant for GS Prelims & Mains Paper II; Polity & Governance

The Supreme Court will on Tuesday hear a challenge to the order of a civil court in Varanasi directing a videographic survey of the Maa Shringar Gauri Sthal in the Kashi Vishwanath temple-Gyanvapi mosque complex. The principal contention of the Committee of Management of AnjumanIntezamia Masjid, the organisation that has filed the appeal, is that the order of the Varanasi court — which was upheld by Allahabad High Court on April 21 — is “clearly interdicted” by The Places of Worship (Special Provisions) Act, 1991.

What is the Places of Worship Act, and what are its provisions?

The long title describes it as “An Act to prohibit conversion of any place of worship and to provide for the maintenance of the religious character of any place of worship as it existed on the 15th day of August, 1947, and for matters connected therewith or incidental thereto.”

Section 3 of the Act bars the conversion, in full or part, of a place of worship of any religious denomination into a place of worship of a different religious denomination — or even a different segment of the same religious denomination.

Section 4(1) declares that the religious character of a place of worship “shall continue to be the same as it existed” on August 15, 1947. Section 4(2) says any suit or legal proceeding with respect to the conversion of the religious character of any place of worship existing on August 15, 1947, pending before any court, shall abate — and no fresh suit or legal proceedings shall be instituted.

The proviso to this subsection saves suits, appeals and legal proceedings that are pending on the date of commencement of the Act, if they pertain to the conversion of the religious character of a place of worship after the cut-off date.

Section 5 stipulates that the Act shall not apply to the Ramjanmabhoomi-Babri Masjid case, and to any suit, appeal or proceeding relating to it.

At least two petitions challenging the Act — filed by Lucknow-based Vishwa Bhadra Pujari Purohit Mahasangh and some followers of Sanatan Vedic Religion, and BJP leader Ashwini Upadhyay — are pending before the Supreme Court. The law has been challenged on the ground that it bars judicial review, which is a basic feature of the Constitution, imposes an “arbitrary irrational retrospective cutoff date”, and abridges the right to religion of Hindus, Jains, Buddhists and Sikhs.

The court issued notice on Upadhyay’s petition in March 2021, but the Centre is yet to file its reply.

Under what circumstances was the 1991 law enacted, and how did the government justify it?

The Act was brought by the Congress government of Prime Minister P V Narasimha Rao at a time when the Ram temple movement was at its peak. The Babri Masjid was still standing, but L K Advani’s rath yatra, his arrest in Bihar, and the firing on kar sevaks in Uttar Pradesh had raised communal tensions.

Moving the Bill in Parliament, then Home Minister S B Chavan said: “It is considered necessary to adopt these measures in view of the controversies arising from time to time with regard to conversion of places of worship which tend to vitiate the communal atmosphere... Adoption of this Bill will effectively prevent any new controversies from arising in respect of conversion of any place of worship...”

What has the BJP said about the Places of Worship Act and the Kashi Vishwanath temple-Gyanvapi mosque dispute?

The main opposition BJP opposed the Bill. Then MP Uma Bharti said “maintenance of status quo as in 1947 in respect of religious places is like closing eyes similar to that of pigeons against advancement of cats. This...will mean preservation of tensions for the coming generations”. She referred to the Kashi Vishwanath temple-Gyanvapi mosque dispute: “Was not the intention of Aurangzeb behind leaving remnants of the temple (he destroyed) at the site of mosque, to keep reminding Hindus of their historical fate and to remind coming generations of Muslims of their past glory and power?”

During the movement for the Ram Temple in Ayodhya, the VHP-BJP often spoke of “liberating” the temples at Varanasi and Mathura as well. A popular slogan of the time was, “Ayodhyatoh bas jhaankihai, Kashi Mathura baaki hai (Ayodhya is just a preview, Kashi and Mathura are yet to come).”

After the Supreme Court’s unanimous 2019 verdict giving the disputed land in Ayodhya to Hindus, however, the RSS sought to distance itself from demands for similar movements in Varanasi and Mathura. Ayodhya was an “exception”, it said.

Responding to specific questions on the issue, RSS chief Mohan Bhagwat told reporters: “The Sangh is not associated with any movement, it is associated with human development. Because of a historical backdrop, the Sangh got associated with this (Ramjanmabhoomi) movement as an organisation. It is an exception. Now we will again be associated with human development and this movement will not remain of concern to us.”

What did the Supreme Court say about the Places of Worship Act in its Ayodhya judgment?

The constitutional validity of the 1991 Act was not under challenge, nor had it been examined before the Supreme Court Bench that heard the Ramjanmabhoomi-Babri Masjid title suit. Even so, the court, while disagreeing with certain conclusions drawn by the Allahabad High Court about the Act, made specific observations in its support.

“In providing a guarantee for the preservation of the religious character of places of public worship as they existed on 15 August 1947 and against the conversion of places of public worship, Parliament determined that independence from colonial rule furnishes a constitutional basis for healing the injustices of the past by

providing the confidence to every religious community that their places of worship will be preserved and that their character will not be altered," the court said.

"The law addresses itself to the State as much as to every citizen of the nation... The State, has by enacting the law, enforced a constitutional commitment and operationalised its constitutional obligations to uphold the equality of all religions and secularism which is a part of the basic features of the Constitution. The Places of Worship Act imposes a non-derogable obligation towards enforcing our commitment to secularism under the Indian Constitution. The law is hence a legislative instrument designed to protect the secular features of the Indian polity, which is one of the basic features of the Constitution... The Places of Worship Act is...a legislative intervention which preserves non-retrogression as an essential feature of our secular values."

Source: The Indian Express

21. What is fair and average quality wheat, the norms for which have been relaxed by govt?

Relevant for GS Prelims & Mains Paper II; Polity & Governance

The Centre on Sunday (May 15) relaxed the Fair and Average Quality (FAQ) norms for wheat in the ongoing rabi marketing season in Punjab, Haryana, and Chandigarh by a factor of three, raising the permissible limit of "shrivelled and broken grains" to 18% from the existing 6%.

Unseasonal heat in March, when the rabi crop goes through its grain-filling stage, has led to shrivelling, making the grain unfit for procurement as per the usual quality norms.

Procurement norms

Every year, before procurement begins in this region in April, the Storage and Research (S&R) division of the Department of Food & Public Distribution in the Union Ministry of Consumer Affairs, Food & Public Distribution, notifies specifications to ensure the quality of the procured wheat. This year, wheat containing up to 0.75% foreign matter, 2% damaged grain, 4% slightly damaged grain, 6% shrivelled and broken grain, and 12% moisture was cleared for procurement.

The specifications are implemented at the time of procurement by qualified personnel from the quality control wing of the central government's nodal agency for procurement, the Food Corporation of India (FCI). According to FCI, fair and average quality (FAQ) wheat is one that meets all all-down specifications.

Grain that looks good

FAQ wheat is fully developed, and has a proper shine or lustre. The main varieties are golden or pale yellow in colour, the grain is not dark, and does not have any streaks. It is properly dry, and meets all nutritional conditions, the values of which are tested in the lab in case of doubt.

"If a layman takes a handful of wheat and finds the grain is shiny and beautiful, it would usually mean that the wheat meets FAQ," an FCI quality control inspector said.

The inspector added that FCI's QC wing conducts physical and chemical analyses during the procurement process, and on the stored crop to ensure quality standards and parameters are met.

Previous relaxations

The government has in the past relaxed norms for moisture content and loss of lustre following heavy rain during the harvesting season, when ripe crops were flattened, and the grain turned blackish. This is for the first time, however, that such a major relaxation has been allowed for shrivelled grain, FCI officials said. The officials said they could not recall a previous relaxation for the shrivelled grain of more than perhaps 1-2%.

Is the wheat bad?

Website: www.prepmate.in

Telegram Channel: [@upscprepmate](https://t.me/upscprepmate)

Prepmate Cengage Books Preview: <https://prepmate.in/books/> Youtube channel: [PrepMateEdutech](https://www.youtube.com/channel/UCPrepMate)

The relaxation of procurement parameters to “reduce the hardship of farmers and avoid distress sale of wheat” does not mean the quality of the grain is bad. “The grains are smaller in size, but there is no loss of quality. The quality control wings of both FCI and the government have carried out several tests on the shrivelled grain, and found only weight loss, not a loss of quality,” a senior FCI officer said, adding that this wheat will now be called “Under Relaxed Specifications (URS) wheat” instead of FAQ.

Several senior scientists at Punjab Agricultural University (PAU), Ludhiana, also said the shrivelling has caused only loss of yield and lower milling recovery, not deterioration of quality or nutritional value, and the protein content of the grain remains intact.

Source: The Indian Express

22. Gyanvapi and the Places of Worship Act

Relevant for GS Prelims & Mains Paper II; Polity & Governance

The Supreme Court on Tuesday directed the District Magistrate of Varanasi to ensure protection of the area at the Gyanvapi mosque complex where a ‘shivling’ is said to have been found during the survey there. (The caretakers of the mosque said that the said object was not a ‘shivling’ but a part of a stone fountain in the wazukhana (ablution tank) of the mosque.)

While hearing the plea of the AnjumanIntezamia Masjid, which manages the affairs of Gyanvapi mosque in Varanasi, challenging the video survey a Bench comprising Justices D.Y. Chandrachud and P.S. Narasimha, ordered that Muslims could continue offering ‘namaz’ there without any impediment. The top court posted the plea of the mosque committee, which had invoked the Places of Worship Act while seeking a stay on the survey, for hearing on May 19.

What does the Places of Worship Act say?

In March 2021, the Supreme Court asked the Centre to respond to a petition that challenges the Places of Worship (Special Provisions) Act, 1991. The law was enacted to freeze the status of all places of worship in the country as on August 15, 1947. An exception was made to keep the Babri Masjid-Ramjanmabhoomi dispute out of its ambit as the structure was then the subject of litigation. The dispute ended after the court ruled that the land on which the Masjid stood should be handed over to the Hindu community for the construction of a Ram temple. The challenge to the Act questions the legality of the prohibition it imposes on any community laying claim to the places of worship of another.

The Act says that no person shall convert any place of worship of any religious denomination into one of a different denomination or section. It contains a declaration that a place of worship shall continue to be as it was on August 15, 1947. Significantly, it prohibits any legal proceedings from being instituted regarding the character of a place of worship, and declares that all suits and appeals pending before any court or authority on the cut-off date regarding the conversion of the character of a place of worship shall abate. In other words, all pending cases will come to an end, and no further proceedings can be filed. However, any suit or proceedings relating to any conversion of status that happened after the cut-off date can continue.

In which cases will the law not apply?

The 1991 Act will not apply in some cases. It will not apply to ancient and historical monuments and archaeological sites and remains that are covered by the Ancient Monuments and Archaeological Sites and Remains Act, 1958. It will also not apply to any suit that has been finally settled or disposed of, any dispute that has been settled by the parties before the 1991 Act came into force, or to the conversion of any place that took place by acquiescence.

The Act specifically exempted from its purview the place of worship commonly referred to at the time as Ram Janmabhoomi-Babri Masjid in Ayodhya. It was done to allow the pending litigation to continue as well as to preserve the scope for a negotiated settlement.

Anyone contravening the prohibition on converting the status of a place of worship is liable to be imprisoned for up to three years, and a fine. Those abetting or participating in a criminal conspiracy to commit this offence will also get the same punishment.

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What has the Supreme Court said on the status freeze?

In its final verdict on the Ayodhya dispute, the Supreme Court had observed that the Act “imposes a non-derogable obligation towards enforcing our commitment to secularism”.

The court went on to say: “Non-retrogression is a foundational feature of the fundamental constitutional principles, of which secularism is a core component.”

The court described the law as one that preserved secularism by not permitting the status of a place of worship to be altered after Independence. In words of caution against further attempts to change the character of a place of worship, the five-judge Bench said, “Historical wrongs cannot be remedied by the people taking the law in their own hands. In preserving the character of places of public worship, Parliament has mandated in no uncertain terms that history and its wrongs shall not be used as instruments to oppress the present and the future.”

How is the Act likely to affect the Gyanvapi proceedings?

The lawyers for the Gyanvapi mosque administration argue that the ongoing civil cases filed by Hindu devotees constitute an attempt to change the status of the place of worship and violates the Act. From entertaining the litigation, to orders such as appointing a commissioner to conduct a survey, the survey itself and the latest order to seal off a portion following the claim that a ‘shivling’ has been found are all contrary to the 1991 Act.

The Vishwa Hindu Parishad, however, contends that the Places of Worship Act is not applicable to the Gyanvapi issue, as there was no change to the religious structure since 1947, and that Hindus have always been performing puja at the site.

The outcome of the case will depend on whether the courts deem the proceedings contrary to the Act, or rule that it is not applicable to the dispute in Varanasi.

Source: The Hindu

23. Chief of Defence Staff and top-level military reforms

Relevant for GS Prelims & Mains Paper II; Polity & Governance

It's now over five months since the country's first Chief of Defence Staff (CDS) General Bipin Rawat was killed in a chopper crash in the Nilgris in Tamil Nadu along with his wife and 12 other military personnel onboard. The Government is yet to announce a successor to the country's top military post. The reason for the delay, official sources say, is because the Government is reassessing the concept of the post as well as the Department of Military Affairs (DMA) and is looking to streamline the setup.

What is the role of the Chief of Defence Staff?

The Government's decision in 2019 to create the post of a CDS, a long-pending demand to bring in tri-service synergy and integration, is the biggest top-level military reform since independence.

In December 2019, the Union Cabinet chaired by Prime Minister Narendra Modi had given approval to create the post of CDS in the rank of a four-star General with salary and perquisites equivalent to a Service Chief and then Army Chief Gen. Rawat was appointed to the post.

The CDS would also be the Principal Military Adviser to the Defence Minister and Permanent Chairman Chiefs of Staff Committee (CoSC).

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In addition, the DMA was created as the fifth department in the Ministry of Defence (MoD) with the CDS functioning as its Secretary.

The broad mandate of the CDS includes bringing about jointness in “operations, logistics, transport, training, support services, communications, repairs and maintenance of the three Services, within three years of the first CDS assuming office.”

He will act as the Principal Military Adviser to Defence Minister on all tri-Services matters. However, the three Chiefs will continue to advise the Defence Minister on matters exclusively concerning their respective Services,” a Government statement had said while adding that the CDS will not exercise any military command, including over the three Service Chiefs.

The CDS is also meant to bring about synergy and optimise procurements, training and logistics and facilitate restructuring of military commands for optimal utilisation of resources by bringing about jointness in operations, including through establishment of joint/ theatre commands. The CDS will also evaluate plans “for ‘Out of Area Contingencies’, as well other contingencies such as Humanitarian Assistance and Disaster Relief (HADR),” officials had stated. The specialised tri-service divisions — special operations, defence cyber and defence space — were also brought under the ambit of the CDS.

Interestingly, while capital procurements are still with the DoD, the prioritisation is with the CDS. In the last three years, the Government had also announced a series of measures to cut down on defence imports and promote indigenous defence manufacturing.

Why the rethink?

Official sources said that with the experience of the last few years of having a CDS, there is a rethink that the appointment of a CDS in itself wasn't enough and there are several issues with respect to roles and responsibilities, issues of equivalence among others. “This made the Government pause, look back and reassess the entire reform process,” one official said on condition of anonymity. There is also dichotomy in the roles and responsibilities with the several hats worn by the CDS and also overlap in responsibilities between the DMA and DoD, officials stated while also adding that there is also a rethink on the ambitious timelines set for the creation of theatre commands and also the number of commands and their envisaged format.

While several options are being looked at, one of the ways to go forward would be to have a CDS with operational powers who will after due legislative changes have theatre commanders report to him while the Service Chiefs will look after the raise, train and sustain functions of respective Services, an official said. In this direction, it is being looked at if the Chief of Integrated Defence Staff to the Chairman, Chiefs of Staff Committee (CISC) can function as the Secretary DMA reporting directly to the CDS.

What has been the progress on theatre commands?

An ambitious agenda was set for the first CDS to reorganise the Indian armed forces into integrated theatre commands, which would be the biggest reorganisation of the military in 75 years and fundamentally change the way the three services operate together. Extensive studies were carried out by the Vice Chiefs of three Services on the theatre commands — land-based Western and Eastern theatre commands, maritime theatre command and an integrated air defence command. Gen. Rawat had stated that the Army's Northern Command would be left out of the ambit for now and integrated at a later stage.

However, differences continue to remain on certain aspects with the Air Force having some reservations with regard to the air defence command and the naming and rotation of the theatre commands among others. Additional studies were ordered, which are currently underway but the overall process has stalled in the absence of a CDS and continued differences.

Source: The Hindu

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24. AG Perarivalan's road to freedom

Relevant for GS Prelims & Mains Paper II; Polity & Governance

A G Perarivalan alias Arivu, 50, was only 19 when he was arrested on June 11, 1991. He was accused of having bought two 9-volt 'Golden Power' battery cells for Sivarasan, the LTTE man who masterminded the conspiracy to assassinate Rajiv Gandhi. The batteries were used in the bomb that killed the former Prime Minister on May 21 that year.

Perarivalan was "set at liberty forthwith" on Wednesday by the Supreme Court, which used its extraordinary powers "for doing complete justice" under Article 142 of the Constitution. Perarivalan's release marks the culmination of the legal battle he waged from his cells in Tamil Nadu's Vellore and Puzhal Central prisons over three decades.

Perarivalan had filed a plea seeking release in accordance with the recommendation made by the Tamil Nadu government in September 2018. The Governor sat on the recommendation for two-and-a-half years before forwarding it to President Ram Nath Kovind in February 2021, and the delay continued.

On May 11, the SC completed the hearing and reserved its orders. On Wednesday, the court ruled that it is "well-settled that the advice of the State Cabinet is binding on the Governor in the exercise of his powers (to grant pardons, reprieves, respites or remissions) under Article 161 of the Constitution", and that the "non-exercise of the power under Article 161 or inexplicable delay in exercise of such power not attributable to the prisoner is subject to judicial review". It also said "the reference of the recommendation of the Tamil Nadu Cabinet by the Governor to the President of India two and a half years after such recommendation had been made is without any constitutional backing and is inimical to the scheme of our Constitution".

Long legal battle

Perarivalan was sentenced to death by a TADA court in 1998, and the sentence was upheld by the Supreme Court in 1999. The sentence was commuted to life imprisonment by the Supreme Court on February 18, 2014, along with the death sentences awarded to other convicts in the case, Murugan and Santhan.

The case in the SC was part of a 2015 remission plea submitted by Perarivalan to the Tamil Nadu Governor, seeking release under Article 161 of the Constitution. He moved the Supreme Court after receiving no response.

He was granted parole for the first time in August 2017, to meet his ailing father, a Tamil poet and a retired school teacher.

The parole order said that he had completed the sentences awarded to him for various offences for which he had been convicted, and that he was now serving time in prison only under IPC Section 302 (punishment for murder). The order said it was open to the appropriate authority (the state government) to consider the case of the convict.

Hearing his plea on the delay in deciding his plea for remission, the SC had said in September 2018 that the Governor had the right to decide on his petition. Within days, the Tamil Nadu Cabinet, headed by then Chief

Minister Edappadi K Palaniswami, had recommended the release of all seven convicts. But Raj Bhavan chose to sit on it.

The Governor faced strong remarks from the Madras High Court in July 2020. The HC reminded him that no time limit had been prescribed for the constitutional authority (Governor) to decide on such issues only “because of the faith and trust attached to the constitutional post”. The court added that “...If such authority fails to take a decision in a reasonable time, then the court will be constrained to interfere.”

In January 2021, the SC too expressed displeasure on the delay on the part of the Governor, and warned that the court may be forced to take a decision. The government counsel promised a decision would not be delayed further. But taking everyone by surprise, the Governor’s office forwarded the file to Rashtrapati Bhavan in February 2021.

Senior jurists described the Governor’s action as “illegal”, and the SC raised questions on the move in multiple hearings after that. But the matter continued to lie with Rashtrapati Bhavan.

In the meantime, the state government granted parole to Perarivalan on May 19, 2021. His parole was subsequently extended on “health grounds”. The Supreme Court granted him bail on March 9, 2022.

Charges against him

“...Moreover, I bought two 9 volt battery cells (Golden Power) and gave them to Sivarasan. He used only these to make the bomb explode,” said Perarivalan’s confession statement taken under Section 15(1) of TADA. While the TADA court used the confession to establish his link with the assassins and his knowledge and role in the assassination, in multiple pleas before the Governor, President and the courts since his conviction in 1999, Perarivalan consistently claimed innocence.

Giving legitimacy to Perarivalan’s claims, an IPS officer named V Thiagarajan revealed in 2013 that he had, in fact, altered the statement that was taken from Perarivalan while he was in custody. Thiagarajan revealed that Perarivalan had admitted to having purchased the batteries, but he did not know the purpose for which they would be used.

“As an investigator, it put me in a dilemma. It wouldn’t have qualified as a confession statement without his admission of being part of the conspiracy. There I omitted a part of his statement and added my interpretation,” Thiagarajan said.

Four witnesses were examined by the TADA court regarding the battery to corroborate Perarivalan’s confession. Three of these witnesses were forensic experts who gave expert opinions on the battery and the bomb; the fourth was an employee of a shop in Chennai that claimed to have sold the battery.

In a 2017 interview with The Indian Express, Justice K T Thomas, who headed the SC Bench that awarded the final order in the Rajiv Gandhi assassination case, said Perarivalan’s case had brought to the fore another aspect that generated intense debate — using the confession of one accused against another. “Under the conventional Evidence Act, a confession can be used only as a corroborative piece of evidence. But the two other judges on my Bench did not agree, they insisted that we should use it as substantive evidence. To prevent the laying of such a wrong law, I called them to my home where we had several rounds of debates in which I tried to convince them. But the majority view in the judgment considered the confession statement as substantive evidence as it was under TADA (Terrorist and Disruptive Activities (Prevention) Act). Later, many senior jurists called me to say that the majority order laid a wrong law in the case,” he said.

Support for Perarivalan

Among the factors that sustained Perarivalan’s long battle was the determination and commitment of his mother, Arputham Ammal, who emerged as the face of an anti-death penalty movement, and the sympathy and empathy that he received from people from all walks of life.

“His soul is precious, his values noble, his jail life has not made him a criminal,” wrote the former SC judge, the late Justice V R Krishna Iyer, in 2006. He was in constant touch with Perarivalan until his death.

Justice Thomas, who had raised the question of ‘double jeopardy’ in 2013 in the case, which led to the SC order commuting the death sentences of three convicts in 2014, had pleaded with Sonia Gandhi to show magnanimity, and called the Governor’s decision to pass the buck to the President “unheard and unconstitutional”.

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He cited the central government’s decision in 1964 to set free Gopal Godse, brother of Nathuram Godse, who was charged with conspiracy in the Mahatma Gandhi assassination case after 14 years of imprisonment.

Source: The Indian Express

25. The content and scope of Article 142, invoked by Supreme Court to release Perarivalan

Relevant for GS Prelims & Mains Paper II; Polity & Governance

In ordering the release of Rajiv Gandhi assassination case convict A G Perarivalan on Wednesday (May 18), the Supreme Court Bench of Justices L Nageswara Rao and B R Gavai invoked the extraordinary power conferred on the court under Article 142 of the Constitution.

“State cabinet had taken its decision based on relevant considerations. In exercise of Article 142, it is appropriate to release the convict,” the court said.

What is Article 142 of the Constitution?

Subsection 1 of Article 142 (“Enforcement of decrees and orders of Supreme Court and orders as to discovery, etc.”) says “the Supreme Court in the exercise of its jurisdiction may pass such decree or make such order as is necessary for doing complete justice in any cause or matter pending before it, and any decree so passed or order so made shall be enforceable throughout the territory of India in such manner as may be prescribed by or under any law made by Parliament and, until provision in that behalf is so made, in such manner as the President may by order prescribe.”

Essentially, this provision of the Constitution gives the country’s top court wide powers to do “complete justice” in a case. Article 142, which started out as draft article 118, was adopted by the Constituent Assembly on May 27, 1949.

Scope of Article 142

While the powers under Article 142 are sweeping, the Supreme Court has in its judgments over the years defined its scope and extent. Some important cases in this regard are ‘Prem Chand Garg v. Excise Commissioner, U.P., Allahabad’ (1962); ‘A.R. Antulay v. R.S. Nayak & Anr’ (1988); ‘Union Carbide Corporation v. Union of India’ (1991); and ‘Supreme Court Bar Association v. Union of India’ (1998). ‘Antulay’ was decided by a seven-judge Bench; the other three cases were decided by five-judge Benches.

* In ‘Prem Chand Garg’, the majority opinion drew red lines for the exercise of the Supreme Court’s powers under Article 142(1). It said: “An order which this Court can make in order to do complete justice between the parties, must not only be consistent with the fundamental rights guaranteed by the Constitution, but it cannot even be inconsistent with the substantive provisions of the relevant statutory laws. Therefore, we do not think it would be possible to hold that Art. 142(1) confers upon this Court powers which can contravene the provisions of Article 32 (right to constitutional remedies).”

* In ‘Antulay’, the majority opinion upheld the court’s opinion in ‘Prem Chand Garg’.

* In 'Union Carbide', while ordering the company to pay \$470 million as compensation for the Bhopal gas disaster, the Bench underlined the wide scope of Article 142(1), saying it was "necessary to set at rest certain misconceptions in the arguments touching the scope of the powers of this Court under Article 142(1) of the Constitution".

The court ruled: "The power under Article 142 is at an entirely different level and of a different quality. Prohibitions on limitations on provisions contained in ordinary laws cannot, ipso-facto, act as prohibitions or limitations on the constitutional powers under Article 142... It will be wholly incorrect to say that powers under Article 142 are subject to express statutory prohibitions. That would convey the idea that statutory provisions override a constitutional provision..."

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* In 'Supreme Court Bar Association', the court ruled that its powers under Article 142 were supplementary in nature, and could not supplant substantive law and "build a new edifice where none existed earlier".

It said: "It, however, needs to be remembered that the powers conferred on the court by Article 142 being curative in nature cannot be construed as powers which authorise the court to ignore the substantive rights of a litigant while dealing with a cause pending before it. This power cannot be used to "supplant" substantive law applicable to the case or cause under consideration of the court. Article 142, even with the width of its amplitude, cannot be used to build a new edifice where none existed earlier, by ignoring express statutory provisions dealing with a subject and thereby to achieve something indirectly which cannot be achieved directly... The construction of Article 142 must be functionally informed by the salutary purpose of the Article viz. to do complete justice between the parties. It cannot be otherwise."

The case of Perarivalan

Perarivalan had submitted a mercy petition to the Tamil Nadu Governor in 2015 seeking release under Article 161 of the Constitution, under which the Governor is empowered to "grant pardons, reprieves, respites or remissions of punishment or to suspend, remit or commute the sentence of any person convicted of any offence".

After failing to receive a response, he moved the Supreme Court, which in 2018 underlined the Governor's right to decide on the remission petition. Three days later, on September 9, 2018, the Tamil Nadu Cabinet headed by then Chief Minister Edappadi K Palaniswami recommended the release of all seven convicts, including Perarivalan.

The Governor, however, continued to sit on the recommendation, and in July 2020, Madras High Court reminded him that the Constitution had not prescribed a time limit for him to act on such issues only "because of the faith and trust attached to the constitutional post", and warned that it might be forced to intervene.

But the Governor did not react, and in January 2021, the Supreme too warned that it will be forced to release the convict on grounds of inordinate delay. In February 2021, the Governor's office forwarded the state government's recommendation to President Ram Nath Kovind. The file has been lying with Rashtrapati Bhavan ever since.

The Supreme Court has now ruled that inordinate delay by the Tamil Nadu Governor in exercising his powers under Article 161 can be subject to judicial review. It has rejected the Centre's submission that the President has exclusive power to grant remission in cases pertaining to Section 302 (murder) of the IPC, and used its powers under Article 142 to release Perarivalan.

Article 142 in Ayodhya verdict

In its 2019 judgment in the Ayodhya case, the Supreme Court made detailed references to Article 142. It said while "the power under Article 142...is not limitless", the Constitution "authorises the court to pass orders to

secure complete justice..." Article 142, it said, "embodies both the notion of justice, equity and good conscience as well as a supplementary power to the court to effect complete justice".

The court used the extraordinary powers under this provision to grant 5 acres of land in Ayodhya situated outside the disputed area to Muslim parties, saying, in an implicit reference to the demolition of the Babri Masjid in 1992, that it was invoking Article 142 "to ensure that a wrong committed must be remedied".

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"Justice", the court said, "would not prevail if the court were to overlook the entitlement of the Muslims who have been deprived of the structure of the mosque through means which should not have been employed in a secular nation committed to the rule of law... The Constitution postulates the equality of all faiths. Tolerance and mutual co-existence nourish the secular commitment of our nation and its people."

The court also invoked Article 142 in favour of the Nirmohi Akhara, who were party to the case. It said: "...Having regard to the historical presence of Nirmohi Akhara at the disputed site and their role, it is necessary for this Court to take recourse to its powers under Article 142 to do complete justice. Hence, we direct that in framing the scheme, an appropriate role in the management would be assigned to the Nirmohi Akhara."

Source: The Indian Express

26. Citizens' right to feed stray dogs, and the dogs' right to food and water — now backed by Delhi HC and SC

Relevant for GS Prelims & Mains Paper II; Polity & Governance

A three-judge Bench of the Supreme Court on Thursday (May 19) vacated the stay on a Delhi High Court order from last year that said that stray dogs have a right to food and water, and citizens have the right to feed them.

The feeding and caring for stray dogs is a hugely divisive issue in urban neighbourhoods across India, with arguments and disputes breaking out frequently between dog lovers and those who feel scared or intimidated by the animals. Each side accuses the other of being insensitive and inconsiderate.

What does the SC's action mean?

It paves the way for community dogs to be fed either at private driveways/porches or spots designated in consultation with resident welfare associations in Delhi. It will be incumbent on the local police to ensure that no caregiver or community dog feeder is harassed.

Earlier on March 4, a division Bench of the Supreme Court comprising Justices Vineet Saran and Aniruddha Bose had stayed the operation of the High Court's order passed on June 24, 2021.

On Thursday, a three-judge Bench comprising Justices U U Lalit, S Ravindra Bhat and Sudhanshu Dhulia vacated the stay to allow the Delhi HC order to be implemented.

What did the High Court say in its 2021 order?

A single-judge Bench of the High Court had observed that animals have a right under the law to be treated with compassion, respect, and dignity, and that their protection is the "moral responsibility of each and every citizen, including the governmental and non-governmental organisations". (Dr Maya D Chablani vs. Radha Mittal and Ors, 2021)

The order by a single-judge Bench of Justice J R Midha read: "Community dogs (stray/street dogs) have the right to food and citizens have the right to feed community dogs but in exercising this right, care and caution

should be taken to ensure that it does not impinge upon the rights of others or cause any harm, hindrance, harassment and nuisance to other individuals or members of the society.”

The order said that “It shall be the duty and responsibility of the RWA or Municipal Corporation and all Government authorities including...Police to provide all assistance and ensure that no hindrance is caused to the caregivers or feeders of community dogs...”

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Disputes often break out over the place where dog lovers feed strays. What did the HC say about that?

The feeding of community dogs has to be done at areas designated by the Animal Welfare Board of India (AWBI) in consultation with the RWAs of the municipal corporation. The High Court said that these designated areas must be finalised keeping in mind that “every community dog is a territorial being and therefore, community dogs must be fed and tended to at places within their territory”.

Therefore, as per the HC’s order, each pack of strays should ideally have a different designated area for feeding “even if that means designating multiple areas in a locality”.

Also, strays can be fed at “the private entrance/porch/driveway of their (feeders’) house or any other place not shared with other residents”, the HC order said.

Can someone be restricted from feeding a dog?

No person can restrict another from feeding dogs, “until and unless it is causing harm or harassment to that other person”, the HC said.

Given the extreme positions that both sides are wont to take, disputes are bound to break out. Who ensures peace in case of a dispute?

The onus is on all law enforcement agencies to ensure that there is no hindrance caused to any person in carrying out activities related to street dogs at the permitted spots. Also, it is the duty of the local SHO to “ensure peace and harmony among residents of the area”, the HC said.

The HC also said that every RWA should have an Animal Welfare Committee to ensure compliance with provisions of the Prevention of Cruelty to Animals Act, and to maintain harmony between feeders and other residents. In case of a grievance, the residents must approach the committee first.

And what happens if there is no caregiver in the community?

The onus then falls on the RWAs or the civic body.

“It is the duty and obligation of every Resident Welfare Association or Municipal Corporation (in case RWA is not available), to ensure that every community dog in every area has access to food and water in the absence of caregivers or community dog feeders in the said area,” the HC order said.

Why did the Supreme Court lift the stay on the operation of the HC’s order?

The HC’s June 2021 order had come in a case of a private dispute where an appeal had been made to restrain the defendants from feeding stray dogs near the entrance of a property mentioned in the complaint before the court.

The Supreme court was told on Thursday that these two parties had resolved their dispute. After this, the court observed that the NGO seeking to challenge the HC order had no legal right to do so, as it was not party to the earlier suit, which now stood settled.

The NGO ‘Humane Foundation for People and Animals’ had mounted the challenge to the HC’s order. The NGO had contended that the High Court’s order was based on misleading, irrelevant, and factually incorrect statements, and that the court’s directions could lead to an increase of the menace of stray dogs.

Source: The Indian Express

27. The SC ruling that GST Council decisions are not binding on Centre or states

Relevant for GS Prelims & Mains Paper II; Polity & Governance

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The Supreme Court ruled on Thursday (May 19) that recommendations of the Goods and Services Tax (GST) Council only have persuasive value, and cannot be binding on the Centre and states.

While the Centre has said that the decision does not bring any change to the already existing framework, some Opposition-ruled states have stated that it would give them greater space to take decisions in the federal structure.

What was the case before the Supreme Court?

A Bench led by Justice D Y Chandrachud and also comprising Justices Surya Kant and Vikram Nath, upheld an order by the Gujarat High Court that had quashed the levy of Integrated GST (IGST) on the component of ocean freight paid by a foreign seller to a foreign shipping line, on a reverse charge basis.

The SC dismissed the Revenue Department's special leave petition challenging the Gujarat HC order that had gone in favour of taxpayers. (Union of India and Anr versus M/s Mohit Minerals Through Director)

Mohit Minerals had filed a writ petition before the Gujarat High Court challenging notifications levying IGST on the ground that customs duty is levied on the component of ocean freight and the levy of IGST on the freight element in the course of transportation would amount to double taxation.

The Union of India argued before the High Court that although tax is being paid twice on the value of ocean freight, it is not unconstitutional as the tax is on two different aspects of the transaction, namely, the supply of service and import of goods.

In its order passed on January 23, 2020, Gujarat High Court had quashed the Central notification levying IGST on importers for ocean freight.

GST is paid by the supplier, but if the shipping line is located in a non-taxable territory, then GST is payable by the importer, the recipient of service. Ocean freight is a method of transport by which goods and cargo is transported by ships through shipping lines.

What observations did the SC make on the country's federal structure?

Federalism in India is "a dialogue in which the states and the Centre constantly engage in conversations", the court said — and although the Constitution confers "the Union with a higher share of power in certain situations to prevent chaos and provide security", states "can still resist the mandates of the Union by using different forms of political contestation".

"It is not imperative that one of the federal units (Centre or states) must always possess a higher share of power over the other units," the Bench said.

The court pointed out that Article 246A of the Constitution stipulates that both Parliament and state legislatures have "simultaneous" power to legislate on GST — and recommendations of the Council "are the product of a collaborative dialogue involving the Union and States". (Article 246A ("Special provision with respect to goods and services tax") says: "(1) Notwithstanding anything contained in articles 246 and 254, Parliament, and, subject to clause (2), the Legislature of every State, have power to make laws with respect to goods and services tax imposed by the Union or by such State.")

Also, the court said, "the GST Council has an "unequal voting structure where the states collectively have a two-third voting share and the Union has a one-third voting share".

How have the Centre and states reacted?

Reacting to the court's order, Union Revenue Secretary Tarun Bajaj said on Thursday that the GST law provides for recommendation, and not a mandate. "It is a constitutional body, an executive body created by the Constitution which consists of Centre and states which will recommend and based on its recommendations we have created our laws on GST," he said.

Adding that Section 9 of the CGST Act clearly states that the tax rate decision should be based on the recommendation of the Council, Bajaj said problems could get compounded if any state decides not to accept the recommendation of the Council.

"An administrative body created by the Constitution cannot have an overriding right on the legislature...it (GST) is a very good experiment...we are coming together in a pooled sovereignty which is good," he said.

A Finance Ministry official said: "This judgment does not in any way lay down anything new insofar as the GST institutional mechanism is concerned, does not have any bearing on the way GST has been functioning in India, nor lays down anything fundamentally different to the existing framework of GST."

Opposition-ruled states, however, said the judgment provides space for greater flexibility for states in the GST structure.

Tamil Nadu Finance Minister Palanivel Thiagarajan said that he had highlighted the issue of the Council being a rubber-stamp authority in his first remarks at the GST council meeting in May 2021.

"Taken together, we have arrived at a constitutional and historical oddity — a GST system and Council that function with an omnipotent and all-encompassing mandate not envisioned in the Constitution of India, yet deeply limited by a structural design and technology platform that are far from adequate to the important task. What makes this oddity truly alarming is that the actual Council is becoming in some ways a mere

ceremonial seal, a rubber-stamp authority, with the real power to create policy abrogated to (constitutionally) ad hoc agencies such as the TRU of the CBIC, a feeble GST Secretariat, and the quasi-Governmental GST Network," he had said at the time.

Kerala's former Finance Minister Thomas Isaac said, "Supreme Court judgment on GST sets the stage for a fundamental revision of GST implementation and functioning of GST Council from the perspective of cooperative federalism. The court's remarks open up the issues of federal flexibility in determining SGST rates and procedures."

Abhishek A Rastogi, partner at Khaitan and Co, who argued for the petitioners before the Gujarat High Court, Supreme Court, and various other courts said: "This opens up the question whether different states could have different rate structures for a similar supply and such a deviated position would fundamentally affect the concept of one nation, one tax. It is optimistically expected that the states will not have different GST rates for the similar supply as the entire purpose of implementation of GST gets defeated in such a situation."

Source: The Indian Express

28. The Krishna Janmabhoomi case in Mathura, and the challenge to the 1968 'compromise' between the Hindus and Muslims**Relevant for GS Prelims & Mains Paper II; Polity & Governance**

On Thursday, the same day when it emerged that a court-ordered videography survey of the Gyanvapi mosque complex in Varanasi had found debris of old temples and Hindu motifs on pillars, a district judge in

Mathura allowed the reopening of a lawsuit on the ownership of a plot of land on which stands another mosque, built in the 17th century.

The Shahi Idgah mosque in Mathura was built on the orders of Emperor Aurangzeb adjacent to the Krishna Janmasthan — believed to be the place where Lord Krishna was born — after demolishing a temple.

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What has the Mathura court ruled?

District and Sessions Judge Rajiv Bharti allowed an appeal by the Shri Krishna Janmabhoomi Trust and other parties seeking ownership of the land on which the mosque is built. The dispute involves ownership of 13.37 acres, which the petitioners claim belongs to the deity Lord Shri Krishna Virajman.

The plea was dismissed by a lower court earlier, and subsequently a revision petition was filed before the district judge. The civil suit will now be heard by a lower court.

Apart from looking into revenue records, the court will also have to decide the validity of a 1968 “compromise agreement” between the Shri Krishna Janmasthan Seva Sansthan — the temple management authority, a registered society under law — and the Trust Shahi Masjid Idgah. It was under this agreement that the temple authority had conceded the contentious portion of land to the Idgah on which the mosque stands.

What is the litigation so far?

At least a dozen cases have been filed in courts in Mathura by different petitioners. A common thread in all the petitions is a prayer for the removal of the mosque from the 13.77-acre complex, which it shares with the Katra Keshav Dev Temple.

Other pleas include a video survey of the mosque (which would be on the lines of the survey allowed by the Varanasi court at the Gyanvapi mosque), and the right to offer prayers on the premises.

The Allahabad High Court is hearing a public interest litigation by advocate Mehek Maheshwari demanding that the mosque be acquired by the government. Initially, the PIL was dismissed as the lawyer did not turn up for the hearing, but a Bench comprising Chief Justice Rajesh Bindal and Justice Prakash Padia revived it. It is expected to be heard on July 25.

In a separate case, the High Court on May 12 directed the Civil Judge (Senior Division), Mathura, to decide within four months cases on the Krishna Janmabhoomi issue. Justice Salil Kumar Rai was hearing a case filed by Manish Yadav, who claims to be next of kin to the deity, seeking a temporary injunction against the Shahi Idgah from entering the premises.

Who owns the land in question?

The mosque was built by Aurangzeb in 1670 on the site of an earlier temple. The area was regarded as nazul land — non-agricultural state land owned by the Marathas, and then the British. Before the mosque was built, Raja Veer Singh Bundela of Orchha had also built a temple on the same premises in 1618.

In 1815, Raja Patni Mal of Benaras bought the 13.77 acres in an auction from the East India Company. The Raja’s descendants — Rai Kishan Das and Rai Anand Das — sold the land to Jugal Kishore Birla for Rs 13,400, and it was registered in the names of Pandit Madan Mohan Malaviya, Goswami Ganesh Dutt, and Bhiken Lalji Aattrey.

The Shri Krishna Janmabhoomi Trust was set up by Birla, and it acquired the ownership rights over the Katra Keshav Dev temple. In 1951, the 13.77 acres were placed in the trust, with the condition that the “trust property will never be sold or pledged.”

In 1956, the Shri Krishna Janmasthan Sewa Sangh was set up to manage the affairs of the temple. In 1977, the word 'Sangh' in the registered society's name was replaced with 'Sansthan.'

What is the petition on which Thursday's order was issued?

In 2020, Lucknow-based advocate Ranjana Agnihotri, along with six others, filed a plea before the Civil Judge (Senior Division) seeking the removal of the Shahi Idgah mosque from the temple complex. Agnihotri — who, incidentally, wrote a book called Sri Ram Janmbhoomi Ayodhya Unpunished Conspiracy: Brutal Killing, Mischief and Interpolation in 2017 — claimed to be suing on behalf of Shri Krishna Virajman as "next of kin" to the deity.

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The petitioners argued that the original kaaraagar (prison) where Lord Krishna is believed to have been born "lies beneath the construction raised by Committee of Management Trust Masjid Idgah" and that the "true fact will come out before the Court after excavation". (According to legend, Lord Krishna's parents Devaki and Vasudev had been imprisoned by the evil king Kansa, after it was prophesied that Devaki's child would be his nemesis.)

In September 2020, Judge Chaya Sharma dismissed the plea on grounds of maintainability, holding that Agnihotri and the other petitioners did not have locus, and could not be "next of kin" of the deity when a temple management authority already exists.

The court also said that the temple and the Shahi Idgah had entered into a compromise in 1968, which had been subsequently formalised through a decree of the court.

What the 1968 compromise says

According to court records, prior to 1968, several hutments stood on the 13.77-acre plot. Following the settlement, tenants of the Idgah were asked to vacate so a new temple could come up. Boundaries were redrawn so both places of worship could operate simultaneously. A wall separated them; it was agreed that the mosque would have no window, door, or open drain facing the temple.

The petitioners say the agreement was made fraudulently, and is invalid in law. In any case, the deity was not part of the proceedings, and His rights cannot be extinguished by the agreement.

THERE was a dispute between Shri Krishna Janmasthan Seva Sangh and Trust Shahi Masjid Idgah and certain Muslims who claimed to be tenants of the Trust, or licensees. Many civil and criminal cases were pending.

NORTHERN and southern wall of Idgah's "Kachchi Kursi" will be extended by Trust to the East up to railway line.

TRUST shall get vacated inhabitant Muslim Ghosis, etc. outside the wall on the North and South sides, and deliver the land to Sangh. It will have no concern with its ownership thereafter, and the Sangh will have no concern with the ownership of the land within the Northern walls.

LAND ON the West-North corner of Kachchi Kursi is of the Sangh. Trust will rectangularise Kachchi Kursi; it will be deemed to be its property.

By 15 Oct 1968, Trust will remove the rubble of stairs on Southern side which is subject of the litigation, and Sangh will have possession over that land.

LAND OUTSIDE the North and South walls will be delivered to Sangh by the Trust by 15 Oct 1968, before walls etc. are constructed. Trust will not affix any door, window, or grill in these walls or walls of Kachchi Kursi towards the Sangh, or open any drain or water outlet in that direction. Sangh will also not do any such work.

SANGH WILL at its own cost divert the water of Idgah outlets by fixing pipes and subsequently constructing a masonry drain. Trust will not object to fixing pipes in the walls of Masjid Idgah.

SANGH WILL deliver to Trust the land in front of the Idgah inside the North and South walls, from the railway land which Sangh is getting acquired.

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BOTH parties shall file compromise in accordance with the Agreement in all pending cases, after fulfilment of all conditions.

IN CASE any party does not adhere to the conditions, both parties will have right to have it enforced through court of law or whatever manner it may be possible.

Source: The Indian Express

29. What will change with the reunification of the MCDs in Delhi?

Relevant for GS Prelims & Mains Paper II; Polity & Governance

The Delhi Municipal Corporation (Amendment) Act, 2022 will come into effect from May 22, and the three Municipal Corporations of Delhi will be formally merged, the central government said in a notification issued on Wednesday (May 18).

How will the MCD unification be executed?

The first administrative step for the proposed unification of the MCDs would be to nullify their boundaries, which could be the “easiest task” in this process. “Unlike the MCD trifurcation in which fresh maps had to be drawn, now one has to just declare that it all comes under one corporation,” a senior BJP leader said.

The next step would be to bring the employees of the three corporations under one umbrella. While the number of the lower-rank staff will not change much, the numbers of higher-rank posts could decrease by a third. For example, there will be one director for each department such as horticulture, sanitation, education, health, hospital, etc. in the unified corporation instead of the existing three directors, one for each of the three MCDs. The same will apply to commissioners, committee heads, and mayors.

Senior BJP leaders have said that among the reforms that are being considered is direct election of mayor with the tenure being increased to at least two-and-half years instead of the existing one year, and provisions for allocation of funds directly from the Centre.

How will the MCD's finances be impacted by the unification?

All three corporations are currently gripped by financial crises, even though the East and North MCDs are worse affected than the South MCD.

The combined budget deficit of the East and North MCDs exceeds Rs 2,000 crore. The South MCD was solvent until a couple of years ago, but it too has come under financial stress now — and has a budget deficit of Rs 500 crore, a senior south corporation official said.

The total annual income of the three corporations from their own revenues is around Rs 6,700 crore, while the total annual salary and pension expenditure for their combined 1,60,000 employees amounts to Rs 8,900 crore. “If the corporations are merged, the civic body would be able to save around Rs 200 crore by decreasing the number of officers and renting out some spaces that will be vacated,” a senior official said.

So, will the savings following unification be enough to improve the MCD's financial health?

It is not just about money, Yogendra Singh Mann, former director of the North MCD's press and information wing, said — unification would result in “a lot of other advantages”.

According to Mann, “Firstly, there would be a balance of resources, income, and expenses. Currently, North regularly suffers from a delay in the payment of salaries. After the unification, there will be uniformity.” Also, with a centralised authority for things like parking rates, property tax, and new initiatives for the city, planning would be better, Mann said.

An East MCD official, however, said that unification alone would not help until other problems are fixed. “The financial arrangements need to be worked out. The corporations must be given their dues and planning on remunerative projects needs to be done,” the official said, adding that “the planning, if done well, will help the MCDs recover, else it will harm all the three MCDs’ financial condition”.

That is the economic part. What about the politics of reunification?

The trifurcation of the erstwhile civic body in 2012, when the Congress ruled Delhi, was intended to “decentralise” the mammoth MCD. However, it was also a political move to fix civic body boundaries in such a way that the Congress could make inroads into the MCD, which had become a BJP bastion.

Ten years later, it appears to be *deja vu*. While the BJP continues to rule the MCDs now, it sees political gains in consolidating their boundaries.

So what does the BJP hope to gain from the merger of the MCDs?

The BJP-run MCDs have claimed they have been starved of funds by the AAP-led Delhi government. “The unification move would help the BJP send out a message to the public that they can fix the MCDs’ funds crisis if voted to power again,” a party leader said.

The party hopes to “run the corporation after the merger in a better way with employees’ salaries being given on time, and new initiatives taken”. This, it believes, will establish that trifurcation is at the root of the crisis, and that the reunification has corrected a “historical wrong”. In the BJP’s calculation, this could help it put up a fight against the resurgent AAP in the civic body elections.

The appointment of a Special Officer, alongside the amendment that makes the civic body answerable to the Centre alone, is also being seen as a way for the Centre to exercise more control in Delhi.

Source: The Indian Express

30. Has Kerala changed its stance on NEP?

Relevant for GS Prelims & Mains Paper II; Polity & Governance

Since the introduction of the National Education Policy, 2020 (NEP), Kerala has viewed the policy document with serious disagreements. However, two years down the line, the State has begun to warm up to some of the provisions, albeit with considerable hesitance. Despite the shift in policy, chances of a quick roll-out appear remote due to various factors. The government has hinted that the reforms might be introduced only during the 2023-24 academic year.

What prompted the State’s initial apathy to NEP, 2020?

Entrusted by the State government to study the impacts of NEP, 2020, the Kerala State Higher Education Council (KSHEC) had constituted a committee chaired by noted economist Prabhat Patnaik which concluded that the policy is retrograde and presented an exclusionary vision of education. It also raised concerns over the possible challenges that the scheme posed for access, equity, social justice and the reservation system. The CPI(M)-led Left Democratic Front (LDF) also felt NEP, 2020 sought to align the country’s education policy with the needs of private investment and technocapitalism, while ignoring democratic principles and the federal system. Some provisions, including the move to permit multiple entry and exit in academic programmes, were feared to legitimise dropouts. The government also claimed the proposed National

Research Foundation and the Board of Governance of Higher Education Institutions would “kill the democratic spirit of universities and their autonomy”.

How has the State altered its position?

When the LDF led by incumbent Chief Minister Pinarayi Vijayan returned to power with a thumping mandate in 2021, the government felt an urgent need to overhaul the higher education sector that appeared to have stagnated in contrast to school education in the State which has constantly topped national rankings. That it emerged victorious on the poll plank of transitioning Kerala into a knowledge-based economy and arresting brain drain from the State led the government to embark on a series of reforms including relaxing its approach on academic autonomy and privatisation.

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The LDF's policy shift was apparent after the recent CPI(M) State conference approved the 'Nava Keralam' vision document presented by Mr. Vijayan which mooted private investments in higher education. This was in stark contrast to the days when activists of the Students Federation of India (SFI), the student body of the CPI(M), roughed up the then KSHCE vice-chairman and former diplomat T.P. Sreenivasan after accusing him of attempting to commercialise the sector through a 'global education meet' held in 2016.

The seeds of change were sown when the previous Pinarayi Vijayan government had, in 2020, constituted a committee to explore the possibility of establishing an 'Education City' in Kerala to offer courses in collaboration with foreign universities.

Notably, the panel included an official of one of the largest private universities in the country.

How has the government's perception about the policy changed?

Of late, the government has begun to feel an urge to address the systemic rigidity that hindered multidisciplinary research and inter-university collaborations. Besides, there has been a growing clamour to liberate universities from the clutches of political machinations and free colleges from the overbearing influence of universities. A section of the academic community also called for relieving universities of their affiliation management chores and enabling them to focus on research. In order to address such lacunae, the LDF government has constituted three commissions to reform the higher education sector, the examination system and the statutory laws that govern universities.

What hinders its implementation?

Despite having adopted a pragmatic stance towards NEP, 2020, the government is yet to frame guidelines on implementing its provisions in the State. It hoped to customise the reforms to suit its ideals of affirmative action and social justice. Various logistical issues such as creating new posts that would burden the State exchequer amid the fiscal crunch have also put a spanner in the works.

What lies ahead?

While the Union government has maintained that the NEP, 2020 is advisory in nature, many educationists feel that the State would do well to be mindful of the carrot-and-stick approach of the University Grants Commission. The universities could be arm-twisted into implementing the provisions to avail themselves of various benefits in the future.

Source: The Hindu

31. 'Holes' in Biodiversity Bill

Relevant for GS Prelims & Mains Paper II; Polity & Governance

Rajya Sabha MP and senior Congress leader Jairam Ramesh has criticised the provisions of the Biological Diversity (Amendment) Bill, 2021 that is currently being reviewed by a Joint Parliamentary Committee (JPC). The law was introduced in Parliament on December 16 last year by the Union Environment Minister

Bhupender Yadav, and was referred to the JPC. Mr. Ramesh is a member of the committee, whose chairperson is BJP MP Sanjay Jaiswal.

What do the amendments in the Bill deal with?

The Biological Diversity Act, 2002 was framed to give effect to the United Nations Convention on Biological Diversity (CBD), 1992, that strives for sustainable, fair and equitable sharing of benefits arising out of the utilisation of biological resources and associated traditional knowledge. To do this, it formulates a three-tier structure consisting of a National Biodiversity Authority (NBA) at the national level, State Biodiversity Boards (SBBs) at the State level and Biodiversity Management Committees (BMCs) at local body levels. The primary responsibility of the BMCs is to document local biodiversity and associated knowledge in the form of a People's Biodiversity Register.

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The amended Bill was drafted in response to complaints by traditional Indian medicine practitioners, the seed sector, and industry and researchers that the Act imposed a heavy "compliance burden" and made it hard to conduct collaborative research and investments and simplify patent application processes. The text of the Bill also says that it proposes to "widen the scope of levying access and benefit sharing with local communities and for further conservation of biological resources." The Bill seeks to exempt registered AYUSH medical practitioners and people accessing codified traditional knowledge, among others, from giving prior intimation to State biodiversity boards for accessing biological resources for certain purposes. Environmentalist organisations such as Legal Initiative for Forests and Environment (LIFE) have said that the amendments were made to "solely benefit" the AYUSH (Ayurveda, Yoga and Naturopathy, Unani, Siddha and Homeopathy) Ministry and would pave the way for "bio piracy." The modifications will exempt AYUSH manufacturing companies from needing approvals from the NBA and thus will go against one of the core provisions of the Act.

What are Mr. Ramesh's objections?

Mr. Ramesh contended that the Environment Ministry was drawing a distinction between a registered AYUSH practitioner and a company, and exempting the former from the Act. He said this was an "artificial distinction" as nothing prevented a registered AYUSH practitioner from having informal links with a company structure. These paved the way for potential "abuse of the law," he said in a letter to Mr. Jaiswal and other committee members. Multiple provisions of the Bill, he said, were aimed at diluting the authority of the National Biodiversity Authority (NBA), especially the clause appointing 16 ex-officio officers of the Centre. The provision of requiring companies to seek the approval of the NBA only at the time of commercialisation, and not when applying for a patent, was of concern. The Bill also decriminalised violations, such as bio-piracy and made them civil offences, and this defeated the Act's "deterrent powers," he said.

Are there other shortcomings in the Bill?

An analysis by the Centre for Science and Environment (CSE) and the Down To Earth magazine on how the Biodiversity Act was being practically implemented, pointed out serious shortcomings. There was no data available — barring a few States — on the money received from companies and traders for access and benefit-sharing from use of traditional knowledge and resources. It was unclear if companies had even paid communities despite commitments. In the case of the Irula Cooperative in Tamil Nadu — traditional knowledge holders of the method of collecting snake venom used for pharmaceutical products — only one company had agreed to pay, but even that promise remained unfulfilled. State boards told Down to Earth that the money collected has not been disbursed to communities because there was no information available about the knowledge holders. The law says that if the information was unavailable, then funds ought to be spent on conservation in the region from where the knowledge-bioresources come. As of now, the funds were lying unutilised, according to State boards. As per law, Indian pharmaceutical companies are required to pay between 3-5% on the extracted bioresources or between 0.01-0.05% on the annual gross ex-factory sales. But companies have resisted paying. In most cases, the courts have held that these companies have to seek prior approval and make payments to the NBA or the State boards. Often, it was not clear who was required to pay, how much or what has already been paid. The proposed amendments didn't address these issues and so aren't helpful in solving the current challenges of implementation.

Source: The Hindu

32. Why HC quashed Delhi govt's doorstep ration delivery scheme

Relevant for GS Prelims & Mains Paper II; Polity & Governance

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The Delhi High Court Thursday halted a proposed scheme for doorstep delivery of ration in the national capital. From the moment the proposal was given a go-ahead by the Arvind Kejriwal government in 2018, it faced stiff opposition from the Lieutenant Governor as well as the central government on technical grounds. When the AAP government decided to go ahead with the scheme in 2021 notwithstanding the opposition, the matter reached the High Court. In its verdict, the HC concurred with the LG's view and said the scheme cannot be implemented in its present form.

The scheme and the hurdles

In March 2018, the Delhi Cabinet approved a scheme for delivery of ration at the doorstep of beneficiaries under the Targeted Public Distribution System. It was called the 'Mukhya Mantri GharGhar Ration Yojna'. The first objection to the plan came from none other than the Lieutenant Governor, who said it may not eliminate corruption – one of the scheme's stated objectives – as it only sought to replace old service providers with new ones. The LG also advised the AAP government to place the matter before the Centre for approval.

However, the Delhi government in 2021 decided to go ahead with the scheme despite the LG reiterating his earlier objections. The scheme was notified in February 2021, and the Centre in March objected to its name. The Centre also said that it "will have no objection if a separate scheme is made by the state government without mixing elements of the NFSA (National Food Security Act) foodgrains".

After this, the Delhi government dropped 'Mukhya Mantri' from the name and decided to go ahead with the implementation. It also clarified that the existing fair price shops will not be closed and people will be given an option to choose.

The proposed implementation

The foodgrain stock for the scheme was to be lifted by millers empanelled with the Delhi State Civil Supplies Corporation Limited and transported to milling units for processing and packaging. The packed items were then to be delivered at designated Fair Price Shops to be set up by Delhi Consumer's Cooperative Wholesale Store Ltd. The last step involved delivering the packaged items at the doorstep of beneficiaries through government-empanelled direct-to-home delivery agencies.

The court battle

The Delhi Sarkari Ration Dealers Sangh and the Delhi Ration Dealers Union moved the High Court last year challenging the scheme and the tenders issued by Delhi government in January 2021. They argued that the scheme bypasses existing fair price shop owners. The tenders were for selection of agencies for home delivery. The unions argued that the NFSA nowhere contemplated doing away with the existing Fair Price Shop structure, and it was not right to replace the same with a completely new set of dealers. The Centre, while supporting the petitions, argued that the tenders and scheme are in contravention of the NFSA. It contended that the Delhi government cannot tinker with the architecture of the PDS, which had Fair Price Shops as an integral part of the distribution mechanism.

The court's verdict

A division Bench headed by acting Chief Justice Vipin Sanghi held that a state can offer delivery of foodgrains at the doorstep of beneficiaries, but with its own resources. The court also said that Delhi government cannot proceed to implement the scheme without addressing the concerns of existing FPS owners regarding their financial viability that it held to be statutorily protected.

The court also agreed with LG's view that the scheme required the approval of the central government since NFSA is a law enacted by Parliament.

The court further pointed out that the Delhi Cabinet was required to refer the matter to the President for decision after a difference of opinion with the LG. The scheme, the High Court held, would necessarily have to be rolled out in the name of the LG, adding that the approval by the council of ministers in itself cannot be described as an action of the Delhi government or even executive action.

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LG's powers in Delhi

The Delhi High Court also deliberated on the existing constitutional scheme in Delhi. The court held that the powers of Delhi cabinet are not unfettered. It pointed out that though there may be no necessity, under the constitutional scheme, for a Cabinet decision requiring LG's approval, "there is an obligation for the CM to communicate the decision of the Council of Ministers to the Lieutenant Governor".

It said that in cases where differences arise between the Cabinet and the LG, the matter is liable to be referred to the President for a final call.

"The Lieutenant Governor shall then act according to that decision of the President. Pending such a decision, in case urgency requires the Lieutenant Governor to act, he may act, and give directions in the matter, as he deems necessary," said the Bench.

Source: The Indian Express

33. Project WARDEC – India's upcoming AI-powered wargame centre

Relevant for GS Prelims & Mains Paper II; Polity & Governance

The Army Training Command on May 13 signed a memorandum of understanding (MoU) with Gandhinagar-based Rashtriya Raksha University (RRU) to develop a 'Wargame Research and Development Centre' in New Delhi. The project, which has been given a prototype name 'WARDEC', will be a first-of-its-kind simulation-based training centre in India that will use artificial intelligence (AI) to design virtual reality wargames.

What is the wargame centre about?

The Wargame Research and Development Centre will be used by the Army to train its soldiers and test their strategies through "metaverse-enabled gameplay". The wargame models will be designed to prepare for wars as well as counter-terror and counter-insurgency operations.

Where will the centre come up and when?

The centre will come up in a military zone in New Delhi, confirmed RRU officials privy to the development. The RRU will join hands with Tech Mahindra to develop the centre in the coming three to four months, officials added.

The RRU, an institute under the Ministry of Home Affairs (MHA), specialises in national security and policing. Located in Gandhinagar's Lavad village, it is an "institute of national importance" – a status granted to it by an Act of Parliament.

A team from the RRU will soon visit Delhi to get from the Army all the data it requires to begin work. The task has been assigned to faculty members from RRU's School of Information Technology, Artificial Intelligence and Cyber Security.

"We already have a prototype lab for wargaming at our campus which was visited by Army officials recently. We have enhanced capabilities in the domains of artificial intelligence and cyber security. Our team will be visiting Delhi soon to begin work," said the RRU official.

How will these simulation exercises play out?

Soldiers will test their skills in the metaverse where their surroundings will be simulated using a combination of virtual reality (VR) and augmented reality (AR). Page | 52

"In metaverse, the players will get a realistic experience of the actual situation. If a weapon weighing 5 kg drops or the air pressure falls, they will feel it like anyone would in a live situation, real-time. The game would play out player versus player, player versus computer or even computer versus computer," said an RRU official.

How will the centre help the Army?

The Army intends to use the wargame centre to train its officers in military strategies. According to RRU officials, the Army will provide data to set the backdrop of the gameplay, so that participants get a realistic experience.

"In Army, it is often said that the enemy can ambush you from 361 directions, where 360 sides are around the soldier, and one is above in case there is an airdrop. So, wargame simulation helps the Army think of all possible scenarios. Aspects such as slope of terrain, weather, time, air pressure, enemy surveillance reach, reach of artillery, the position of troops, soldier's health and enemy's reaction capabilities are all taken into account by the use of AI," said the RRU official.

What promise does AI-based wargame simulation hold?

Apart from the armed forces, the BSF, CRPF, CISF, ITBP and SSB can also use the metaverse-enabled simulation exercises for better training.

The use of AI can provide a totally immersive training experience as it can simulate a battlefield close to reality and map several eventualities in the probable event of a war.

"For now, the centre will only be used by the Army but the intent is to develop it into a state-of-the-art research centre where other security agencies can also take part," said the RRU official.

How many countries use such wargaming drills?

Since the 9/11 attacks, use of information technology-enabled wargaming is preferred by several countries like the US, Israel, the UK to prepare for possibilities in case of terror attacks or war.

In March 2014, several world leaders, including former German chancellor Angela Merkel, former US president Barack Obama and Chinese president Xi Jinping had played a war simulation game during the Hague Summit about how to react in case of a nuclear attack. In that case, the target of the nuclear attack was a fictional country named Brinia.

Source: The Indian Express

34. Understanding the process of issuing LOCs

Relevant for GS Prelims & Mains Paper II; Polity & Governance

On April 5, the Punjab and Haryana High Court while quashing a Look Out Circular (LOC) against petitioner Noor Paul passed omnibus instructions to the respondents including the Ministry of Home Affairs (MHA) and the Bureau of Immigration (BOI) to serve a copy of the LOC to the affected person, state the reasons for issuing the LOC "as soon as possible" and provide a "post-decisional opportunity". It asked the MHA to include

these directions into the “Official Memorandum” or the guidelines that govern the opening of LOCs. The Government of India moved Supreme Court and the apex court stayed the particular paragraph of the High Court order. The High Court in its judgement has said that the action of the Bank of India to issue an LOC against Ms. Paul who was a guarantor to a loan procured by her father was “arbitrary, illegal and violative of Article 21 of the Constitution.” Ms. Paul got to know about the LOC when she was turned away from the Delhi airport on February 22 when she was there to travel to Dubai.

What is a look out circular?

It is a notice to stop any individual wanted by the police, investigating agency or even a bank from leaving or entering the country through designated land, air and sea ports. The immigration is tasked to stop any such individual against whom such a notice exists from leaving or entering the country. There are 86 immigration check posts across the country.

Who can issue LOCs?

A large number of agencies which includes the Central Bureau of Investigation (CBI), Enforcement Directorate, Directorate of Revenue Intelligence (DRI), Income Tax, State police and intelligence agencies are authorised to generate LOCs. The officer should not be below the rank of a district magistrate or superintendent of police or a deputy secretary in the Union Government.

What are the details required to generate an LOC and who issues it?

According to a 2010 official memorandum of the Ministry, details such as First Information Report (FIR) number, court case number are to be mandatorily provided with name, passport number and other details. The BOI under the MHA is only the executing agency. They generate LOCs based on requests by different agencies. Since immigration posts are manned by the BOI officials they are the first responders to execute LOCs by stopping or detaining or informing about an individual to the issuing agency. The LOCs can be modified; deleted or withdrawn only at the request of the originator. Further, the legal liability of the action taken by immigration authorities in pursuance of LOC rests with the originating agency.

How are banks authorised?

After several businessmen including liquor baron Vijay Mallya, businessmen Nirav Modi and Mehul Choksi fled the country after defaulting on loans, the MHA in 2018 brought changes to the 2010 guidelines authorising the chairman, managing director and chief executives of all public sector banks to generate LOCs against persons who could be detrimental to economic interests of the country. Though an LOC generated by the CBI on October 16, 2015 to “detain” Mr. Mallya existed based on the preliminary enquiry in a ₹900 crore loan default case, it was downgraded to “inform only” on November 23, 2015 as there was no FIR yet against him. Mr. Mallya who was a Rajya Sabha member then was a frequent flyer and he fled to the U.K in March 2016. The Ministry recently told the Delhi High Court that banks were authorised to generate LOCs as “in the recent past there have been incidents where the willful defaulters or economic offenders of public financial institutions have left the country after usurping public money or defrauding such public financial institutions.”

Is there any other clause under which an individual can be stopped?

The 2010 Ministry guidelines give sweeping powers to police and intelligence agencies to generate LOCs in “exceptional cases” without keying in complete parameters or case details against “suspects, terrorists, anti-national elements, etc, in larger national interest.” In 2015, Greenpeace activist Priya Pillai was stopped from travelling to London on a request by the Intelligence Bureau (IB) based on the “etc” provision in the 2010 order. The LOC was later quashed by the Delhi High Court. After the special status of J&K under Article 370 of the Constitutions was read down by the Parliament in August 2019, LOCs were opened against several politicians, human rights activists, journalists and social activists to bar them from flying out of the country. The number of persons and the crime for which they have been placed under the list is unknown.

Are individuals entitled to any remedial measures?

Many citizens have moved courts to get the LOC quashed. The MHA has asserted that “LOCs cannot be shown to the subject” at the time of detention nor can any prior intimation be provided. The Ministry recently informed the Punjab and Haryana High Court that the LOC guidelines are a secret document and the same cannot be shared with the ‘accused’ or any unauthorised stakeholder; it cannot be provided or shown to the subject at the time of detention by the BOI since it defeats the purpose of LOC and no accused or subject of LOC can be provided any opportunity of hearing before the issuance of the LOC.

On January 12, a Delhi High Court bench led by Justice Rekha Palli had quashed an LOC against a Delhi businessman Vikas Chaudhary generated at the instance of the Income Tax department. The court said “no proceedings under any penal law had been initiated against the petitioner” and the LOC was “wholly unsustainable.” A Delhi court on April 8 while quashing an LOC against Aakar Patel, chair, Amnesty International India said that “there cannot be any unfettered control or restriction on the right to travel” and that it was part of the fundamental rights and asked the Director of the CBI to tender a written apology. As per norms, an LOC will stay valid for a maximum period of 12 months and if there is no fresh request from the agency then it will not be automatically revived.

Source: The Hindu

35. Who are ASHA workers, the women healthcare volunteers honoured by WHO?

Relevant for GS Prelims & Mains Paper II; Polity & Governance

The World Health Organisation has recognised the country’s 10.4 lakh ASHA (Accredited Social Health Activist) workers as ‘Global Health Leaders’ for their efforts in connecting the community to the government’s health programmes.

While congratulatory messages have since poured in from the Prime Minister and the Health Minister among others, the women health volunteers continue to fight for higher remuneration, regular jobs, and even health benefits.

While intermittent protests have been going on in several states, thousands of ASHAs from across the country took to the streets in September last year to fight for their demands.

Who are ASHA workers?

ASHA workers are volunteers from within the community who are trained to provide information and aid people in accessing benefits of various healthcare schemes of the government.

They act as a bridge connecting marginalised communities with facilities such as primary health centres, sub-centres and district hospitals.

The role of these community health volunteers under the National Rural Health Mission (NRHM) was first established in 2005.

ASHAs are primarily married, widowed, or divorced women between the ages of 25 and 45 years from within the community. They must have good communication and leadership skills; should be literate with formal education up to Class 8, as per the programme guidelines.

How many ASHAs are there across the country?

The aim is to have one ASHA for every 1,000 persons or per habitation in hilly, tribal or other sparsely populated areas.

There are around 10.4 lakh ASHA workers across the country, with the largest workforces in states with high populations – Uttar Pradesh (1.63 lakh), Bihar (89,437), and Madhya Pradesh (77,531). Goa is the only state with no such workers, as per the latest National Health Mission data available from September 2019.

What do ASHA workers do?

They go door-to-door in their designated areas creating awareness about basic nutrition, hygiene practices, and the health services available. They focus primarily on ensuring that women undergo ante-natal check-up, maintain nutrition during pregnancy, deliver at a healthcare facility, and provide post-birth training on breast-feeding and complementary nutrition of children. They also counsel women about contraceptives and sexually transmitted infections.

ASHA workers are also tasked with ensuring and motivating children to get immunised. Other than mother and child care, ASHA workers also provide medicines daily to TB patients under directly observed treatment of the national programme. They are also tasked with screening for infections like malaria during the season. They also provide basic medicines and therapies to people under their jurisdiction such as oral rehydration solution, chloroquine for malaria, iron folic acid tablets to prevent anaemia, and contraceptive pills.

“Now, we also get people tested and get their reports for non-communicable diseases. On top of that ASHA workers were given so much work during the pandemic. We are no longer volunteers,” said IsmatArRa Khatun, an ASHA worker from West Bengal and general secretary of the Scheme Workers Federation of India that led the national protest.

The health volunteers are also tasked with informing their respective primary health centre about any births or deaths in their designated areas.

How did the ASHA network help in pandemic response?

ASHA workers were a key part of the government’s pandemic response, with most states using the network for screening people in containment zones, getting them tested, and taking them to quarantine centres or help with home quarantine.

“During the first year of the pandemic, when everyone was scared of the infection, we had to go door-to-door and check people for Covid-19 symptoms. Those who had fever or cough had to be tested. Then, we had to inform the authorities and help the people reach the quarantine centres. We also faced a lot of harassment because there was so much stigma about the infection that people did not want to let us in,” said Ismat Khatun.

Kavita Singh from Delhi, a former ASHA worker and a member of Scheme Workers Federation of India, added, “We had to go to households with confirmed Covid-19 cases and explain the quarantine procedure. We had to provide them with medicines and pulse-oximeters. All of this on top of our routine work.”

With the vaccination drive for Covid-19 beginning in January last year, they have also been tasked with motivating people to get their shots and collect data on how many people are yet to get vaccinated.

How much are ASHA workers paid?

Since they are considered “volunteers”, governments are not obligated to pay them a salary. And, most states don’t. Their income depends on incentives under various schemes that are provided when they, for example, ensure an institutional delivery or when they get a child immunised. All this adds up to only between Rs 6,000 to Rs 8,000 a month.

“Her work would be so tailored that it does not interfere with her normal livelihood,” the National Health Mission states. However, with outreach of most health programmes depending on them, that is not the case.

“Even if we work 24 hours, we will not be able to complete all the tasks. And, we do not get any benefits like pension or health insurance. If WHO recognises our role, if the government can call us veerangna (hero), shower us with flowers, why can’t they pay us fairly for all the work that we do,” said Ismat.

For quite some time now, ASHA workers have been demanding that they be made permanent employees of the government and provided benefits.

“If not that, they should at least fix our core incentives so that we get paid at least Rs 3,000 a month no matter what. All the work is graded 0 to 12 and if I do not get at least 6 points, I get paid only Rs 500 instead of Rs 3,000. I do not get points, even if a woman goes back to her home town to deliver the baby,” said Kavita.

She said that Covid-19 pushed them to their limits.

“During Covid-19, we were only being paid Rs 1,000 for all of the additional work. Since the incentive stopped in March this year, half of the ASHA workers in Delhi decided not to participate in Covid-19 vaccination related activities,” added Kavita.

Source: The Indian Express

36. Qutub Minar not a place of worship: ASI

Relevant for GS Prelims & Mains Paper II; Polity & Governance

Claim of 27 temples being demolished

The Qutub Minar complex is not a place of worship and its character cannot be changed now, the Archaeological Survey of India submitted in a Delhi court on Tuesday while opposing a plea challenging the dismissal of a civil suit seeking “restoration” of Hindu and Jain temples on the premises.

The original suit, which claimed that 27 temples were demolished to build the Quwwat-ul-Islam mosque at the Qutub Minar complex, was dismissed last year under the provisions of Places of Worship (Special Provisions) Act, 1991.

Court reserves order

Additional District Judge (ADJ) Nikhil Chopra has reserved the order on the plea for June 9.

Argument

Arguing before the ADJ at a Saket court, petitioner Hari Shankar Jain said the dismissal of the original suit based on the 1991 Act was wrong as the Qutub Minar complex comes under the purview of the Ancient Monuments and Archaeological Sites and Remains (AMASR) Act of 1958.

Counter argument

The ASI, however, submitted that the Qutub Minar complex was not a place of worship when it was first notified as a protected monument in 1914.

Advocate S. Gupta, appearing for the ASI, explained that the character of a monument is decided on the date when it comes under protection. Following this, objections from the public are invited for two months. This is how several places where religious practices were being conducted came to be protected under the AMASR Act, the ASI explained, adding that the petitioner cannot at this juncture seek to change the character of the monument.

Argument

While hearing the arguments, ADJ Chopra noted that the central question appears to revolve around the character of the monument.

Mr. Jain cited the Ayodhya Ram Janmabhoomi judgment to argue that the character of the area remained that of a temple as the structure was built by allegedly demolishing Hindu and Jain temples.

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In its submissions, the ASI said remains of 27 temples were procured for the mosque by spending 2,00,000 Deliwals (coins) on each. It added that nowhere in the records does it mention that these remains were retrieved by demolishing temples.

The court said that the petitioner is seeking to turn the monument into a place of worship based on a claim that a temple complex existed there 800 years ago. "Deity has survived without worship for 800 years, why not let it survive like that?" the court said on a lighter note.

Source: The Hindu

37. The controversy around the Jagannath temple Heritage Corridor Project

Relevant for GS Prelims & Mains Paper II; Polity & Governance

The Archaeological Survey of India (ASI) on May 17 said that a sculpture of a lion, which possibly dates back to the Ganga dynasty, was found during excavation for the controversial heritage corridor project around the 12th century Jagannath Temple in Puri, Odisha. This is the third such lion sculpture found during the excavation work. The Odisha government's ambitious temple corridor project in Puri has become a subject of intense political controversy in the State.

What is the controversy?

The Puri Heritage Corridor Project is a ₹3,200 crore redevelopment project of and around the 800-year-old Jagannath temple in Puri by the Odisha government to create an international heritage site.

Plans for the corridor had been in the making since 2016, with the State Assembly unanimously passing a resolution for the effective implementation of the project in February last year. Soon after, the plan was approved by the Shree Jagannatha Temple Administration (SJTA). The Odisha government has listed three objectives for the revamp of the area around the temple — the security of the temple, the safety of devotees, and the creation of a religious atmosphere for devotees. In all, 22 development projects are planned under the scheme.

In February this year, when the Odisha Bridge and Construction Corporation (OBBC) started excavation work within 75 metres of the Jagannath temple to build public amenities such as toilets and cloakrooms, experts and members of civil society objected to the use of heavy machinery for digging, citing the possibility of an adverse impact on the 12th century temple. Questions started being raised about whether the construction around the temple had the due permissions and clearances.

The Jagannath temple has been designated a monument of national importance by the ASI and is a centrally protected monument. As per the Ancient Monuments and Archaeological Sites and Remains (Amendment and Validation) Act (AMSAR), construction is prohibited within a 100-metre periphery of a protected area. The area extending to 200 metres around the monument in all directions is called a regulated area. If construction has to be undertaken in the regulated or prohibited area, permission from the National Monuments Authority (NMA) is required. Notably, the term "construction" as defined in the AMSAR Act does not include the construction of public toilets, urinals, and "similar conveniences". It also does not include works for the supply of water, electricity or "provision of similar facilities for publicity".

Raising concerns about the structural safety of the temple in the wake of the excavation in the prohibited area of the temple, DilipBaral, a resident of Puri, filed a plea with the Orissa High Court in March.

BJP MP Aparajita Sarangi also raised the issue in a Parliament session in March. Calling the work around the temple “illegal”, she said: “It is a matter of great concern.... Massive demolition and construction works are taking place within 100 and 200-metre area of the temple. No permission from NMA and ASI has been taken. The work which is a threat to the temple must stop.”

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Responding to Ms. Sarangi, BJD MP Pinaki Misra said that no digging was being done. “Only four toilets are being constructed... No additional construction is taking place,” he said.

What has the ASI said?

After the petition was filed in the High Court, the ASI was directed to conduct a joint inspection of the site along with the State government. In its affidavit submitted to the court in May post the survey, the ASI observed that there was “every possibility that the agency OBCC during the excavation or soil removal might have destroyed the archaeological remains of the heritage site”. It pointed out that the construction work fell partly within both the prohibited and regulated areas of the centrally protected monument.

The ASI had found that the ongoing construction work had “no valid permission or no objection certificate (NOC) issued by the competent authority”.

Moreover, the apex conservation agency said: “It was informed during the discussion that no heritage impact assessment studies have been conducted before commencement of the project. No Ground Penetrating Radar Survey (GPRS) has been conducted to ascertain the archaeological and historical importance lying buried in the subsoil of 75m radius (Construction Zone) of Centrally Protected Monuments.”

What is the stand of the Odisha government?

The Odisha government refuted the ASI report in court, saying that it had acquired an NOC from the NMA in September 2021. The NOC was granted for constructing a cloakroom, three toilets, an electrical facility, a pavement, and a shelter pavilion in the 75-metre zone as it did not come under “construction” as per the AMSAR Act. The NMA had no objection as long as the work was carried out under ASI supervision. However, the ASI said that no such permission was taken from it.

In a move seen by the opposition as a “cover up”, the government on May 21, started a GPRS to trace any archaeological treasure beneath the soil.

Source: The Hindu

38. Yasin Malik gets life term for terror funding

Relevant for GS Prelims & Mains Paper II; Polity & Governance

A special court on Wednesday sentenced Kashmiri separatist leader Yasin Malik to life imprisonment in a terror funding case, triggering a spontaneous shutdown of the main markets in Srinagar and a strong political reaction in Jammu & Kashmir. Mobile Internet was suspended in parts of the Kashmir Valley “as a precautionary measure”.

The People’s Alliance for Gupkar Declaration (PAGD), an amalgam of regional parties in J&K that includes the National Conference and the Peoples Democratic Party (PDP), said the life imprisonment to Malik was “unfortunate and a setback to the efforts for peace”.

“Kashmir is a political problem. Muscular policy adopted will have only a negative impact. Instead of resolving the Kashmir problem, it will complicate it. Unless the muscular policy changes, the bloodshed will not end,” PDP chief Mehbooba Mufti said.

The National Investigation Agency (NIA) court of special judge Parveen Singh sentenced Malik — who previously had pleaded guilty to the charges — to life term under Section 17 of the Unlawful Activities (Prevention) Act (UAPA) and Section 121 of the Indian Penal Code (IPC) and also imposed a fine of ₹10 lakh. He was also sentenced for several other offences under the UAPA and the IPC.

Death penalty sought

During the course of arguments on the sentence, the NIA prosecutor sought death penalty for Malik, stating that his “terrorist acts” had led to severe chaos and unrest in the Kashmir Valley and resulted in the loss of numerous lives and damage to property. The prosecutor said Malik was involved in terror funding, supported terror outfits and had waged war against the country.

The amicus curiae, however, argued for minimum punishment pointing out that since his arrest, and during his confinement, Malik had not engaged in any of the activities for which he had been convicted and that he had voluntarily pleaded guilty.

Malik submitted that after the ceasefire in 1994, he had declared that he would “follow peaceful path of Mahatma Gandhi and would engage in non-violent political struggle”. Not only Prime Minister Manmohan Singh, but all the Prime Ministers from the time of V.P. Singh to Atal Bihari Vajpayee had engaged with him and given him a political platform, Malik said.

Source: The Hindu

39. SC directions on sex workers: history of the case, and where it stands now

Relevant for GS Prelims & Mains Paper II; Polity & Governance

Exercising powers under Article 142 of the Constitution, the Supreme Court on May 19 asked states and Union Territories to “implement” and “to act in strict compliance of” certain recommendations made by a panel appointed by the court in 2011 on the rehabilitation of sex workers.

What was the case about?

In 2010, an appeal was filed in the SC against a July 25, 2007 order of the Calcutta High Court by which the latter upheld the life imprisonment imposed on a man named Budhadev Karmaskar, found guilty of murdering a sex worker in Kolkata’s redlight area in September 1999. On February 14, 2011, the SC dismissed Karmaskar’s appeal against his conviction and sentencing.

The court suo motu converted the case into a PIL to address the problems of sex workers. It said: “We strongly feel that the Central and the State Governments through Social Welfare Boards should prepare schemes for rehabilitation all over the country for physically and sexually abused women commonly known as prostitutes as we are of the view that the prostitutes also have a right to live with dignity under Article 21 of the Constitution...” It issued notices seeking responses from the central and state governments.

What happened thereafter?

On July 19, 2011, the SC appointed a panel comprising Senior Advocates Pradip Ghosh and Jayant Bhushan, and the NGOs Usha Multipurpose Co-operative Society, Durbar Mahila Samanwaya Committee and Roshni Academy “to assist and advise” it “for giving suitable directions in this matter”.

The panel was asked to study and make “suitable suggestions” on “prevention of trafficking...rehabilitation of sex workers who wish to leave sex work” and, as per a revised term of reference, “on conditions conducive for sex workers to live with dignity in accordance with the provisions of Article 21...”.

What did the panel say in its report?

In its final report submitted on September 14, 2016, the panel noted that sex workers found it difficult to acquire proofs of identity such as ration cards or voter cards because they lacked a proof of residence. It said that district authorities did not recognise the identities of sex workers and their children, and sex workers did not have access to schemes meant for their rehabilitation. They also had no access to credit offered by states, because the lack of documents prevented them from opening bank accounts, the panel said.

The committee recommended that amendments should be made to The Immoral Traffic (Prevention) Act, 1956.

How did the Centre respond?

The Centre told the court that the amendments suggested by the committee were under active consideration for a comprehensive law to be enacted by Parliament. On February 27, 2020, the government’s law officer informed the SC “that a Group of Ministers has been constituted to examine the two draft legislations” and the “Report of the Committee appointed by this Court shall be taken into consideration by the Group of Ministers”.

What happened in court subsequently?

The SC continued to monitor developments and, on September 29, 2020, directed States and Union Territories to provide dry rations to sex workers identified by National Aids Control Organisation (NACO) without insisting on proof of identity. It asked District Legal Services Authorities to assist in this.

On January 10, 2022, the court asked states and UTs to complete the process of issuing ration cards/ voter cards to all sex workers, as was recommended by the committee in an interim report.

On May 19, a Bench led by Justice L Nageswara Rao noted that despite its assurances, the Centre was still to bring a law on the subject. Therefore, the court used its extraordinary powers under Article 142 (which enables it to pass orders necessary to do “complete justice” in a pending matter), and directed that some of the recommendations which “relate only to the rehabilitation measures in respect of sex workers and other connected issues” be implemented by states and UTs. The directions, it said, “will hold the field till a legislation is made by the Union of India”.

Which are the recommendations that the SC has directed to be implemented?

The May 19 order listed 10 recommendations of the panel, and directed that six of them should be implemented.

These include: provision for immediate medical assistance for any sex worker who is a victim of sexual assault; direction to states to do a survey of all Immoral Trafficking (Prevention) Act Protective Homes so that cases of adult women who are detained against their will can be reviewed and processed for release in a time-bound manner; sensitising police and other law enforcement agencies to the rights of sex workers and to ensure that police treat them with dignity and do not abuse them verbally or physically or coerce them into any sexual activity; ask The Press Council of India to issue appropriate guidelines for the media to take utmost care not to reveal the identities of sex workers; and direction that measures that sex workers employ for their health and safety (condoms, etc.) must neither be construed as offences nor seen as evidence of commission of an offence.

Which recommendations remain pending?

The Centre said it had “certain reservations” on four recommendations of the panel.

These are: no criminal action against sex worker who is adult and participating with consent; arresting only the brothel owner and not sex workers during raid on brothels; role of sex workers in decision-making processes, including planning, designing and implementing policy relating to sex work; a recommendation with regard to children of sex workers.

The SC has asked the Centre to file its response to the recommendations of the panel within six weeks.

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Source: The Indian Express

40. IAS couple's transfer raises 'dumping ground' storm

Relevant for GS Prelims & Mains Paper II; Polity & Governance

The transfer of errant IAS couple Sanjeev Khirwar and Rinku Dugga from Delhi to Ladakh and Arunachal Pradesh respectively has raised a "dumping ground" storm on social media.

The Central government had on Thursday shunted the duo — both 1994-batch IAS officers of the AGMUT cadre — out of Delhi after they had allegedly forced athletes at the Thyagraj Stadium to finish their training early in order to take their dog for an evening walk.

AGMUT expands to Arunachal, Goa, Mizoram and the Union Territories.

But the transfer of Mr. Khirwar to Ladakh and Ms. Dugga to Arunachal Pradesh has not gone down well. Many took to Twitter and other social media platforms to ask if the Centre viewed the northernmost and the north-easternmost parts of India as dumping grounds for errant bureaucrats.

Source: The Hindu

41. AKRUTI to take roots in Kudankulam

Relevant for GS Prelims

The Nuclear Power Corporation of India Limited, which is assisting unemployed youth living in 16 village panchayats near the Tarapur Atomic Power Station (TAPS) through its Advanced Knowledge and Rural Technology Implementation (AKRUTI) programme, is all set to launch a similar initiative in the villages surrounding Kudankulam Nuclear Power Project (KKNPP).

The Bhabha Atomic Research Centre, the country's premier multidisciplinary research and development centre under the Department of Atomic Energy, besides identifying newer nuclear power generation techniques, is devising new, user-friendly and cost-effective technologies in the fields of nuclear science, radioisotopes, industry, health and agriculture. These technologies are being taught to the younger generation and the unemployed youth to make them entrepreneurs.

Technology transfers under AKRUTI

One of the AKRUTI's interesting technology transfers is the cost-effective foldable dryer, which can be used for drying fruits, vegetables and fish.

The rectangular or triangle-shaped dryer having steel mesh trays is covered with poly sheets to amplify the atmospheric heat to 200%. "If the temperature outside is 30°C, the heat inside the dryer would be 60°C, which dries fruits and vegetables easily to ensure longer shelf-life," says Ranjit Singh, coordinator, AKRUTI, Boisor.

These foldable solar dryers can also be used for drying fish in a clean and hygienic environment as it has hanging steel wires. Since the KKNPP is surrounded by 13 coastal hamlets, this type of dryer will be a boon to the fishermen.

Source: The Hindu

42. An IAS couple is transferred after dog-walking incident; what rules govern the conduct of senior Govt officers?

Relevant for GS Prelims & Mains Paper II; Polity & Governance

Senior IAS officer Sanjeev Khirwar and his wife Rinku Dugga, who is also a senior IAS officer, were transferred from their posts in Delhi to two different places this week, hours after The Indian Express published a picture of the couple along with their dog walking on the tracks of Thyagraj Stadium at a time when young athletes should have been practising on it.

The Indian Express reported that over the past few months, athletes training at the Delhi government stadium were being asked to leave early so that Khirwar, Delhi's Principal Secretary (Revenue), could walk his dog there.

Days previously, The Indian Express had reported that Rajiv Bansal, Secretary, Ministry of Civil Aviation, had bought Economy Class tickets on Air India to fly to the United States with his wife on a personal visit at a rate that was far cheaper than what was paid by other passengers who had booked their seats on those same dates. Also, the couple was upgraded to Business Class on the flight.

On Saturday (May 28), Union Sports and Information and Broadcasting Minister Anurag Thakur described the Thyagraj Stadium incident as "very unfortunate", and said the IAS couple had been transferred to "give a strong message". "There should be rules and they should be followed," the Minister said.

What rules govern the behaviour of high officials of the government?

The three All India Services (IAS, IPS, Indian Forest Service) are governed by the All India Service Conduct Rules, 1968. There are 23 Rules in all, which have been amended 37 times since they were first notified. The other civil services are governed by the Central Civil Services (CCS) Conduct Rules, 1964, which comprise 25 Rules which have seen 44 amendments so far.

The overarching Rule for civil servants is: "Every member of the Service shall at all times maintain absolute integrity and devotion to duty and shall do nothing which is unbecoming of a member of the Service.

"They shall maintain high ethical standards, integrity and honesty; political neutrality; accountability and transparency; responsiveness to the public, particularly to the weaker section; courtesy and good behaviour with the public."

Do the Rules say anything about the general character and conduct of the officials?

By an amendment in August 2014, several points were added that may be seen as having a bearing on the conduct of the IAS officers in the recent cases. These include:

"Every member of the Service shall commit himself to and uphold the supremacy of the Constitution and democratic values; not misuse his position as civil servant and not take decisions in order to derive financial or material benefits for himself, his family or his friends; act with fairness and impartiality and not discriminate against anyone, particularly the poor and the under-privileged sections of society; refrain from doing anything which is or may be contrary to any law, rules, regulations and established practices", among others things.

But officials sometimes claim their behaviour is dictated by orders of their superiors.

There is a well-framed Rule about how to act on oral orders given by superiors. It says, “The direction of the official superior shall ordinarily be in writing. Where the issue of oral direction becomes unavoidable, the official superior shall confirm it in writing immediately thereafter.

“A member of the Service who has received oral direction from his official superior shall seek confirmation of the same in writing, as early as possible.”

There are also a slew of other Rules relating to child labour, dowry, and marriages; securing employment for members of officers’ families; association with political parties and elections; receiving gifts; and expressing views and criticising the government in the media, etc.

How then do situations of violation of these Rules arise?

Many of these Rules continue to be violated frequently in big and small measure by officials. Departmental authorities, as well as the Vigilance set-up of governments, often fail to act against the violations — which has over time given rise to a culture of impunity and entitlement in a section of officers.

The spread of awareness among the public, the universal availability of camera phones, and the massive growth of social media have, however, served to put a check on some of these officials. In many places, government authorities have moved quickly to enforce accountability, reacting to media reports and public posts on social media.

Sources in the government said that the broad Rule against doing anything that is “unbecoming of a member of the Service” is often invoked to rein in errant officials.

Source: The Indian Express

43. Nawab Malik said Wankhede, a Muslim, illegally benefitted from SC quota. What rules apply to job reservations for different religions, converts?

Relevant for GS Prelims & Mains Paper II; Polity & Governance

As the Narcotics Control Bureau (NCB) case against Shah Rukh Khan’s son Aryan Khan collapsed on Friday (May 27), leaders of Maharashtra’s ruling Maha Vikas Aghadi (MVA) rallied behind former NCP Minister Nawab Malik, who had in October last year waged a literally one-man battle against Sameer Wankhede, the chief investigator in the case.

Among the allegations that Malik, who is now in jail after being arrested by the Enforcement Directorate in a separate case earlier this year, made against Wankhede was that the officer had illegally benefitted from the government’s affirmative action policy for Dalits.

Malik’s allegation was that Wankhede was raised as a Muslim, and was, therefore, ineligible for the 15 per cent reservation for Scheduled Castes (SCs) in government jobs. Wankhede’s family had denied the allegation.

What did Nawab Malik accuse Sameer Wankhede of having done?

According to Malik, Dnyandeve Kachru Wankhede, the father of Sameer Wankhede, was an SC who converted to Islam before marrying Sameer’s mother, Zaheeda Begum.

Sameer was born in 1979. Malik has released his birth certificate which records his father’s name as Dawood K Wankhede.

Malik has claimed that Sameer was raised as a Muslim, and was a Muslim at the time of his marriage in 2006. Malik had last year released what he had claimed was Sameer's nikahnama — the document on which two Muslim partners entering into a civil union must sign to legalise their marriage.

The document was dated December 7, 2006, and showed Wankhede's name as Sameer Dawood Wankhede.

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So where does the question of his having availed of quota arise?

Malik alleged that Sameer, a Muslim, was selected in the Civil Services Examination (CSE) under the SC quota, to which he was not entitled.

The list of officers on the website of the Department of Personnel and Training (DoPT), which allots services to those who clear the CSE shows that Wankhede was ranked 561st in CSE 2007.

He was selected as a candidate from the SC category, and became an officer of the 2008 batch of the Indian Revenue Service (Customs and Indirect Taxes).

How does the fact that he may have been Muslim impact his eligibility for reservation?

There is a 15 per cent quota for SCs in government jobs. But Hindu SCs who convert to Islam lose their SC status, and are no longer eligible for the quota.

A brochure on the DoPT site lays down the position on SC status and conversions:

"A person shall be held to be a member of a Scheduled Caste or Scheduled Tribe if he belongs to a caste, or a tribe which has been declared as such...

"No person who professes a religion different from the Hindu or the Sikh religion shall be deemed to be a member of the Scheduled Castes..." (On STs, see below.)

Further, "A person belonging to a Scheduled Caste or Scheduled Tribe will continue to be deemed as such irrespective of his/her marriage to a non-Scheduled Caste/Scheduled Tribe."

However, "A convert or re-convert to Hinduism and Sikhism shall be accepted as a member of Scheduled Caste if he has been received back and accepted as a member of the concerned Scheduled Caste."

The Constitution (Scheduled Castes) Order, 1950, which lays down that no person professing a religion different from the Hindu or Sikh or Buddhist religion can be deemed to be a member of an SC, has been amended several times.

The original order under which only Hindus were classified as SCs, was amended to include Sikhs in 1956, and Buddhists in 1990.

No such religion-based bar, however, operates for STs and Other Backward Classes (OBCs). The brochure on the DoPT site says, "The rights of a person belonging to a Scheduled Tribe are independent of his/her religious faith."

But if Hindus and Sikhs qualify for benefits under the SC quota, is the exclusion of Muslims and Christians discriminatory?

Petitions have been filed in the Supreme Court seeking the inclusion of Muslims and Christians in the SC category.

In 2004, the Centre for Public Interest Litigation challenged the legality of the provision by which people professing and converting to religions other than Hinduism, Sikhism, and Buddhism were deprived of reservation benefits.

In 2008, the National Commission on Minorities concluded that there was a case for inclusion of Dalit Christians and Dalit Muslims in the SC category.

In January 2020, the SC agreed to examine a plea by the National Council of Dalit Christians to make the government's affirmative action programmes religion-neutral. The plea is pending before the court.

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In inter-caste marriages, can the mother's caste be the caste of the couple's child?

The child carries the caste of the father, and caste certificates are issued on this basis. However, courts have taken note of the surroundings in which the child was brought up.

In 'Rameshbhai Dabhai Naika vs State of Gujarat & Ors' (2012), the Supreme Court ruled: "In an inter-caste marriage or a marriage between a tribal and a non-tribal there may be a presumption that the child has the caste of the father. This presumption may be stronger in the case where in the inter-caste marriage or a marriage between a tribal and a non-tribal the husband belongs to a forward caste. But by no means the presumption is conclusive or irrebuttable and it is open to the child of such marriage to lead evidence to show that he/she was brought up by the mother who belonged to the Scheduled Caste/Scheduled Tribe."

In 2006, then Minister for Social Justice and Empowerment Meira Kumar had proposed that children born of inter-caste marriages should get SC status if either parent belongs to a Scheduled Caste. A proposal along these lines was to be placed before the Cabinet in April 2008, but was withdrawn at the last minute. There was resistance to the suggestion from many quarters, including the National Commission for Scheduled Castes (NCSC).

Coming back to Wankhede, what can happen if a caste certificate is found to be false?

A DoPT circular of May 19, 1993 says: "Wherever it is found that a Government servant, who was not qualified or eligible in terms of the recruitment rules etc... or had furnished false information or produced a false certificate in order to secure appointment, he should not be retained in service..."

"If he/she has become a permanent Government Servant... if the charges are proved, the Government servant should be removed or dismissed from service."

Sameer Wankhede may face an inquiry, and may even be dismissed if his SC certificate is found to be false. However, clarity is required on several questions — for example:

- * whether his father was a Muslim when Sameer was issued his SC certificate;
- * whether his father converted to Islam to marry and then re-converted — and if so, when;
- * whether Sameer changed his religion to Hinduism just to receive an SC certificate.

Source: The Indian Express

44. Reservation in public employment

Relevant for GS Prelims & Mains Paper II; Polity & Governance

The jurisprudence of reservation relies on the symbiotic coexistence of constitutionally guaranteed equality of opportunity in public employment under Article 16 (1) of the Constitution of India and classifications thereunder various clauses of the same article, especially Article 16(4) and Article 16 (4 A), which are in the nature of facilitating provisions, vesting a discretion on the government to consider providing reservations for the socially and educationally backward sections of the society and to provide reservation in promotion to Scheduled Castes and Scheduled Tribes, respectively.

Reservation not a fundamental Right

It is a settled law, time and again reiterated by the Supreme Court, that there is no fundamental right to reservation or promotion under Article 16(4) or Article 16(4 A) of the Constitution, rather they are enabling provisions for providing reservation, if the circumstances so warrant (Mukesh Kumar and Another vs State of Uttarakhand &Ors. 2020).

However, these pronouncements no way understate the constitutional directive under Article 46 that mandates that the state shall promote with special care the educational and economic interests of the weaker sections of the people and in particular Scheduled Castes and Scheduled Tribes. In fact, sensitivity of the welfare state towards the weaker sections over decades resulted in the gradual expansion of canopy of reservation in the form of increasing classifications under Article 16, a set of actions that created a wave of litigation by which resulted in the ever-evolving jurisprudence of affirmative action in public employment.

The Mandal storm and Indra Sawhney

Reservation in employment which was otherwise confined to Scheduled Castes and Scheduled Tribes got extended to Other Backward Classes as well on the basis of the recommendations of the Second Backward Class Commission as constituted, headed by B.P. Mandal.

The recommendation of Mandal Commission (1980) to provide 27% reservation to Other Backward Classes in central services and public sector undertakings, over and above the existing 22.5% reservation for Scheduled Castes and Scheduled Tribes, was sought to be implemented by the V.P. Singh Government in 1990 and the same was assailed in the Supreme Court resulting in the historic Indra Sawhney Judgment (1992).

In the judgment, a nine-judge bench presided by Chief Justice M.H. Kania upheld the constitutionality of the 27% reservation but put a ceiling of 50% unless exceptional circumstances warranting the breach, so that the constitutionally guaranteed right to equality under Article 14 would remain secured.

The Court dwelled on the interrelationship between Articles 16(1) and 16(4) and declared that Article 16(4) is not an exception to article 16(1), rather an illustration of classification implicit in article 16(1).

While Article 16(1) is a fundamental right, Article 16(4) is an enabling provision. Further, the Court directed the exclusion of creamy layer by way of horizontal division of every other backward class into creamy layer and non-creamy layer.

The Constitution (Seventy-seventh Amendment) Act, 1995

In Indra Sawhney Case, the Supreme Court had held that Article 16(4) of the Constitution of India does not authorise reservation in the matter of promotions. However, the judgment was not to affect the promotions already made and hence only prospective in operation, it was ruled.

By the Constitution (Seventy-seventh Amendment) Act, 1995, which, Article 16(4-A), was inserted to provide that “nothing in this article shall prevent the State from making any provision for reservation in matters of promotion to any class or classes of posts in the services under the State in favour of the Scheduled Castes

and the Scheduled Tribes which, in the opinion of the State, are not adequately represented in the services under the State”.

Later, two more amendments were brought, one to ensure consequential seniority and another to secure carry forward of unfilled vacancies of a year, the former by way of addition to Article 16(4 A) and the latter by way of adding Article 16(4 B).

The Constitution Bench Judgment in M. Nagaraj (2006)

A five-judge bench of Supreme Court declared the 1995 amendment as not vocative of basic structure of the Constitution but laid down certain conditions which included the collection of “quantifiable data showing

backwardness of the class and inadequacy of representation of that class in public employment". . The bench held that the creamy layer among Scheduled castes and tribes is to be excluded from reservation.

Jarnail Singh vs LachhmiNarain Gupta (2018)

In the aforementioned case, a constitution bench of Supreme Court was called on to examine wisdom of the 2006 judgment in the light of the constitutionally recognised socio-economic backwardness of the Scheduled Castes and Scheduled Tribes which may not require any further substantiation. It was also contended that the requirement to identify creamy lawyer among Scheduled Castes and Scheduled tribes fell foul of Indra Sawhney decision. The constitution bench invalidated the requirement to collect quantifiable data in relation to Scheduled Castes and Scheduled Tribes but upheld the principle of applicability of creamy lawyer in relation to Scheduled Castes and Scheduled Tribes. Jarnail Singh judgment authored by Justice Rohinton Nariman indicates a critical turn in the jurisprudence of reservation.

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The Constitution (103rd Amendment) Act, 2019

The 10% reservation for Economically Weaker Sections (EWS), other Scheduled Castes, Scheduled Tribes and backward classes for government jobs and admission in educational institutions is currently under challenge before the Supreme Court which has referred the same to a constitution bench. The adjudication awaited in this regard may also turn to be a critical milestone in the jurisprudence of reservation as traditional understanding of backwardness is broadened to specifically include economic backwardness without social backwardness as is traditionally seen.

Dr. JaishriLaxmanrao Patil vs Chief Minister (2021)

Despite the Indra Sawhney ruling, there have been attempts on the part of many States to breach the rule by way of expanding the reservation coverage and the Maharashtra Socially and Educationally Backward Classes Act 2018, (Maratha reservation law) came under challenge before the Supreme Court which referred the same to a bench of five judges and one question was whether the 1992 judgment needs a relook.

Interestingly, the Supreme Court not only affirmed the Indra Sawhney decision, but also struck down Section 4(1)(a) and Section 4(1)(b) of the Act which provided 12% reservation for Marathas in educational institutions and 13% reservation in public employment respectively, citing the breach of ceiling. "The 2018 Act as amended in 2019 granting reservation for Maratha community does not make out any exceptional circumstance to exceed the ceiling limit of 50% reservation," declared the apex Court. This judgment is likely to rein in the propensity on the part of some State governments to blatantly disregard the stipulated ceiling on electoral grounds rather than any exceptional circumstances as conceived by the constitution bench. It is pertinent to note that several States such as Maharashtra, Karnataka, and Andhra Pradesh had made submissions before the Supreme Court against any upper limit on reservation.

Source: The Hindu

International Organizations & Relations

1. Why Pakistan launched airstrikes on Afghanistan

Relevant for GS Prelims & Mains Paper II; International Issues

Last month, the Pakistani military carried out pre-dawn airstrikes in the Kunar and Khost provinces in eastern Afghanistan, killing at least 45 people, including 20 children. The military action, though not confirmed by authorities in Islamabad, is believed to be in retaliation for the deaths of seven Pakistani soldiers in the North Waziristan district of Khyber-Pakhtunkhwa on the border with Afghanistan. Militants said to be operating from eastern Afghanistan were behind the killings.

Which group do the militants belong to?

The militants who carried out the killings are suspected to be members of the Tehrik-i-Taliban Pakistan (TTP) or the Pakistani Taliban, a banned terrorist organisation founded in 2007 by Baitullah Mehsud, a high-profile jihadi commander. It primarily draws members and support from Pashtun tribal areas in northwestern Pakistan, particularly in North and South Waziristan.

What are the group's main objectives?

The TTP's main objectives, according to a US Institute of Peace report, include "implementing Sharia law, fighting US and Nato forces in Afghanistan, and engaging in jihad against the Pakistani Army." With the US and Nato forces exiting the region and the Taliban in control now, the TTP is now exclusively focused on implementing Sharia and fighting the Pakistan Army.

What significant terror attacks have TTP claimed responsibility for?

One of their most audacious attacks include the seize of Karachi international airport in 2014 and the killing of 150 people, most of them students at the Army Public School, in Peshawar, the same year. In the previous year, again in Peshawar, TTP suicide bombers targeted the historic All Saints Church, killing at least 120 people. In 2012, they were responsible for the attempted murder of Malala Yousafzai, who won the Nobel Peace Prize in 2014.

What is their equation with the Afghan Taliban?

They are "two faces of the same coin", a senior member of the Pakistani Army has been quoted as saying in the past. The Pakistani Taliban are known to provide men and logistical support to their Afghan counterparts. It had even trained and sent hundreds of suicide bombers from the tribal areas across the border. Hundreds of jailed TTP militants were released from prisons last year as the Afghan Taliban seized control of Afghanistan. The TTP also shares close ties with Al Qaeda and the Haqqani Network, an affiliate of the Afghan Taliban.

What was the Afghan Taliban's reaction to the airstrikes?

Taliban authorities expressed strong disapproval of the airstrikes and summoned Pakistan's ambassador in Kabul to hand him a diplomatic démarche.

"The Islamic Emirate of Afghanistan strongly condemns Pakistan's attacks on refugees in Khost and Kunar. IEA calls on the Pakistani side not to test the patience of Afghans on such issues and not repeat the same mistake again otherwise it will have bad consequences," said Zabihullah Mujahid, a spokesman for the Taliban government.

The Pakistani Taliban also issued a statement condemning the attack. "We want to tell the Pakistani army that every war has a principle and Pakistan has violated every principle of war up to date," said Muhammad Khurasani, a spokesman for the Pakistani Taliban. "We challenge the Pakistan army to fight us on the battlefield instead of bombing oppressed people and refugee camps."

Pakistan's foreign office issued a statement saying: "Pakistan has repeatedly requested Afghan Government in last few months to secure Pak-Afghan border region. Terrorists are using Afghan soil with impunity to carry out activities inside Pakistan."

Source: The Indian Express

2. Embroiling Transnistria in the Russia-Ukraine War

Relevant for GS Prelims & Mains Paper II; International Issues

As the Russia-Ukraine War completes over two months, Transnistria, the tiny breakaway region of Moldova, risks being dragged into the conflict.

Where is Transnistria?

The de facto state lies between Moldova to its west and Ukraine towards its east. Often described as a “remnant of the Soviet Union”, Transnistria declared independence like Moldova did soon after the break-up of the Soviet Union. When Moldovan troops attempted to take over the territory in 1990-1992, Transnistria was able to resist them because of Russian soldiers based in Transnistria. Since then, it has remained free of Moldovan control. However, most countries continue to see Transnistria as part of Moldova.

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What is the political make-up of Transnistria?

Transnistria is not recognised as independent even by Russia and its economy is dependent on Russia for subsidies and free gas. Most Transnistrians have dual citizenship of Russia and Transnistria or triple citizenship of Moldova, Transnistria, and Russia. Unlike the rest of Moldova, which speaks Romanian, the majority of people in Transnistria speak Russian and use the Cyrillic script like Russians. It has its own government (which is pro-Russian), Parliament, armed force, constitution, flag, anthem, etc. In a referendum held in 2006, over 97% of Transnistrians voted for future integration with Russia and after the annexation of Crimea, the government asked if it could be absorbed into Russia. Russia, however, was not keen on this. But Transnistria is host to over 1,500 Russian “peacekeepers” and is home to a large Russian ammunition depot at Cobasna.

Why is it in the news now?

Transnistria risks being drawn into the Russia-Ukraine war because of reports of a series of explosions in its territory. First, there was an attack by men using rocket propelled grenades on its security headquarters, followed by an attack on a radio centre which broadcasts Russian news. There were also reports that a village which is host to one of the largest ammunition depots in Europe was hit by shots. No one has taken responsibility for these attacks in which there were no deaths. However, Ukrainian officials termed them as a deliberate provocation by Russia to intervene in Transnistria and Moldova while Russian officials blamed Ukraine for the attacks. After the explosions, Transnistria’s President Vadim Krasnoselsky called for a 15-day red alert, with anti-terrorist security measures put in place. Men of fighting age have been banned from leaving its territory. This is being read as a sign that Transnistria will be drawn into the Russia-Ukraine conflict.

There are fears in the West and in Ukraine that Transnistria could be used as a staging ground in the conflict between Russia and Ukraine and that Russia might use Transnistria to cut off the southwestern corner of Ukraine, leading to direct Russian intervention inside Moldova.

These fears were compounded by a Russian General, Rustam Minnekayev, asserting that Russian speaking people in Transnistria and Moldova are being oppressed, reminding observers ominously of Russia justifying its invasion of Ukraine by claiming to be acting on behalf of Russian speakers in the Donbass region oppressed by Ukraine. Added to this was his statement that Moscow intends to take over southern Ukraine, including the port city of Odesa, which would allow it access to Transnistria. This would create a land-bridge for Russia from southern Ukraine all the way to Transnistria.

Clearly, Transnistria’s strategic location is important to the next phase of Russia’s war on Ukraine. The region is not too distant from the Black Sea port of Odesa and also shares a relatively long border with Ukraine. If Transnistria comes under Russian control, it will enable Russia to create a Russian-controlled corridor along Ukraine’s Black Sea coast. If Russia succeeds in linking Odesa with Transnistria, the rest of Ukraine would become completely landlocked and the country would naturally be weakened. Moldova, on its part, fears that Russia will use Transnistria to launch an attack on it as Russia has long wanted Moldova to be in its sphere of influence.

What lies ahead?

There is little Moldova, Europe's poorest country, can do in this situation. It is constitutionally neutral and has a very small military force. It is not a member of NATO. So, there is little chance of NATO coming to its rescue, particularly since NATO cannot give membership to countries which have border disputes with other countries.

Similarly, it is not a member of the European Union though it is pro-Europe. In March this year, Moldova had signed an official request to join the EU. However, this will take time and the country right now cannot comply with the EU's conditions for membership.

Meanwhile, all eyes will be on what Russia intends to do next in Transnistria as part of its war with Ukraine, which has already dragged on longer than expected.

Source: The Hindu

3. What would be the impact of Russian oil sanctions in Europe?

Relevant for GS Prelims & Mains Paper II; International Issues

What does the European Union currently import?

The European Union imported 2.2 million barrels per day (bpd) of crude oil and 1.2 million bpd refined oil products before the war in Ukraine, according to the International Energy Agency (IEA).

Cars: Filling up your car will probably get more expensive. Europe imports not only crude oil from Russia but also refined oil products, such as diesel to fuel industrial and passenger vehicles. Importing diesel from further afield than Russia will mean increased freight costs and thus higher prices at filling stations. In Germany, for example, 74% of diesel imports before the war came from Russia, data from consultancy FGE Energy shows.

Refineries depending on Russian oil: Russian oil makes up a fifth of oil refined in Europe, according to the IEA. Some refineries producing fuel from gasoline to jet fuel such as Germany's PCK Schwedt and Leuna as well as refineries in the Czech Republic, Hungary, Slovakia and Poland get fed Russian crude oil via the Druzhba – or "Friendship" – pipeline.

Supplies along Druzhba have been fluctuating sharply in recent years with deliveries running as high as 1.5 million bpd while declining in recent months including February to around 0.8 million bpd.

Poland can switch to seaborne supplies from places like Saudi Arabia or Norway via the Gdansk port in the Baltic Sea.

PCK Schwedt, which supplies cars and airports in Berlin and the region, and Leuna near Leipzig could get some oil from the German Baltic sea port of Rostock – much less of a crude oil hub than Gdansk – but not enough for them to run at full capacity.

Poland, itself trying to replace all Russian crude in its refineries, could route some of the oil arriving in Gdansk to these two German refineries, but the details have not been worked out yet.

Changing these supply routes will most likely mean higher feedstock prices for two of Germany's biggest refineries, feeding into higher prices for end consumers.

For all the refineries in landlocked countries, making up for zero oil via Druzhba will be a mammoth task. It is likely to involve more expensive and less efficient transport via trucks, railways, rivers or the future extension of other pipelines such as TAL going from the Mediterranean via Austria to Germany. Such an extension still needs approval from southern German authorities.

Slovakia, Bulgaria and the Czech Republic are seeking exemptions from an imminent EU ban on Russian oil to sort such alternatives, while Hungary does not support the plans out of fear for its energy security.

Can they replace Russian oil with any other oil?

Refineries are typically set up to run on a specific type of crude oil, such as Russia's prime export grade Urals. Other types of crude from Norway, the Middle East, the United States or West Africa can be blended or the refineries revamped, but this can change the yield of a refinery and cost more money in addition to higher freight costs.

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Traditional consumers of Russian oil will also now have to compete not only with each other for alternative oil imports but also with existing customers in Asia.

Reduced refining runs?

An oil refinery cannot simply be switched off as a restart is expensive and complex.

Globally, refining capacity is shrinking as the world tries to reduce its dependence on oil-based fuels. Morgan Stanley estimates that capacity has shrunk by as much as 2.7 million bpd since the onset of the coronavirus pandemic.

With the re-emergence of economic growth as lockdowns come to an end, refining margins have skyrocketed, meaning refineries will try to squeeze as much fuel as possible into the market.

Refineries that have the toughest supply issues, however, are likely to see lower margins because their crude costs will rise, so operators may slow processing.

Countries and refiners typically also have storage tanks which they can tap in case of short-term disruptions.

Transition period?

EU countries have until the end of the year to prepare for the disruption and would likely fill storage in areas near refineries that might struggle.

It would cause more severe disruptions, if Russia cuts supplies first.

Source: The Indian Express

4. The corruption cases that cost Nawaz Sharif the Pakistan PM post

Relevant for GS Prelims & Mains Paper II; International Issues

A Supreme Court ruling in 2017 cost then Pakistan prime minister Nawaz Sharif his chair, and another SC ruling has brought his party, Pakistan Muslim League-Nawaz, back in power in 2022. The new government, under his brother Shehbaz Sharif, has now said it is considering quashing the corruption sentences against Nawaz and allow him to plead his cases afresh.

Pakistan's Federal Interior Minister Rana Sanaullah Khan said earlier in May that both the central as well as the Punjab government had the power to repeal or suspend a "wrong" sentence so the accused could approach courts again, and these "provisions might be used to provide relief" to Nawaz and others, according to a report in the Dawn.

The Pakistan SC had disqualified Nawaz from holding the PM's post because it found him not "sadiq and ameen" (honest and righteous), as the country's religion-influenced constitution says public representatives should be. In the subsequent corruption trials that followed, matters debated included when the Calibri font was made available for public use, as the authenticity of a document depended on this.

A look at the corruption cases that brought down the longest-serving Pakistan PM in his third term.

Sharif family named in Panama Papers

Nawaz Sharif's third term in office, which began in 2013, was going far from smoothly, with run-ins with the Army and opposition leader Imran Khan snapping at his heels. However, trouble for him began in earnest when his family's name surfaced in the Panama Papers leak in April 2016.

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The Panama Papers claimed Nawaz's children — daughter and political heir Maryam Nawaz, and sons Hasan and Hussein — owned undeclared firms and assets offshore. The firms were British Virgin Islands-based Nescoll Ltd, Nielsen Enterprises Ltd and Hangan Property Holdings Ltd. The allegation was that these companies were used to launder money and buy foreign assets, including an apartment in a posh London neighbourhood.

Nawaz and family denied any wrongdoing. However, Imran Khan and other politicians used the scandal to demand the PM's resignation, soon approaching the country's apex court. In April 2017, a five-judge bench gave a 3:2 ruling that Nawaz could continue in office, but a joint investigation team should look into the allegations against him. The JIT submitted its report, and in July 2017, the SC disqualified the PM from holding public office.

What the SC said

The SC's decision, however, was not over the Panama allegations. While it directed that an accountability court hear those corruption charges – the Avenfield properties case and the Azizia Steel Company case – the SC based its disqualification decision over something else the JIT found.

The JIT had claimed that Nawaz served as chairman of a Dubai-based company, drawing a salary of 10,000 dirhams between August 7, 2006 and April 20, 2014, which he did not declare in his nomination papers. Nawaz's defence argued that while he did serve in that post and was entitled to a salary, he never drew it.

The court, however, reasoned, "...the statement that he did not withdraw the salary would not prevent the un-withdrawn salary from being receivable, hence [making it] an asset." The SC ruled that not declaring this asset meant Nawaz was not "sadiq and ameen" and disqualified him, later clarifying the disqualification was for life.

So, what happened with the corruption cases against Nawaz?

The SC had directed the accountability court to hear the Avenfield and Azizia cases against the Sharifs, along with other Panama allegations.

What is the Avenfield Apartments case?

In July 2018, three members of the family were fined and sentenced to jail – Nawaz for 10 years, Maryam for seven, and her husband Captain Safdar for one year – in the Avenfield apartments case, as they could not show that the posh London property had been bought legitimately.

While Nawaz was sentenced for owning assets beyond income, the other two were held guilty of abetment and not cooperating with the probe agency.

It was in this case that Maryam had presented a trust deed dated February 2006, in Microsoft's Calibri font, which became commercially available only in 2007.

Nawaz and his kin were jailed, but in September 2018, the Islamabad High Court ordered their release and suspended their sentence pending final adjudication of their appeals against it.

And, what is the Al Azizia case?

Months after the HC relief, in December 2018, Nawaz Sharif was sentenced to jail again, for seven years, in the Al-Azizia Steel Mills case. The accountability court held that the PMLN chief had been unable to show how he earned the money to set up Al-Azizia Steel Mills and Hill Metal Establishment (HME) in Saudi Arabia.

The Sharifs had claimed that the funds came from some investments Nawaz's father, Mian Mohammad Sharif, had made with the Qatar royal family.

The court, however, found Nawaz innocent in a similar case about setting up Flagship Investment in the United Kingdom.

Nawaz Sharif flies to London

In October 2019, Nawaz had to be taken to a Lahore hospital from jail after his health deteriorated. His conviction was then suspended for eight weeks on medical grounds. In November 2019, he was allowed to fly to London for treatment for four weeks. Nawaz has not returned to Pakistan since, but has been involved in the country's politics through video meetings and addresses since 2020.

Pictures of Nawaz appearing in good health surfaced on social media that year, prompting then PM Imran to say in August 2020 that his government "regretted" the "mistake" of letting the PMLN leader leave for the UK. In December 2020, Nawaz was declared a proclaimed offender by the Islamabad High Court after he failed to appear for the hearings of his appeals against the Avenfield and Al Azizia convictions.

In September 2021, Pakistan's anti-graft body started the process of auctioning Nawaz's properties to recover the \$10-million fine in the Avenfield case.

Other cases against Nawaz Sharif

While serving time for his other convictions, Nawaz was in October 2019 arrested in the Chaudhry Sugar Mills shares money laundering case. Maryam had been arrested in the case earlier. Both later received bail.

In October 2020, the National Accountability Bureau approved another case against Nawaz Sharif and some others, over the alleged illegal purchase of 73 high-security vehicles for foreign dignitaries. They are accused of favouritism and illegal use of vehicles, causing a loss of over Rs 1,952 million to the national exchequer.

Controversy over the convictions

The Sharifs and their supporters have maintained that the corruption cases are a result of "political vendetta". In November 2021, a former top judge of Gilgit-Baltistan, Rana Shamim, purportedly claimed in an affidavit that he witnessed former chief justice of Pakistan, Mian Saqib Nisar, instructing a high court judge to not release Nawaz and Maryam in a corruption case in 2018. While Nisar denied the allegation, Maryam, as quoted in Dawn, cited it as "the third major testimony from within the judiciary" about the innocence of her and her father.

The other two "testimonies", according to Maryam, were Islamabad High Court judge Shaukat Aziz Siddiqui claiming in 2018 that the ISI was manipulating judicial proceedings, specially those related to the Sharif father-daughter; and late accountability judge Arshad Malik saying in a purported video in 2019 that he convicted Nawaz unfairly due to "immense pressure". Judge Malik, who died in 2020, had claimed the video was "fake and based on lies".

Source: The Indian Express

5. India's position on the World Press Freedom Index

Relevant for GS Prelims & Mains Paper II; International Organisations

On what indicators are countries ranked in the index? Which countries have improved their ranking?

India's ranking in the 2022 World Press Freedom Index has fallen to 150 out of 180 countries, according to the latest report released by the global media watchdog, Reporters Without Borders (RSF). In last year's report, India was ranked 142. The top three positions for countries with the highest press freedom were taken by the Nordic trio of Norway (a score of 92.65), Denmark (90.27) and Sweden (88.84).

What is RSF and what's the objective of this Index?

RSF is an international NGO whose self-proclaimed aim is to defend and promote media freedom. Headquartered in Paris, it has consultative status with the United Nations. The objective of the World Press Freedom Index, which it releases every year, "is to compare the level of press freedom enjoyed by journalists and media in 180 countries and territories" in the previous calendar year. The RSF defines press freedom as "the ability of journalists as individuals and collectives to select, produce, and disseminate news in the public interest independent of political, economic, legal, and social interference and in the absence of threats to their physical and mental safety."

What is the methodology used by RSF to assess and rank countries?

Countries are ranked after being assigned a score ranging from 0 to 100, with 100 representing the highest possible level of press freedom and 0 the worst. The scoring has two components: a quantitative one, that tallies abuses against journalists and media outlets, and a qualitative analysis based on the responses of press freedom specialists (journalists, researchers, human rights defenders) to an RSF questionnaire.

Countries are evaluated on five contextual indicators: political context, legal framework, economic context, socio-cultural context, and safety. For instance, the political context indicator considers, among other things, "the degree of support for the media in their role of holding politicians and government to account in the public interest". A 'subsidiary score' ranging from 0 to 100 is calculated for each indicator, and all the subsidiary scores together contribute to the 'global score'. India, which had a global score of 53.44 in the 2021 Index, could muster only 41 this time.

What are the findings with regard to world press freedom?

In terms of global trends, the report flags a "two-fold increase in polarisation amplified by information chaos — that is, media polarisation fuelling divisions within countries, as well as polarisation between countries at the international level." It notes that "within democratic societies, divisions are growing" due to the spread of "opinion media" modelled on Fox News, and the rise of "disinformation circuits" amplified by how social media functions.

While singling out Moldova (40th) and Bulgaria (91st) for drastic improvements in press freedom "thanks to a government change", it has classified the situation in 28 countries including Russia (155) and Belarus (153), as "very bad". The world's 10 worst countries for press freedom include Myanmar (176th), China (175), Turkmenistan (177th), Iran (178th), Eritrea (179th) and North Korea (180th).

What does the Index say about India?

The report states that in India, "the violence against journalists, the politically partisan media and the concentration of media ownership all demonstrate that press freedom is in crisis". Describing India as "one of the world's most dangerous countries for the media", the report notes that "journalists are exposed to all kinds of physical violence including police violence, ambushes by political activists, and deadly reprisals by criminal groups or corrupt local officials." It highlights that "supporters of Hindutva, the ideology that spawned the Hindu far-right, wage all-out online attacks on any views that conflict with their thinking."

What are the report's observations on India under various indicators?

Under 'political context', it states: "Originally a product of the anti-colonial movement, the Indian press used to be seen as fairly progressive but things changed radically in the mid-2010s, when Narendra Modi became prime minister and engineered a spectacular rapprochement between his party, the BJP, and the big families

dominating the media.” It highlights that “very early on, Modi took a critical stance vis-à-vis journalists, seeing them as ‘intermediaries’ polluting the direct relationship between himself and his supporters.”

With regard to ‘legal framework’, the report notes that “Indian law is protective in theory but charges of defamation, sedition, contempt of court and endangering national security are increasingly used against journalists critical of the government”. Under ‘economic context’, the report, describing Indian media as a “colossus with a feet of clay”, points out that “media outlets largely depend on advertising contracts with local and regional governments” and “at the national level, the central government has seen that it can exploit this to impose its own narrative, and is now spending more than ₹130 billion (5 billion euros) a year on ads in the print and online media alone. “Finally, on the socio-cultural indicators of press freedom, the report, noting that “the enormous diversity of Indian society is barely reflected in the mainstream media,” states that “for the most part, only Hindu men from upper castes hold senior positions in journalism or are media executives — a bias that is reflected in media content.”

Source: The Hindu

6. Why Russia celebrates Victory Day, and why it may mark a turning point in Ukraine war

Relevant for GS Prelims & Mains Paper II; International Issues

One of Russia’s most significant national holidays is merely days away. Celebrated annually on the 9th of May, Victory Day marks the Soviet Union’s victory over Nazi Germany during World War 2. But this year, the country’s celebrations are likely to take on a whole new meaning.

Over two months after Russia launched a crippling attack on Ukraine, some western critics believe this year’s Victory Day will mark a turning point in the invasion, which has already cost thousands of Russians and Ukrainians lives. After so far insisting on calling the attack on Ukraine a “special military operation”, some believe the Kremlin may officially declare a “war” on Ukraine on May 9, a symbolic day for the country.

While the Kremlin’s press secretary has denied these allegations, calling them “nonsense”, ordinary Ukrainians are bracing themselves for a fresh wave of attacks.

Why does Russia celebrate ‘Victory Day’?

On May 9, Russia commemorates the defeat of the Nazis during World War II. Notably, while the allies observe “V-E Day”, or Victory in Europe Day, on May 7 — the day Nazis surrendered in France — Soviet leader Joseph Stalin chose to celebrate the fall of the Nazis in Soviet-controlled Berlin the next day.

While Russia’s first post-Soviet president Boris Yeltsin made Victory Day celebrations an annual affair, it was Soviet leader Leonid Brezhnev who declared May 9 a national holiday, Time Magazine reported. Victory Day celebrations usually include a massive military parade in Moscow. Russian leaders also traditionally stand on the tomb of revolutionary leader Vladimir Lenin in Red Square.

Over the last two decades, Putin has turned Victory Day into a near-sacred event. In Putin’s Russia, millions of ordinary Russians are known to gather on the streets of Moscow to watch the parade and participate in the festivities. People often carry photographs and portraits of relatives who died during the Second World War.

Even when celebrations were disrupted during the coronavirus pandemic, the names of soldiers killed during the war were broadcasted on state television channels.

Why could ‘Victory Day’ celebrations be different this year?

Over the last few years, on the near-sacred national holiday, Putin has repeatedly warned of new battles ahead. Last year, in his annual address at Red Square, he said Russia’s enemies were once again deploying “much of the ideology of the Nazis,” The New York Times reported.

Since Moscow invaded Ukraine, Putin has justified the war by claiming he was “denazifying” the country. Putin has repeatedly used the Holocaust, World War II and Nazism to legitimise Russia’s attack on Ukraine. But many historians have criticised the Russian president for spreading disinformation to further the Kremlin’s agenda.

Several political analysts believe the Russian President will use his May 9 speech next week to draw parallels between the conflict in Ukraine and the heroism of Soviet soldiers during World War II.

Preparations for a grand May 9 celebration are well underway in Russia this year, with state media reporting that warplanes are practising flying formations over Red Square. The parade next week may include eight MiG-29 jets flying in the shape of the letter “Z,” which has become a popular symbol of Russian nationalism, according to a report in The NYT.

According to Russian Defence Minister Sergei Shoigu, military parades will be held in 28 cities and will involve around 65,000 personnel and 460 aircraft.

Ukraine has alleged Russia has plans to celebrate in Ukrainian cities too. Intelligence officials have claimed that Russia has been cleaning up the streets of the battered port city of Mariupol in an effort to make it presentable as “the centre of celebrations”.

Some say Putin may even declare an official state of war in Ukraine. So far, the Kremlin has maintained that the invasion is a “special military operation”, and has taken action against journalists and news outlets that have questioned its official position.

While the Kremlin has denied that Putin will declare war on May 9, he is expected to make a strong statement. According to a CNN report, he may announce plans to annex the breakaway territories of Luhansk and Donetsk in eastern Ukraine, or declare full control over Mariupol.

Why is the West worried?

Western critics fear Putin will use his May 9 speech to intensify the attack on Ukraine and mobilise Russian citizens for a wider, more bloody battle.

US State Department spokesman Ned Price said Monday there is “good reason to believe that the Russians will do everything they can to use” May 9 for propaganda purposes, CNN reported. “We’ve seen the Russians really double down on their propaganda efforts, probably, almost certainly, as a means to distract from their tactical and strategic failures on the battlefield in Ukraine,” he said during a recent press briefing.

According to a report by The Hill, many ordinary Ukrainians are migrating from bigger cities and towns out of fear that the war will escalate.

Source: The Indian Express

7. Why are reproductive rights under threat in the U.S.?

Relevant for GS Prelims & Mains Paper II; International Issues

The Supreme Court of the United States (SCOTUS) has privately voted to strike down the constitutional right to abortion as determined by the landmark Roe vs Wade case in 1973, according to a leaked draft opinion from February 2022. The leak, by news outlet Politico on May 2, has itself become a subject of profound criticism and a likely criminal inquiry within the highest court in the land. The content has provoked dismay among liberals and pro-choice advocates and jubilation on the part of anti-abortionists. While the opinion is not surprising given that a SCOTUS majority of 6-3 leans and votes conservative, it will likely set off a lengthy

series of judicial battles at the state level given that it will, if it formally becomes the law of the land, leave the decision on whether to outlaw abortions to state legislators.

What is the Roe vs. Wade case?

Roe, short for Jane Roe, is the pseudonym for a Texas woman named Norma McCorvey who in 1970 sought to have an abortion when she was five months pregnant, notwithstanding Texas' ban on abortions except to save a mother's life. Wade refers to Henry Wade, the district attorney in Dallas County, Texas, at the time, who was the defendant in the case. The 7-2 majority opinion of the SCOTUS was written on January 22, 1973, by Justice Harry Blackmun, paving the way for the recognition of abortion as a constitutional right in the U.S., effectively striking down a wide range of state-level abortion limitations applied before foetal viability. Foetal viability is the point at which a foetus can survive outside the womb, at the time considered to be around 28 weeks, but today is closer to 23 or 24 weeks owing to advances in medicine and technology.

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Based on the Roe vs Wade case, the framework of regulations that applied towards the right to abortion required that in the first trimester, almost no limitations could be placed on that right; in the second trimester, only limitations to abortion rights that were aimed at protecting a woman's health were permitted; and in the third trimester, state governments had greater leeway to limit the right to abortion except for cases in which the life and health of the mother were endangered.

However, Roe vs Wade was not the last word on abortion rights in the U.S. even before the latest SCOTUS opinion. In the 1992 Planned Parenthood vs Casey case, the SCOTUS threw out the so-called trimester framework yet retained the Roe vs Wade case's "essential holding," which established women's constitutional right to abortion until foetal viability.

Why is there a possibility of the judgment being overturned?

The overturning of the Roe vs Wade case has not yet been formally announced and thus not yet a part of settled law, although most legal experts believe it is only a matter of time before it becomes so. It remains to be seen whether the leaked text of the private opinion of the SCOTUS, believed to be authored primarily by Justice Samuel Alito, will be the same as the final version that enters the statute books.

Nevertheless, the conservative majority of the court, to which former President Donald Trump successfully nominated three justices, regarded Roe vs Wade to lack any jurisprudential basis within the U.S. Constitution. Hence in the first draft of their opinion, dated February 2022, the justices of the SCOTUS said, "We hold that Roe and Casey must be overruled. The Constitution makes no reference to abortion, and no such right is implicitly protected by any constitutional provision... It is time to heed the Constitution and return the issue of abortion to the people's elected representatives."

What impact will the opinion have if it passes into law?

Based on analysis of data from the Centers for Disease Control and Prevention, reports have shown that the typical patient seeking an abortion in the U.S. is already a mother, is in her late 20s, has obtained some college education, is relatively poor, is unmarried, is in her first six weeks of pregnancy, is seeking a first abortion, and lives in a Democratic Party-ruled state. At a broad level, therefore, the SCOTUS opinion will disproportionately affect poorer women if it becomes law. For example, in 2014, nearly 50% of women who went in for abortions were below the poverty line, with another 25% said to be relatively close to the poverty line. Reports quoted researchers saying that the growing share of poorer women in the abortion demographic "reflects improved access to effective contraception among higher-earning women, and a recognition of the growing costs of raising children among poorer women. It may also reflect the growing presence of charities that help poor women pay for abortions in states where public programs don't."

However, all is not lost for the pro-choice side of the debate, because even if the SCOTUS successfully strikes down Roe vs Wade U.S. President Joe Biden has called upon Congress to pass legislation codifying the right to abortion, which lawmakers have every right to do. Yet, given the 50-50 split of Democratic and Republican Senators on Capitol Hill, it is near impossible to rally together the requisite 60-member supermajority

required to defeat a filibuster and pass abortion rights into law in the face of lock-step opposition from conservatives. Democrats are likely pinning their hopes on the November mid-term election sweeping more of their members into the Senate and thus restoring a constitutional right to abortion.

Source: The Hindu

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8. Counting India's Covid deaths

Relevant for GS Prelims & Mains Paper II; International Issues

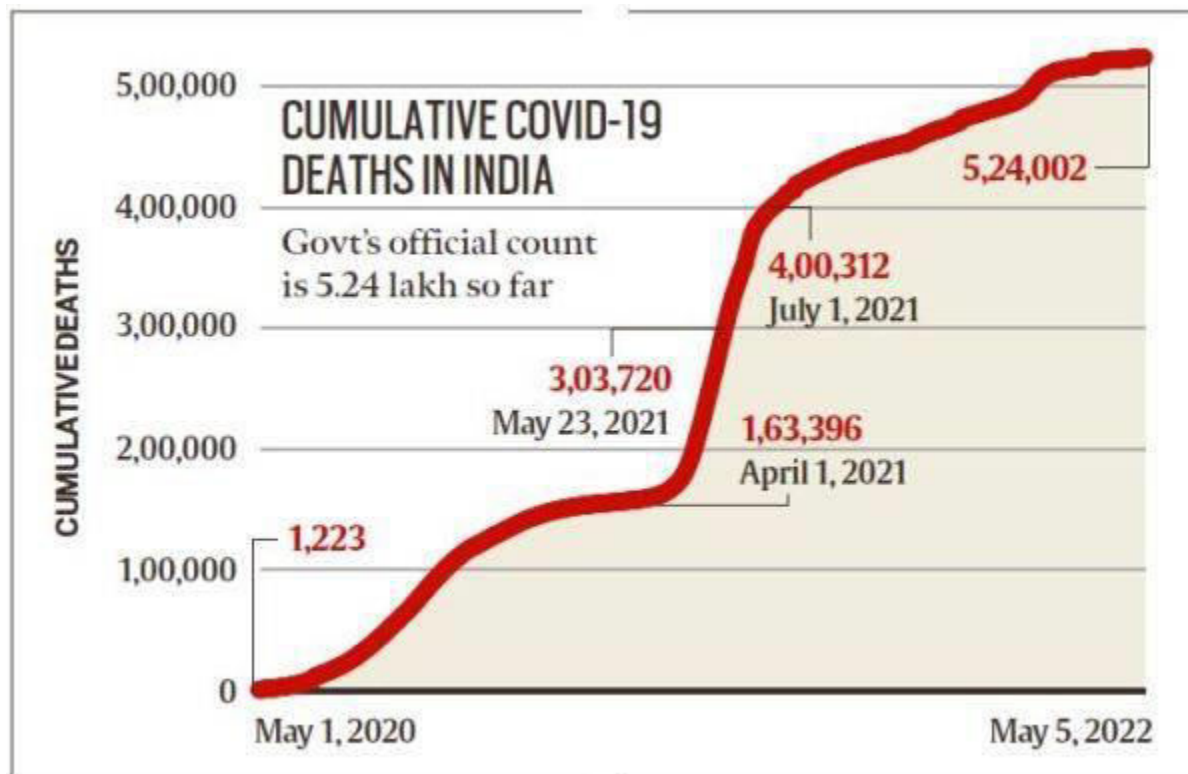
The World Health Organization (WHO) report on excess mortality due to Covid-19 is the latest in a series of exercises in the last over a year that tend to suggest India's official death toll is an undercount. The WHO report has pegged India's excess mortality (people who probably would not have died if there was no pandemic) for 2020 and 2021 at 47.4 lakh. Several other studies have shown India's Covid-related death count at anywhere between 25 lakh to 60 lakh. In fact, the upper bound for the WHO study is even higher.

While these figures are being debated, many important nuances are being missed.

The official count

Any discussion on the undercount as of now is premature because India has not yet stopped counting its Covid deaths. The 5.24 lakh deaths counted until now is not the final official toll. The number is under constant revision, almost daily, and is likely to remain so for several months, if not years. Kerala, for example, is updating its death toll almost every day, and many other states have been doing it periodically. Last week, Assam added 1,300 deaths on a single day. Other states have made similar adjustments in the past.

Even the death numbers reported in 2020 and 2021 are not final. The more than 21,000 deaths Kerala has reported in the last four months have not all happened this year. Most of them pertain to last year. The 1,300 deaths Assam added on April 25 did not all happen that day, or that month, or this year. They most likely happened the previous year. Several hundreds, possibly thousands, of deaths that states adjusted in 2021 would have actually happened in 2020. The additions to the overall tally are being made on the day these deaths are being confirmed, and not the day these might have happened.



That would mean that even though the death count for 2020 still shows up as 1.49 lakh, chances are that it has already been substantially corrected, and may be revised even further at a later stage. Many of the deaths that would have happened in 2020 but are not included in the 1.49 lakh tally would have been accounted for at a later stage. Those deaths have not been missed; they will reflect in the statistics. The same is true for 2021.

It is difficult to measure the scale of the undercount in a situation like this, particularly when the counting exercise is still on. A physical count, and verification, of the dead in a country as vast as India during such chaotic times is bound to take a little more time than running some equations in a computer model.

The WHO report does not get into calculating the scale of the undercount, for India or any other country. It has done a more straightforward exercise of calculating excess mortality. It has estimated the total number of people who likely died in India in 2020 due to all causes and, from that, has subtracted the expected number of all-cause deaths if there was no Covid. These 'excess' deaths are considered to be a direct or indirect result of Covid-19.

Multiple studies and estimates

It is often argued that, because multiple studies have been pointing to similar estimates, they must be reflective of the true death toll in the country. What is being overlooked is that these studies have been throwing up similar estimates probably because they have all been using similar mathematical models and statistical methods. The researchers, and those doing peer reviews, belong to an overlapping set of people.

What these studies certainly show is that there is a general agreement in academic circles on the usefulness of these models in the current situation, possibly based on their ability to simulate the reality in some earlier situations. That, however, is no guarantee that these models have an unquestionable capability to accurately mimic the dynamics of the current pandemic, whose nature and behaviour is far from fully understood.

Computer modelling is routinely used by academics to simulate real-life situations. The accuracy of their results depend on the underlying quality of data and assumptions. Because of multiple layers of extrapolations involved, slight changes in assumptions or input data can significantly alter results.

To estimate India's Covid toll, the WHO study has relied, among various sources, on death registration data from the Civil Registration System (CRS). Several media houses had published monthly CRS data for a few states last year, and these numbers did not always match. Depending on which publication was selected to pick these numbers from, the output of the mathematical model would have been different.

Also, the monthly CRS death data, even if obtained through an RTI applications, was only 'provisional' and subject to change. Only the numbers mentioned in the annual CRS report, released last week, are final.

The quality of assumptions can also induce large uncertainties in the final result. In March 2020, a widely quoted computer modelling study led by Ramanan Laxminarayan had predicted 1 to 3 million Covid-related deaths in India by the middle of April, roughly three weeks from that time. When nothing like that happened, Laxminarayan acknowledged that the risk of dying from Covid was actually a lot lower than he had originally assumed.

Scientists admit that they still do not fully understand the nature and behaviour of this virus. It is thus difficult to assume that these processes and behaviours that epidemiologists have not fully understood have somehow found accurate description in modelling or machine learning algorithms.

CRS and SRS

As discussed in The Indian Express earlier, the CRS data released last week do not throw any fresh light on this debate on their own. That is because CRS only has death registration data, and not every death in the country is registered. The actual death data is revealed by the Sample Registration Survey (SRS) whose report for 2020 has not yet been released.

CRS and SRS are annual exercises that complement each other. The SRS uses a door-to-door survey in a few thousand sample towns and villages to produce an estimate of the total number of births and deaths in the country every year. This exercise is repeated after a few months to avoid duplication.

The CRS is a database of all births and deaths that get registered. The CRS database is therefore a subset of the SRS. Over the last few years, as more and more people are registering their births and deaths, the CRS numbers are converging closer to the SRS estimates.

These two systems might still not be perfect, but they are extremely robust sources of birth and death data. These data are consistent with the findings of the Census and a vast array of other data-collection exercises that together make up all the demographic, social and economic indicators that everyone agrees on.

SRS numbers from the past 15 years have established that about 83 lakh people die in India every year on an average. If the SRS for 2020, whenever it comes out, reveals that 90 lakh or more people died in the country in that year, instead of the expected 82 to 84 lakh, then it would suggest that the computer models used by WHO or other studies were accurate in estimating 8 lakh excess deaths due to Covid-19 in India in 2020. If the SRS numbers are not close to that, it can be inferred that those many never died.

Source: The Indian Express

9. Will the Northeast benefit from Bangladesh offer of services at Chittagong Port?

Relevant for GS Prelims & Mains Paper II; Bilateral Relations

Bangladesh Prime Minister Sheikh Hasina offered India the use of the Chittagong Port when External Affairs Minister S. Jaishankar called on her in Dhaka last month for an invite to New Delhi. Ms. Hasina said the port would be of benefit to India's northeastern States, particularly Assam and Tripura. The two other northeastern States bordering Bangladesh — Meghalaya and Mizoram — could also benefit from access to the port.

How did Partition affect business in the Northeast?

India's Northeast had easy access to the seaports, specifically Chittagong, in present-day Bangladesh via the Brahmaputra and Barak River systems before independence. The Partition in 1947 did not immediately affect the transportation of tea, timber, coal and oil through these rivers and local-level border trade, helping maintain undivided Assam's status as the State with the highest per capita income till the early 1950s. But the volume of trade began dipping with the souring of ties between India and Pakistan — Bangladesh was East Pakistan then — before the 1965 war cut the Northeast off. The movement of goods through the 'chicken's neck', a narrow strip in West Bengal, became a costlier alternative for the region after access to the river and land routes through East Pakistan was denied.

Did things change after Bangladesh was created?

The creation of Bangladesh with India's help in 1971 did not translate into the revival of the traditional river and land trade and communication routes for the Northeast. A degree of mistrust between the two countries, primarily because of the 'Bangladeshi' issue and camps established by myriad Northeast extremist groups in Bangladesh, did not help matters. Besides, the two countries did not look at trade and commerce opportunities more closely. The scenario began to change when Sheikh Hasina's Awami League government took charge in 2009 and the mistrust lessened after the dispute-ending land boundary agreement was signed in 2015. The two countries undertook efforts to improve capacity across waterways, roadways and railroads. From a bus service between Agartala and Kolkata via Dhaka to the movement of cargo on barges, trial runs and trans-shipments have been successfully conducted.

What does the Bangladesh PM's offer mean?

The Northeast has been the key to the increase in bilateral engagements between India and Bangladesh in the last five years. India's 'Act East' policy that focuses on the region and a new sense of cooperation between the two countries can help the Northeast, specifically four States, explore the potential of economic activities optimally. These States — Assam, Meghalaya, Tripura and Mizoram — share a 1,879 km border with Bangladesh. With a special focus on railways and waterways, many of the pre-Partition trade routes are being revived. Most of these roads lead to Chittagong port, which has historically been the largest and the most convenient for trade and commerce for the region. The importance of this port made the British administrators build the Assam-Bengal Railway route to ship goods from the Chittagong port to the remotest parts of the region such as the now-defunct Lekhapani station near the Arunachal Pradesh-Assam border.

Is there any action on the ground?

The need for connectivity between India's 'mainland' and the Northeast via Bangladesh through a multi-modal approach has been felt for a long time. It began translating into action on the ground in the last five years following the assessment that reopening the pre-Partition trade routes would reduce the cost and time of transportation for the Northeast and generate revenue for Bangladesh. India has been working on infrastructure on either side of the border. In March 2021, the Prime Ministers of the two countries inaugurated the MaitriSetu, a bridge built over the Feni River, which has reduced the distance between Sabroom in southern Tripura and the Chittagong port to just 111 km. The government is working on a multi-modal transit hub at Sabroom inclusive of road and rail connectivity that can help goods reach the Chittagong port in a few hours. Road connectivity in Meghalaya's Dawki, southern Assam's Sutarkandi and Tripura's Akhaura linking eastern and south-eastern Bangladesh is also being improved. Mizoram is keen on bridges across the Khawthlangtuipui river (Karnaphuli in Bangladesh) for faster access to the Chittagong port. Apart from the India-Bangladesh Protocol Route involving the Brahmaputra, cargo ships from Bangladesh have reached Tripura through the Gomati River and Assam's Karimganj via the Kushiara River.

Source: The Hindu

10. From neutral to NATO: Why Finland joining the alliance matters

Relevant for GS Prelims & Mains Paper II; International Issues

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While countries were thinking about the security dynamics of Europe, Finland's Prime Minister had insisted that her country was unlikely to join NATO even as Russian troops amassed on the Ukrainian border in February. Three months and one invasion later, Finland is hurtling to join the alliance — a monumental shift for a nation with a long history of wartime neutrality and staying out of military alliances.

The Kremlin, meanwhile, has responded by saying that the move would be a threat to Russia and warned of a possible retaliation. We take a look at why Finland has chosen to ditch its neutrality and what the move's impact might be.

Why join now?

On Thursday, Finnish President Sauli Niinistö urged his country to apply for NATO membership “without delay”, with the wider government expected to formally announce its decision on Sunday.

The country, so far, has stayed away from joining such alliances as it always wanted to maintain cordial relations with its neighbour Russia. For a long time, the idea of not joining NATO or getting too close to the West was a matter of survival for the Finns. However, the change in perception and an overwhelming support to join NATO came about following the Russian invasion of Ukraine.

NATO membership would strengthen the country's security and defence system, President Niinistö and Prime Minister Sanna Marin said. Niinistö has held Russian President Vladimir Putin responsible for this dramatic stand. “You (Putin) caused this, look in the mirror,” he said a day before the announcement.

Former Finnish Prime Minister Alexander Stubb said that there was no surprise in the announcement and that this was a “done deal” as soon as Russia set foot in Ukraine.

According to a public poll conducted by Finnish broadcaster YLE, 76 per cent of Finns favour joining the alliance. This number used to be around 25 per cent for years before the invasion, The New York Times reported.

Was this a long time coming?

For Finns, events in Ukraine bring a haunting sense of familiarity. The Soviets had invaded Finland in late 1939 and despite the Finnish army putting up fierce resistance for more than three months, they ended up losing 10 per cent of their territory.

The country adopted to stay non-aligned during the cold war years. However, insecurities started growing since Russia annexed Crimea in 2014 as Finland brought back conscription and military spending went up.

Talking to the BBC, Historian Henrik Meinander said that Finland was “mentally prepared” to join the organisation for a long time. “In 1992, Finland bought 64 US combat planes. Three years later, it joined the European Union, alongside Sweden. Every Finnish government since then has reviewed the so-called NATO option,” Meinander added.

What about Sweden?

Sweden is likely to apply for a membership after Finland's final call. If Finland joins, Sweden will be the only Nordic non-member of NATO. Now, unlike Finland, whose policy stance was a matter of survival, Sweden has been opposed to joining the organisation for ideological reasons.

The ruling Social Democratic Party is currently conducting a security policy review in its parliament to analyse the pros and cons of joining NATO and the results are due on Friday. In terms of public perception, the Swedes seem to be on the same page with the Finns. A poll conducted by Swedish daily Aftonbladet this week showed support for a NATO membership rise to 61 per cent, as compared to a 42 per cent in January.

What would a membership mean and will it benefit NATO as well?

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Being a member of NATO will give the nations a security guarantee under the alliance's "Article 5" on collective defence. The article essentially guarantees a military response and protection by NATO countries if any member of the organisation comes under attack.

NATO, too, has shown eagerness about Finland and Sweden's memberships. Usually, becoming an official NATO member can take up to a year as it requires the approval of all existing member states. However, NATO Secretary General Jens Stoltenberg has ensured that the countries could join quickly and that the organisation would make full security arrangements during the interim period.

Finland's geographical location plays in its favour as once it becomes a member, the length of borders Russia shares with NATO would double and it would also strengthen the alliance's position in the Baltic Sea.

The symbolic consequence of this cannot be ignored as well. More sovereign powers siding with the west and increasing its strength is a direct blow to Russia. Former Prime Minister of Denmark Anders Fogh Rasmussen wrote in a New York Times column that if Sweden and Finland do join NATO, especially under these circumstances, "it would show Putin that the war is counterproductive and it only strengthens Western unity, resolve and military preparedness".

How have Russia and other countries reacted?

Russia's foreign ministry has said that they will be forced to take military steps if the membership materialises and said that Finland should "be aware of its responsibility and the consequences of such a move".

Kremlin spokesperson, Dmitry Peskov, too, took a similar stance and said that this move will be clearly interpreted as a threat and that everything will depend on how the process takes place. Dmitry Medvedev, a close ally to Putin has warned that this may prompt Moscow to deploy nuclear weapons in Kaliningrad, the Russian exclave between Poland and Lithuania.

However, fellow European nations and the United States have welcomed the announcement. Norway and Denmark said that they would push for a faster approval of NATO admission.

The US stated that it was ready to provide any defence support or address concerns that might arise till the membership becomes official. "We are confident that we could find ways to address any concerns either country may have about the period of time between a NATO membership application and the formal accession to the alliance," White House spokesperson Jen Psaki said.

Source: The Indian Express

11. Why has Elon Musk put the Twitter deal on hold?

Relevant for GS Prelims & Mains Paper II; International Issues

Elon Musk said that his \$44 billion deal to acquire Twitter has been put on hold. The billionaire Tesla chief cited pending details to support the microblogging site's claim that spam or fake accounts were less than 5 per cent of its total user base.

What has Elon Musk said?

Website: www.prepmate.in

Telegram Channel: [@upscprepmate](https://t.me/upscprepmate)

Prepmate Cengage Books Preview: <https://prepmate.in/books/> Youtube channel: [PrepMateEduTech](https://www.youtube.com/channel/UCPrepMate)

In a tweet Friday, Musk said: "Twitter deal temporarily on hold pending details supporting calculation that spam/fake accounts do indeed represent less than 5% of users". He shared a link in his tweet to a May 2 Reuters story titled 'Twitter estimates spam, fake accounts comprise less than 5% of users -filing'.

Why has Elon Musk put the Twitter deal on hold?

The world's richest man on prior occasions has said that removing "spam bots" from Twitter will be one of his top priorities following the completion of the acquisition. Page | 84

What is Twitter's claim on spam users?

Earlier this month, the microblogging platform had claimed in a regulatory filing that false or spam accounts represented fewer than 5 per cent of its monetisable daily active users during the first quarter. It also said it faced several risks until the deal with Musk is closed, including whether advertisers would continue to spend on Twitter.

What was the reaction to Musk's announcement?

According to Reuters, shares of Twitter fell 20 per cent in premarket trading. Even though Musk did not provide much details in his tweet announcing the deal going on hold, it could cause a flurry in the tech and investment ecosystem.

Why is it important?

While Musk had initially announced that he would take Twitter private by buying it for \$44 billion with the help of a loan by Morgan Stanley, he later made a filing saying he has received equity commitment from marquee investment houses including Sequoia Capital, Andreessen Horowitz, Larry Ellison, and others.

Source: The Indian Express

12. What does Finland's entry into NATO mean for Russia and the European Union? Will the move escalate the security crisis?

Relevant for GS Prelims & Mains Paper II; International Issues

The strategic geopolitical ambiguity of Finland has finally come to a halt and taken a hard turn as Finland formally announced its intention of joining the North Atlantic Treaty Organization (NATO). This marks the culmination of a series of veiled comments by Finland hinting their intention of joining NATO. The Finnish President Sauli Niinistö along with the Ministerial Committee on Foreign and Security Policy announced their bid for NATO membership on Sunday. They would now send their recommendation to the Parliament where it is expected to pass through without any roadblocks.

The last two odd decades have seen Finland revise its outlook of global geopolitics and order but rarely have their different heads of state overtly signalled their shift. This ambiguity has allowed them to not only improve their ties with rest of the Europe post 2000 but also go back to increasing trade ties with Russia during the European economic slump. Their actions post the collapse of the Soviet Union and emergence of a more integrated European Union indicate their preference for having their cake and eating it too. This is set to change and has been brought about by Russia's actions in Ukraine. The Finnish security concerns began to heighten post the Russian annexation of Crimea in 2014 and have snow-balled now into an immediate existential crisis of sorts after the recent Russian assault on Ukraine.

What is happening?

The last joint statement by the Finnish President and Prime Minister Sanna Marin put it in no ambiguous terms that "Finland must apply for NATO membership without delay". This was followed by the official Finnish declaration of a NATO bid on Sunday. This tectonic shift is likely to have significant ramifications for the entire European continent. The last few days also saw Russian Defence Committee deputy chair, Aleksey Zhuravlyov, discuss Russia nuking Europe and question the very existence of Finland on Russian state

television which bears similarities to their justification for the Ukrainian invasion. Mr. Zhuravlyov also threatened the Finns with the use of Kinzhal-class ballistic missiles boasting how it “will reach Finland in 20 seconds, or even 10 seconds”. RAO Nordic (a subsidiary of Inter RAO which is a major energy company in Russia), citing delayed payments from Finland, cut off electricity supply to Finland. The Finns seem to be hopeful that Sweden, the Baltic nations, and their own energy sources can help fill the void. There also seems to be a concerted effort from sections of the western media to create a sense of panic in Finland which has been decried by Finnish nationals. Mr. Niinistö spoke with the U.S. President Joe Biden and the Swedish Prime Minister Magdalena Andersson discussing their “next steps towards NATO membership”.

How has Russia responded to the announcement?

Official voices from within Russia give a sense of how they perceive the U.S.’s role as an agent provocateur trying to lure other countries towards NATO. The Russian state seems to be going through a sense of mania where officials talk about nuking countries, ‘crushing bugs’ (referring to the Baltic states), and invading countries in a bid to safeguard their security. Finland’s formal declaration and Sweden’s interest in joining NATO has aggravated their security dilemma. We see the manifestation of Waltzian realism unravelling in front of us as nations begin to grapple with their existential crises precipitated by the anarchic structure of the world and actions of other states aimed towards their security goals.

These states seek security guarantees through alliance formation as well. The risk of a new arms race cannot be entirely written off as we see strongman tactics from the Russian head of state and from different senior security officials of the Russian government which signal revanchist attitudes and a highly volatile method of engagement.

What does NATO membership achieve?

One would expect NATO membership to allay Finland and Sweden’s security concerns to a reasonable degree as all the countries involved in the highly volatile region would, likely, reach an impasse until someone decides to break through the gridlock through a change in tactics.

However, the rational actor assumption has recently been on tumultuous grounds vis-à-vis Russia, and it would be difficult to predict its next set of actions as and when Finland and Sweden formally join NATO. Even the comments of a former Prime Minister of Denmark, Anders Fogh Rasmussen, on the NATO membership teaching Russian President Vladimir Putin the resolve of the West and the counterproductive nature of the war, are based on Mr. Putin following the supposed logic of a rational actor.

What lies ahead?

As Kremlin’s rhetoric and threats against its neighbours continue to increase, it wouldn’t be a flight of fancy to imagine that more of its neighbours, primarily the Baltic states, will firmly express their heightened security concerns and seek to remedy them. Those actions would then in turn further create a high security risk environment in the immediate periphery of Russia. NATO expansionism has been publicly cited multiple times by Russian Ministers and senior defence officers as a major reason for Russia’s perceived security threat. Estonia has already asked NATO for local anti-Russia command centres and greater air defence systems citing Baltic security concerns.

The full-blown Russian invasion of Ukraine, which began almost three months back, has only resulted in isolating Russia from most countries in the world. They are losing a significant number of troops and scores of military equipment as the war continues. What seemed initially like a quick victory to the Russians is now spiralling into a nightmare for Kremlin. The propaganda can only cloak the reality for so long. The war is also taking an economic toll on Moscow as it is further impacted by the economic sanctions against them by the West. As multiple corporations leave the Russian space and countries continue to decrease their energy dependency on Russia, the road ahead for Moscow is most certainly a dark and long-winding one. As Finland joins NATO, Russia could seek to deploy more troops along the Russian-Finland border and further thin-out an already attenuated Russian army.

Finland and Russia share a 1,300 km border and Kremlin's actions against Finland's (and potentially Sweden's) NATO membership may heavily depend on the potential military asset deployment along the border on the Finnish, and potentially Swedish, side. The Finns may very well not opt for immediate asset deployment and perhaps would want to use their NATO membership as a signal to Russia but if they continue to feel sufficiently threatened, they may opt for exhaustive asset deployment. Russia's revanchist assault on Ukrainian sovereignty has cascaded into a nightmare for Russian security concerns, with NATO looking to be at their immediate doorsteps. Such actions would only further fuel already anxious and retaliatory minds within Russia and may cause things to spiral out of control. Constant communication from all sides is key to avoid a grim eventuality. The Finns understand this and have constantly been in touch with Kremlin updating them of developments. Sunday's announcement saw the Finnish President reiterate that they don't see security as a zero-sum game (a comment aimed to quell anxious minds within Kremlin). The situation is also exacerbated by the political capital Mr. Putin continues to enjoy which makes it even more difficult for any significant political opposition to come to the fore. The only hope from within the Russian borders would be the collective conscience of the Russian public.

Source: The Hindu

13. What's the 21st Constitutional Amendment aimed to cut power of Sri Lankan presidents

Relevant for GS Prelims & Mains Paper II; International Issues

Sri Lanka's new Prime Minister Ranil Wickremesinghe has said that the 21st Amendment to the Constitution to curb the presidential powers will be discussed with the Attorney General's Department on Monday so that it can be submitted to the Cabinet for approval. The 21st Amendment is expected to annul the 20th Amendment, which gave unfettered powers to President Gotabaya Rajapaksa after abolishing the 19th Amendment, a provision that had made the Parliament powerful over the president.

What will the 21st Amendment entail?

The amendment is likely to reduce the Presidency to a ceremonial position, retaining the powers of the President on all three armed forces while handing over almost all other key powers pertaining to governance, and cabinet ministers to the Prime Minister.

There are two proposed amendments in the form of Private Member's Bills – one by Samagi Jana Balawegaya (SJB) and another by Sri Lanka Podujana Peramuna (SLPP) MPs. Both Bills look at transferring powers of making key appointments from the President to the Constitutional Council. Both proposals agree that the Council should comprise of both MPs and citizens not affiliated to political parties.

Additionally, the President would require to act on the Prime Minister's advice to determine the scope and functions of ministries and appoint ministers, deputy ministers and state ministers.

The two proposals, however, differ on the sway the President will hold over the Parliament. According to the SJB proposal, the President will be elected by the Parliament for a term of five years and can be removed by a no-confidence vote. The President will also lose the power of dissolving a Parliament session at will. The second proposal, on the other hand, allows the President to dissolve or prorogue the Parliament at any time after 2.5 years of its first sitting.

The proposal by SJB also calls for the establishment of a National Security Council to formulate policy and monitor implementation of policy relating the national security. The Council will be chaired by the Prime Minister.

Additionally, the Bill proposes amending Article 70 to allow the parliament to pass resolutions by majority vote to dissolve the parliament before its term expires.

Which amendments preceded the 21st Amendment?

The enactment of the 19th Amendment in April 2015 was rushed by then Prime Minister Ranil Wickremesinghe. It had removed the powers of the President to sack the Prime Minister at his discretion. Articles 46 (2) and 48 of the Sri Lankan constitution were amended ensuring that the cabinet ministers could have been dismissed only if the Prime Minister ceased to hold office by death, resignation or otherwise, or only if the Parliament rejects a statement of government policy or the budget or if the parliament passes a vote of no confidence against the Government. The amendment also restricted the President's powers to dismiss Cabinet ministers as he was required to act on the advice of the Prime Minister.

This was overturned in 2019, when the Rajapaksa family came into power with Gotabaya Rajapaksa winning the presidential election and his brother Mahinda Rajapaksa occupying the prime minister's office. The 19th amendment was scrapped.

After registering a landslide victory in the 2020 general elections, the Rajapaksas increased the executive powers of a President by bringing in the 20th Amendment. The amendment also empowered the President to make key appointments to independent institutions. It was after the passage of this amendment that close family members of the Rajapaksa brothers were installed in key positions.

A look at the proposed amendment's timing

The proposed amendment comes at the time Sri Lanka is facing its worst economic and political crisis since it was liberated from British rule in 1948. A crippling shortage of foreign reserves has led to long queues for fuel, cooking gas and other essentials while power cuts and soaring food prices heaped misery on the people. Protestors stationed outside the secretariat in Colombo and across the island nation have been demanding President Gotabaya Rajapaksa's resignation, while his brother Mahinda Rajapaksa resigned as Prime Minister after violent clashes last week that left nine dead and hundreds injured.

Amid growing resentment, the President sacked his Cabinet and appointed a younger Cabinet. The 73-year-old United National Party (UNP) leader, Ranil Wickremesinghe, was appointed the new Prime Minister.

Discussion of an amendment also comes as a hope for bringing calm to the country, where the leaders are reaching out across party lines to resolve the prevailing crisis. Wickremesinghe has also invited the Leaders of the 10 parties that quit the previous government to discuss the current political situation and said he will make an appointment after meeting them.

Rajapaksa's Sri Lanka Podujana Peramuna Party (SLPP) has extended their support to Wickremesinghe and almost all parties represented in the 225-member Parliament have said although they wouldn't be a party to Wickremesinghe's government they would support him in his effort to pull Sri Lanka out of the current economic crisis. Sri Lanka Freedom Party (SLFP) chief and former President Maithripala Sirisena has written a letter to Wickremesinghe, saying that his party will support the formation of his government.

The amendment will look to resolve the governance crisis in the country, where resentment against the President rises but executive presidency proves a major hurdle in removing the president and dissolving the parliament.

Source: The Indian Express

14. Amid China head start, Modi push to claim India's place in Nepal's Buddhist heritage**Relevant for GS Prelims & Mains Paper II; International Issues**

On November 8, 2011, the veteran Congress leader Karan Singh, who was then a member of Rajya Sabha, told an unscheduled press conference during a visit to Nepal: "India would be interested in developing Lumbini in a manner befitting its status on the world map."

Singh's statement followed the aggressive pursuit by China of a \$3 billion project through one of its NGOs — Asia Pacific Exchange of Cooperation Foundation (APECF) — to develop the birthplace of Lord Buddha into an international “city of peace”.

At a dinner hosted by a Nepali businessman where Nepal's former King Gyanendra — who was chairman of the Lumbini Development Trust when it was established in 1985 with the aim of restoring the Lumbini Garden — it was underlined that Lumbini was “less than 10 km” from the Indian border.

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The Congress was then in power, and Singh was apparently told to convey to Nepal that India had both a cultural and a security interest in the development of Lumbini.

Modi in Lumbini: A new push

More than a decade later, Prime Minister Narendra Modi is in Lumbini on Monday (May 16), the 2,566th birth anniversary of the Buddha, to lay the foundation of a monastery and to address a celebration at the Maya Devi temple. India will join more than a dozen countries including China, Thailand, Vietnam, Myanmar, Japan, Taiwan, and South Korea to have a monastery of its own in the global project.

As he spends several hours in Nepal on Monday, Modi will become the first Indian Prime Minister to visit Lumbini. He had expressed a desire to visit Lumbini during his first official visit to Nepal as Prime Minister in July 2014 — he had, in an address to the Constituent Assembly of Nepal on that occasion, acknowledged the birth of the Buddha in that country, reassuring Nepali sentiment that India would not try to appropriate it.

The Chinese: First off the block

After the Chinese had declared their plans for Lumbini and roped in Maoist leader and then former Prime Minister of Nepal Pushpa Kamal Dahal ‘Prachanda’ as the APECF's vice-chairman and project in-charge, the foundation signed an understanding with the United Nations Industrial Development Organisation (UNIDO) to expedite the Chinese vision on Lumbini.

Given the lack of clarity on the project, and Indian and US unease about it, subsequent governments in Nepal did not pursue the initiative further. However, the Chinese continued to focus on Lumbini as part of their project for Nepal.

In 2018, it announced plans to connect Tibet with Kathmandu by a trans-Himalayan railway, and then to Lumbini. Chinese government delegates and political figures often made the 30-minute flight to Lumbini from Kathmandu to send the signal that it was sincere about the development project, and to underline the two countries' shared Buddhist heritage. It was also the Chinese counter to the claims made by India and other countries that China's interest in Nepal was rooted purely in business.

Ramayana and Buddhist circuits

And yet, India itself showed no significant interest in building connectivity to Lumbini — or in promoting other shrines in Nepal. As Prime Minister, Modi made a break in this policy disinterest by allocating funds for the renovation of the passage around the Pashupati Nath Temple and the building of a dharmashala for pilgrims.

Both he and Uttar Pradesh Chief Minister Yogi Adityanath visited Janakpur, the birthplace of Sita — and announced a connectivity package to link the pilgrimage centre to Ayodhya by a regular bus service. This was intended to be part of the proposed Ramayan circuit, but the project continues to lack clarity and a concrete roadmap.

By contrast, the Government of India seems more keen to develop the Buddhist circuit, in which Lumbini would be a prominent stop.

Nepal's Prime Minister Sher Bahadur Deuba will inaugurate the Gautam Buddha International Airport — an expanded and upgraded domestic airport — at Bhairahawa, 18 km from Lumbini, on Monday. Modi will, however, avoid this airport, which has been built with Chinese assistance — the Prime Minister will fly from Kushinagar, another Buddhist pilgrimage and part of the proposed circuit, and his helicopter will land on a new helipad that has been built in Lumbini.

While the Indian message is clearly of shared cultural and religious links with Nepal that are removed from that of any other country, the fact, as an Indian diplomat pointed out privately, is that governments prior to Modi's had done little to promote India's soft power and religion in Nepal, and Modi himself had initially focused on the 'Hindu' aspect of the relationship — until New Delhi was nudged awake by the Chinese initiative.

Source: The Indian Express

15. Sweden enters 'new era' with NATO bid

Relevant for GS Prelims & Mains Paper II; International Issues

Sweden and Finland to join NATO

Sweden on Monday officially announced it will apply for NATO membership as a deterrent against Russian aggression, entering a "new era" and reversing two centuries of military non-alignment.

Sweden and Finland have both expressed a desire to act in lockstep on NATO membership. They are expected to submit their applications jointly this week.

Response of Russia

Russian President Vladimir Putin on Monday warned that NATO's expansion may trigger a response from Moscow.

It poses "no direct threat for us... but the expansion of military infrastructure to these territories will certainly provoke our response," Putin said during a televised summit meeting of the Collective Security Treaty Organisation, a Moscow-led military alliance.

Sweden's vulnerability

Ms. Andersson acknowledged Sweden would be "vulnerable" in the interim period before its application is ratified.

Stockholm has received security assurances from several key partners, including the United States, Britain, Germany, France and the Nordic countries, she added.

U-turn

Sweden's announcement was expected after Andersson's Social Democratic party on Sunday backed membership, in a dramatic U-turn. Sweden had opposed the idea since the birth of the Western military alliance.

The premier had earlier in the day consulted parliament by convening a debate, though lawmakers did not vote on the issue.

Six of eight parties in parliament, constituting a very broad majority, are in favour of joining. Swedish public support has also risen dramatically to around 50 percent — with about 20 percent against.

In Helsinki, support has surged even more dramatically, with more than three-quarters of Finns in favour of membership, almost triple the level seen before the war in Ukraine began on February 24.

Finnish lawmakers on Monday launched a marathon debate with over 150 of 200 MPs asking to speak, following a NATO membership proposal presented on Sunday by President Sauli Niinistö and Prime Minister Sanna Marin.

"Our security environment has fundamentally changed," Marin told parliament.

"The only country that threatens European security, and is now openly waging a war of aggression, is Russia", she said.

Memories of war

Finland, which shares a 1,300-kilometre (800-mile) border with Russia, has a long shared history with Russia.

It spent more than a century as part of the Russian empire until it gained independence in 1917. Finland was then invaded by the Soviet Union in 1939.

Finns put up a fierce fight during the bloody Winter War, but were ultimately forced to cede a huge stretch of their eastern Karelia province in a peace treaty with Moscow.

An overwhelming majority of Finland's 200 MPs -- at least 85 percent -- back the decision to join NATO.

During the debate in Sweden's parliament, Andersson acknowledged that Sweden's decision to join NATO was closely tied to Finland's.

As the only country in the Baltic Sea region outside of NATO, Sweden would find itself "in a very vulnerable position", she told parliament.

She also stressed Sweden's "extensive military cooperation" with Finland.

If Sweden doesn't join, and "Finland as a NATO member focuses more on its cooperation with NATO countries, Sweden's defence capability decreases at a time when it instead needs to be strengthened."

"The best thing for our country's security is therefore for Sweden to apply for membership in NATO and to do it together with Finland," she said.

Andersson later said "it shouldn't take more than a year" for the alliance's 30 members to unanimously ratify Sweden's membership application.

NATO has said the two countries would be welcomed "with open arms", but Turkish President Recep Tayyip Erdogan has expressed last-minute objections.

Ankara is angered by what it considers to be the two countries' leniency, in particular Stockholm's, towards the Kurdistan Workers' Party (PKK), which is on the EU's list of terrorist organisations.

Swedish Defence Minister Peter Hultqvist said Monday Sweden was sending a delegation to Turkey for talks with officials.

Source: The Hindu

16. Why Turkey is wary of Sweden and Finland's NATO bid

Relevant for GS Prelims & Mains Paper II; International Issues

Turkish President Recep Tayyip Erdogan has thrown a spanner in the works of Sweden and Finland's historic decisions to seek NATO membership, declaring that he cannot allow them to join due to their alleged support of Kurdish militants and other groups that Ankara says threaten its national security.

NATO Secretary General Jens Stoltenberg has voiced confidence that the alliance will move to admit Sweden and Finland swiftly. But Erdogan's declaration suggests that the two Nordic countries' path to membership could be anything but smooth.

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Turkey's approval is crucial because the military alliance makes its decisions by consensus. Any of its 30 member countries can veto a new member.

Erdogan's government is expected to use the two countries' membership bids as leverage for concessions and guarantees from its allies.

Here's a look at Turkey's position, what it could gain and likely repercussions:

What's Turkey's problem with the membership bids?

Turkey, which has NATO's second largest army, has traditionally been supportive of NATO enlargement, believing that the alliance's "open door" policy enhances European security. It has for example, spoken in favor of the prospect of Ukraine and Georgia joining.

Erdogan's objection to Sweden and Finland stems from Turkish grievances with Stockholm's — and to a lesser degree Helsinki's — perceived support of the banned Kurdistan Workers Party, or PKK, the leftist extremist group DHKP-C and followers of the US-based Muslim cleric Fethullah Gulen who Ankara claims was behind a failed military coup attempt in 2016.

Many Kurdish and other exiles have found refuge in Sweden over the past decades, as have members of Gulen's movement more recently. According to Turkey's state-run media, Sweden and Finland have refused to extradite 33 people wanted by Turkey.

Ankara, which frequently accuses allies of turning a blind eye to its security concerns, has also been angered by restrictions on sales of military equipment to Turkey. These were imposed by EU countries, including Sweden and Finland, following Turkey's military incursion into northern Syria in 2019.

Further justifying his objection, Erdogan says his country doesn't want to repeat a "mistake" by Ankara, which agreed to readmit Greece into NATO's military structure in 1980. He claimed the action had allowed Greece "to take an attitude against Turkey" with NATO's backing.

What could Turkey gain?

Turkey is expected to seek to negotiate a compromise deal under which the two countries will crack down on the PKK and other groups in return for Turkish support of their joining NATO. A key demand is expected to be that they halt any support to a Syrian Kurdish group, the Kurdish People's Protection Units, or YPG. The group is a Western ally in the fight against the Islamic State group in northern Syria but Turkey views it as an extension of the PKK.

Erdogan could also seek to use Sweden and Finland's membership to wrest concessions from the United States and other allies. Turkey wants to return to the US-led F-35 fighter jet program — a project it was kicked out of following its purchase of Russian S-400 missile defense systems. Alternatively, Turkey is looking to purchase a new batch of F-16 fighter jets and upgrade its existing fleet.

Other possible demands could include an end to an unofficial embargo on military sales to Turkey by allies; concessions from EU member countries concerning Turkey's faltered bid to join the bloc; and increased funds to help the country support 3.7 million Syrian refugees.

How does this affect Turkey's image in the West?

Turkey's threat of a veto is likely to undermine its own status in Washington and across NATO, reinforcing an image of a country that is blocking the alliance's expansion for its own profit. With the move, Turkey also risks damaging the credit it had earned by supplying Ukraine with the Bayraktar TB2 armed drones that became an effective weapon against Russian forces.

"There is no scenario under which Turkey does not end up being seen as (Russian President Vladimir) Putin's mole inside NATO," said Soner Cagaptay, an expert on Turkey at the Washington Institute. "Everybody will forget the objections linked to the PKK. Everybody will focus on the fact that Turkey is blocking NATO's expansion. It will distort the view of Turkey across (NATO)."

Cagaptay said Turkey's obstruction could also undo "the positive momentum" that had started to build in Washington regarding the sale of the F-16s. "I cannot see that sale going through at this stage," he said.

Is Turkey trying to appease Russia?

Turkey has built close relations with both Russia and Ukraine and has been trying to balance its ties with both. It has refused to join sanctions against Russia — while supporting Ukraine with the drones that helped deny Russia air superiority.

"The fact that Erdogan is derailing (the NATO) process intentionally suggests that maybe he is trying to balance the strong military support Turkey has given to Kyiv with political support to Russia," Cagaptay said. A top Turkish politician has also expressed concerns that Finland and Sweden's membership could provoke Russia and inflame the war in Ukraine. Devlet Bahçeli, the leader of a nationalist party allied with Erdogan, said the best option would be to keep the two Nordic countries in the "waiting room."

Can the move help Erdogan's ratings at home?

The Turkish leader is seeing a decline in his domestic support due to a faltering economy, skyrocketing inflation and a cost of living crisis.

A standoff with Western nations over the emotional issue of perceived support to the PKK could help Erdogan boost his support and rally the nationalist vote before elections that are currently scheduled for June 2023.

"With dwindling domestic support at a time when Turkey is entering a critical electoral cycle, Erdogan is looking for a higher international profile to demonstrate his global importance to Turkish voters," analyst Asli Aydintasbas wrote in an article published in the European Council on Foreign Relations.

Source: The Indian Express

17. Why is Turkey against SweFin joining NATO?

Relevant for GS Prelims & Mains Paper II; International Issues

With the Russian invasion of Ukraine nearing three months, Sweden and Finland (SweFin), the two Nordic countries that have historically stayed out of military alliances, have formally applied to join the North Atlantic Treaty Organization (NATO). If President Vladimir Putin ordered the Ukraine attack on February 24, apparently to prevent NATO's further expansion into Russia's neighbourhood, he is now facing the prospects of two countries joining the trans-Atlantic military alliance. But their accession into NATO may not be smooth. Turkey, a NATO member since 1952, has said it would oppose the Nordic countries joining the bloc, citing that they harbour "terrorist groups" — a reference to Kurdish insurgent outfits. Put together, these developments — the continuing war in Ukraine, fresh NATO applications, and Turkey's opposition to SweFin's bid — have shaken up Europe's delicate security equilibrium further.

What explains the long-term neutrality of Sweden and Finland?

The last war Sweden fought was in 1814 — the Swedish Norwegian War. Six years earlier Russia had invaded the Gotland Island in the Baltic Sea. While the Swedes drove the Russians out of the island, the latter took Finland away from Sweden while retreating. After the Swedish-Norwegian war, Sweden has adopted neutrality as the cornerstone of its foreign policy as it suited its interests better in an increasingly hostile neighbourhood. It stayed out of the two World Wars and the Cold War.

Finland's history has been more complicated. Soviet leader Joseph Stalin invaded Finland in 1939, demanding territories in the Karelian Isthmus, the strip of land situated between the Gulf of Finland and Lake Ladoga. Leningrad (now St. Petersburg) sat at the southern end of the Isthmus and Stalin wanted a buffer between Finland and the former Tsarist capital. The Finns resisted valiantly in the initial phase of the war denying an outright victory to the Red Army, but eventually agreed to sign the Moscow Peace Treaty as part of which they had to cede more territories of the Isthmus than what Stalin originally demanded. But a year later, the Finns joined hands with the German Nazis and attacked the Soviet Union.

Peace returned to the long Soviet-Finnish border only after the Nazis were defeated in the Second World War. Having suffered the after-effects of two wars, Finland did not want to get sucked into another great power contest. Like 19th century Sweden, Finland also adopted neutrality as the centrepiece of its foreign policy.

What triggered SweFin's NATO application?

In short, Mr. Putin's Ukraine war. While the Russians may have their explanations for the war, the invasion saw Russia violating the sovereignty of a weaker power in its neighbourhood. It also raised questions on whether Russia would have started the war had Ukraine been a NATO member.

Unlike Ukraine, Sweden and Finland do not have any border conflict with Russia. But again, Ukraine didn't have any major conflict with Russia until the 2014 regime change in Kyiv. So the Russian attack seemed to have altered the security calculus of SweFin. They moved quickly to apply for NATO membership because they hoped the alliance would act as deterrence against potential future attacks. Sweden and Finland have already developed deep ties with the West. Both are members of the European Union. Their ties with NATO are the closest two non-members could get with the alliance. They hold joint military drills with NATO, share intelligence and have supported NATO's military missions abroad. They did not formally seek membership until now because they did not want to upset the security status quo in Europe. They also feared Russian retaliation. But that status quo has been altered by the Russian invasion. And the possibility of Russian military retaliation is very less now because Russian troops are fighting a seemingly prolonged war in Ukraine.

This opened the door for both SweFin and NATO. And they are ready to embrace each other.

What's Russia's position?

Since the German reunification in 1990, NATO has seen five rounds of expansions. In 1999, three East European countries — Czech Republic, Hungary and Poland — became NATO members. In 2004, seven more countries — including the three Baltic nations, Estonia, Latvia and Lithuania, all sharing borders with Russia — were taken into the alliance. Russia has consistently opposed the bloc expanding its reach towards its neighbourhood, but was not in a position to do anything about it. In 2008, however, when Georgia and Ukraine, both Russia's neighbours and Black Sea basin countries, were offered membership, Russia responded militarily. Now, with SweFin applying for NATO membership, the bloc is coming further closer to Russia's border. Finland shares an over 1,300-km border with Russia. Sweden's Gotland island in the Baltic Sea is some 200 km away from Russia's Kaliningrad coast. But despite its concerns, Russia would not be able to do much to stop their NATO bids. Mr. Putin has sought to play down the development saying the Nordic countries joining NATO does not pose any immediate threat to his nation, but warned against NATO moving weapons to these countries. While it's not clear what Russia would do in the long term, its immediate response was to cut electricity exports and gas supplies to Finland.

Why is Turkey against SweFin's bids?

President Recep Tayyip Erdogan has repeatedly said Turkey would oppose SweFin's NATO bid. Within NATO, decisions are taken unanimously, which means every country in the 30-member bloc holds a veto. Turkey says Sweden and Finland have ties with "terrorist" groups — a reference to the Kurdistan Workers Party (PKK) and the People's Protection Units (YPG). The PKK, which seeks greater autonomy for Turkey's Kurdish minority, has waged an armed insurgency since the mid-1980s. The YPG is the armed wing of Syrian Kurdistan which controls parts of the Kurdish region in Syria. Turkey faces serious allegations of human rights violations in the Kurdish region. In recent years, Mr. Erdogan's government has cracked down on Kurdish political groups and leaders, including the left-wing People's Democratic Party (HDP). Selahattin Demirtas, a charismatic Kurdish politician who was a former legislator and presidential election candidate, has been in prison since 2016. Turkey has justified its actions, claiming that the PKK, YPG and their associated political groups are "terrorists".

Turkey says Sweden, and Finland to a certain extent, maintain close ties with Kurdish militias, particularly the YPG. It also alleges that the countries are hosting supporters of the Fethullah Gulen movement, a religious sect led by the U.S.-based Gulen who is accused by Ankara of being the mastermind behind the failed 2016 coup against Mr. Erdogan. Turkish state TV reported last week that Sweden and Finland refused to extradite 33 people wanted by Ankara. Mr. Erdogan calls Sweden "a nesting ground for terrorist organisations" and has ruled out Turkey backing SweFin's NATO entry in the future either.

What's next?

When Mr. Erdogan first expressed his opposition, many thought it would be a bargaining tactic. But the repeated comments from the Turkish leadership have raised alarm in NATO capitals. If Turkey walks the talk and blocks the SweFin bid, that would leave the Nordic countries in an awkward spot — they have already given up neutrality, but they won't be getting NATO's protection. Even if the application goes through, it would take time for these countries to be formally inducted into the alliance. In the case of NATO's last expansion, when North Macedonia was admitted into the alliance in March 2020, the process took 20 months. In the case of Montenegro, which became a NATO member in June 2017, the process took 18 months. So the time taken for the process to be completed offers a window to Mr. Putin, whose response would depend on whether his troops could meet their military objectives in Ukraine and whether they could do it fast. There's a lot of uncertainty. The only thing that's certain is that more instability is awaiting Europe.

Source: The Hindu

18. What is the Indo-Pacific Economic Framework?**Relevant for GS Prelims & Mains Paper II; International Issues**

United States President Joe Biden, who embarked Friday on an East Asia trip that will see him touch down first in Seoul and in Tokyo on Sunday ahead of the May 24 Quad summit, is expected to launch his Administration's much discussed Indo-Pacific Economic Framework (IPEF) in the Japanese capital along with Prime Minister Kishida Fumio.

Biden first spoke about the IPEF at the October 2021 East Asia Summit, where he said that the "United States will explore with partners the development of an Indo-Pacific economic framework that will define our shared objectives around trade facilitation, standards for the digital economy and technology, supply chain resiliency, decarbonization and clean energy, infrastructure, worker standards, and other areas of shared interest".

According to an "insight" paper on IPEF put out by the US Congressional Research Service in February, the IPEF is not a traditional trade agreement. Rather, it would include different modules covering "fair and resilient trade, supply chain resilience, infrastructure and decarbonization, and tax and anticorruption".

Countries would have to sign up to all of the components within a module, but do not have to participate in all modules. The “fair and resilient trade” module will be led by the US Trade Representative and include digital, labor, and environment issues, with some binding commitments. The IPEF will not include market access commitments such as lowering tariff barriers, as the agreement is “more of an Administrative arrangement”, and Congressional approval, which is a must for trade agreements, is not mandatory for this.

The IPEF is also seen as a means by which the US is trying to regain credibility in the region after former President Donald Trump pulled out of the Trans Pacific Partnership TPP). Since then, there has been concern over the absence of a credible US economic and trade strategy to counter China's economic influence in the region. China is an influential member of the TPP, and has sought membership of its successor agreement Comprehensive and Progressive Agreement on Trans Pacific Partnership. It is also in the 14-member Regional Comprehensive Economic Partnership, of which the US is not a member (India withdrew from RCEP). The Biden Administration is projecting IPEF as the new US vehicle for re-engagement with East Asia and South East Asia.

Earlier this week, US National Security Adviser Jake Sullivan described it as a “21st-century economic arrangement”. But IPEF may not enthrall all countries in the Indo-Pacific region equally as it comes with binding trade rules but no guarantees on market access. Japan has welcomed the IPEF, and Thailand announced earlier this week it would join the negotiations. Australia and New Zealand may also join. South Korea, Philippines and Singapore have expressed cautious interest.

The Japanese news organisation Nikkei described it as “a more tailor-made mechanism [than a free trade agreement] that seeks the benefits of trade partnerships while insulating Americans from the downsides of trade liberalization”.

Biden is expected to invite India to join negotiations for the IPEF when he meets Prime Minister Narendra Modi on the sidelines of the Quad summit. India is the only member of the grouping that has said nothing about it.

On Thursday, Ministry of External Affairs (MEA) spokesman Arindam Bagchi said in response to a question on the possibility of India joining the IPEF: “This is an initiative of the United States. We have received details of this. And we are examining it.”

In a paper titled ‘Deciphering the IPEF’ in March this year, Prabir De of the Research and Information System for Developing Countries, a think tank of the MEA, wrote that India “may also be uncomfortable with the US high standards, and would like to avoid risks” and “may take time to consider joining, should an invite to join the IPEF be extended by the Biden Administration”.

According to De, “some areas proposed in the IPEF do not appear to serve India’s interests. For example, the IPEF talks about digital governance but the IPEF formulation contains issues that directly conflict with India’s stated position. Amongst these are the prohibition / restrictions on cross-border data flows and data localization requirements, including for financial services; the prohibition of the levying of customs duties on digital products distributed electronically; promotion of the interoperability of privacy rules and related enforcement regimes, such as the APEC Cross-Border Privacy Rule, while respecting U.S. federal and state privacy laws and regulations.”

Source: The Indian Express

19. Navy info hub could play key role in Quad push to check China overfishing

Relevant for GS Prelims & Mains Paper II; International Issues

The Indian Navy's Information Fusion Centre-Indian Ocean Region (IFC-IOR) may play a key role in a Quad initiative against illegal fishing.

Quoting a US official, the Financial Times reported that the initiative, to be announced by the four leaders of the Quad at the group's Tokyo Summit, will bring together existing surveillance centres in Singapore, India, and the Pacific to create a tracking system for illegal unregulated and unreported fishing (IUUF) in the Indo-Pacific region.

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Chinese trawler fleets are seen as responsible for most of the IUUF in the Indo-Pacific region, and the initiative is likely to be viewed as a Quad pressure point against China.

The US is also expected to launch a new economic and trade agreement called the Indo-Pacific Economic Framework that is also aimed at containing China's economic clout in the region.

The IFC-IOR was established in 2018 for regional collaboration on maritime security issues including "maritime terrorism", IUUF, piracy, armed robbery on the high seas, and human and contraband trafficking. The Gurgaon-based data fusion centre has information sharing links with 50 nations and multinational/maritime centres, according to its website.

The IFC-IOR "aims at strengthening maritime security in the region and beyond, by building a common coherent maritime situation picture and acting as a maritime security information hub for the region", according to the website.

The centre was established as part of the government's SAGAR (Security and Growth For All in the Region) framework for maritime co-operation in the Indian Ocean region. It hosts international liaison officers from partner countries, which include both India's immediate neighbours in the Indian Ocean region and from further afield, including Australia, France, Japan, Singapore, the UK and the US.

The two other data fusion centres likely to be involved in this initiative are the Singapore Navy's Information Fusion Centre, and the Australia-sponsored Pacific Fusion Centre, set up in 2019 in Port Vila in Vanuatu.

In recent years, IUUF has been seen as growing into a bigger threat to maritime states than international piracy. Studies have said that unregulated and underreported fishing are bigger challenges than illegal fishing, as they deplete stocks and deprive vulnerable regional economies of an important food source.

In a January 2021 paper, the American think tank Brookings called IUUF "a national security concern" that "may indeed become an increasingly important mission for the United States and its security partners and allies around the world, and most certainly those in the Indo-Pacific."

The paper ('National Security Imperative to Tackle IUUF', Michael Sinclair) argued that Chinese fishing practices presented "a truly unique and dire" threat.

"First, China boasts the world's largest fishing fleet. It uses this fleet to devastating effect to meet its population's huge demand for protein. It also provides generous subsidies, which has incentivised the rapid proliferation of large, capable, "distant water" vessels that can harvest staggering amounts of catch in a single voyage, often by dragging the ocean bottom without regard to fish type, age, or quantity limits. When working together in fleets, these vessels are rapacious".

Ahead of the 2020 presidential election in the US, an article in the journal The Fletcher Forum of World Affairs said "the flagrancy and scale of IUU fishing tramples sovereign rights, undermines the rule of law, and robs coastal states of a valuable economic resource.

“In this age of global great power competition, IUU fishing should be seen as an international security threat and should be given appropriate priority by the next administration, irrespective of whether Donald Trump or Joe Biden occupies the Oval Office.”

Source: The Indian Express

20. What is the Quad's proposed plan to rein in the massive illegal fishing by China in the Indo-Pacific?

Relevant for GS Prelims & Mains Paper II; International Issues

The leaders of Quad nations — Australia, India, Japan and the United States — are reported to be getting ready to unveil a maritime surveillance initiative to protect exclusive economic zones in the Indo-Pacific against environmental damage.

The aim, according to analyses appearing on Sunday, is to push back especially against massive and reckless deepwater fishing by Chinese trawlers in the region.

Prime Minister Narendra Modi will meet with President Joe Biden of the US and Prime Ministers Fumio Kishida of Japan and Anthony Albanese of Australia at the Quad Leaders' Summit in Tokyo on Tuesday (May 24). A series of other meetings are also lined up.

How will the proposed maritime surveillance system work?

The initiative will use satellite technology to connect existing surveillance centres in India, Singapore and the Pacific. This will help establish a tracking system to combat illegal, unregulated and unprotected (IUU) fishing.

The satellite-enabled dragnet will track IUU fishing activities from the Indian Ocean and South-east Asia to the South Pacific, a report in the 'Financial Times' said. The idea is to monitor illicit fishing vessels that have their AIS (automatic identification system) transponders turned off to evade tracking.

The move by the Quad security group is also seen to be aimed at reducing the small Pacific island nations' growing reliance on China.

Why is illegal fishing seen as such a big threat?

The unregulated plunder of global fishing stock poses a grave threat to the livelihood and food security of millions of people.

Globally, fish provide about 3.3 billion people with 20% of their average animal protein intake. According to an FAO report, around 60 million people are engaged in the sector of fisheries and aquaculture.

While the economic loss from illegal fishing has been difficult to precisely quantify, some estimates peg it around USD 20 billion annually. In 2020, the US Coast Guard had said that illegal fishing had replaced piracy as a global maritime threat.

In the Indo-Pacific region, like elsewhere, the collapse of fisheries can destabilise coastal nations and pose a much bigger security risk, as it can fuel human trafficking, drug crime and terror recruiting.

Why is China in the dock?

The 2021 IUU Fishing Index, which maps 152 coastal countries, ranked China as the worst offender.

China is considered responsible for 80% to 95% illegal fishing in the region after having overfished its own waters. It, in fact, is known to incentivise illegal fishing with generous subsidies to meet its growing domestic demand.

According to ODI, a global affairs think-tank, China's distant-water fishing (DWF) fleet has almost 17,000 vessels. "China's DWF fleet is the largest in the world....vessel ownership is highly fragmented among many small companies and the fleet includes vessels registered in other jurisdictions," it said in a report.

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These vessels, which can scoop staggering amounts of catch on every single voyage, are often accused of pillaging ocean wealth with great sophistication and with little regard for maritime boundaries. China also uses them to project strategic influence and to bully fishing vessels from weaker nations.

According to a recent report by the UK-based Environmental Justice Foundation on the scale and nature of China's distant-water fishing: "The burgeoning body of research that has explored the extent and behaviours of the Chinese distant-water fleet (CDWF) has unveiled the widespread, and harmful, economic, environmental and human consequences linked to overcapacity, high instances of illegal, unreported and unregulated (IUU) fishing, destructive practises such as bottom trawling and the use of forced, bonded and slave labour and trafficked crew, alongside the widespread abuse of migrant crewmembers."

"The Chinese fleet has become a substantial presence in multiple developing countries. Over a third of the authorised CDWF operations in 2019 and 2020 covered 29 specific EEZs in Africa, Asia and South America — the fisheries of many of the regions being characterised by limited MCS capacity and coastal regions heavily dependent on fishing for both nutritional and livelihood needs," it added in its key findings.

Source: The Indian Express

21. Opportunities, challenges

Relevant for GS Prelims & Mains Paper II; International Issues

As the leaders of the Quadrilateral Security Dialogue grouping of Australia, Japan, India and the United States — also known as the Quad — meet in Tokyo Tuesday for their second in-person summit, after the last one in Washington in September 2021 (they had met once in a virtual summit in March 2021), here is a look at three major themes that present challenges and opportunities for the grouping.

Distraction of Europe

Russia's invasion of Ukraine has shaken up the old world order, reshaping geopolitics across the world.

As the leader of the Western alliance against Russia, the US is now deeply engaged with the war. It has already committed \$54 billion to the war effort. From February 24, the day of the invasion to now, the nature of US involvement has undergone a change, and so have its objectives. "We don't know how the rest of this war will unfold, but we do know that a sovereign, independent Ukraine will be around a lot longer than Vladimir Putin is on the scene," US Secretary of State Anthony Blinken said recently.

The reinvigoration of Europe and NATO in the wake of Putin's aggression in Ukraine has made new demands on US attention and resources, prompting questions about American appetite to take on two rivals — Russia and China — at the same time, and how this might adversely impact US commitment to the Quad and the Indo-Pacific.

US President Joe Biden seemed to be responding to the sceptics with his reply to a question from a reporter in Tokyo who asked if the US would defend Taiwan militarily if it were attacked by China. "Yes," he said, "that's the commitment we made... We agree with a one-China policy. We've signed on to it and all the intended

agreements made from there. But the idea that it can be taken by force, just taken by force, is just not, is just not appropriate.”

Those who fear that the Biden Administration may lose focus on China, the “real” threat to the US, have been making the case for Europe strategic autonomy and security self-reliance. But there is also a growing view that this is not an “either-or” choice for the US, and that what happens in Europe is not insulated from Asia or the Indo-Pacific.

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The war in Ukraine also poses an internal challenge in the Quad. Three members — US, Japan and Australia — have taken an unequivocal stand against Russia’s aggression, while India’s position has been one of studied neutrality that calls for respect of territorial sovereignty and integrity and the UN charter, but does not criticise Russia. On Monday, India’s separateness on the issue was apparent in the the joint statement by Biden and Japanese Prime Minister Kishida Fumio, affirming that “the rules- based international order is indivisible; threats to international law and the free and fair economic order anywhere constitute a challenge to our values and interests everywhere... the greatest immediate challenge to this order is Russia’s brutal, unprovoked, and unjustified aggression against Ukraine”.

The threat of China

While China does not find mention in any official statements of the Quad by name, the four nations are joined by the shared interest of creating a strategic balance of power in the region to protect their interests in the Indo-Pacific region from what they see as China’s subversion of the international order and a bid to establish its own set of rules. Every Quad statement has proxy references to China — in the repeated emphasis on a “rules based international order” and a “free and open” Indo-Pacific.

But Beijing has not been shy of branding Quad as an “anti-China alliance”. On Sunday Chinese Foreign Minister Wang Yi called the US Indo-Pacific strategy “concocted... under the banner of ‘freedom and openness’” by Washington, which was “keen to gang up with ‘small circles’ and change China’s neighbourhood environment”.

In 2008, Australia pulled out of the Quad because it did not wish to antagonise China, with which it has deep economic ties, with membership of a group seen as a mechanism to counter China. But China’s militarisation, aggressive foreign policy and determined push on its territorial claims, from the Ladakh frontier with India to the seas in East Asia, had the effect of bringing the four together again in 2017, in what was called Quad 2.0. The pandemic, its controversial origins in China, and the resulting disruption of the global supply chain have also been instrumental in bringing the four closer.

However, each Quad member views the Chinese threat differently. For the US, it is about trade and Taiwan. For Australia too, trade was the biggest issue until the recent establishment of a Chinese military base in the Solomon Islands brought a new dimension. Japan and India are closest to China, and both face belligerent Chinese claims to territory.

India is the only one with a long “hot” land border with China, full of contested territorial claims, and the only one to have been in a recent military encounter with the People’s Liberation Army, in eastern Ladakh. It also faces challenges from China’s inroads in its neighbours Sri Lanka, Nepal, Bangladesh, and Pakistan. While the Ladakh incursions were one reason for New Delhi to shed its earlier diffidence on Quad, it has hardly wished to provoke Beijing, whose “iron-clad” friendship with Pakistan has additionally brought home the threat of a two-front war.

How to deal with China thus remains the central question for Quad. The grouping has maintained it is not a security alliance, or an “Asian NATO” as some have termed it. In recent months however, the clamour has grown, including from India’s strategic community, for injecting a security component in the grouping. One of the arguments is that this is required to deter Beijing from following friend Putin’s example and pulling a

Ukraine on Taiwan or elsewhere, although a case could be equally made that China, with an economy 10 times the size of Russia's, would be more cautious.

Non-security initiatives

Cutting-edge technology, pharmaceuticals and infrastructure have been described as “key battlegrounds” in the contest with China. The last Quad summit threw up an array of proposals intended to leverage the economic, scientific and technological capabilities of the four countries. Page | 100

Covid vaccine manufacture; climate change initiatives, a Quad infrastructure group, cooperation in cyber-security, use of satellites for information sharing were all listed. An ambitious initiative involves critical technologies, with a working group focusing on technical standards, 5G diversification and deployment, and resilient technology supply chains.

However, over the last year, the procedural difficulties of pulling together on these initiatives have become apparent, and progress has been scant.

The Biden Administration's new trade policy, launched in Tokyo and known as the Indo-Pacific Economic Partnership, appears streamlined with these Quad initiatives. It aims to offer an alternative model to the China-dominated Trans Pacific Partnership, but how it can counter Chinese economic clout and rope in prospective partners without offering guarantees on market access remains to be seen.

Source: The Indian Express

22. What is Russia's Terminator tank support system, now deployed in Ukraine?

Relevant for GS Prelims & Mains Paper II; International Issues

Russia, according to Western intelligence inputs, has deployed the Terminator tank support system – the BMPT, also known as the BMPT ‘Terminator’, and its new version the BMPT-72 – in an area that remains its immediate tactical priority in the Ukraine war. What is this latest addition to the Russian inventory of mechanised battle vehicles and what does its deployment mean in the ongoing conflict?

What is the ‘Terminator’?

The Terminator or the Boyevaya Mashina Podderzhki Tankov (BMPT), is a tank support fighting vehicle developed by Russia.

Western military analysts believe that Russia developed the Terminator after identifying the need to provide dedicated protection to main battle tanks it used during the Afghan and the Chechen wars.

The tank support vehicles are designed to protect the Russian tanks against enemy infantry. They are basically a replacement for mechanised infantry troops in the urban battlefield.

The high-level of attrition suffered by the Russian tanks in the ongoing war in Ukraine due to the use of anti-tank weapons provided by the West appears to have pushed Russian military commanders to induct the Terminator. The move is aimed at providing close protection to the Russian armour from Ukrainian tank-hunting infantry.

Where have the Russians deployed it?

According to the latest intelligence bulletin released by the British Ministry of Defence on the ongoing conflict in Ukraine, Russia's only operational company of BMP-T Terminator tank support vehicles has likely been deployed to the Severodonetsk axis of the Donbas offensive.

According to the British appreciation of intelligence inputs and several independent sightings of the Terminators, their presence suggests that the Central Grouping of Forces (CGF) is involved in this attack – which is the only Russian army formation fielding this vehicle.

The CGF, as per the British MoD bulletin, previously suffered heavy losses while failing to break through to eastern Kyiv during the first phase of the invasion.

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As of now, the Severodonetsk area remains one of Russia's immediate tactical priorities. But with a maximum of ten Terminators deployed, they are unlikely to have a significant impact on the campaign.

What kind of weapons does the Terminator have?

The list of potent weaponry that Terminator is equipped with includes 4×130 mm Ataka-T GWS launchers, 2×30 mm 2A42 autocannons (850 rounds), 2×30 mm AG-17D or 2× AGS-30 grenade launchers (600 rounds), 1×7.62 mm PKTM machine gun (2,000 rounds).

These weapons are capable of firing in multiple directions in quick succession, thus suppressing firepower to prevent any attempt to take out the tank columns being protected.

The BMPT destroys targets such as infantry personnel carrying anti-tank weapons, as well as lightly and heavily armoured targets, like tanks. The BMPT can be put to alternate uses too and can provide protection to infantry or to convoys.

Where are its other features?

The BMPT was first brought into public domain during the Russian Arms Expo held at Nizhny Tagil in 2013. Guerrilla warfare tactics used by the Chechen fighters in Grozny during the First Chechen War in 1995 led to the development of this weapon system as many Russian tanks were lost in the urban fighting.

The Terminators, initial version BMP-T and the new version BMPT-72, are based on the chassis of the T-72 tank and are produced by the Russian company Uralvagonzavod.

The Terminator's latest upgrade is equipped with fragmenting ammunition which is essential to target the enemy infantry which lies in wait to destroy the tanks. Information in public domain also reveals that increased gun elevation provides for engaging top floors of buildings in urban environments and also low flying aircraft/drones. The manufacturer claims that a single Terminator can replace two conventional BMPs and an infantry platoon.

Source: The Indian Express

23. What is One China Policy, US's delicate balancing act on the dispute between China and Taiwan?

Relevant for GS Prelims & Mains Paper II; International Issues

Soon after President Joe Biden said on Monday (May 23) that the United States would intervene militarily if China invaded Taiwan, the White House sought to clarify that he did not mean America's policy towards the dispute had changed.

In a statement sent to reporters, the White House said that Biden had "reiterated our One China Policy and our commitment to peace and stability across the Taiwan Strait", while also reiterating "our commitment under the Taiwan Relations Act to provide Taiwan with the military means to defend itself".

What is One China Policy of the United States?

'One China' is a longstanding US policy that forms the bedrock of its relationship with Beijing. Under the policy, the US snapped formal diplomatic ties with the Republic of China (ROC) in Taiwan, and established ties with the People's Republic of China (PRC) in Beijing in 1979.

The contours of the policy were explained in the US-PRC joint communique of December, 1978, which said: "The People's Republic of China and the United States of America have agreed to recognise each other and to establish diplomatic relations as of January 1, 1979. The United States of America recognises the Government of the People's Republic of China as the sole legal Government of China. Within this context, the people of the United States will maintain cultural, commercial, and other unofficial relations with the people of Taiwan."

It added: "The Government of the United States of America acknowledges the Chinese position that there is but one China and Taiwan is part of China."

In operational terms, the One China Policy is a balancing act wherein the US maintains an official relationship with China, and an unofficial one with Taiwan.

How did the US preserve its Taiwan ties?

In 1979, around the time PRC and the United States posted Ambassadors in each other's capitals, the US Congress passed the Taiwan Relations Act (TRA). The Act made it clear that "the United States decision to establish diplomatic relations with the People's Republic of China rests upon the expectation that the future of Taiwan will be determined by peaceful means".

It committed to providing Taiwan "with arms of a defensive character" and "to maintain the capacity of the United States to resist any resort to force or other forms of coercion that would jeopardize the security, or the social or economic system, of the people on Taiwan".

The Act established the American Institute in Taiwan (AIT), as a private, nongovernmental organisation to maintain the facade of unofficialness in the ties. The AIT is the de facto US Embassy in Taiwan.

So was there ever a "two Chinas" situation?

After the communist forces won the Chinese civil war in 1949 after over two decades, the Republic of China moved its capital to Taipei, Taiwan. The People's Republic of China was established with Beijing as its capital. Both governments made competing claims to represent all of China, but only a few recognised the PRC at that time. It was much later in 1971 that the PRC managed to enter the UN through Resolution 2758, which unseated ROC as the official representative of "China".

The US did not recognise the PRC till 1979.

So how did the US policy shift come about?

It began with the "ping-pong diplomacy" of 1971. In April that year, American table tennis players crossed into the mainland and became a medium for both sides to move towards a thaw in relations.

The UN nod came later that year, and in 1972, President Richard Nixon made a trip to China. This is the trip that brought about the Shanghai Communique that can be seen as a major milestone in the birth of the US's 'One China' policy.

It said: "The United States acknowledges that all Chinese on either side of the Taiwan Strait maintain there is but one China and that Taiwan is a part of China. The United States Government does not challenge that position."

Subsequent US administrations, including the present one, have reiterated their commitment to the One China Policy.

Is the US One China Policy different from the “One China” principle stressed by Beijing?

The One China Policy of the United States is not the same as the “One China” principle of the PRC, according to a One China Policy Primer published by the Brookings Institution.

“The One China Policy contains more elements, such as the US interest in a peaceful process of cross-Strait dispute resolution, and its differing interpretation of Taiwan’s legal status as compared to Beijing’s interpretation,” it says. Page | 103

It states that in the 1980s, the US shifted to using “policy” in place of “principle” in order to differentiate between the US approach and China’s version.

Also, according to the Primer, when US officials refer to the One China Policy, “they usually elaborate by listing several defining elements: adherence to the three US-PRC communiques of 1972, 1978, and 1982; implementation of the Taiwan Relations Act enacted in April 1979; an abiding interest in the peaceful resolution of the differences between the two sides; opposition to either side unilaterally changing the status quo and non-support for de jure independence of Taiwan”.

Source: The Indian Express

24. The China-Taiwan tussle — its history, current tensions, and why the world is worried

Relevant for GS Prelims & Mains Paper II; International Issues

A statement by United States President Joe Biden at the Quad Summit in Tokyo on Monday (May 23) suggesting that any attempt by China to invade Taiwan would attract American military intervention set off an angry response from the government in Beijing, which vowed “firm action to safeguard its sovereignty and security interests”, and warned that “we will do what we say”.

The current round of tensions between China and Taiwan began on October 1 last year, when China observes its National Day to mark the birth of the People’s Republic of China (PRC).

Coinciding with the 72nd anniversary celebrations, China flew over 100 fighter jets into Taiwan’s air defence identification zone, jangling nerves in Taiwan and setting off alarm around the world that it was prepping to take over the island by force. President Vladimir Putin’s invasion of Ukraine in February, and Beijing’s steadfast support of Russia in the face of global criticism has heightened these fears.

Although largely unrecognised by other countries, Taiwan, officially the Republic of China (RoC), sees itself as a de jure sovereign state, and its leaders, including the fiercely pro-independence President Tsai Ing-wen, have vowed to defend its sovereignty against the Chinese goal of “reunification” with the People’s Republic of China (PRC).

Since Taiwan is entirely dependent on the US for its defence against possible Chinese aggression, every spike in military tensions between China and Taiwan injects more hostility in the already strained relationship between Washington and Beijing.

Where does Taiwan stand in relation to China and the world?

Taiwan, earlier known as Formosa, a tiny island off the east coast of China, is where Chinese republicans of the Kuomintang government retreated after the 1949 victory of the communists — and it has since continued as the Republic of China. The island is located in the East China Sea, to the northeast of Hong Kong, north of the Philippines and south of South Korea, and southwest of Japan. What happens in and around Taiwan is of deep concern to all of East Asia.

Taiwan observes October 10 — “double 10” — as its national day; it was on this day in 1911 that sections of the Manchu army rose in rebellion, leading ultimately to the overthrow of the Qing dynasty and the end of 4,000 years of the monarchy. The RoC was declared on December 29, 1911, and it found its feet in the 1920s under the leadership of Dr Sun Yat-sen, founder of the Kuomintang (KMT) Party.

Sun was succeeded by General Chiang Kai-shek, whose actions against the Chinese communists, who were part of an alliance with the KMT, triggered the civil war that ended in victory for the communists and retreat of Chiang and the KMT to Taiwan.

Since its founding in 1949, the PRC has believed that Taiwan must be reunified with the mainland, while the RoC has held out as an “independent” country. The RoC became the non-communist frontier against China during the Cold War, and it was only in 1971 that the US inaugurated ties with the PRC through the secret diplomacy of Henry Kissinger, national security adviser to President Richard Nixon.

The US has a policy of “strategic ambiguity” towards Taiwan. This means that it maintains ties with Taipei, and sells weapons to it, but officially subscribes to the PRC’s “One China Policy” in which Taiwan does not exist as a separate entity. It is this delicate diplomatic balance that Biden’s pronouncement on Monday jolted. Just 15 countries around the world recognise Taiwan. Most are very small, many are remote island nations.

When did the tensions with China begin to acquire a serious dimension?

In 1954-55, and in 1958, the PRC bombed the Jinmen, Mazu, and Dachen islands under Taiwan’s control, drawing in the US. Congress passed the Formosa Resolution authorising President Dwight D Eisenhower to defend RoC territory.

In 1955, Premier Zhou En-lai declared at the Bandung Conference that he wanted negotiations with the US. But as civil war broke out in Lebanon in 1958, China resumed the bombing, provoking the US to supply Taiwanese outposts on the islands. The PRC and ROC then arrived at an arrangement to bomb each other’s garrisons on alternate days – this continued until 1971. (‘Milestones in the History of US Foreign Relations’, history.state.gov)

The most serious encounter was in 1995-96, when China began testing missiles in the seas around Taiwan, triggering the biggest US mobilisation in the region since the Vietnam War. The tests led to the re-election in 1996 of President Lee Teng-hui, seen by the Chinese as a pro-independence leader.

How has Taiwan’s recent political and economic history unfolded?

In 1975, Chiang Kai-shek died, martial law was lifted, and Taiwan got its first democratic reforms. Starting from the 1990s, and despite the missile crisis, relations between the PRC and RoC improved, and trade ties were established. As the British prepared to exit Hong Kong in 1999, the “One China, Two Systems” solution was offered to Taiwan as well, but it was rejected by the Taiwanese.

In 2000, Taiwan got its first non-KMT government, when the Taiwanese nationalist Democratic Progressive Party (DPP) won the presidency. In 2004, China started drafting an anti-secession law aimed at Taiwan; trade and connectivity, however, continued to improve.

Today, the two big players in Taiwan’s politics are the DPP and KMT, broadly the parties of the island’s Hakka inhabitants and the minority mainland Chinese respectively. The 2016 election of President Tsai marked the onset of a sharp pro-independence phase in Taiwan, and the current tensions with China coincided with her re-election in 2020.

Taiwan now has massive economic interests, including investments in China, and pro-independence sections worry that this might come in the way of their goals. Inversely, the pro-reunification sections of the polity, as well as China, hope that economic dependence and increasing people-to-people contacts will wear out the pro-independence lobbies.

How did the current round of tensions come about?

In 2020, amid worsening US-China relations over Covid and trade, the State Department sent its highest ranking delegation till then to Taipei. During the visit, the Chinese conducted a military exercise in the Taiwan Strait, which separates Taiwan from mainland China.

In October that year, President Xi Jinping asked the PLA to prepare for war, triggering alarm in Taiwan, which read it as an open threat.

After assuming charge in January 2021, the Biden Administration declared America's "rock solid" commitment to Taiwan. In April last year, Taiwan reported Chinese jets in its air defence zone. In July, Xi warned that he would "smash" any Taiwanese move towards independence.

At the beginning of October 2021, as the Chinese jets came back, Taiwanese Defence Minister Chiu Kuo-cheng told Parliament that China already has the capacity to invade Taiwan, and would be able to "bring the cost and attrition to its lowest" by 2025.

In a speech on October 10, Xi appeared to allay fears of a forcible takeover, and spoke about "peaceful reunification". But he underlined that "the historical task of the complete reunification of the motherland. will definitely be fulfilled." That same day, the Taiwanese president said that while her government would not "act rashly", the Taiwanese people would not "bow to pressure" either.

What has the US been doing as tensions rise?

As tensions rise, the world is watching the US, whose status as the world's pre-eminent power has been dented by the messy exit from Afghanistan. In East and Southeast Asia, several countries including Japan, South Korea, and the Philippines, which are sheltered under the protective umbrella of the US, are reading the tea leaves.

President Joe Biden has been seen as walking a thin line between pledging support for Taiwan, and keeping the lid on tensions with Beijing. After speaking with Xi in October 2021, he had said that they had agreed to abide by the "Taiwan Agreement", under which US support for the "One China Policy" is premised on Beijing not invading Taiwan.

The AUKUS pact among the US, UK, and Australia, under which Australia will be supplied with nuclear submarines, imparted a new dimension to the security dynamics of the Indo-Pacific. Taiwan welcomed the pact, while China denounced it as seriously undermining regional peace.

Following Biden's statement in Tokyo on Monday, the White House hastened to clarify that what the President said did not amount to a "policy shift" on the question of Taiwan.

What are the implications of the rising tensions for India?

With India facing its own problems with China on the LAC, there have been suggestions that it should review its One China Policy — it has in any case long stopped reiterating this officially — and use not just the Tibet card, but also develop more robust relations with Taiwan to send a message to Beijing.

India and Taiwan currently maintain "trade and cultural exchange" offices in each other's capitals. In May 2020, the swearing-in of Tsai was attended virtually by BJP MPs Meenakshi Lekhi (now MoS External Affairs) and Rahul Kaswan. In 2016, New Delhi had dropped plans to send two representatives for Tsai's first inaugural at the last minute.

India has been reported to be in talks with Taipei to bring a \$7.5-billion semiconductor chip manufacturing plant to India. Chips are used in a range of devices from computers to 5G smartphones, to electric cars and medical equipment. The deal was reported on the heels of last year's Summit of the Quad, which discussed the need to build a "safe supply chain for semiconductors".

Source: The Indian Express

25. The new Indo-Pacific bloc

Relevant for GS Prelims & Mains Paper II; International Issues

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The Indo-Pacific Economic Framework, launched by United States President Joe Biden on Monday and being joined by 12 other countries including India, is Washington's answer to the Trans Pacific Partnership (TTP) and its successor agreement, the Comprehensive and Progressive Agreement for TTP (CPTPP), as well as the Regional Comprehensive Economic Partnership (RCEP).

The US had pulled out from the TTP due to enormous domestic backlash against the low/no tariff agreement in it — one of Donald Trump's first decisions after becoming President. The US did not join the China-led 15-country RCEP. Last year, Beijing applied to join the 11-member CPTTP. So have Taiwan and the United Kingdom.

Why the framework

The Biden Administration's realisation that its near-onlooker status to the trade arrangements in the region, with China's stamp all over it, did not match its Indo-Pacific strategic objectives spurred work on a new framework for doing trade. The aim was to reclaim economic leadership in East Asia and the ASEAN region without giving away concessions that would anger domestic lobbies.

"We believe that expanding US economic leadership in the Indo-Pacific through vehicles like IPEF is good for America — American workers and businesses as well as for the people in the region," US National Security Adviser Jake Sullivan said at a press briefing.

He listed the challenges IPEF would address as "setting the rules of the road for the digital economy, ensuring secure and resilient supply chains, helping make the kinds of major investments necessary in clean energy infrastructure and the clean energy transition, to raising standards for transparency, fair taxation, and anti-corruption". "The fact is that past models did not address these challenges — or did not address them fully and take them head on... So we believe that we need a new model that we can move on quickly to, in fact, take these challenges head on, and that's what IPEF will do," he said.

US Commerce Secretary Gina Raimondo has said the IMEF "marks an important turning point in restoring US economic leadership in the region and presenting Indo-Pacific countries an alternative to China's approach to these critical issues".

Joining the IPEF

India has announced it will join the bloc despite its concerns over certain aspects of the IPEF. The other 11 countries are Australia, Brunei, Indonesia, Japan, the Republic of Korea (South Korea), Malaysia, New Zealand, the Philippines, Singapore, Thailand, and Vietnam, which together account for 40% of the world's GDP. Taiwan is not part of it.

The 12 countries are yet to begin negotiations, which is the next step in the process. The US hopes it will draw in more members. US officials have emphasised that IMEF is not a free trade agreement, and not even any other kind of "same old, same old" trade agreement, but one that will offer flexibility. The negotiations will be along four main "pillars". According to an "insight" paper by the US Congressional Research Service in February, countries would have to sign up to all components within a pillar, but do not have to participate in all pillars.

The four pillars are:

- * trade that will include digital economy and emerging technology, labour commitments, the environment, trade facilitation, transparency and good regulatory practices, and corporate accountability, standards on cross-border data flows and data localisations;
- * supply chain resiliency to develop “a first-of-its-kind supply chain agreement” that would anticipate and prevent disruptions;
- * clean energy and decarbonisation that will include agreements on “high-ambition commitments” such as renewable energy targets, carbon removal purchasing commitments, energy efficiency standards, and new measures to combat methane emissions; and
- * tax and anti-corruption, with commitments to enact and enforce “effective tax, anti-money laundering, anti-bribery schemes in line with [American] values”.

Negotiations on the trade pillar will be led by the US Trade Representative Katherine Tai, and on the other three pillars by the Commerce Department.

India & the IPEF

India’s main concern is on the issue of data localisation, on which it has locked horns with the US over the last two or three years. In 2019, the government has introduced a Bill in Lok Sabha that envisages a framework for localising Indian data and the establishment of a Data Protection Authority. Just last month, the US said in its National Trade Estimate Report on Foreign Trade Barriers that India’s proposed data localisation requirements, under which firms need to store data within India, “will serve as significant barriers to digital trade” between the two countries, and will act as “market access barriers, especially for smaller firms”.

However, if India continues to have reservations, it kept them to itself on this occasion and struck no discordant notes at the Tokyo launch on the IPEF on Monday. Prime Minister Narendra Modi, who participated in the launch, said “The Indo-Pacific Economic Framework is a declaration of our collective will to make the region an engine of global economic growth. I thank President Biden very much for this important initiative.”

He noted that Lothal, the world’s oldest commercial port, was in Gujarat, his home state. “History is witness to the fact that India has been a major centre in the trade flows of the Indo-Pacific region for centuries... Therefore, it is essential that we find common and creative solutions for the economic challenges of the region.”

The Ministry of External Affairs statement on IPEF said India “is committed to a free, open, and inclusive Indo-Pacific region and believes that deepening economic engagement among partners is crucial for continued growth, peace, and prosperity. India is keen to collaborate with partner countries under the IPEF and work towards advancing regional economic connectivity, integration and boosting trade and investment within the region”.

It also made the point that the discussion will now begin on “strengthening economic cooperation and achieving shared goals”.

Source: The Indian Express

26. What China aims to achieve by building a second, bigger bridge on Pangong Tso

Relevant for GS Prelims & Mains Paper II; International Issues

The Ministry of External Affairs has confirmed that China is building a second bridge on the Pangong Tso lake, not far from the site of one of the most intense friction points in the border standoff that began in May 2020. The second bridge, which is still under construction, is a permanent structure, sources told The Indian Express. A previous bridge, which came up around January, seemed to have been built to facilitate work on

the new one. After completion, this second bridge will allow swift movement of armoured vehicles between the north and the south banks of Pangong Tso.

Where are these bridges located?

After building the first bridge – about 400 metres long and 8 metres wide – on the Pangong Tso close to the friction areas on the north bank of the lake and the Chushul sub-sector on the south bank, China started constructing a broader bridge next to it a few months back.

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The site of the bridge is around 20 km east of Finger 8 on the lake's north bank – which is where the Line of Actual Control (LAC) passes, according to India. However, the actual distance by road is more than 35 km between the bridge site and Finger 8.

The construction site is just east of an old ruin called Khurnak Fort, where China has major frontier defence bases. China calls it Rutong Country. It has a frontier defence company at the Khurnak Fort, and further east, a water squadron deployed at Banmozhang.

Although it is being built in territory that is under China's control since 1958, the exact point is just west of India's claim line, which means India considers it its own territory. The Ministry of External Affairs last week stated that it considers the area as illegally occupied by China.

Pangong Tso is a 135-km long landlocked lake. India has around 45 km of Pangong Tso under its control, while China has more than two-thirds. The site of the new bridge is near the halfway mark of the boomerang-shaped lake.



How will these constructions help China?

The main objective of the bridges is faster movement of troops, including mechanised forces, heavy weapons, and military vehicles. The bridges are at one of the narrowest points on the lake, close to the LAC.

The constructions are a direct outcome of the ongoing standoff that began in May 2020, which catalysed the construction of infrastructure by both sides across the entire 3,488-km long LAC.

Why this location, though?

The location has to do with an operation by the Indian Army in August 2020, which allowed India to gain some leverage in negotiations to resolve the standoff. Indian troops outmanoeuvred the People's Liberation Army to occupy the heights of Kailash Range in the Chushul sub-sector on the south bank of Pangong Tso.

The positions allowed India to dominate the strategically significant Spanggur Gap, which could be used to launch an offensive as China had done in 1962. Also, India got a direct view of China's Moldo Garrison. This was a cause of immense concern for the Chinese.

After this operation, the Indian Army also readjusted on the lake's north bank to position themselves above Chinese positions. The north bank was one of the first friction points to have come up in May 2020.

During this jostling, warning shots were fired for the first time by both sides, a first in over four decades. Also at certain areas on the south bank, troops and tanks were positioned just a few hundred metres apart, creating a dangerous eyeball-to-eyeball standoff.

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The two sides finally agreed to pull back troops from these areas in February last year after spending a harsh winter on those heights.

China is building these bridges close to the theatre of action. Sources suggest that the new bridge will allow Chinese troops to slash travel time from around 12 hours at the moment to around four hours.

What has been India's response?

Officially, India has said that the site of the bridge is under illegal occupation of China, and that it is monitoring all Chinese activity closely.

MEA spokesperson Arindam Bagchi said on Friday (May 20), "We have seen reports of a bridge being constructed by China on Pangong Lake alongside its earlier bridge. Both these bridges are in areas that have continued to be under the illegal occupation of China since the 1960s. We have never accepted such illegal occupation of our territory, nor have we accepted the unjustified Chinese claim or such construction activities."

About India upgrading and developing infrastructure along the northern border, former Army Chief General M M Naravane had said in January:

"We are in a much better position where we were a year and half ago," adding that "whatever China is doing, is being equally matched by our side", and that India is in no way "lagging behind as far as infra is concerned". In 2021, over 100 projects were completed by the Border Roads Organisation (BRO) in the border areas, most of which were close to the China border. India is also improving surveillance along the LAC, apart from building new airstrips and landing areas.

What is the current situation in the standoff?

While several friction points have been resolved, discussions are on regarding three remaining areas.

India and China pulled their troops back from Patrolling Point (PP) 14 in Galwan Valley in June 2020, after the fatal clashes.

Then they disengaged from the north and south banks of Pangong Tso in February 2021, and from PP17A near Gogra Post in August. But negotiations have been stuck since then.

The Corps Commanders from both sides have met 15 times since the standoff began, and the last meeting was in March.

The dates for the next round of talks are still awaited.

China has a Platoon-sized strength of PLA troops on the Indian side of the LAC at PP15 in the Hot Springs area. Also, some so-called "Chinese civilians" have pitched tents on the Indian side of the Charding Nalla, which marks the LAC in Demchok.

Further north, closer to the Karakoram Pass, Chinese troops continue to block Indian soldiers in an area called the Bottleneck in Depsang Plain, disallowing them to access India's traditional patrolling limits at PP10, PP11, PP11a, PP12 and PP13.

Both sides have over 50,000 troops each in the region, in the depth areas, along with additional air defence assets, artillery, tanks and other weapons.

Source: The Indian Express

27. On Quad; its origins, goals and future plans

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Relevant for GS Prelims & Mains Paper II; International Issues

The leaders of four countries — India, the U.S., Australia, and Japan — are meeting for the second in-person summit of the Quadrilateral Security Dialogue or Quad in Tokyo which commenced yesterday on May 24. A lot has changed, since the first in-person meeting of the Quad in September last year.

The ongoing Russia-Ukraine crisis has triggered geopolitical shifts, driven up global inflation, and affected supply chains amid a slew of western sanctions on Moscow. In March this year, Quad leaders discussed the situation in Ukraine in an unscheduled virtual meeting called by U.S President Joe Biden.

What is the Quad and why was it formed?

The Quad is an informal multilateral grouping of India, the U.S., Australia, and Japan aimed at cooperation for a free and open Indo-Pacific region. The region, composed of two oceans and spanning multiple continents is a hub of maritime trade and naval establishments. While not stated explicitly by the leaders, a major basis for the grouping is to check China's growing influence in the region.

After the Indian Ocean tsunami in 2004 wreaked havoc in the region now called the Indo-Pacific, India stepped up its rescue efforts not just on its own shores but also provided assistance to its maritime neighbours: Sri Lanka, the Maldives and Indonesia. Soon, the disaster relief effort was joined by three other naval powers — the U.S., Australia and Japan, with then U.S. President George W. Bush announcing that the four countries would set up an international coalition to coordinate the massive effort.

While the charge of the rescue operations was handed over to the United Nations shortly after, it led to the birth of a new framework: the Quadrilateral or Quad. Then Japanese Prime Minister Shinzo Abe, who had been promoting the idea of an “arc of prosperity and freedom” that brought the Quad countries closer together, further developed the concept and discussed it with then Prime Minister Manmohan Singh during a summit in December 2006. The grouping held a meeting in May 2007 but did not release an official statement. The 2007 Indo-U.S. Malabar naval exercises also saw the partial involvement of Japan, Australia and Singapore. The exercises and coordination were seen by China as an attempt to encircle it, which termed the grouping as trying to build “an Asian NATO”.

The Quad lost momentum post the 2007 meeting as the effort “dissipated amidst member leadership transitions, concerns about economic repercussions from China, and attention to other national interests,” according to the U.S. Congressional Research Service.

The grouping was only revived an entire decade later in 2017, at a time when all four countries had revised their assessment of the China challenge; and India had witnessed the Doklam standoff. Leaders of all four countries met in the Philippines for the ‘India-Australia-Japan-U.S.’ dialogue, not referred to as a Quad dialogue to avoid the notion of a “gang-up”. Even at this point, a set of objectives, areas of cooperation, and even the definition of Indo-Pacific were not fixed among Quad members.

It was in March 2021 that Mr. Biden, Mr. Modi, Australia's outgoing Prime Minister Scott Morrison, and then Japanese PM Yoshihide Suga met virtually, for the first time as an official Quad summit, releasing a set of objectives for the grouping in a joint statement called the “The Spirit of the Quad”.

What were the objectives of the grouping?

The March 2021 virtual summit gave rise to the main objectives of the Quad, outlined actionable goals, and formed expert working groups in multiple areas.

Coming together to foster a free and open Indo-Pacific formed the bedrock of cooperation. “We recommit to promoting the free, open, rules-based order, rooted in international law and undaunted by coercion, to bolster security and prosperity in the Indo-Pacific and beyond,” the joint statement said. Emphasis was laid on “rule of law, territorial integrity, freedom of navigation and overflight, peaceful resolution of disputes, and democratic values” in the region.

The other areas of immediate focus were the pandemic through strengthening equitable vaccine access for the Indo-Pacific, combating climate change, sharing critical technologies, cyber security, supply chain resilience, and infrastructure and connectivity projects.

Quad leaders launched the Quad Vaccine Initiative (QVI) with the aim of manufacturing and distributing at least a billion COVID-19 vaccines for the Asia region by the end of 2022. The plan was to manufacture U.S. developed vaccines in India with financing provided by the U.S. and Japan, and delivery undertaken by Australia and Japan to countries in Southeast Asia. The plan, however, has had trouble taking off for multiple reasons including legal indemnity issues with Indian law, safety concerns around the vaccine facility (of Pharma Biological E in Hyderabad), and lower demand for vaccines in South East Asia. As for emerging technologies, the four countries aimed to work on the development and diversification of 5G telecommunications and the creation of supply chains for critical minerals and technologies for making semiconductors used in smartphones, another area where China is a leader.

Quad nations had also agreed to build joint connectivity projects and transparent infrastructure funding for countries in the region. The emphasis on connectivity saw the Quad challenge China in another sphere: a coordinated effort to provide financing and sustainable alternatives to China’s Belt and Road Initiative (BRI), which has led many nations to take loans and accept infrastructure bids from Beijing.

The Quad also created a working group for combating climate change which would oversee efforts to foster green shipping by decarbonising maritime supply chains and promoting the use of clean hydrogen.

What are the future plans of the Quad?

According to a statement released by the Ministry of External Affairs about the agenda of the May 24 summit, “The Leaders will review the progress of Quad initiatives and Working Groups, identify new areas of cooperation and provide strategic guidance and vision for future collaboration”. The Quad summit is expected to discuss the Russian war in Ukraine, and the impact of three months of Western sanctions. Mr. Biden said yesterday that the world was “navigating a dark hour” with Russia’s attack on Ukraine, adding that the war made evident the need for decent international order.

(India is the only member of the Quad that has not joined sanctions against Russia, while also ramping up its intake of Russian oil — an estimated 40 million barrels more than it had in all of 2021).

Mr. Biden also unveiled the ‘Indo-Pacific Economic Framework’ (IPEF) on May 23, which, according to Reuters is a programme to bind countries in the region more closely through common standards in areas including supply-chain resilience, clean energy, infrastructure and digital trade.

Mr. Modi, who attended the launch, signalled India’s readiness to join the economic initiative. Indian officials had earlier expressed, however, that India was likely to be cautious about its participation in the Indo-Pacific Economic Framework as it could be seen as a counter to the 15-nation Regional Comprehensive Economic Partnership and the 17-nation Trans-Pacific Partnership that China is a member of. Quad members also launched a maritime monitoring plan to curb illegal fishing in the Indo-Pacific. Several countries have

objected to Chinese fishing vessels often violating their exclusive economic zones resulting in economic losses, while also engaging in deep-sea trawling, which causes environmental damage.

Source: The Hindu

28. Why do many in the US resist stricter gun laws?

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Relevant for GS Prelims & Mains Paper II; International Issues

A shooting at a Texas elementary school that killed 19 children and two adults Tuesday was the 27th school shooting in the US this year. It has also been 10 years since the Sandy Hook Elementary School massacre in which 20 children had died. But despite a high rate of gun violence, the country's politicians and voters continue resisting changes to their gun laws.

Political divide

Since Sandy Hook, 13 states — all controlled by Democrats, have enacted or expanded background checks for new gun purchases, a New York Times report points out. On the flip side, 14 states controlled by Republicans, have passed laws allowing their citizens to carry guns with no permit process at all. The political divisions on gun laws remain sharp.

As of 2021, as per a survey by the Pew Research Center, Republicans remain staunchly opposed to new gun regulations, arguing that the Second Amendment is sacrosanct and should not be infringed by virtually any legislation.

The Second Amendment of the US Constitution reads: "A well regulated Militia, being necessary to the security of a free State, the right of the people to keep and bear Arms, shall not be infringed." The First Amendment is freedom of speech.

Idea of freedom

According to the Pew Research Center report, one of the key and defining characteristics of gun owners is that they associate the right to own guns with their personal sense of freedom. Around 74% of gun owners say this is essential. The other main reason cited by gun owners is for personal protection. In previous surveys too, American gun owners have often stated that owning a gun is integral to their personal identity.

The powerful NRA

Some of the strongest opposition to gun control comes from the powerful and influential National Rifle Association (NRA). After Sandy Hook, the association's CEO Wayne LaPierre said that gun bans wouldn't protect Americans, but gun-free school zones in fact attract killers. This ties in with the guns-for-protection idea, in which increasing gun sales, rather than restricting them, is seen as beneficial in countering mass shooters. He said that the NRA would help create a National School Shield Emergency Response Program to help. Interestingly, 77% of NRA members who own guns are Republicans or lean Republican (Pew Research Center).

No background checks

In December 2021, Republican Chuck Grassley blocked a request to proceed on gun legislation that would prohibit firearms from being transferred among individuals unless a licensed dealer or manufacturer carried out a background check. Grassley condemned it as "hostile towards lawful gun owners and lawful firearm transactions". He also said that the background checks will not prevent crime and "will turn otherwise law-abiding citizens into criminals".

The US had 390 million guns in circulation in 2018 as per the Small Arms Survey. Also, three out of every ten US adults own a gun (Pew Research Center).

Mental illness

Critics of gun control laws have often framed mass shootings as a symptom and not the disease, citing mental health illnesses as the root cause that needs to be treated. Following two mass shootings in Texas and Ohio in less than 24 hours in 2019, former US President Donald Trump had said, “This is also a mental illness problem. These are people that are very, very seriously mentally ill.”

However, there is research, such as that by forensic psychiatrist Dr Michael Stone at Columbia University, which suggests that many mass shooters are not mentally ill/ According to Dr Stone, 65% of mass shooters are not mentally ill.

The racism argument

In March 2021, Republican Senators framed gun control laws as part of the country’s history of racism during a Senate Judiciary Committee hearing on gun violence. Their argument, tapping into the history of firearms ownership and the restrictions placed by Whites on African Americans, was that gun control acts impinge on the rights of minority communities.

Source: The Indian Express

29. Who are the NRA, America’s most prominent gun lobby group?**Relevant for GS Prelims & Mains Paper II; International Issues**

As 19 children and two teachers were murdered in the deadliest school shooting in the United States since the Sandy Hook massacre of 2012, President Joe Biden said in seeming despair: “As a nation, we have to ask when in God’s name we’re going to stand up to the gun lobby, when in God’s name we do what we all know in our gut needs to be done.”

The biggest and most powerful gun lobby group in the US is the National Rifle Association (NRA), which has for years mounted determined and fierce opposition to all efforts to reduce or restrict access to lethal firearms. A little over a decade ago, the NRA had sued Texas — the same state in which the 18-year-old gunman went on a rampage on Tuesday (May 24) — in a bid to force it to lower the legal age for owning a handgun from 21 years to 18.

Since 1991, the NRA has been led by Wayne LaPierre, 72, the CEO and executive vice president of the group.

The group

The NRA was founded in 1871 by William Conant Church and Captain George Wood Wingate, two veterans of the Civil War, with the intention to “promote and encourage rifle shooting on a scientific basis”. Gen Ambrose Burnside of the Union Army was elected the NRA’s first president.

In the initial decades of its existence, the NRA promoted rifle clubs across the US, and encouraged marksmanship as a sport. It was only in the 1930s that it entered the arena of political lobbying. The NRA supported the National Firearms Act (NFA) of 1934, the first federal gun control law in the US, and then the Gun Control Act (GCA) of 1968, which put in place a system of licensing gun dealers and restricted certain categories of weapons, but opposed the proposal for building a national firearms registry.

NRA’s politics

The NRA remained broadly nonpartisan until the 1970s. Its lobbying arm, the Institute for Legislative Action, was founded in 1975, and in 1977, the NRA built its own Political Action Committee (PAC) to fund lawmakers. Today, it is one of the most influential of special interest groups, with a very large budget to influence Congressmen and Congresswomen on gun policy in the US.

The NRA has close ties with the Republican party, and Republican politicians have long solicited the support of the group and its members. The NRA directly gave well over \$600,000 to politicians during the 2020 elections, almost all of it to Republicans, according to the nonprofit monitoring group OpenSecrets.

The 2015 Leadership Forum of the Institute for Legislative Action, the NRA's political advocacy arm, was addressed by a galaxy of candidates for the GOP presidential ticket, including Donald Trump, Jeb Bush, Ted Cruz, Marco Rubio, and Ben Carson.

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Trump, Cruz, and Texas Governor Gregg Abbott are among the Republicans who are scheduled to address the Institute of Legislative Action's 2022 Forum in Houston, Texas, over the weekend.

Size and strength

The NRA spends hundreds of millions of dollars annually, which for a long time was much more than all the advocacies for gun control put together. That situation is estimated to have changed in the last few years.

Estimates of the NRA's membership vary, and the group is often accused of overstating its numbers. The number of the NRA's members is perhaps around 3 million now. Former President George H W Bush, former Republican candidate for vice president Sarah Palin, and actors Tom Selleck, Whoopi Goldberg, and Charlton Heston have been members of the NRA at different times.

The NRA actively gives money for building and maintaining gun ranges. Its lobbying budget, including official and unofficial spends, runs into tens of millions of dollars every year. The group's membership is highly engaged politically, and considered to be a solid vote bank focussed on a single issue that Republican politicians seek to tap.

Source: The Indian Express

30. Understanding the nature of U.S.-Taiwan relations

Relevant for GS Prelims & Mains Paper II; International Issues

The President of the United States Joe Biden made a controversial statement on May 23, during a joint news conference with Japanese Prime Minister Fumio Kishida a day before the start of the Quad summit in Japan. He gave an affirmative reply to a question on whether the U.S. will come to the aid of Taiwan militarily in case of an invasion by China. This is the third time that he has made such a statement, raising questions about whether the U.S. is shifting from its long-standing policy of strategic ambiguity over Taiwan to that of strategic clarity.

What is the Taiwan issue?

Taiwan is an island territory located off the coast of mainland China, across the Taiwan Strait. After their defeat to the communist forces in the Chinese civil war (1945-1949), the ruling Kuomintang (Nationalist) government of China fled to Taiwan. They transplanted the Republic of China (ROC) government in Taiwan, while the Communist Party of China (CPC) established the People's Republic of China (PRC) in the mainland. Since then, the PRC considers the island as a renegade province awaiting reunification by peaceful means, if possible. Meanwhile, the ROC retained its membership at the United Nations and its permanent seat at the UN Security Council (UNSC). The cross-strait relations became strained as a result of the Cold War, with the PRC allying itself with the Soviet Union (USSR) and ROC with the U.S. This resulted in the two Taiwan Strait crises of the 1950s.

However, with the shifting geopolitics of the Cold War, the PRC and the U.S. were forced to come together in the 1970s to counter the growing influence of the USSR. This led to the US-China rapprochement demonstrated by the historic visit of then U.S. President Richard Nixon to PRC in 1972. The same year, the PRC displaced ROC as the official representative of the Chinese nation at the UN. Diplomatic relations with the

PRC became possible only if countries abided by its “One China Principle” — recognising PRC and not the ROC as China. Taiwan transitioned from a single party state to a multi-party democracy at the same time that China reformed its economic system under Deng Xiaoping, and by the end of the Cold War they became economically entangled; nevertheless, they continue to compete for international recognition and preparing themselves for the worst possible scenario.

How has the U.S’s stance on the Taiwan question evolved vis-à-vis China?

The very foundation of the U.S. rapprochement as well as its recognition of the PRC is a mutual understanding on the Taiwan question. This has been outlined in three documents — the Shanghai Communique (1972), the Normalisation Communique (1979) and the 1982 Communique. According to the 1972 communique, the U.S. agreed to the ‘one China principle’, with an understanding that it “acknowledges” and “does not challenge” that “all Chinese on either side of the Taiwan Strait maintain that there is but one China and that Taiwan is a part of China.”

As per the 1979 communique, the U.S. recognised PRC, but stated that it merely “acknowledges the Chinese position that there is but one China and Taiwan is part of China”. It also established unofficial relations with Taiwan through this communique in the name of the people of both the countries. The 1982 communique assuaged Chinese concerns of the possibility for continued arms supply to Taiwan by the U.S. provisioned in the Taiwan Relations Act (TRA) of 1979 which enabled it to resume supply of “defensive” arms. With these foundational arrangements, the U.S. developed a way to balance the recognition of PRC with the concerns of Taiwan. This delicate balance, however, has increasingly been tested of late.

Why is the issue significant today?

As Taiwan’s democracy flourished, the popular mood drifted towards a new Taiwanese identity and a pro-independence stance on sovereignty. The past decade has seen considerable souring of ties across the Strait, as the Democratic People’s Party (DPP) became the most powerful political force in Taiwan, sweeping two consecutive elections in the past decade. The DPP government, led by Tsai Ing Wen has been catering to the pro-independence constituency in Taiwan and seeks to diversify economic relations away from China. This has made China wary of Tsai. China has always seen Taiwan as a territory with high geopolitical significance. This is due to its central location in the First Island Chain between Japan and the South China Sea, which is seen as the first benchmark or barrier for China’s power projection. U.S. military outposts are scattered throughout this region, and hence, taking control of Taiwan would mean a significant breakthrough as per China’s geostrategic calculus. Moreover, its reunification will formally bury the remaining ghosts of China’s “century of humiliation”. China under President Xi Jinping seems to have lost its patience and currently sees very slim chances of a peaceful reunification, given the current downturn in cross-Strait relations and the trajectory of the wider geopolitics. This has been demonstrated in the growing frequency of rhetorical spats between Beijing and Taipei, and China’s military drills and patrols across the Strait, as well as the record-breaking aerial transgressions by China of Taiwan’s Air Defence Identification Zone (ADIZ). Also, this build-up of tensions is happening simultaneously and drawing parallels with the Russo-Ukrainian conflict.

Is U.S. strategy towards Taiwan witnessing a major transformation?

The U.S.’s strategy towards Taiwan in light of the unresolved nature of the cross-Strait relations has been marked by what has been called “strategic ambiguity”, which is quite visible in the TRA.

The TRA had come up in the wake of U.S.’s recognition of the PRC, and the resultant termination of the 1954 U.S.-Taiwan mutual defence treaty. As per the TRA, the U.S. has stated clearly that the establishment of bilateral relations with the PRC rests upon “the expectation that the future of Taiwan will be determined by peaceful means”. It also states that it is the policy of the U.S. “to maintain the capacity of the United States to resist any resort to force or other forms of coercion that would jeopardise the security, or the social or economic system, of the people on Taiwan”. Hence, there is no clear guarantee here that the U.S. will militarily involve in a situation where China attempts to invade Taiwan, short of supplying “defensive weapons”. The U.S. has for long utilised this strategic ambiguity with its own interpretation of the ‘one China principle’ to maintain its strategic interests in the Western Pacific. It is in this context that Mr. Biden’s statements have

made controversy. The reason behind why Mr. Biden stated that the U.S. will come to the rescue of Taiwan, as well as the backtracking by the administration later is not clear. It is quite possible that this could have been a “gaffe”, as portrayed by some sections of the media. However, this is the third time that Mr. Biden has put forward such a strong, clear viewpoint to the media — the first was in August and the second in October, 2021. This repeated assertive signalling seems to be therefore more than just accidental. Rather, it is speculated that the need to reassure U.S. allies in the Indo-Pacific in lieu of the Quad summit could have played a part in taking a bolder stance by the Biden administration.

It is also possible that the Russo-Ukraine conflict might have created a context where a strong message to the adversary becomes essential, especially considering Beijing’s wearing patience and Taipei’s increasingly pro-independence slant. It may have reached the point where strategic ambiguity may be losing its relevance to strategic clarity. However, another plausible interpretation can be that this messaging is aimed by the U.S. for eliciting responses and testing the waters to get a feel of China’s game plan for the Indo-Pacific, at a time when a grand distraction is underway at the Eurasian-Atlantic theatre. This may muddle the level of U.S.’s strategic ambiguity further.

Source: The Hindu

31. The Wagner Group of Russian mercenaries, now in focus in Ukraine

Relevant for GS Prelims & Mains Paper II; International Issues

Ukrainian authorities on Tuesday (May 24) accused two soldiers from Belarus of torturing and killing civilians in Motyzhyn village near Kyiv. Allegedly belonging to the ‘Wagner Group’, these are the first international mercenaries to be accused of war crimes in Ukraine, according to a report by The Guardian.

The group

Since the beginning of Russia’s invasion of Ukraine in late February, news reports have indicated the presence of a mercenary group in the country. Although known popularly as the Wagner Group, there is no corporation registered under that name, no recruitment centre, and no records about where its funding comes from. According to reports in The Washington Post, it is a network of contractors that supply soldiers for hire.

The Wagner Group first surfaced in 2014, during Russia’s annexation of Crimea. There have been reports of its presence in the Middle East and Africa as well.

There are allegations, denied by the Kremlin, that Wagner Group shares close ties with President Vladimir Putin. While the Kremlin stresses mercenary forces are illegal in Russia, observers have argued that the Wagner Group is helpful to Russia’s war effort, as it can send these forces to Ukraine while simultaneously denying any relationship with them. Sorchia MacLeod, chair of the United Nations Working Group on the use of mercenaries, told The New York Times that the lack of transparency allows the country to have plausible deniability and helps form a “distance between the Russian state and the group”.

The group is said to have been founded by Dmitry Utkin, a former special forces officer, member of Russia’s military intelligence service and a veteran of both Chechen wars. Some claim that the Wagner Group got its name from Utkin’s call sign, Vagner. According to another theory, he named his group in honour of Adolf Hitler’s favourite composer, Richard Wagner.

Putin’s ‘chef’

The European Union and US Treasury Department have claimed that the Wagner Group is bankrolled by the Russian oligarch and close ally of Putin, Yevgeniy Prigozhin, who has repeatedly denied these allegations.

Beginning his career as a hot dog vendor, Prigozhin rose to be a restaurateur and served the Russian elite. He earned the nickname ‘Putin’s Chef’ after winning a number of catering contracts for state banquets. The US

Treasury has also accused Prigozhin of financing the Internet Research Agency, a “troll farm” that was to have influenced the 2016 presidential elections in the US through disinformation campaigns by fake social media accounts. In April, the European Union imposed sanctions on Prigozhin and stated that as the “founder and unofficial head of the Wagner Group”, he was “responsible for the deployment of Wagner Group mercenaries in Ukraine”.

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Presence in Ukraine

The Wagner Group is said to have trained and armed Russian-backed forces that were attempting to take over Ukraine’s Donbas region in 2014. It is also said to have aided Russian forces during the annexation of Crimea.

Since Russia’s invasion of Ukraine, there have been an estimated 1,000 Wagner Group mercenaries stationed in Ukraine, according to a report in The Washington Post in April. Also in April, The Financial Times reported that Russia had moved some 200 soldiers of the Wagner Group to Ukraine from Libya.

With an estimated 190,000 Russian soldiers deployed in Ukraine, it is not yet completely clear what function the Wagner Group is supposed to perform. Candace Rondeaux, director of the Future Frontlines programme at New America, told The Intercept that one purpose they serve is to “create the impression that Russia can project itself militarily anywhere in the world.”

Fighters from the Wagner Group have also been accused by Ukrainian officials of committing war crimes since the takeover of the Donbas region in 2014. The Guardian reported on May 25 that at least two Wagner fighters have been suspected of murdering civilians in Ukraine.

Presence elsewhere

Wagner Group forces have also been deployed in Syria, Libya, Central African Republic, Mali, Sudan and Mozambique, The New York Times reported.

In Syria, the Wagner Group fought alongside Russian forces and the backed Bashar al-Assad regime. They aided in the seizure of oil and gas fields and secured government infrastructure, the Wall Street Journal reported.

After France decided to withdraw thousands of troops from Mali last year, authorities turned to Russia and the Wagner Group to help aid in the battle against insurgents. According to The Washington Post, 800-1,000 Russian mercenaries are stationed in Mali, costing the government \$10 million each month. A report in The

Guardian said that in March, the Wagner Group was suspected to have been involved in a massacre in Moura (Mali), where 350-380 men were killed.

In May, Human Rights Watch reported that Russian and Wagner Group forces “appear to have summarily executed, tortured, and beaten civilians since 2019” in Central African Republic.

Source: The Indian Express

32. The cultural roots and significance of PM Modi’s gifts for his Quad colleagues

Relevant for GS Prelims & Mains Paper II; International Issues

As Prime Minister Narendra Modi travelled to Tokyo to attend the Quad Summit, he carried with him gifts for leaders of the US, Australia and Japan showcasing India’s rich cultural heritage and art forms. A look at those gifts and their cultural roots.

Sanjhi art panel for US President Joe Biden

Website: www.prepmate.in

Telegram Channel: [@upscprepmate](https://t.me/@upscprepmate)

Prepmate Cengage Books Preview: <https://prepmate.in/books/> Youtube channel: [PrepMateEdutech](https://www.youtube.com/channel/UCPrepMate)

The intricate sanjhi panel that PM Modi gave US President Joe Biden is based on the theme of Thakurani Ghat, which is one of the most famous ghats on the banks of the holy river of Yamuna in Gokul. The traditional art form that originated out of the cult of Krishna, involves creating stencils based on incidents from the life of the deity and then hand-cutting these on thin sheets of paper using scissors. In olden times, the stencils were made using rough paper or banana leaves, but now this has changed to handmade and recycled paper.

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Radha, according to Hindu mythology, used to paint sanjhi patterns on the walls for her beloved Krishna and later the gopis of Vrindavan followed suit. Later, the form was used to make ceremonial rangolis in temples dedicated to Lord Krishna. In fact, the term 'sanjhi' is derived from 'sanjh' or dusk and is related to the practice of making rangolis in temples at dusk.



Prime Minister Narendra Modi's gift to US President Joe Biden. (Express photo)

In the form of painting, sanjhi was popularised in the 15th and 16th centuries by the Vaishnava temples and was practiced by Brahmin priests. During the Mughal period, contemporary themes were added and several families have continued to practice the form to this day. During the 2010 Commonwealth Games, the pictograms were inspired by traditional Sanjhi art.

Gond art painting for Australian PM Anthony Albanese

A form of painting practised by one of the largest tribal groups in India, the Gond community in Madhya Pradesh, the art in its visual form is often traced to Jangarh Shyam, who in the 1970s and '80s began drawing the largely oral myths and legends of the tribe onto the walls of homes in the village of Patangarh. His talent was spotted by artist J Swaminathan, who invited him to work at Bharat Bhavan in Bhopal in the early '80s.

The dotted patterns, jagged patterns, dots, waves and squiggles told the tale of their gods and goddesses and as well as the flora and fauna of the deep forests in Madhya Pradesh.

As the form received global recognition, several Gond artists have gained prominence and recognition. The prominent names include BhajjuShyam, Venkat Shyam, DurgabaiVyam, Ram Singh Urveti and Subhash Vyam, among others.



Prime Minister Narendra Modi's gift to Australian PM Anthony Albanese. (Express photo)

PM Modi's gift to PM Albanese depicts a popular motif in Gond art — the Tree of Life, with intricate patterns and lines that are a trademark of Gond art.

Wooden hand-carved box with a Rogan painting for Japanese PM Fumio Kishida

PM Modi gifted PM Kishida a hand-carved deep brown wooden box with a gold and white Rogan painting on a green cloth as its central motif. Rogan is a form of cloth painting that is considered to be more than four centuries old and is primarily practised in Kutch district of Gujarat.



Prime Minister Narendra Modi's gift to Japanese PM Fumio Kishida at the Quad summit. (Express photo)

The word 'rogan' comes from Persian, meaning varnish or oil. The craft uses paint made from boiled oil and vegetable dyes, where castor seeds are hand-pounded to extract the oil and turned into a paste by boiling. Coloured powder is diluted in water and mixed to make pastes in different colours that are stored in earthen pots. Artists place a small amount of the paint paste into their palms and twirl it with a rod for a textured appearance on the fabric. The rod never really comes in contact with the fabric and by moving it above, the artist sketches thin lines on the fabric. Usually, only half the fabric is painted and it is folded to create a mirror image. While originally only men used to practice the art form, now several women in Gujarat also pursue it. PM Modi had also gifted a Rogan painting to the Queen of Denmark, Margrethe II, during his three-day visit to Europe earlier this month.

Source: The Indian Express

33. Is the Indo-Pacific bloc limited in scope?

Relevant for GS Prelims & Mains Paper II; International Relations

The launch this week of U.S. President Joseph Biden's new trade initiative for the region, the Indo-Pacific Economic Framework for Prosperity (IPEF), which was witnessed by leaders of 13 countries, including Prime Minister Narendra Modi, was heralded as the start of a new economic bloc in the region, one which could be seen as a counter to China. The IPEF, which comprises a "baker's dozen" of Australia, Brunei, India, Indonesia, Japan, Republic of Korea, Malaysia, New Zealand, the Philippines, Singapore, Thailand, the United States and Vietnam, represents 40% of the world's GDP. However, the launch of the IPEF has also been accompanied with some scepticism, not least from within the U.S., about just what it can deliver, given that officials made it clear that it is not a traditional trade deal.

What is the IPEF, if not a trade deal?

For the past few months, the Biden administration has been working with countries in the Indo-Pacific region to try and bring them on board with the idea of an alternative trading arrangement led by the U.S. The four pillars that the IPEF framework rests on are 'Connected Economy', setting standards on digital trade, cross-border data flows and data localisation; 'Resilient Economy', with supply chain commitments and guarding against price spikes; 'Clean Economy', with commitments on clean energy, decarbonisation, and infrastructure to cut emissions; and 'Fair Economy', in terms of enforcing regimes that cut down on money laundering and corruption, and ensure fair taxation. As a result, the IPEF is more about standard setting and facilitating trade and will not involve more market access for its members. Nor will it negotiate lower tariffs.

Officials say as the negotiations proceed, they may incorporate more ideas, but have also stressed that members can take a “pick and choose” attitude towards joining only the pillars that interest them. While this concept has been developed in order to be more inclusive and attract more members, it also has raised questions about the seriousness of the U.S. proposition.

Why is the U.S. promoting this bloc?

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The IPEF is part of the U.S.’s more than a decade old “Pivot to Asia” programme, re-imagining the Indo-Pacific as a geographic construct including America. The Quad, consisting of India, Australia, Japan and the U.S., is part of the same pitch made originally by the Obama administration, and then re-energised by the Trump administration. The IPEF is also a way for the U.S. to keep its foot in the door on trade in Asia, after the Trump administration walked out of the 11-member Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP, originally the TPP) in 2017 that includes Canada, Mexico and countries in Asia and South America (China has applied to be a member).

The U.S. is also not part of the other big trade bloc, the Regional Comprehensive Economic Partnership (RCEP), that includes China, all 10 members of the ASEAN, as well as Australia, Japan, New Zealand and South Korea, a deal India walked out of in 2019. By announcing a new arrangement that includes India, seven of 10 ASEAN members, and a majority of the RCEP members, the Biden administration is seeking to signal that it has not been cut out of trade in the region. The IPEF also clearly has a geopolitical edge — as it doesn’t include China, although the Biden administration stopped short of including Taiwan in the launch, as many U.S. Congress members had demanded.

Given that the U.S. itself is deeply divided on free trade issues, the U.S. Government has chosen not to make the IPEF a trade deal, which would need congressional clearance. At a briefing just prior to the launch, U.S. Trade Representative Katherine Tai said the government had learnt a “strong lesson” from the TPP experience. “With respect to TPP, I think that the biggest problem with it was that we did not have the support at home to get it through...despite Herculean efforts, it could not be gotten through Congress,” Ms. Tai explained.

Finally, the IPEF is part of the Biden administration’s way of showing that despite its current focus on the war in Europe, and hot pursuit of Russia through economic sanctions, it has not lost sight that Asia, and the challenge from China, is prominent in the U.S. agenda.

What’s in it for India?

For the Modi government too, which walked out of the RCEP after eight years of negotiations, the membership of IPEF keeps it in the room on Asian trading arrangements, and is a way of blunting criticism that it is overtly protectionist. In the past year, the government has made a virtual U-turn from its previous antagonism towards bilateral trade agreements. It has concluded its first-ever trade deal in its tenure with the United Arab Emirates, and is in active negotiations to complete deals with the U.K., Australia and Canada.

The IPEF’s non-specific and flexible nature also suits India, which has held strong views on a range of issues like labour standards, environmental restrictions on fossil fuels, and data localisation.

India’s inclusion also comes from a geopolitical need to counter China’s virtual control over Asian trade, given that the RCEP seeks to eliminate about 90% of tariffs amongst members, particularly given India’s bilateral issues with China since the 2020 transgressions by the Chinese army at the Line of Actual Control.

For the U.S., and other Quad members Japan and Australia, India’s inclusion, which had been tentative in the run-up to the IPEF launch, is important. Although India may not be an ideal participant under current conditions, its exclusion from the IPEF would raise questions about how ‘Indo’ the Indo-Pacific Economic Framework truly is,” remarked a brief on IPEF released by the Washington-based Center for Strategic and International Studies (CSIS) in April this year. It is significant that India is the only country in South Asia

which has been invited to the grouping, and the U.S. plans to expand the membership further will be watched closely.

How has China responded to the IPEF?

Clearly, China has been deeply critical of all U.S. initiatives in the region, as a part of a strategy to “contain China”. The Chinese government has accused the U.S. of building an “Asian NATO” in the Quad, of nuclearising the region through the Australia-U.K.-U.S. security pact AUKUS, and has also trained its guns on the IPEF, dismissing its utility, but also warning, as Chinese Foreign Ministry spokesperson Wang Wenbin did, that “many countries in the region are worried about the huge cost of ‘decoupling’ with China.”

“The U.S. is taking a selective approach in acceding to regional cooperation initiatives. Now the U.S. proposed the IPEF only to start something new to serve its own interests,” Mr. Wang said. Already, three members of ASEAN seen as closest to China: Myanmar, Cambodia and Laos, have chosen not to join IPEF.

What about other criticisms of the arrangement?

The biggest criticism of IPEF in other capitals in Asia is that it is still too vague and lacks enough substance. Indian officials said India’s participation as an “initial founder” means that it will go along with the negotiations and see where they lead, but, like with RCEP, joining the launch is not the same as joining the eventual IPEF agreement negotiated, and much will depend on whether India’s specific red-lines on market protection and services are included.

There is also some scepticism of U.S. initiatives that don’t carry any “dollar value”. With market access to U.S. and tariff reductions off the table, there are questions about how much “skin in the game” Washington will bring. Previous initiatives like the Blue Dot Network, and the Build Back World initiative with G-7 partners have not brought in the sort of funding required for emerging economies in the region. A Quad initiative for \$50 billion in financing infrastructure projects over five years seems unambitious, compared to U.S. spending in other regions, and even on Ukraine in the past few months.

Finally, in selling the IPEF back home in Washington, the U.S. appears to be making the deal more about benefits to the U.S. economy than to the Indo-Pacific region as a whole. U.S. National Security Adviser Jake Sullivan’s remarks in a press briefing, that the “IPEF is part of President Biden’s commitment to putting American families and workers at the centre of [U.S.] economic and foreign policy, while strengthening our ties with allies and partners for the purpose of increasing shared prosperity,” raised eyebrows.

Source: The Hindu

34. Why can’t America solve its gun problem?

Relevant for GS Prelims & Mains Paper II; International Issues

On May 24, a gunman went on a shooting rampage at Robb Elementary School in the small town of Uvalde, Texas, killing 19 children and two teachers. The attack has reminded the U.S. yet again that it has failed to act to stop gun crimes despite the grim toll on human life for several decades. The shooter, identified in reports as 18-year-old Salvador Ramos, carried out the massacre using AR-15 assault rifles, which he allegedly purchased legally from a gun store. The murders, which came scarcely 10 days after 10 people were shot dead at a grocery store in Buffalo, New York, an incident identified as a racist hate crime, have prompted another round of acrimony between liberals and conservatives on the need for tighter gun control laws. U.S. President Joe Biden wasted no time in condemning the attack but was sketchy on details regarding what legislation or executive actions he hoped to push forward to close regulatory loopholes that allow teenagers to buy assault weapons, and, more broadly, a lack of background checks for potential gun buyers. Neither Mr. Biden, nor any of his Democratic predecessors have succeeded in getting common-sense gun control reform passed in the U.S. Congress owing to Republican lawmakers’ refusal to budge on their view regarding their constitutional right to bear arms.

How many school shootings have occurred in recent years?

The Uvalde school shooting is the worst such attack on U.S. soil since the incident at Sandy Hook elementary attack in Newtown, Connecticut, in 2012, in which 20 first-graders and six school employees were killed. A similar toll on human life came after a shooting at Marjory Stoneman Douglas High School in 2018, when a former student of the school in Parkland, Florida, killed 17 persons and wounded 17 others.

Overall, there have been at least 26 school shootings in 2022 alone and at least 118 incidents since 2018, according to reports that have tracked this statistic over the past four years. However, these include 'non-mass shootings' where fewer than four persons were killed in a single incident. Using this statistic, 2021 witnessed 34 shootings, the highest number during this period, followed by 24 incidents each in 2019 and 2018 and 10 shootings in 2020.

Considering mass school shootings alone, there have been 13 such attacks since 1966, including notably the Columbine High School massacre of 1999, at that time the worst mass shooting at a school in American history. It is concerning that the Columbine attack's death toll now ranks fourth, after the three more recent shootings at Uvalde, Parkland and Newtown overtook the former on that grim statistic during the past decade.

What is the role of the Second Amendment?

The U.S.'s penchant for gun ownership stems from its deep belief in the Second Amendment of its constitution, which assures its citizenry that "a well-regulated Militia, being necessary to the security of a free State, the right of the people to keep and bear Arms, shall not be infringed." The Second Amendment, ratified in 1791, was one of 10 such that together make up the Bill of Rights in the U.S. constitution. The original intent of the founding fathers of the nation was to give to the people the right to defend themselves against an oppressive government and create an armed militia that could be recruited into federal military in the event of a war with a foreign power. However, after the balance of power shifted from the states to the federal government, including technological advances that made the U.S. military a far superior force than any local or state militia could hope to be, the only interpretation of the Second Amendment that remained was that it guaranteed, at the individual level, the right to bear arms.

In 1939, the U.S. Supreme Court considered the matter in *United States v. Miller* and ruled that local, state, and federal legislative bodies possessed the authority to regulate firearms without implicating a constitutional right given that there was no individual right to bear arms, only a collective right of the citizenry. Using this ruling the state then regulated the inter-state commerce of sawed-off shotguns, which it deemed to not be consistent with any requirements of a "well-regulated militia." That interpretation stood until 2008, in the case of *District of Columbia v. Heller*, where the Supreme Court held that the "Second Amendment protects an individual right to possess a firearm unconnected with service in a militia, and to use that arm for traditionally lawful purposes, such as self-defence within the home," effectively reading down a ban on handgun possession in Washington DC.

Regardless of the state of legal protections, a strong culture of gun ownership has permeated the broader consciousness of security-minded U.S. citizens since the times of the 'Wild West' or America frontier days. Today that culture is most fervently institutionalised in the Republican party, which has close links to the National Rifle Association, also a well-networked and deep pocketed organisation that systematically lobbies with lawmakers on Capitol Hill to get specific laws passed favouring the possession and trade of firearms.

It is in this context that there are no surprises that Congress rejected no fewer than 17 attempts by the administration of former President Barack Obama to get common-sense gun control passed on the floor of the Senate. In the end Mr. Obama resorted to passing gun control reform by diktat, that is through the temporary route of executive actions. Exercising presidential power in this manner may be the only option available to Mr. Biden. These should, at a minimum, include an assault weapons ban, expanded background checks, and ban on gun ownership by those with mental illness, criminal records, or minors.

Source: The Hindu

35. The Azerbaijan-Armenia conflict over Nagorno-Karabakh Enclave

Relevant for GS Prelims & Mains Paper II; International Issues

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Armenia's Prime Minister Nikol Pashinyan and Azerbaijan's President Ilham Aliyev announced on May 23 that their respective countries would be setting up border security and delimitation commissions, signalling a step towards resolution of a decades-long conflict over the Nagorno-Karabakh Enclave. The talks between the two leaders have triggered protests in the Armenian capital of Yerevan and other parts of the country and the Opposition has demanded his resignation.

How did the conflict over Nagorno-Karabakh begin?

Nagorno-Karabakh is a landlocked, mountainous and forested region, falling within the boundaries of Azerbaijan. Nagorno-Karabakh, called Artsakh in Armenian, hosts a predominantly ethnic Armenian population with an Azeri minority. It is located in the South Caucasus region and is roughly made up of modern-day Armenia, Azerbaijan, and Georgia.

Nagorno-Karabakh, which was once a part of the Armenian kingdom, has been ruled by several empires over the centuries — the Ottomans, the Persians, and the Russians.

Armenia, Azerbaijan and Georgia later became separate Republics, with the Azeris incorporating Nagorno-Karabakh into their Republic. During the First World War, the Ottomans, aided by Azeris, attacked the south Caucasus, especially targeting ethnic Armenians. As the Ottomans retreated at the end of the World War, Azerbaijan and Armenia descended into a full-blown war in 1920.

The Azeri-Armenian war of 1991

Soon, the Bolsheviks took over south Caucasus to expand Soviet influence and Azerbaijan, Armenia, and Georgia became Soviet Republics. The Soviets officially placed Nagorno-Karabakh as an autonomous Oblast (administrative region) in Azerbaijan's territory, despite the chiefly Armenian population. As Soviet power began to wane in the 1980s, the ethnic Armenian population of Nagorno-Karabakh expressed a desire to be reunited with their roots and become a part of Armenia, organising a vote for the same in 1988.

This did not go down well with Azerbaijan and military clashes ensued. The war killed nearly 30,000 people and caused numerous ethnic Azeris to flee Karabakh and Armenia. Some Armenians in parts of Azerbaijan fled too.

By 1993, Armenia had taken control of most of Nagorno-Karabakh. The war ended in 1994 when both countries entered into a ceasefire brokered by Russia but the borders of Armenia and Azerbaijan were not demarcated. Peace talks were initiated by the Minsk Group but peace treaty could not be brokered.

The Minsk Group, created by the Organisation for Security and Cooperation in Europe (OSCE) in early 1990, was co-chaired by Russia, the United States, and France.

The Minsk Group's proposals were continuously rejected by both Yerevan and Baku. The role of the Minsk Group declined during the 2020 war between the two countries, as other negotiating groups entered the scene.

The war of 2016 and 2020

A ceasefire signed in 1994 could not prevent multiple flare-ups between the Nagorno-Karabakh rebel armed forces backed by the Armenian military, and the Azerbaijani military. Some skirmishes turned into direct clashes and the conflict has resulted in several casualties over the years.

In 2016, a clash started between Azerbaijan and Armenia which lasted for four days. A ceasefire signed in Moscow put an end to the war but the Nagorno-Karabakh issue was far from resolved.

Fresh clashes erupted on the Armenia-Azerbaijan border in September of 2020, which turned into a fierce six-week war in which more than 2,000 people died. The fighting began after Azerbaijani President Aliyev launched an offensive vowing to take back Nagorno-Karabakh and other Armenian-occupied districts.

Both parties entered a ceasefire brokered by Moscow in November 2020.

Who is organising the current peace talks and where do they stand?

Despite the 2020 ceasefire, clashes have not stopped. In November last year, seven Azerbaijani and six Armenian soldiers were killed in border clashes. With the efforts of the Minsk Group remaining largely unsuccessful, Baku saw an opportunity to introduce its own peace proposal, which calls for the mutual recognition of each State's territorial integrity, meaning the recognition of Nagorno-Karabakh within Azerbaijani territory.

The European Union, meanwhile, has emerged as a potential peace broker. European Council President Charles Michel spearheaded meetings between both countries for the beginning of peace talks twice in April, and again more recently on May 22.

While both countries have now agreed to formulate border security and delimitation commissions and start talks for a peace deal, a permanent solution for the Karabakh issue remains out of sight.

Source: The Hindu

36. Nepal's unfortunate history of deadly plane crashes

Relevant for GS Prelims & Mains Paper II; International Issues

A small plane carrying 22 passengers Sunday crashed near Nepal's Lete hill. The 9N-AET Twin Otter aircraft, run by the Nepal-based Tara Air, was travelling from Pokhara to Jomson carrying 4 Indians, 13 Nepali passengers, 3 Japanese nationals, 2 Germans, along with 3 Nepali crew members, according to Sudarshan Bartaula, the spokesperson of Tara Air.

What makes flying risky in Nepal?

Nepal has had a long and unfortunate history of plane crashes in the country. According to the Aviation Safety database, there have been 27 fatal plane crashes in Nepal over the past 30 years. Of these, more than 20 have taken place in the last decade.

The rugged mountainous terrain, dearth of investment in new planes and infrastructure and poor regulation have contributed to these crashes.

Further, the airstrips are located in mountainous areas, amid weather conditions that are known for their sudden turns.

In 2013, the European Union banned all Nepal-based airlines from flying in its airspace, citing safety concerns.

In March 2022, the Kathmandu Post reported that the Nepal government's failure to act had ensured that the EU aviation blacklist continues.

The deadliest crashes in Nepal have taken place in Tribhuvan International Airport in Kathmandu, perched 1,338 metres above sea level. The terrain is particularly challenging here as it is located in a narrow oval-

shaped valley and surrounded by tall, jagged mountains, which means that planes have less room to manoeuvre in.

However, most pilots profess that the steeper and narrower landing strips higher in the Himalayas are even more difficult to navigate.

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Smaller planes containing turboprop engines, such as the Twin Otter aircraft that crashed today, can arrive here and not the larger jetliners. These smaller planes are more affected by strong weather conditions in Nepal.

Some significant plane crashes

February 2019: a helicopter operated by Air Dynasty, crashed into a hill as it was attempting to find its way back into Kathmandu. All seven passengers died, including Nepal's Tourism Minister Rabindra Adhikari and entrepreneur Ang Chhiring Sherpa. He was the owner of Yeti Air, Tara Air, and Himalayan Airlines in partnership with Tibet Air. The disaster struck as the area was experiencing poor visibility.

The government of Nepal subsequently began an investigation into the accident. The preliminary report claimed that there had been violations of operating procedures, such as disbalance of weights due to the positioning of the fuel tank and the incorrect seating arrangements of passengers.

The investigator alleged that there was perhaps 'undue pressure' on the pilot to fly the VIP passengers in poor weather conditions, as reported by the Kathmandu Post.

March 2018: A Bombardier Q400 operated by Bangladeshi airline, US-Bangla crash landed in Tribhuvan International Airport in Kathmandu while returning from Dhaka, killing 49 of the 71 passengers and crew.

The aircraft skidded off the runway, crashed through an airport fence, halted in a football field, and then exploded. This was the third deadliest aviation disaster in Nepal's history.

The accident led to much controversy and speculation, as both Kathmandu officials and the airline blamed each other. Airport officials claimed that the pilot did not follow the control tower's instructions and entered the runway from the wrong direction. Imran Asif, the CEO of the US-Bangla Air told reporters that he "suspected" that the control tower "might have misled the pilot".

According to the final report published by Nepalese authorities 2019, Abid Sultan, the captain of the plane and a former member of the Bangladesh Air Force, "seemed to have an emotional breakdown". The investigators also blamed the crash on the crew's failure to follow "the standard operating procedure at the critical stage of the flight".

September 2011: A Beechcraft 1900D operated by Buddha Air that was carrying tourists on a sightseeing trip around Mount Everest, collided with a hill. All 19 people on board died, including 10 Indians. Adverse weather conditions were the cause of the accident, as the Kathmandu airport and its surrounding area was encased in thick monsoon clouds during the crash.

September 1992: An Airbus A300 operated by Pakistan International Airlines crashed while landing in the Kathmandu airport and killed all 167 people on board.

The flight was coming from the Jinnah International Airport in Karachi and struck the last mountain ridge that lay 11 km before Kathmandu airport. The investigation revealed that the approach to the airport is very difficult because of the surrounding topography and due to the pilot's error, the plane began to descend too early.

July 1992: Only two months before the Airbus A300 crash, an Airbus 310 operated by Thai Airways crashed on its approach in Kathmandu and killed all 99 passengers and 14 crew on board. The plane collided with a mountain 37 km north of Kathmandu, during heavy monsoon rain. According to the investigation, there was a minor failure in the plane's flaps and the pilot was undergoing a great deal of stress due to miscommunication with the air traffic controller during poor climatic conditions. Nepalese authorities also claimed that Thai Airways did not provide the pilot with adequate simulator training for the difficult Kathmandu approach.

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Source: The Indian Express

Geography

1. What is causing the intense heat in north, west, central and east India?

Relevant for GS Prelims & Mains Paper I; Geography

India is in the throes of an unusually long series of heatwaves that began in the end of March and scorched north India for most of April. The India Meteorological Department (IMD) said April was the hottest in northwest India in 122 years. It has also been an unusually hot April – with temperatures touching above 40 degree Celsius – in large parts of Bihar, Jharkhand and West Bengal.

How widespread is the heatwave?

Records from IMD suggest that the average maximum temperature till April 27 was 35.7 degree Celsius, the highest in five years for this month. In Madhya Pradesh, Rajasthan, Punjab, and Gujarat, the average maximum temperature in April 2022 so far has been the highest since 1951; while it has been the second highest in Delhi, Uttar Pradesh, and Haryana. In most of these States, the temperature has been consistently above 42 degree Celsius and around 5-6 degrees above normal for this time of the year.

Latest IMD forecasts say heat wave conditions prevail in many parts of Punjab, northwest Rajasthan and Vidarbha, Maharashtra. It's also unusually hot in parts of Himachal Pradesh, west Madhya Pradesh, Jharkhand, Bihar, Gangetic West Bengal and Odisha. Maximum temperatures were 43-46 degree Celsius over most parts of Rajasthan, Vidarbha, Madhya Pradesh and east Uttar Pradesh, in many parts of Gujarat and interior Odisha; in some parts of Madhya Maharashtra and in isolated pockets of Bihar, Jharkhand, interior Gangetic West Bengal and 40-43 degree Celsius over most parts of Haryana-Delhi, Punjab and in isolated pockets of west Uttar Pradesh, Chhattisgarh, Marathwada, Telangana and Rayalaseema.

These scorching conditions are expected to continue until the middle of next week until, the agency says, a western disturbance from West Asia brings rain to parts of north and north-western India. While it is not unusual for the latter half of April to be dry and hot in most of north, west and central India, this year is unusual in that this follows the warmest March in 121 years with the maximum temperature across the country nearly 1.86 degree Celsius above normal.

How are heatwaves defined?

A heatwave is declared when the maximum temperature is over 40 degree Celsius and at least 4.5 notches above normal. A severe heatwave is declared if the departure from normal temperature is more than 6.4 degrees, according to the IMD. Based on absolute recorded temperatures, a heatwave is declared when an area logs a maximum temperature of 45 degree Celsius. A severe heatwave is declared if the maximum temperature crosses 47 degrees.

Is climate change responsible?

The heat-trapping consequences of global warming imply that climate extremes such as heatwaves are expected to rise in frequency. Instances of extreme rainfall, as well as longer rainless spells are expected, according to assessments by the Intergovernmental Panel on Climate Change.

The main reason for the scorching heat in the northern parts of the country is lack of rainfall. Usually, periods of high temperature are punctuated by periodic episodes of rain but this was largely absent during March and April. Ironically, April also saw maximum instances of extreme rainfall since 2018 though it was concentrated in the south and north-eastern India. The rain-bearing western disturbances originate because of temperature gradients between the northernmost parts of the globe and the latitudes passing through West Asia. Weaker gradients mean weaker rains. This March and April, cooler than normal conditions in the Pacific Ocean failed to aid rainfall in north India.

What impact do heatwaves have over India?

Research through the years shows that the number of heatwave days in India is increasing every decade. From 413 in 1981-90 to 575 in 2001-10 and 600 in 2011-20, the number of days that see extremely hot days is persistently increasing at 103 weather stations. Some parts along eastern India, such as Andhra Pradesh, Telangana and Odisha, also register higher humidity along with high temperatures, leading to a rise in a condition called 'wet bulb' temperature, that at its mildest can cause extreme discomfort and at its worst cause dehydration and death.

Heatwaves have killed more than 17,000 people in 50 years in India, according to a research study by IMD scientists. However, the intensity and length of heatwaves don't have a direct connection to India's monsoon that sets in over Kerala in June.

What is being done to buffer against high temperatures?

Over the years, forecast systems have improved that allow heatwave warnings to be disseminated via electronic channels and phones instantaneously. Many State governments across the country have declared school holidays; some have highlighted the dangers of working outdoors during the day. Many State governments award monetary compensation for deaths linked to heatwaves.

Source: The Hindu

2. Is La Nina a fair weather friend of our country?

Relevant for GS Prelims & Mains Paper I; Geography

Usual Benefits of La Nina

In most years, meteorologists consider the La Nina to be a friend of India. The phenomenon associated with below normal sea surface temperatures in the eastern and central Pacific Ocean, makes the summer monsoon wetter and the winter colder unlike its evil twin, the El Nino, or a warming phenomenon that frequently dries up monsoon rains over India.

Causing Heat waves

This year, however, the La Nina is being blamed for worsening perhaps the longest spell of heatwaves from March to April in north, west and Central India.

Formally known as the El Nino Southern Oscillation (ENSO), the La Nina-El Nino phenomenon follows a periodic pattern that roughly lasts three years.

During a La Nina winter, a north-south pressure pattern sets up over India and normally this influences the trade winds that bring rains to India. However, because the La Nina didn't peak, the sea surface temperatures

continued to be cold and this drove hot westerly winds and blasts of hot air from the Middle East into Pakistan and India.

While land temperatures over India begin rising in March, they are usually punctuated by western disturbances, or moisture from the Mediterranean region that fall as rain over north and western India. For these currents to make it as far as India, they need a significant difference in temperature between Europe and the latitudes over India. Partly due to La Nina, this temperature difference was absent and so the western disturbances that came to India were weak with hardly any rain.

According to a 2021 report by the Ministry of Earth Sciences, 'Assessment of Climate Change over the Indian Region', all India averaged frequency of summer heatwaves is expected to rise to about 2.5 events per season by the mid-21st century, with a further slight rise to about 3.0 events by the end of 21st century under current trajectory of greenhouse gas emission.

Source: The Hindu

3. Super cyclones in India, Bangladesh: numbers exposed to severe flooding projected to rise hugely

Relevant for GS Prelims & Mains Paper I; Geography

A new study has found that super cyclones are likely to have a much more devastating impact on people in South Asia in future years. The paper was published in the Royal Meteorological Society journal Climate Resilience and Sustainability on Monday — a day when the India Meteorological Department was tracking Asani, classified as a severe cyclonic storm and predicted to weaken into a cyclone.

The research, led by the University of Bristol and including scientists from Bangladesh, looked at the 2020 Super Cyclone Amphan, the most costly cyclone to have made landfall in South Asia. They projected its consequences in different scenarios of sea level rise due to global warming.

FINDINGS: The researchers used sophisticated climate model projections to anticipate the scale of those affected by cyclones in the rest of this century. They found that if the release of greenhouse gases into the atmosphere continues at the same scale, more than two-and-a-half times (250%) the population in India, as compared to the 2020 event, would experience flooding of greater than 1 metre.

In Bangladesh, the increase in the number of people at risk is anticipated to be more modest — a rise of 60% to 70%. This, however, factors in declining coastal populations in future.

If the Paris Agreement climate goals of 2°C warming above pre-industrial levels are adhered to, the modelling showed, population exposures to flooding would drop close to zero in that country. But in India, even in this scenario, the exposures still showed an alarming increase — between 50% to 80% more people compared to 2020 are expected to experience flooding in future.

TAKEAWAYS: The study “presents a critical piece of evidence in support of ramping down our greenhouse gas emissions to achieve the Paris Agreement climate goals, where other lines of evidence all too often focus on high income countries where impacts are lower, and adaptation is more easily achievable”, lead author Dann Mitchell, Professor of Climate Science, was quoted as saying in a media release from the University of Bristol.

Saiful Islam, Professor of Hydrology at the Bangladesh University of Engineering and Technology, and contributing author of the study, was quoted as saying: “... a strong, rapid and sustained greenhouse gas

reduction is essential to achieve goals of the Paris Agreement and to reduce losses and damages of highly vulnerable countries like Bangladesh.”

Source: The Indian Express

4. From Amphan to Asani: How and why are cyclones named?

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Relevant for GS Prelims & Mains Paper I; Geography

Whenever a cyclone hits a country, the first thing that strikes the minds of most is what these names mean. When Tauktae hit the western coast of India in May last year, people were seen searching for the origin of the name. The cyclone, which was named by Myanmar, means “gecko” — a highly vocal lizard — in Burmese dialect.

Similarly, Cyclone Asani, which developed over southeast regions of Bay of Bengal and intensified into a ‘severe cyclone’ on Monday, was named by Sri Lanka. Asani means “wrath” in Sinhalese.

So, how are the cyclones named and what are the guidelines on adopting their names?

How are the cyclones named?

In 2000, a group of nations called WMO/ESCAP (World Meteorological Organisation/United Nations Economic and Social Commission for Asia and the Pacific), which comprised Bangladesh, India, the Maldives, Myanmar, Oman, Pakistan, Sri Lanka and Thailand, decided to start naming cyclones in the region. After each country sent in suggestions, the WMO/ESCAP Panel on Tropical Cyclones (PTC) finalised the list.

The WMO/ESCAP expanded to include five more countries in 2018 — Iran, Qatar, Saudi Arabia, United Arab Emirates and Yemen.

The list of 169 cyclone names released by IMD in April 2020 were provided by these countries — 13 suggestions from each of the 13 countries.

Why is it important to name cyclones?

Adopting names for cyclones makes it easier for people to remember, as opposed to numbers and technical terms. Apart from the general public, it also helps the scientific community, the media, disaster managers etc. With a name, it is also easy to identify individual cyclones, create awareness of its development, rapidly disseminate warnings to increase community preparedness and remove confusion where there are multiple cyclonic systems over a region.

What are the guidelines to adopt names of cyclones?

While picking names for cyclones, countries need to follow some rules. If those guidelines are followed, the name is accepted by the panel on tropical cyclones (PTC) that finalises the selection. The guidelines are:

- * The proposed name should be neutral to (a) politics and political figures (b) religious believes, (c) cultures and (d) gender
- * Name should be chosen in such a way that it does not hurt the sentiments of any group of population over the globe
- * It should not be very rude and cruel in nature
- * It should be short, easy to pronounce and should not be offensive to any member
- * The maximum length of the name will be eight letters
- * The proposed name should be provided with its pronunciation and voice over

* The names of tropical cyclones over the north Indian Ocean will not be repeated. Once used, it will cease to be used again. Thus, the name should be new.

Some of the names picked by India were suggested by the general public. An IMD committee is formed to finalise the names before sending it to the PTC.

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Here is the list of 104 names. The first cyclone name which was chosen was the one in the first row of the first column — Nisarga by Bangladesh. Next, India's choice, Gati, was chosen, and so on. Subsequent cyclones are being named sequentially, column-wise, with each cyclone given the name immediately below that of the previous cyclone. Once the bottom of the column is reached, the sequence moves to the top of the next column (in the second image). We are now on Cyclone Asani, as marked in red.

| WMO/ESCAP Panel Member countries | Column 1 | | Column 2 | | Column 3 | | Column 4 | |
|-------------------------------------|--------------|----------|----------|----------|-----------|-----------|----------|----------|
| | Name | Pron' | Name | Pron' | Name | Pron' | Name | Pron' |
| Bangladesh | Nisarga | Nisarga | Biparjoy | Biporjoy | Arnab | Ornab | Upakul | Upokul |
| India | Gati | Gati | Tej | Tej | Murasu | Murasu | Aag | Aag |
| Iran | Nivar | Nivar | Hamoon | Hamoon | Akvan | Akvan | Sepand | Sepand |
| Maldives | Burevi | Burevi | Midhili | Midhili | Kaani | Kaani | Odi | Odi |
| Myanmar | Tauktae | Tau'Te | Michaung | Migjaum | Ngamann | Ngaman | Kyarthit | Kjathi |
| Oman | Yaas | Yass | Remal | Re-Mal | Sail | Sail | Naseem | Naseem |
| Pakistan | Gulab | Gul-Aab | Asna | As-Na | Sahab | Sa-Hab | Afshan | Af-Shan |
| Qatar | Shaheen | Shaheen | Dana | Dana | Lulu | Lulu | Mouj | Mouj |
| Saudi Arabia | Jawad | Jowad | Fengal | Feinjal | Ghazeer | Razeer | Asif | Aasif |
| Sri Lanka | <u>Asani</u> | Asani | Shakhti | Shakhti | Gigum | Gigum | Gagana | Gagana |
| Thailand | Sitrang | Si-Trang | Montha | Mon-Tha | Thianytot | Thian-Yot | Bulan | Bu-Lan |
| United Arab Emirates | Mandous | Man-Dous | Senyar | Sen-Yaar | Afoor | Aa-Foor | Nahhaam | Nah-Haam |
| Yemen | Mocha | Mokha | Ditwah | Ditwah | Diksam | Diksam | Sira | Sira |

Cyclone Asani was named in Sri Lanka

| WMO/ESCAP Panel Member countries | Column 5 | | Column 6 | | Column 7 | | Column 8 | |
|-------------------------------------|----------|------------|----------|-----------|----------|----------|----------|------------|
| | Name | Pron' | Name | Pron' | Name | Pron' | Name | Pron' |
| Bangladesh | Barshon | Borshon | Rajani | Rojoni | Nishith | Nishith | Urmi | Urmi |
| India | Vyom | Vyom | Jhar | Jhor | Probaho | Probaho | Neer | Neer |
| Iran | Booran | Booran | Anahita | Anahita | Azar | Azar | Pooyan | Pooyan |
| Maldives | Kenau | Kenau | Endheri | Endheri | Riyau | Riyau | Guruva | Guruva |
| Myanmar | Sapakyee | Zabagji | Wetwun | We'wum | Mwaihout | Mwei'hau | Kywe | Kjwe |
| Oman | Muzn | Muzn | Sadeem | Sadeem | Dima | Dima | Manjour | Manjour |
| Pakistan | Manahil | Ma-Na-Hil | Shujana | Shu-Ja-Na | Parwaz | Par-Waaz | Zannata | Zan Naa Ta |
| Qatar | Suhail | Es'hail | Sadaf | Sadaf | Reem | Reem | Rayhan | Rayhan |
| Saudi Arabia | Sidrah | Sadrah | Hareed | Haareed | Faid | Faid | Kaseer | Kusaer |
| Sri Lanka | Verambha | Ve-Ram-Bha | Garjana | Garjana | Neeba | Neeba | Ninnada | Nin-Na-Da |
| Thailand | Phutala | Phu-Ta-La | Aiyara | Al-Ya-Ra | Saming | Sa-Ming | Kraison | Krai-Son |
| United Arab Emirates | Quffai | Quf-Faai | Daaman | Daa-Man | Deem | Deem | Gargoor | Gar-Goor |
| Yemen | Bakhur | Bakhoor | Ghwyzi | Ghwayzi | Hawf | Hawf | Balhaf | Balhaf |

After Sira, the list moves on to Barshon, Vyom, Booran etc.

Source: The Indian Express

5. India Heatwaves and the role humidity plays in making them deadly

Relevant for GS Prelims & Mains Paper I; Geography

The consecutive heatwaves over South Asia since March 2022 have continued the disturbing tradition of breaking historical temperature records. Mercifully, these record temperatures were not accompanied by the high mortality burden observed in previous heatwaves such as the one during 2015. Why those heatwaves were so deadly is a puzzle that we are yet to resolve.

The recent IPCC report AR6 has emphasised that humidity is also very important while estimating the physiological stress that extreme heat puts on the human body. Instead of the “dry bulb” temperature that is usually measured using a regular thermometer, an alternative metric known as the “wet bulb temperature” has been used to measure exposure to extreme heat. The report mentions that sustained exposures to wet bulb temperatures above 35°C are fatal, while sustained exposures to wet bulb temperatures above 32°C are dangerous for intense physical activity. The critical word here is “sustained”, which we will come back to later.

These projections are very welcome and are the outcome of more than a decade of work put in by the climate science community. The public health community was, of course, aware of the implications of humidity for a much longer time. Furthermore, a number of recent articles in the media have helped make the public aware of this. However, there has been a growing concern about the 35°C threshold and whether parts of South Asia will become “unsurvivable” in the coming years.

Humidity and temperature

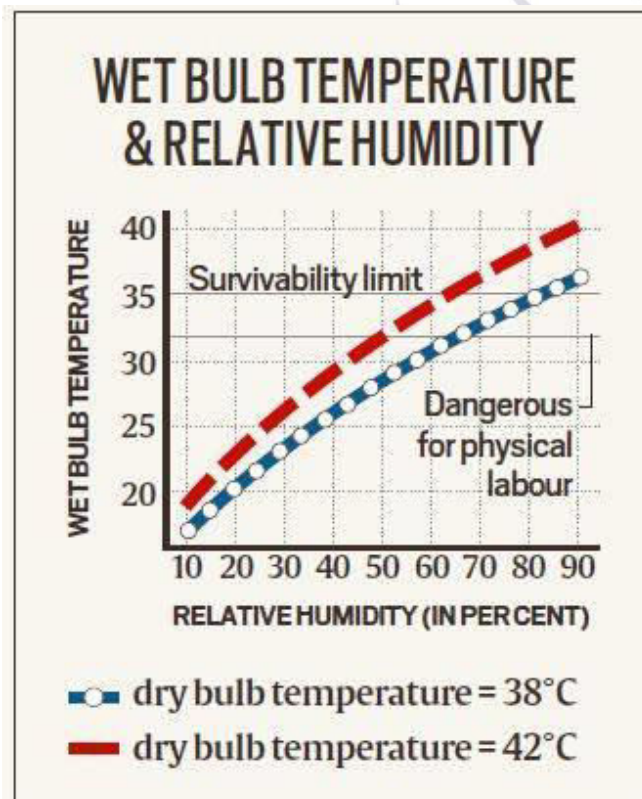
Why is humidity such a critical factor while measuring heat exposure? Humans lose heat generated within their body by producing sweat that evaporates on the skin. The cooling effect of this evaporation is essential in maintaining a stable body temperature. As humidity rises, sweat does not evaporate —just like clothes take a long time to dry in humid locations – and makes it difficult to regulate body temperature. This is why we feel more discomfort in humid places.

The wet bulb temperature is usually lower than the dry bulb temperature, and the difference between the two increases dramatically as the air becomes dry. The variation of wet bulb temperature for a fixed dry bulb temperature is shown in the figure.

The humidity required to reach wet bulb temperatures in excess of 35°C over land is exceedingly difficult to achieve for a variety of reasons, which this article will not go into. This is the reason the AR6 says that such conditions are rarely observed nowadays. Wet bulb temperatures in excess of 35°C have been observed in Sindh in Pakistan, but such conditions occur once every three to four years, and probably for a few hours. This fails to meet the criteria of “sustained exposure”.

Just because we don’t observe such conditions in the current climate does not mean that they will be as rare in future climates. However, the research that backs the AR6 also suggests we are unlikely to experience sustained exposure to wet bulb temperatures beyond the threshold of survivability.

The hype around survivability thresholds and wet bulb temperatures obscures deeper issues, both physiological and political. Firstly, the inability of the body to stabilise its core temperature can have multiple reasons. For instance, increased strain on the heart during periods of elevated temperature could be fatal for those with pre-existing cardiac conditions and is in fact the leading cause of deaths during heatwaves. Pre-existing respiratory problems and diabetes too are potential causes of death. Such conditions impair the body’s ability to efficiently transfer heat to the environment.



A less obvious issue is that of dehydration. Many labourers, especially women, intentionally keep themselves dehydrated due to the lack of toilets in workplaces. Dehydration can lead to decreased sweat production and therefore increased vulnerability to heat stroke during heatwaves. Such public health factors can dramatically reduce the survivability thresholds and underestimate the actual vulnerability of the population.

Global and local

There is also a political issue here that often goes unnoticed. A singular focus on increasing wet bulb temperatures subtly shifts the responsibility of action from the local to the transnational arena. Increasing wet bulb temperatures are the byproduct of global climate change, and therefore keeping our population safe becomes the responsibility of international negotiators at conferences such as COP26. Very little can be done at the local level to keep wet bulb temperatures from rising if the factors controlling them are global. On the other hand, understanding the factors that increase vulnerability to heatwaves puts the onus on local actors, who have to provide better sanitation facilities, protect the elderly and those with cardiac conditions, and reduce the incidence of diabetes in the population. Such a focus will increase the pressure to improve our national health infrastructure, whose fragility has become increasingly clear to everyone over the past two years.

In summary, the recent focus on increasing temperature and humidity is a welcome step in building awareness about the impacts of climate change. However, it is important to realise that our vulnerability to heatwaves is a systemic problem that has existed for a very long time, and is not dependent only on increasing greenhouse gas emissions. Refocusing our priorities to highlight critical gaps in our urban and health infrastructure that repeatedly fail to protect the most vulnerable among us will allow us to build a more climate-resilient nation.

Source: The Indian Express

Economics

1. The recent woes of the jute industry in West Bengal

Relevant for GS Prelims & Mains Paper III; Economics

Member of Parliament (MP) from Barrackpore constituency in West Bengal, Arjun Singh, met Textile Minister Piyush Goyal on Saturday to apprise him about issues concerning jute farmers, workers and the overall jute industry. Mr. Singh later said in a tweet that the meeting was very positive and expressed hope that the issues would be resolved soon. The Barrackpore MP had earlier written to West Bengal Chief Minister Mamata Banerjee, seeking her intervention into the “arbitrary decision” of capping the price for procuring raw jute from the mills. He was referring to the Office of the Jute Commissioner (JCO)’s September 30 notification mandating that no entity would be allowed to purchase or sell raw jute at a price exceeding ₹6,500 per quintal.

Mr. Singh had also written to Chief Ministers of other jute producing States as Assam, Tripura, Odisha and Bihar, seeking their intervention.

The West Bengal BJP vice president, in a letter, mentioned that the operations of 20 jute mills in his constituency, with lakhs of people dependent on them, were adversely affected with many forced to shut down and many others on the verge of closure.

A mill executive on the condition of anonymity told The Hindu, “We have been held hostage it seems.” He said that of approximately 60 mills operating in the State, 15 had shut down because of the crisis.

What is the problem?

In simple words, mills are procuring raw jute at prices higher than what they are selling them at after processing. Let's understand the mechanism first. Mills do not acquire their raw material directly from the farmers. There are two reasons for the same. First, because the farmers are far-off from the mills locations and the procurement process is cumbersome. Mills would have to go to multiple farmers to acquire the requisite quantity as no single farmer produces enough to fulfil the requirements of the entire mill. The procurement now flows through middlemen or traders. As a standard practice, the middlemen charge mills for their services, which involves procuring jute from farmers, grading, bailing and then bringing the bales to the mills.

The government has a fixed Minimum Support Price (MSP) for raw jute procurement from farmers, which is ₹4,750 per quintal for the 2022-23 season. However, as the executive stated, this reached his mill at ₹7,200 per quintal, that is, ₹700 more than the ₹6,500 per quintal cap for the final product. Though the Union government has come up with several schemes to prevent de-hoarding, the executive believes the mechanism requires a certain "systematic regulation".

What happened to supply?

What made the situation particularly worrisome recently was the occurrence of Cyclone Amphan in May 2020 and the subsequent rains in major jute producing States. These events led to lower acreage, which in turn led to lower production and yield compared to previous years. Additionally, as the Commission for Agricultural Costs and Prices (CACP) stated in its report, this led to production of a lower quality of jute fibre in 2020-21 as water-logging in large fields resulted in farmers harvesting the crop prematurely.

Acreage issues were accompanied by hoarding at all levels – right from the farmers to the traders.

Where is jute used?

Bulk of the final jute produced is used for packaging purposes. The provisions of the Jute Packaging Material (Compulsory use in Packing Commodities) Act, 1987 or the JPM Act mandate that 100% production of foodgrains and 20% sugar production must be packaged in jute bags. The share of jute used for sacks, therefore, increased from 67.9% for the TE (TE: Triennium Ending or three years ending) 2010-11 to 78.3% in TE 2020-21. On the other hand, jute used for manufacturing other products (such as furnishing materials, fashion accessories, floor coverings or varied applications in paper and textile industries) has declined from 15.5% to 9.7% during the same period.

As per the Food and Agriculture Organisation (FAO), India is the largest producer of jute followed by Bangladesh and China. However, in terms of acreage and trade, Bangladesh takes the lead accounting for three-fourth of the global jute exports in comparison to India's 7%. This can be attributed to the fact that India lags behind Bangladesh in producing superior quality jute fibre due to infrastructural constraints related to retting, farm mechanisation, lack of availability of certified seeds and varieties suitable for the country's agro-climate. What also does not bode well for India is that jute acreage competes with crops as paddy, maize, groundnut, and sesame. The increased availability of synthetic substitutes is further bothering the demand for jute domestically.

Further, as the CACP report stated, Bangladesh provides cash subsidies for varied semi-finished and finished jute products. Hence, the competitiveness emerges as a challenge for India to explore export options in order to compensate for the domestic scenario.

What is at stake?

As the jute sector provides direct employment to 3.70 lakh workers in the country and supports the livelihood of around 40 lakh farm families, closure of the mills is a direct blow to workers and indirectly, to the farmers whose production is used in the mills. West Bengal, Bihar and Assam account for almost 99% of India's total production.

Source: The Hindu

2. Who are the anchors, the initial investors in an IPO?

Relevant for GS Prelims & Mains Paper III; Economics

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Domestic mutual funds invested Rs 4,002.27 crore, accounting for 71.12 per cent of the total anchor book portion of the initial public offering (IPO) of Life Insurance Corporation (LIC). SBI Mutual Fund invested Rs 1,006.89 crore, becoming the largest investor in the anchor book quota.

Anchor investors

An anchor investor in an IPO is a qualified institutional buyer (QIB) like a foreign portfolio investor or mutual fund or insurance company which invests before the IPO is made available to the public as per Sebi regulations.

As initial investors, they make the IPO process more attractive for investors, and instil confidence in them. Anchor investors also aid in price discovery of the IPO.

Anchor investors who get guaranteed allotment a day before the IPO opens to the public are normally allocated 60 per cent of the QIB quota. Companies with a profitable track record can allocate 50 per cent of the IPO to QIBs. The demand in the anchor category is an indication of the success of the IPO, according to analysts.

LIC's investors

LIC mobilised a total of Rs 5,627 crore from anchor investors on Monday (May 2). Four equity schemes of SBI mutual fund invested the amount, with SBI Equity Hybrid Fund alone putting in Rs 518.99 crore, according to data available from the exchanges.

Seven schemes of ICICI Prudential Mutual Fund invested Rs 725 crore. HDFC Mutual Fund was allocated shares worth Rs 525 crore. Aditya Birla Sun Life MF, Axis Mutual Fund, Kotak MF, L&T MF and Nippon India MF also invested in the anchor portion.

IPO pricing

LIC has priced its IPO in the range of Rs 902-949 per share. It has offered a discount of Rs 60 for policyholders and Rs 45 for retail investors and employees. The issue will open for retail investors on May 4 after the Eid holiday on May 3. Investors can bid for a minimum of 15 shares and thereafter in multiples of 15 shares.

The size of the IPO was cut from Rs 65,000 crore to Rs 21,000 crore as the Russian invasion of Ukraine and sustained selling by foreign investors sent the stock markets into a tailspin.

Sebi recently said the existing lock-in of 30 days would continue for 50% of the portion allocated to anchor investors and for the remaining portion, a lock-in of 90 days from the date of allotment will be applicable for all issues opening on or after April 1.

The change in the anchor lock-in rules was to avoid sell-off by anchor investors. For instance, shares of One97 Communications, the parent firm of Paytm, dipped sharply by 13 per cent on the day the mandatory lock-in period for anchor investors ended.

Source: The Indian Express

3. Coal shortage and India's looming power crisis

Relevant for GS Prelims & Mains Paper III; Economics

Due to several factors, India is staring at a coal crisis, with stock critically low at 108 of its 173 thermal power plants. The Indian Railways has cancelled trains to prioritise delivery of coal rakes across the country. So, why is there a coal shortage? Which states are worst hit? What happens now? Take a look:

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COAL SHORTAGE AND INDIA'S LOOMING POWER CRISIS

WHY IS THERE A COAL SHORTAGE?

- 108 of 173 thermal power plants have critically low levels of stock
- Power demand is hitting record highs due to economic recovery after COVID-19
- Surges and a major heatwave spell across India
- Some imported coal-based power plants are not in production due to high international prices of coal



#QUIXPLAINED

Why is there a coal shortage in India?



- Poor financial performance of distribution companies has left some of them unable to resume supply at higher prices
- Some states, including Jharkhand and Maharashtra, have large outstanding dues to coal companies
- The railways has thus far been unable to transport sufficient coal to thermal power plants to meet current demand and build up stock

#QUIXPLAINED

2

Reasons for India's coal shortage

EXPRESS **explained.**

WHAT HAPPENS NOW?

- The railways has cancelled trips to prioritise the delivery of coal rakes across the country
- Some states are looking to blend domestic and imported coal to augment stocks
- Peak power demand is expected to set a record high of 215-220 GW in May-June. The low stocks could signal a worse crisis in September-October when monsoon makes production and transportation of stocks difficult



India power crisis: what now?

STATES WITH MAXIMUM DEFICIT

(Power shortage in between April 23- April 29)

| State/UT | Total demand met* | Shortage | Shortage % |
|--------------|-------------------|----------|------------|
| Jharkhand | 214.8 | 45.89 | 17.60% |
| Rajasthan | 1819.9 | 288.2 | 13.67% |
| J&K & Ladakh | 287.7 | 42.35 | 12.83% |
| Haryana | 1097.3 | 152.43 | 12.20% |
| Bihar | 821.4 | 62.53 | 7.07% |
| Punjab | 1200.9 | 89.15 | 6.91% |
| UP | 2967.8 | 138.24 | 4.45% |
| Uttarakhand | 311 | 12.16 | 3.76% |
| HP | 220.8 | 6.96 | 3.06% |
| Meghalaya | 38 | 1.18 | 3.01% |

* In Million Units

TEXT: KARUNJEET SINGH

#QUIXPLAINED

4

States with maximum deficit

Source: The Indian Express

Website: www.prepmate.in

Telegram Channel: [@upscprepmate](https://t.me/upscprepmate)

Prepmate Cengage Books Preview: <https://prepmate.in/books/> Youtube channel: [PrepMateEdutech](https://www.youtube.com/channel/UCPrepMate)

4. The status of GST compensation dues

Relevant for GS Prelims & Mains Paper III; Economics

Why are funds owed to the States delayed? Are cess collections not growing fast enough? Will the compensation period be extended beyond five years?

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At a meeting with Chief Ministers last week, Prime Minister Narendra Modi said that several non-BJP ruled States had failed to cut taxes on fuel products whose prices have surged sharply since March and urged them to do so in the interest of giving relief to the people facing high inflation. Most of the States he referred to — West Bengal, Tamil Nadu, Maharashtra, Kerala, Telangana, Jharkhand and Andhra Pradesh — countered the PM's pitch bluntly. West Bengal and Tamil Nadu said they had already reduced their VAT levies once. Maharashtra and Kerala pointed to States' resource constraints and pending dues from the Centre. The Mamata Banerjee administration said slashing State levies on petrol and diesel will be possible only if the Centre clears its outstanding dues of over ₹97,000 crore, which includes compensation for implementing the Goods and Services Tax (GST).

What is the status of the outstanding GST compensation due to the States?

The GST regime entailed doing away with multiple State and Central levies to create a simplified tax system for businesses. As this meant that States had to give up several taxation powers in the process, they were assured that revenue losses will be compensated for five years. The compensation was to be calculated by assuming a 14% year-on-year growth over revenues in 2015-16 from the State taxes subsumed in GST, and remitted from a compensation cess fund backed by cess levies on sin and luxury goods like pan masala, tobacco, coal and cars.

Hours after the meeting, to counter these States' arguments about pending dues, the Finance Ministry said that outstanding GST compensation dues to States for 2021-22 stood at ₹78,704 crore, equivalent to four months of such accruals. This means that dues have been remitted to States for the eight-month period of April 2021 till November 2021. The ministry, which had last released GST compensation of ₹18,252 crore to States and Union Territories during March, indicated its inability to pay the dues immediately owing to 'inadequate balance' in the compensation cess collections fund. "Normally, compensation for 10 months from April-January of any financial year is released during that year and the compensation for February-March is released only in the next financial year. The pending amount will also be released as and when amount from cess accrues in the compensation fund," the Ministry assured.

On top of the ₹78,704 crore due to States, ostensibly for the period of December 2021 to March 2022, compensation for the April to June period — the last quarter for which such dues will accrue — also need to be arranged. Chief economist of rating agency ICRA Aditi Nayar has estimated that this could be another ₹60,000 crore, taking total dues that remain to be paid to States close to ₹1.4 lakh crore.

How much GST compensation has been paid so far to States and when will this cess levy end?

From July 2017 when the GST regime kicked off till now, about ₹7.35 lakh crore has been released as GST compensation to States. It had nearly doubled from ₹83,000 crore in 2018-19 to ₹1.65 lakh crore in 2019-20, before the pandemic hit the economy and revenue collections across the board. The Finance Ministry said that ₹2.78 lakh crore of compensation has been released to States for the year 2020-21 itself. Because GST as well as compensation cess inflows had dried up due to the COVID-19 lockdowns, as much as ₹1.1 lakh crore was financed through special borrowings from the market. In effect, the Centre borrowed these funds and lent them onwards to States as 'back-to-back' loans staggered through the year. Similarly, ₹1.59 lakh crore was raised in 2021-22 to pay States' compensation dues as per estimated shortfalls in the cess fund collections, and these funds were disbursed entirely by October by resorting to front-loading of the borrowings during the financial year. At the time, the Finance Ministry had expected the overall compensation payouts for the year to be ₹2.59 lakh crore, which it said would exceed the amount of compensation accruing to States in 2021-22, indicating it included pending compensation shortfalls for 2020-21.

The levy of the compensation cess, which was to cease on June 30 this year, has been extended till March 2025-26 with a view to use the receipts to repay the principal and interest on these special loans. Several States, worried about income sources falling off a cliff once the assured compensation ceases to accrue from July 1, have urged the Centre to extend the GST compensation period beyond the five-year promise. But these demands have been stymied so far, citing the legal provisions enabling GST, and are unlikely to gain traction.

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Will the record GST collections in recent months help?

To the extent that States get a larger share of higher GST collections, of course. With April and May both clocking fresh highs in GST revenues of ₹1.42 lakh crore and over ₹1.67 lakh crore, the Centre and States' share, after making adjustments, was a robust ₹1.32 lakh crore and ₹1.36 lakh crore, respectively, over the two-month period. However, GST compensation cess collections are still not growing as rapidly as the overall kitty. Giving States some clarity on when outstanding GST compensation dues will be released, will help them plan their borrowings for the year, which will be particularly tricky from July. While the expected step-down in GST compensation flows from July 2023 may enlarge State borrowings this year, the timing of the release of the pending funds would impact their plans significantly, Ms. Nayar noted.

Moreover, with States expected to aggressively push capital spending this year, which is critical to spur growth, an early release of funds, be it the devolution of other tax collections, or GST compensation, would help them plan and execute public infrastructure projects quicker.

Source: The Hindu

5. Behind low wheat procurement

Relevant for GS Prelims & Mains Paper III; Economics

Wheat procurement by government agencies is set to dip to a 15-year low in the current marketing season, from an all-time high scaled last year.

The 18.5 million tonnes (mt) likely procurement this time — farmers mostly sell from April to mid-May, although government wheat purchases technically extends until June and the marketing season until the following March — will be the lowest since the 11.1 mt bought in 2007-08.

Moreover, this would be the first time that wheat procured from the new crop (18.5 mt) is less than the public stocks at the start of the marketing season (19 mt). As the table shows, fresh procurement has always exceeded the opening balance stocks. It was so even during the previous two low procurement years of 2006-07 and 2007-08.

| WHEAT PROCUREMENT & OFFTAKE (LAKH TONNES) | | | |
|--|--|-----------------------------|--------------------------|
| | STOCKS (OPENING BALANCE AS OF APRIL 1) | PROCUREMENT (APRIL-JUNE) | OFFTAKE (APRIL-MARCH) |
| 2005-06 | 40.66 | 147.87 | 167.08 |
| 2006-07 | 20.09 | 92.26 | 118.75 |
| 2007-08 | 47.03 | 111.28 | 122.47 |
| 2008-09 | 58.03 | 226.89 | 148.85 |
| 2009-10 | 134.29 | 253.82 | 223.84 |
| 2010-11 | 161.25 | 225.13 | 230.67 |
| 2011-12 | 153.64 | 283.34 | 242.67 |
| 2012-13 | 199.52 | 382.15 | 332.42 |
| 2013-14 | 242.07 | 250.72 | 306.15 |
| 2014-15 | 178.34 | 281.31 | 271.59 |
| 2015-16 | 172.21 | 280.88 | 315.73 |
| 2016-17 | 145.38 | 229.61 | 292.47 |
| 2017-18 | 80.59 | 308.24 | 253 |
| 2018-19 | 132.31 | 357.95 | 316.47 |
| 2019-20 | 169.92 | 341.32 | 271.89 |
| 2020-21 | 247 | 389.92 | 363.9 |
| 2021-22 | 273.04 | 433.44 | 505.55 |
| 2022-23 | 189.9 | 185.00* | |

*Likely
Source: Food Corporation of India

Wheat procurement & offtake

This year would be an exception and in sharp contrast to 2021-22, which had unprecedented levels of both opening stocks (27.3 mt) and procurement (43.3 mt).

Why it has fallen

There are two main reasons for procurement plunging to a 15-year-low this time.

The first is export demand.

In 2021-22, India exported a record 7.8 mt of wheat. Supply disruptions from the Russia-Ukraine war – the two countries account for over 28% of global wheat exports – have led to skyrocketing prices and a further increase in demand for Indian grain. On Friday, wheat futures prices at the Chicago Board of Trade exchange closed at \$407.30 per tonne, as against \$276.77 a year ago. With Indian wheat getting exported at about \$350 or Rs 27,000 per tonne free-on-board (i.e. at the point of shipping), farmers are realising well above the

minimum support price (MSP) of Rs 20,150/tonne at which government is procuring. This is even after deducting various costs – from bagging and loading at the purchase point, to transport and handling at the port. These would add up to Rs 4,500-6,000 per tonne, depending on the distance from the wholesale mandi to the port.

The second reason is lower production.

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In mid-February, the Union Agriculture Ministry estimated the size of India's 2021-22 crop (marketed during 2022-23) at 111.32 mt, surpassing even the previous year's high of 109.59 mt. But the sudden spike in temperatures from the second half of March — when the crop was in grain-filling stage, with the kernels still accumulating starch, protein and other dry matter — has taken a toll on yields. In most wheat-growing areas — barring Madhya Pradesh, where the crop is harvest-ready by mid-March — farmers have reported a 15-20% decline in per-acre yields.

A smaller crop, in combination with export demand, has resulted in open market prices of wheat crossing the MSP in many parts of India. The shorter the distance to the ports, the higher the premium that exporter/traders have paid over the MSP. Even in Punjab and Haryana — where the state governments charge up to 6% market levies, compared to 0.5-1.6% in MP, Uttar Pradesh and Rajasthan — flour millers have paid farmers Rs 50-100 above the MSP of Rs 20,150 per tonne. Traders and millers aren't the only ones stocking up in anticipation of prices going up further. Many farmers, especially the more entrepreneurial/better-off sections among them, are also holding back their crop. Such "hoarding" by farmers was seen in the recent past in soyabean and cotton, too, again driven by soaring international prices.

The end-result of a heatwave-affected crop and open market prices rising closer to export parity levels has been that procurement by government agencies has plummeted to 9.6 mt in Punjab (from 13.2 mt last year), and even more in MP (12.8 mt to 4 mt), Haryana (8.5 mt to 4.1 mt) and other states (8.8 mt to not more than 0.8 mt).

Impact on availability

With opening stocks of 19 mt and expected procurement of 18.5 mt, government agencies would have 37.5 mt of wheat available for 2022-23. Not all this, however, can be sold, as a minimum operational stock-cum-strategic reserve has to be maintained. The normative buffer or closing stock requirement for March 31 is 7.5 mt. Providing for that will leave 30 mt available for sale from government godowns this fiscal.

That quantity should suffice for the public distribution system, midday meals and other regular welfare schemes, whose annual wheat requirement is around 26 mt. But the last two years have also witnessed substantial offtake under the Pradhan Mantri Garib Kalyan Anna Yojana scheme (10.3 mt in 2020-21 and 19.9 mt in 2021-22) and open market sales to flour mills (2.5 mt and 7.1 mt, respectively). There's clearly not enough wheat for these, which explains the Centre's recent decision to slash allocation under the PMGKAY from 10.9 mt to 5.4 mt for April-September 2022. Meeting even this requirement may not be easy, leave alone supplying to millers and other bulk consumers to moderate open market prices during the lean months after October.

Simply put, one can expect wheat prices to firm up and a rerun of what happened in 2006-07 and 2007-08. That period, too, saw a worldwide agri-commodity price boom and production shortfalls, causing reduced procurement and depletion of stocks.

However, the relatively tight supplies in wheat this time is compensated for by the comfortable public stocks of rice. At over 55 mt as on April 1, these were more than four times the required buffer of 13.6 mt. And a good monsoon should further augment availability from the ensuing kharif crop and tide over the shortages in wheat.

Source: The Indian Express

Website: www.prepmate.in

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6. Inflation, rate hike, falling markets: what now

Relevant for GS Prelims & Mains Paper III; Economics

The sharp outflow of foreign portfolio investor (FPI) money from Indian markets amid concerns over global growth, rising inflation and monetary tightening by central banks has accelerated the fall in equity markets.

Anticipating a spike in inflation in April, which came at 7.8%, the Sensex at the Bombay Stock Exchange fell by 1,158 points or 2.1% on Thursday to close at 52,930 — its lowest level since March 7 when it had closed at 52,842. The Sensex has lost 4,045 points, or 7%, over the last seven trading sessions as FPIs withdrew a net of Rs 23,670 crore since the Reserve Bank of India announced a surprise hike of 40 basis points in repo rates on May 4. Since October, FPIs have pulled out a net of Rs 1,86,089 crore.

In the same period that the Sensex has shed 7%, the Dow Jones Industrial in the United States too has lost 7% since the Federal Reserve hiked interest rates by 50 basis points on May 4. The Hang Seng in Hong Kong has lost 8.2%, the Nikkei in Japan 4%, and Dax in Germany 3.4%.

The concerns

Market sentiments have been negative for now amid apprehensions that the RBI could go for a series of rate hikes to keep inflation under check. The Fed has already hiked rates twice in the last two months, by 25 basis points in March and by 50 basis points last week.

A spike in interest rates will hurt not only consumption in the economy but also the margins of listed entities. If higher costs of raw materials will impact margins, higher interest rates will raise the cost of funds for companies, hurting their profitability in coming quarters.

As the April CPI inflation hit an eight-year high of 7.8%, the credit ratings agency CRISIL said in its report, “We expect the RBI to raise repo rates by another 75-100 bps in the rest of this fiscal. This move cannot bring down food or fuel inflation, but can help check its generalisation by curbing the second-round effects.”

A report by Kotak Institutional equities said that in 2022, from hereon, RBI could raise repo rate by 90-110 basis points. So, growth expectations are likely to moderate in line with the rate hikes, which will closely follow the inflation trajectory.

Where markets are headed

With central banks expecting inflation to remain elevated for some time, they are likely to continue with measures to keep it under check. With no end in sight yet to Russia’s war against Ukraine, the geopolitical situation will continue to hurt global economies and equity markets. Further rate hikes will push FPIs to move out of emerging economies, which will have a bearing on these markets and their currencies. So, with the markets likely to remain under pressure, investors will have to wait and see how the inflation situation pans out over the next few months.

However, even as the markets fall, investors should take the cue from what domestic institutional investors (DIIs) have been doing. In May, while FPIs have pulled out a net of around Rs 25,000 crore from Indian equities, DIIs have invested a net of Rs 23,565 crore. And since October 2021, against a net FPI outflow of Rs 1.86 lakh crore, DIIs have invested 2.24 lakh crore.

So, retail investors can go for long-term value investing as net asset values have fallen and several blue-chip stocks are trading at a significant discount. Investors need to be cautious and go for high-quality companies, and should put in their money only if they can remain invested for 3-5 years.

Source: The Indian Express

7. Why is there a fall in India's foreign exchange reserves?

Relevant for GS Prelims & Mains Paper III; Economics

The Indian rupee hit an all-time low against the U.S. dollar this week weakening past the 77 rupees to a dollar mark and selling at 77.63 against the dollar on Thursday. Many analysts expect the rupee to weaken further in the coming months to hit the 80 rupees to a dollar mark. In fact, the International Monetary Fund expects the rupee to weaken past the 94 rupees to a dollar mark by FY29.

What is happening?

The Indian rupee has been witnessing a steady decline this year, losing almost 4% against the U.S. dollar since the beginning of 2022. India's forex reserves have also dropped below \$600 billion, plunging by about \$45 billion since September 3, 2021, when forex reserves stood at an all-time high of \$642 billion. According to Reserve Bank of India data released on Friday, India's forex reserves dropped by \$1.774 billion for the week ended May 6 to \$595.954 billion. The drop in India's forex reserves is believed to be largely due to steps taken by the Reserve Bank of India to support the rupee. RBI officials, however, have noted that the drop in forex reserves is due to a fall in the dollar value of assets held as reserves by the RBI. For instance, if a portion of the reserves are in euros and the euro depreciates against the dollar, this would cause a drop in the value of forex reserves.

It should be noted that, as a matter of policy, the Indian central bank has usually tried to slow down or smoothen, rather than reverse or prevent, the fall in exchange value of the rupee against the U.S. dollar. The aim of the RBI's policy is to allow the rupee to find its natural value in the market but without undue volatility or causing unnecessary panic among investors. State-run banks are usually instructed by the RBI to sell dollars in order to offer some support to the rupee. By thus selling dollars in the open market in exchange for rupees, the RBI can improve demand for the rupee and cushion its fall.

What determines the rupee's value?

The value of any currency is determined by demand for the currency as well as its supply. When the supply of a currency increases, its value drops. On the other hand, when the demand for a currency increases, its value rises. In the wider economy, central banks determine the supply of currencies, while the demand for currencies depends on the amount of goods and services produced in the economy.

In the forex market, the supply of rupees is determined by the demand for imports and various foreign assets. So, if there is high demand to import oil, it can lead to an increase in the supply of rupees in the forex market and cause the rupee's value to drop. The demand for rupees in the forex market, on the other hand, depends on foreign demand for Indian exports and other domestic assets. So, for instance, when there is great enthusiasm among foreign investors to invest in India, it can lead to an increase in the supply of dollars in the forex market which in turn causes the rupee's value to rise against the dollar.

What's causing the rupee to lose value against the dollar?

Since March this year, the U.S. Federal Reserve has been raising its benchmark interest rate causing investors seeking higher returns to pull capital away from emerging markets such as India and back into the United States. This, in turn, has put pressure on emerging market currencies which have depreciated significantly against the U.S. dollar so far this year. Even developed market currencies such as the euro and the yen have depreciated against the dollar and the dollar index is up more than 8% so far this year. In fact, some analysts believe that the RBI's surprise decision to raise rates earlier this month may have simply been to defend the rupee by preventing any rapid outflow of capital from India. In 2013, the rupee fell 15% against the dollar in about three months after investors were spooked by the U.S. Federal Reserve's decision to trim down its bond purchase programme that had helped keep long-term interest rates low.

Moreover, India's current account deficit, which measures among other things the gap between the value of imports and exports of goods and services, is expected to hit a 10-year high of 3.3% of gross domestic product

in the current financial year. This means that India's import demand amid rising global oil prices is likely to negatively affect the rupee unless foreign investors pour sufficient capital into the country to fund the deficit. But foreign investors are unlikely to plough capital into India when investment yields are rising in the U.S. Yields on U.S. 10-year Treasuries, for instance, have risen from around 0.5% in mid-2020 to over 3% earlier this month.

The rupee, it should also be noted, has consistently lost value against the U.S. dollar for several decades now. A major reason for this has been the consistently higher domestic price inflation in India. Higher inflation in India suggests that the RBI has been creating rupees at a faster rate than the U.S. Federal Reserve has been creating dollars. So, while capital and trade flows gain a lot of attention in discussions on the rupee's value, the difference in the rates at which the U.S. Federal Reserve and the RBI regulate the supply of their currencies may play a much larger role in determining the value of the rupee over the long run.

What lies ahead?

Analysts believe that, over the long run, the rupee is likely to continue to depreciate against the dollar given the significant differences in long-run inflation between India and the U.S. At the moment, as the U.S. Federal Reserve raises rates to tackle historically high inflation in the country, other countries and emerging markets in particular will be forced to raise their own interest rates to avoid disruptive capital outflows and to protect their currencies. It should be noted that inflation in the U.S. hit a 40-year high of 8.5% in March. The RBI too has been trying to rein in domestic consumer price inflation, which hit a 95-month high of 7.8% in April, by raising rates and tightening liquidity. As interest rates rise across the globe, the threat of a global recession also rises as economies readjust to tighter monetary conditions.

Source: The Hindu

8. Why ban of wheat exports is knee-jerk reaction, hits farmers and dents policy credibility

Relevant for GS Prelims & Mains Paper III; Economics

In a knee-jerk reaction, the Government has banned wheat exports with effect from May 13, with some minor exceptions for those who have irrevocable letters of credit or where the governments of importing countries request the Indian government for food security purposes.

This comes as a shock because only a month ago, Prime Minister Narendra Modi had said to US President Joe Biden, in his inaugural address at the 2+2 ministerial on April 11, that if WTO allows us to export grains, India will start exporting from tomorrow to feed the world.

What happened between April 11 and May 13 that such a drastic decision had to be taken?

The only plausible explanation, from the Government's side, could be that the revised estimates of wheat production are much lower than the estimated 111 mmt (million metric tonnes), and that wheat procurement is likely to end up at around 19 to 20 mmt by June-end against the more than 43 mmt last year. Another factor could be that the April '22 wheat inflation is at 9.59 per cent (y-o-y) against overall cereal inflation of 5.96 per cent.

No matter what the rationale, Government babus or the minister concerned gives, it surely hits adversely not only the credibility of our Prime Minister but also of India as a reliable supplier of anything in global markets. It conveys that we don't have any credible export policy as it can turn its back at the drop of a hat.

More interestingly, it also reflects a deep-rooted consumer bias in India's trade policies. It is this consumer bias that indirectly becomes anti-farmer. When farmers are getting just 10 per cent higher price than Minimum Support Price (MSP) of wheat, why is the Government not letting them take benefit of improved market conditions? Does the government not want to augment farmers' incomes? And that, too, when 800

million plus people have been given almost free food (rice and wheat) under NFSA and PMGKAY until September end. Is the government trying to protect the urban middle class at the cost of farmers? It is this urban-consumer bias that has kept our peasantry poor.

In a major work that ICRIER did with OECD on this issue of agricultural price policies, it found that imposition of stocking limits on traders and export restrictions, all act as an implicit tax on farmers. All OECD countries, and other large countries like China, Brazil, Indonesia, etc provide net positive support to their farmers but India still implicitly taxes its peasantry through market and export controls. The export ban also reflects poorly on India's image in playing its shared global responsibility when the Russia-Ukraine war is creating uncertainty in global commodity markets. Export bans will worsen the situation.

What could have been done even when wheat production and procurement are down?

First, the Government could have announced a bonus of Rs 200-250/quintal on top of MSP to augment its wheat procurement. Even now, farmers who are holding stocks, may like to give it to the Government, if bonus is announced tomorrow. That will make farmers happy and incentivise them to increase area under wheat in the next season.

Secondly, one wonders why the Government announced free food until September-end under PMGKAY. If it wanted to provide extra help on top of PDS supplies, it could have offered cash so that they could buy any food, from eggs to milk to pulses, where inflation is much lower and they are more nutritious. Substitution of rice for wheat in PMGKAY is a step in the right direction.

Third, if the Government feels that the situation on the wheat front is so dire, it could have calibrated exports by putting some minimum export price (MEP). But instead, it chose the worst policy option of outright ban on exports. It only shows the hollowness of agri-trade policies and dreams of doubling agri-exports. Finally, it may be recognised that inflation is a global phenomenon today caused by excessive liquidity injected by central banks and loose fiscal policies around the world. India's wheat export ban will not help tame inflation at home.

Source: The Indian Express

9. Why Luna crash has raised questions about stability of crypto assets

Relevant for GS Prelims & Mains Paper III; Economics

The sharp crash in Luna, the sister cryptocurrency of algorithmic stablecoin Terra, which has rendered it almost worthless, has sent shockwaves throughout the cryptocurrency market, with experts likening the crash in the crypto market to be as severe as the big financial crisis of 2008. The near-collapse of these stablecoins, considered to be comparatively safer investment bets within the crypto universe, has also prompted regulators and authorities to call for stricter laws governing these financial assets.

What has happened?

Stablecoins are tokens pegged to the value of a government-backed currency such as the US dollar or commodities like gold or silver. Tether (USDT) and USD Coin (USDC) are the two leading stablecoins. The value proposition of these tokens is that they largely trade around \$1 per token, which gives investors some security in highly volatile market situations.

TerraUSD, or UST, is different from Tether in that it is not backed by a fiat currency or other commodities, but instead relies on a complex mix of code and a sister token called luna to stabilise its price. Terra is referred to as an algorithmic stablecoin, meaning that its value is not determined by the financial collateral in the traditional markets but by lines of complex computer code.

In order to maintain its dollar peg, Terra's algorithm, which is a set of well-defined instructions, incentivises investors to take advantage of price changes between Terra and its sister token Luna, meaning that UST is heavily dependent on the Luna token. In simple terms, it means that on paper, if Terra's price falls below \$1, traders can "burn" the coin, or permanently remove it from circulation in exchange of the Luna cryptocurrency, and conversely, if Terra's value climbs over \$1, investors can burn Luna and create new Terra, making gains in the process and keeping the value of the coin close to a dollar.

Last week, after UST depegged from \$1 to around \$0.45, it led to tremendous sell pressure Luna, which resulted in the coin losing almost all of its value. This meant that Luna tanked to a few decimal cents from its peak of more than \$110 per token, meaning that investors have lost almost all of their wealth from the cryptocurrency. Estimates suggest that the token has wiped out \$40 billion from investors' pockets — a big fall from grace for a cryptocurrency that was considered to be among the top ten tokens before the crash.

What is the near-term impact of the crash?

The severe crash could deplete investors' trust in the crypto market. As investors lost almost all the value of their investments in Terra and Luna, exchanges, including Indian ones like WazirX and CoinDCX, have delisted the currencies from their platforms so that new investors don't end up buying them. The crash also sent ripples throughout the crypto market, which fell more than 16 per cent on Thursday. Bitcoin, the most popular cryptocurrency, saw its value fall below \$27,000 amid the bloodbath in the crypto market, its lowest since December 2020. However, since then, it has shown tepid signs of stability.

What does it mean in the big picture?

Regulators could sweep in to tighten norms around investments in stablecoins. Gary Gensler, the chair of the US Securities and Exchange Commission, who has previously likened stablecoins to poker chips, has renewed calls for regulations around the crypto asset class. Amid the Terra and Luna crash, she said, "I think that simply illustrates that this is a rapidly growing product and that there are risks to financial stability". According to a WSJ report, US Treasury Secretary Janet Yellen reiterated calls for the US Congress to authorise regulations for stablecoins. Commenting on the Terra developments, Yellen said: "I think that simply illustrates that this is a rapidly growing product and that there are risks to financial stability. We really need a consistent federal framework". The report noted that a Treasury-led panel of regulators recommended last year that Congress write legislation that would regulate stablecoin issuers similarly to banks.

Source: The Indian Express

10. The cause and effect of rising inflation

Relevant for GS Prelims & Mains Paper III; Economics

On Thursday, official data revealed that retail inflation had grown by 7.8% in April. In other words, the general price level Indian consumers faced was almost 8% higher than it was in April last year.

This is not only the highest rate in the last eight years but also almost twice the inflation rate targeted by the Reserve Bank of India. According to law, since October 2016, the RBI is required to maintain retail inflation at a level of 4%; it is, however, given a leeway of two percentage points on either side — that is, in a particular month, inflation can either fall as low as 2% or rise as much as 6%.

Is the April spike because of Ukraine?

While the war in Ukraine and the associated inflation via higher prices of crude oil are a significant contributor, April's high inflation data is neither unexpected nor a one-off spike.

Retail inflation has been high since October 2019 and has, in fact, touched the 4% mark just once since then. In all other months, it has been not only been higher than 4% but regularly breached the 6% mark.

April's inflation is the seventh straight month when inflation rate has gone up. Further, inflation in India has been above 6% since the start of 2022 (before Russia's invasion of Ukraine happened in February) and the eventual pass-through of the higher crude oil prices to domestic consumers (which started happening in late March after elections to five Assemblies were completed).

What is worse is that most analysts expect retail inflation to remain outside that comfort zone (6%) for the rest of the year as well. Page | 150

So, what is driving inflation?

Headline inflation has been above the 4% mark since 2019-20 — the year when the current Narendra Modi government won its second term. Headline inflation is calculated using the Consumer Price Index. This index had different categories with varying weights. There are three main categories:

FOOD ITEMS, which account for 46% of the index;

FUEL & LIGHT, with a weight of 7%;

CORE, all other items, which make up the remaining 47%.

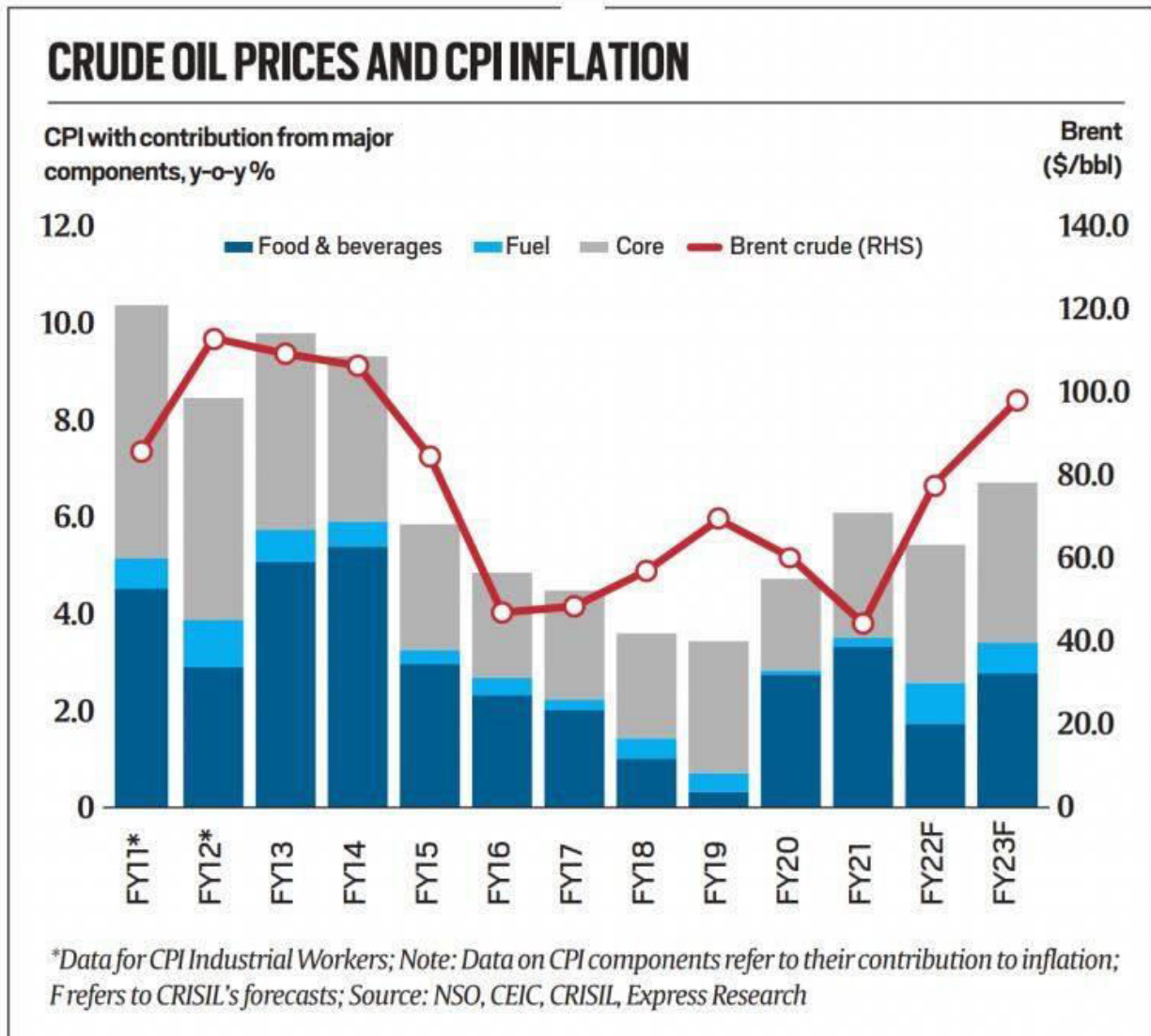
Given the different weights, it is important to understand that a 10% increase in food items will obviously raise the overall inflation far more than a 10% increase in fuel prices.

As the years have rolled by, overall inflation has been driven by more and more factors. In 2019-20, when overall inflation was 4.8%, the main reason was a 6% spike in food prices.

And in 2020-21, when the pandemic hit the economy, food prices rose by an even larger factor (7.3%) and even core inflation rose by 5.5%.

But until then, fuel price inflation was still low — 1.3% in 2019-20 and 2.7% in 2020-21. In 2021-22, the year when the global economy started recovering sharply, even though food price inflation moderated to 4%, fuel prices rose by 11.3% and core inflation went up to 6%.

In the current financial year, it is estimated that all three components will experience an inflation rate of 6% or more.



Crude oil prices and CPI inflation

What are the effects of high inflation?

In the short term, inflation creates winners and losers, but in the eventual analysis, everyone suffers if it stays persistently high.

Some of the likely impacts of inflation:

* It reduces people's purchasing power. Given the actual observed inflation as well as the expected inflation in the current year, the general price level at the end of 2022 would be around 25% higher than it was at the start of 2019. Even in normal times, this would have restricted people's ability to purchase things, but coupled with reduced incomes and job losses, households would struggle even more. The poor are the worst affected because they have little buffer to sustain through long periods of high inflation.

* It reduces overall demand. The eventual fallout of reduced purchasing power is that consumers demand fewer goods and services. Typically, non-essential demands such as a vacation get curtailed while households focus on the essentials.

* It harms savers and helps borrowers. High inflation eats away the real interest earned from keeping one's money in the bank or similar savings instruments. Earning a 6% nominal interest from a savings deposit effectively means earning no interest if inflation is at 6%. By the reverse logic, borrowers are better off when inflation rises because they end up paying a lower "real" interest rate.

* It helps the government meet debt obligations. In the short term, the government, which is the single largest borrower in the economy, benefits from high inflation. Inflation also allows the government to meet its fiscal deficit targets. Fiscal deficit limits are expressed as a percentage of the nominal GDP. As the nominal GDP rises because of inflation (without necessarily implying an increase in overall production), the same amount of fiscal deficit (borrowing) becomes a smaller percentage of the GDP.

* Mixed results for corporate profitability. In the short term, corporates, especially the large and dominant ones, could enjoy higher profitability because they might be in a position to pass on the prices to consumers. But for many companies, especially smaller ones, persistently higher inflation will reduce sales and profitability because of lower demand.

* It worsens the exchange rate. High inflation means the rupee is losing its power and, if the RBI doesn't raise interest rates fast enough, investors will increasingly stay away because of reduced returns. For instance, as of Thursday, the return on a 10-year Government of India bond, which is essentially a risk-free investment, was 7.2%. But with inflation at 7.8%, this implies a negative rate of return.

* It leads to expectations of higher inflation. Persistently high inflation changes the psychology of people. People expect future prices to be higher and demand higher wages. But this, in turn, creates its own spiral of inflation as companies try to price goods and services even higher.

The way out is for the RBI to raise interest rates in a credible fashion. The difficulty is that raising interest rates at the current juncture, when growth is iffy, could lead to concerns of stagflation.

Source: The Indian Express

11. Adani buys Ambuja, ACC for \$10.5 billion

Relevant for GS Prelims & Mains Paper III; Economics

Ambuja and ACC acquired

The Adani family, through an offshore special purpose vehicle (SPV), said it had entered into definitive agreements for the acquisition of Switzerland-based Holcim Limited's entire stake in Ambuja Cements Limited and ACC Limited, two of India's leading cement companies.

Holcim, through its subsidiaries, holds 63.19% in Ambuja Cements and 54.53% in ACC (of which 50.05% is held through Ambuja Cements).

An open offer has been made in accordance with regulatory norms.

Impact of deal

This deal makes the Adanis the second largest cement player, after UltraTech Cement of the Aditya Birla Group.

"Our move into the cement business is yet another validation of our belief in our nation's growth story," Gautam Adani, chairman of the Adani Group, said.

“Not only is India expected to remain one of the world’s largest demand-driven economies for several decades, India also continues to be the world’s second largest cement market and yet has less than half of the global average per capita cement consumption,” he said.

“In statistical comparison, China’s cement consumption is over seven times that of India’s. When these factors are combined with the several adjacencies of our existing businesses that include the Adani Group’s ports and logistics business, energy business, and real estate business, we believe that we will be able to build a uniquely integrated and differentiated business model and set ourselves up for significant capacity expansion,” he added.

“I am delighted that the Adani Group is acquiring our business in India to lead its next era of growth,” Jan Jenisch, CEO of Holcim Limited, said in a statement.

Ambuja Cements Limited and ACC Limited currently have a combined installed production capacity of 70 million tonnes per annum (MTPA). They have 23 cement plants, 14 grinding stations, 80 ready-mix concrete plants and over 50,000 channel partners across India.

“Both Ambuja and ACC will benefit from synergies with the integrated Adani infrastructure platform, especially in the areas of raw material, renewable power and logistics, where Adani Portfolio companies have vast experience and deep expertise. This will enable higher margins and return on capital employed for the two companies,” the Adani Group’s statement said.

Quint Media also acquired

The Adanis appear to be on an acquisition spree. On May 13, 2022 Adani Enterprises Limited informed the stock exchanges that its wholly owned subsidiary, AMG Media Networks Limited, has signed an agreement to acquire 49% stake in Quintillion Media Limited and Quintillion Business Media Limited. The deal, for an unspecified amount, also includes Quint Digital Media Limited.

Source: The Hindu

12. The repo rate in India

Relevant for GS Prelims & Mains Paper III; Economics

How does the repo rate work? How does it affect the country’s inflation and what are the factors that influence its efficacy?

On May 4, the Reserve Bank of India, in a surprise move, announced that the bank’s Monetary Policy Committee (MPC) had held an ‘off-cycle’ meeting at which it had decided unanimously to raise the “policy repo rate by 40 basis points to 4.40%, with immediate effect”. Citing ‘inflation that was rising alarmingly and spreading fast’ globally, amid geopolitical tensions, RBI Governor Shaktikanta Das said that the MPC had judged that the ‘inflation outlook warranted an appropriate and timely response through resolute and calibrated steps to ensure that the second-round effects of supply side shocks on the economy were contained and long-term inflation expectations were kept firmly anchored’. Mr. Das added that the RBI’s monetary policy response would help preserve macro-financial stability amid increasing volatility in financial markets.

What is the repo rate?

The repo rate is one of several direct and indirect instruments that are used by the RBI for implementing monetary policy. Specifically, the RBI defines the repo rate as the fixed interest rate at which it provides overnight liquidity to banks against the collateral of government and other approved securities under the liquidity adjustment facility (LAF).

In other words, when banks have short-term requirements for funds, they can place government securities that they hold with the central bank and borrow money against these securities at the repo rate.

Since this is the rate of interest that the RBI charges commercial banks such as State Bank of India and ICICI Bank when it lends them money, it serves as a key benchmark for the lenders to in turn price the loans they offer to their borrowers.

Why is the repo rate such a crucial monetary tool?

According to Investopedia, when government central banks repurchase securities from commercial lenders, they do so at a discounted rate that is known as the repo rate. The repo rate system allows central banks to control the money supply within economies by increasing or decreasing the availability of funds.

How does the repo rate work?

Besides the direct loan pricing relationship, the repo rate also functions as a monetary tool by helping to regulate the availability of liquidity or funds in the banking system. For instance, when the repo rate is decreased, banks may find an incentive to sell securities back to the government in return for cash. This increases the money supply available to the general economy. Conversely, when the repo rate is increased, lenders would end up thinking twice before borrowing from the central bank at the repo window thus, reducing the availability of money supply in the economy.

Since inflation is, in large measure, caused by more money chasing the same quantity of goods and services available in an economy, central banks tend to target regulation of money supply as a means to slow inflation.

What impact can a repo rate change have on inflation?

Inflation can broadly be: mainly demand driven price gains, or a result of supply side factors that in turn push up the costs of inputs used by producers of goods and providers of services, thus spurring inflation, or most often caused by a combination of both demand and supply side pressures.

Changes to the repo rate to influence interest rates and the availability of money supply primarily work only on the demand side by making credit more expensive and savings more attractive and therefore dissuading consumption. However, they do little to address the supply side factors, be it the high price of commodities such as crude oil or metals or imported food items such as edible oils.

What other factors influence the repo rate's efficacy?

There is also another aspect to consider. Repo rate increases impact the real economy with a lag.

In February 2021, the RBI in its annual 'Report on Currency and Finance' observed that "the challenge for an efficient operating procedure [of monetary policy] is to minimise the transmission lag from changes in the policy rate to the operating target", which in this case is the mandate to keep medium-term inflation anchored at 4%, and bound within a tolerance range of 2% to 6%.

The RBI noted in the report that there were several channels of transmission, 'the interest rate channel; the credit or bank lending channel; the exchange rate channel operating through relative prices of tradables and non-tradables; the asset price channel impacting wealth/income accruing from holdings of financial assets; and the expectations channel encapsulating the perceptions of households and businesses on the state of the economy and its outlook'.

"These conduits of transmission intertwine and operate in conjunction and are difficult to disentangle," the central bank added, underscoring the challenges monetary authorities face in ensuring that changes to the repo rate actually help in achieving the policy objective.

Source: The Hindu



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hovering over the 40°C mark across the State in April. The extreme heat led to a marked decrease in wheat yields across north India. For instance, in Punjab, crop cutting experiments showed that the wheat productivity was below 18 quintals per acre this year, down from the average yield of 19.7 quintals per acre last year.

Hence, the wheat arrivals in Punjab's mandis were 20% lower in the first twenty days of the 2022 season compared to the same period in 2021. In the first twenty days, 73 lakh metric tonnes of wheat had reached the mandis in 2022, compared to the 92.4 lakh recorded in 2021.

Source: The Hindu

14. Record spike in WPI inflation: Cause, effect

Relevant for GS Prelims & Mains Paper III; Economics

The Wholesale Price Index-based inflation rate surged to a record high of 15.1 per cent in April, with rise in prices of vegetables, fruits, milk and fuel, government data released on Tuesday showed.

WPI inflation has been in double digits for the thirteenth months in a row now. According to the data released last week, retail inflation had also surged to an 8-year high of 7.79 per cent in April. As such, another round of repo rate hike is expected in June, with its quantum being as high as 40 basis points.

What caused the spike?

The heatwave led to a spike in prices of perishables such as fruits, vegetables and milk, which, along with a spike in tea prices, pushed up primary food inflation.

The core-WPI inflation rose to a four-month high of 11.1% in April, with producers forced to pass on the input price pressures. Fuel inflation rose to 38.66 per cent, while inflation for manufactured products rose to 10.85 per cent.

Much of the inflation spike is being seen as a result of the Russia-Ukraine conflict, with the contribution in retail inflation being seen at three-fourths of the index.

What will be the impact of high inflation rates?

With WPI inflation remaining in double-digits, the probability of a repo hike in the June monetary policy has risen further.

"We expect a 40 bps hike in June 2022 followed by a 35 bps rise in August 2022, amidst a terminal rate of 5.5% to be reached by mid-2023," Aditi Nayar, the Chief Economist of ICRA, said.

"With the source of inflation being global supply issues and not exuberant domestic demand, we maintain our view that overtightening will douse the fledgling recovery without having a commensurate impact on the origins of inflationary pressures," she added.

On May 4, after an unscheduled meeting of its Monetary Policy Committee, the RBI raised the Repo rate by 40 basis points to 4.40 per cent and the CRR by 50 basis points to 4.50 per cent.

Source: The Indian Express

15. Why textile and garment industries want ban on cotton exports

Relevant for GS Prelims & Mains Paper III; Economics

On Wednesday, May 18, Union Textiles Minister Piyush Goyal convened a meeting of cotton traders, millers and garment manufacturers. The topic: Spiraling prices of cotton, resulting in demands by the textile and garment industries to ban exports of the fibre. This comes days after the government on May 13 banned wheat shipments in response to rising prices due to a heat wave-induced production shortfall. Is there a case for similar restrictions on cotton exports?

How much have cotton prices gone up?

They have nearly doubled compared to last year. The average modal or most-quoted price of kapas (raw unginned cotton) at Rajkot APMC (Agricultural Produce Market Committee) mandi was Rs 12,250 per quintal on Thursday, as against around Rs 6,300 this time last year. This was also way above the government's minimum support price of Rs 6,025 per quintal for long-staple cotton varieties.

Prices have been rallying since November, when they crossed Rs 8,000 per quintal before scaling the Rs 10,000 mark for the first ever time in many markets by early-January. The marketing season for cotton extends from October to September, with more than 90% of crop arrivals already taking place by May end.

Why have prices risen so much?

Basically three reasons. The first is lower production. In 2020-21, India's total cotton lint fibre output was 353 lakh bales (lb) of 170 kg each. For the current year, the Cotton Association of India (CAI), a Mumbai-based trade body, has estimated production at 323.63 lb. This figure, released on May 14, is lower than its previous estimates of 335.13 lb (made on April 9), 343.13 lb (February 25), 348.13 lb (January 18) and 360.13 lb (October 30).

The second reason is international prices. The Cotlook 'A' Index price – an average of representative quotes in the Far East destination markets – is currently ruling at 167 cents per pound, up from 92 cents a year ago. India is the world's second largest cotton producer (after China) and third largest exporter (after the US and Brazil). High global prices have made exports attractive. Also, they have pushed up domestic prices closer to export parity levels, while simultaneously making imports more expensive.

The third reason is consumption. The state-owned Cotton Corporation of India (CCI), in March, projected total domestic consumption for 2021-22 at 345 lb, compared to 334.87 lb, 269.19 lb and 311.21 lb in the preceding three marketing years. "Demand has significantly increased, as mills and other users were operating at sub-optimal levels in the past few years. Even during the pandemic, demand for bed-sheets and towels had zoomed, translating into higher consumption of cotton and yarn," said S K Panigrahi, chief general manager (marketing) of CCI.

But the pressure on availability from lower production has already led CAI to revise downwards its estimates of domestic consumption to 320 lb, from its earlier January 18 estimate of 345 lb. CCI is expected to follow suit soon.

Why has production fallen so much?

The area sown under cotton in India has reduced from 134.77 lakh hectares (lh) in 2019-20 to 132.85 lh in 2020-21 and 123.5 lh in 2021-22. This has been largely due to the diminishing benefits from the genetically-modified Bt cotton, which helped almost treble the country's production from 136 lb to 398 lb between 2002-03 and 2013-14. Over a period, Bt cotton has become increasingly susceptible to pink bollworm and white-fly insect pest attacks, making it riskier for farmers to grow the crop. Besides, the government does not permit testing or commercialisation of next-generation transgenic breeding technologies.

This time, the crop was also affected by unseasonal rains in November-December, which affected yields as well as quality of the bolls from the second and third "flushes" (cotton is generally harvested over three or even four pickings, with the first one in October-November and the subsequent ones every following 20-30 days).

How justified is the demand for a ban on exports?

India's cotton exports are actually projected at 40 lb this year, down from the 78 lb of 2020-21. At the same time, imports are likely to be higher, at 15 lb, from last year's 10 lb. Moreover, on April 13, the Centre slashed the import duty on cotton from 11% to nil. Given the anyway lower exports and duty-free imports – which have for now been allowed until September 30, before the next marketing season – there may be no strong case for an outright ban on shipments.

Further, with domestic prices already rising to international parity levels, exports would slow down in the natural course. Advocates of an export ban say it would not impact farmers, as they have already sold their crop. However, a ban can also send wrong signals ahead of the planting season, which will take off next month with the arrival of the southwest monsoon rains.

Who are the main players in the cotton value chain?

Lint, the white fibre that mills spin into yarn, constitutes only about 34% of kapas. The balance is seed (65%) and moisture. The seed further yields both oil (used for cooking) and de-oiled cake (used as a protein ingredient by livestock feed manufacturers). Kapas rates have firmed up not only because of export and domestic demand for lint, but also due to rising vegetable oil prices. Cotton seed oil is, in fact, India's third largest domestically produced vegetable oil. Its estimated output, at 12.49 lakh tonnes (lt) in 2020-21, was next only to mustard (27.39 lt) and soybean (13.29 lt), out of a total 93.18 lt, according to the Solvent Extractors' Association of India.

Kapas is mostly bought by traders and ginning units that separate the cotton fibre from the seeds. The fibre is sold to spinning mills and seed to oil mills for crushing and producing vegetable oil. From every one kilo of lint, mills obtain 700-800 grams of yarn. The yarn is further woven or knitted into fabric and garments. India in 2021-22 not only exported raw cotton valued at \$2.8 billion, but also cotton yarn worth \$5.5 billion and fabrics and made-ups worth \$8.2 billion. Every part of the value chain, thus, involves exports.

Source: The Indian Express

16. What is 'storage gain' in wheat and why Punjab procurement agencies don't want to shell it out**Relevant for GS Prelims & Mains Paper III; Economics**

After Centre relaxed the Fair and Average Quality (FAQ) norms for wheat procurement this season raising the permissible limit of 'Shrivelled and Broken grains' from 6% to 18%, Punjab's state procurement agencies (SPAs) are now seeking a waiver of 'storage gain'. If allowed, the waiver in actual terms would stand at around Rs 150 crore for the current season. What is 'storage gain' and why do Punjab agencies want a complete waiver.

What is 'storage gain' in wheat?

Wheat, considered a 'living grain', tends to gain some weight during storage. This is known as 'storage gain' and it mostly happens due to absorption of moisture. There are three parts of the grain — bran (outer layer rich in fibre), germ (inner layer rich in nutrients) and endosperm (bulk of the kernel which contains minerals and vitamins). The moisture is mostly absorbed by the endosperm.

Who compensates whom for 'storage gain'?

State procurement agencies, which purchase and store wheat at their facilities, are required to give one kg wheat extra per quintal to the Food Corporation of India (FCI), the Centre's nodal agency for grain procurement, to compensate for storage gain.

While 20% of wheat, procured by the FCI and the SPAs, is moved immediately after procurement, it is usually on the remaining 80%, which is moved out after July 1 every year, that storage gain has to be accounted for due to longer storage duration.

What is the storage gain calculation for this year?

This year 96 lakh metric tonnes (LMT) wheat was procured in Punjab by all agencies. As 80% of this figure comes to 76.80 LMT, it means that storage gain would be around 7.68 lakh quintals on this. At MSP rate of Rs 2,015, it would cost state agencies Rs 154.74 crore if they are unable to supply 7.68 lakh quintals extra during movement of 76.80 LMT wheat. SPA sources said that FCI deducts that amount during final settlement of dues to balance the books.

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Why do state agencies want a waiver this year?

They argue that grain procured this year is both shrivelled and broken and therefore will not gain much weight.

Vinod Kumar Sharma, the president of Joint Coordination Committee of Punjab SPAs, which has demanded storage gain waiver, said: "Due to shrivelled and broken grains, the size of endosperm is small, which is usually above 75%. So, this will lead to less absorption of water as compared to wheat procured without FAQ norms relaxation earlier." A major reason to seek this waiver is also the fact that the SPAs in Punjab are already cash-strapped.

Is this FCI vs SPA fight new?

Till 1986-87, the SPAs kept the entire 'storage gain' – actual grain – of the procured crop and handed the rest to FCI. In 1999, Punjab Cabinet set one kg gain per quintal as storage gain and said that this would go to the state, not to SPAs. FCI then protested and said that the procurement was done using Centre's money so the 'gain' belonged to the FCI. Around 2004, it made norms on the lines of Punjab's 1999 decision and fixed the storage gain quantity. State procurement agencies have since been protesting calling the FCI's method unscientific, and demanding a region-wise 3-year study of climatic conditions, storage facilities to come up with a method to determine storage gain. While FCI had got a study done by the Indian Council for Agriculture Research (ICAR) earlier, the SPAs argue that it had several shortcomings, including small sample size, few storage places, and even the overall methodology.

"A proper system of surveillance must be installed at all storage places which can be monitored by FCI from their offices to check any theft of storage gain or other malpractices like deliberate soaking of the grain," said a senior PUNGRAIN official.

The SPAs now say that the Punjab government has assured them they will approach the Centre with waiver and other demands.

Source: The Indian Express

17. The case against Mehul Choksi

Relevant for GS Prelims & Mains Paper III; Economics

Earlier this week, Dominica dropped criminal proceedings against diamantaire Mehul Choksi, who was accused of illegally entering the country in May 2021. Now wanted by the Central Bureau of Investigation (CBI) and the Enforcement Directorate (ED) for his alleged role in the ₹13,578 crore Punjab National Bank (PNB) fraud, he had shifted to Antigua and Barbuda in January 2018, days before the first case against him was registered.

What happened in Dominica?

On May 23, 2021, Mr. Choksi went missing from Antigua and Barbuda under mysterious circumstances. He later surfaced about 190 km away in Dominica, where he was detained on the charge of illegal entry. On May 27, 2021, the Dominican government confirmed his presence there. His family and lawyers alleged that he was abducted and taken to Dominica in a yacht, and had in that process, suffered injuries as well. In July 2021, a Dominica High Court allowed him to travel back to Antigua and Barbuda on bail for medical treatment. The Dominican government has now decided to drop all charges against him.

What are the charges against Mr. Choksi in India?

On the PNB's complaint, the CBI registered the first case against Mr. Choksi, his nephew, Nirav Modi and others on January 31, 2018, alleging that they cheated the bank of over ₹280 crore in conspiracy with some officials. The alleged role of three companies, Diamonds R US, Solar Exports and Stellar Diamonds, was detected after they approached the bank's corporate branch in Mumbai for buyer's credit to make payment to the so-called overseas suppliers.

Days later, the agency registered another case against three Gitanjali group companies of Mr. Choksi for causing an alleged ₹4,887 crore loss to the bank. Following investigations, the CBI filed a chargesheet alleging that the amount involved was over ₹7,080 crore.

In an unrelated matter, earlier this month the CBI registered yet another case against Gitanjali Gems Limited, Mr. Choksi and others for allegedly cheating the IFCI Limited of ₹22.06 crore.

The ED has filed chargesheets under the Prevention of Money Laundering Act and attached properties worth hundreds of crores in India and abroad. Proceedings against him have also been initiated under the Fugitive Economic Offenders Act.

How was the PNB allegedly cheated by Mr. Choksi and his associates?

The CBI found that Mr. Choksi's companies were fraudulently issued 165 Letters of Undertaking (LoU). The value of 58 Foreign Letters of Credit (FLCs) were also enhanced in 2017 for payment to dummy overseas suppliers. In all, 347 FLCs were issued from 2014-16. The suspect transactions had been initiated in 2011 and they continued till the bank authorities unearthed the "scam". They earlier remained undetected as the respective major entries were not made in the bank's Core Banking Software (CBS).

Initially, the FLCs were opened for small amounts against which entries were recorded in CBS and letters sent to overseas branches through the SWIFT messaging system. As time went by, the value of FLCs was enhanced manifold by making amendments via SWIFT, without making CBS entries. The funds released to "suppliers" were used for clearing previous liabilities and other purposes, as alleged.

When did the shift to Antigua and Barbuda happen?

Mr. Choksi and his relatives flew out of India in the first week of January 2018, days before the bank lodged a complaint with the CBI. The agencies later found that he had applied for Antiguan citizenship in May 2017. His application was approved in November 2017. On January 15, 2018, he took the oath of allegiance to Antigua and since then has been living there. As alleged, Mr. Choksi had visited Hong Kong in December 2017 and told the dummy directors of "supplier" companies to apply for Thailand visa. Therefore, the ED has alleged that he knew beforehand about the impending criminal proceedings.

What measures are the Indian agencies taking to bring Mr. Choksi back?

Based on its findings, the CBI approached Interpol and got a Red Notice issued against Mr. Choksi in December 2018. Through diplomatic channels, the probe agencies have sought the fugitive's custody for his prosecution in India. India does not have an extradition treaty with Antigua and Barbuda. However, according to a Ministry of External Affairs' order dated August 3, 2018, provisions of the Extradition Act, 1962, (other than Chapter III) apply to Antigua and Barbuda with effect from the date of notifying India as a Designated Commonwealth Country under the Extradition Act of Antigua and Barbuda on September 17, 2001. India is

currently pursuing its request for Mr. Choksi's extradition in the court there. He is also facing legal proceedings challenging the validity of his Antiguan citizenship.

Source: The Hindu

18. The cryptocurrency price fall

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Relevant for GS Prelims & Mains Paper III; Economics

Bitcoin, the most dominant cryptocurrency around, is down more than 50% from an all-time high price of \$68,000, which it achieved just last November. It has, in fact, lost a fourth of its value in the last 30 days. Bitcoin isn't alone. The prices of almost all cryptocurrencies have seen a similar steep downward movement over the last month. Volatile price movements aren't new to the cryptocurrency world but this time the plunge seems to have revealed new insights and vulnerabilities of the market.

Is the Bitcoin price fluctuation a new phenomenon?

It isn't. Its history is filled with many instances of big price falls and big price rises within a short period of time. Last year, after hitting a new peak of over \$63,000 in April, its value more than halved by June. China's crackdown on cryptocurrency mining operations was seen as the main reason for this fall. The April price it reached was itself a massive eight to nine times of its year-ago value. So steep was the climb. The new peak in November followed.

Over the years, speculators have flooded in to take advantage of such volatility. It should be noted that the downside risks come swift and steep. At the same time, this inherent volatility effectively rules it out as a medium of exchange which is something that researchers have repeatedly pointed out. All these and the fact that cryptocurrencies are designed to bypass the official monetary mechanism of any country make most governments wary of them.

What's new about this phase of the cryptocurrency price fall?

The context is, of course, new. This big sell-off phase has come about at a time when the war in Ukraine and the subsequent disruptions to the global supply chain have resulted in record-high inflation throughout the world. Inflation in the U.K., for instance, is at its highest levels in 40 years. To tackle such conditions, many central banks have gone in for interest rate hikes. Early this month, the U.S. Federal Reserve increased its benchmark interest rate by half a percentage point, the biggest hike in 22 years.

"These aren't normal times," said the 2022 Midyear Economic Outlook report of Morgan Stanley. "Persistent inflation, supply chain constraints, the continuing pandemic and war in Ukraine signal a significant slowdown in global GDP growth this year but not a worldwide recession."

Cryptocurrencies, which are perceived amongst the riskier investments, are weighed down in such an environment where investors want safety more than anything else. Cryptocurrencies, interestingly, were promoted as those that could weather these storms. A recent article in The New York Times said, "Bitcoin was conceived more than a decade ago as 'digital gold,' a long-term store of value that would resist broader economic trends and provide a hedge against inflation. But Bitcoin's crashing price over the last month shows that vision is a long way from reality. Instead, traders are increasingly treating the cryptocurrency like just another speculative tech investment." It has in recent times behaved more in the lines of the technology stocks at Nasdaq and less like gold, which is seen as a store of value. But a vulnerability in the cryptocurrency ecosystem also played its part in the recent price crash.

What vulnerability was revealed during this crash?

The Bitcoin value also got impacted by what's essentially a sub-story in the entire episode — the fate of a stablecoin called TerraUSD. Stablecoins are a type of cryptocurrency that seek to hold their value steady, even

if the Bitcoins of the world have a rocky journey. This, they do by pegging to a currency such as the dollar. TerraUSD's idea was to maintain a value of \$1.

The way it maintains its peg is through an algorithmic solution, wherein if it drops below \$1, a trader is encouraged to receive a 'sister' token called Luna at a discounted price in exchange. The TerraUSD, for which Luna was exchanged, then goes out of circulation. The supply falls, and the peg to \$1 is achieved again. That's how it works in theory. What happened in reality is that the peg was lost, and the investors began to pull out, and both the stablecoins had a free fall.

On May 23, TerraUSD was trading below seven cents (it was 99 cents on May 9, a day before the fall began). Luna was trading at \$0.0002044, very close to zero. The Luna Foundation Guard, which backs the Terra ecosystem, had tried selling its Bitcoin reserves to keep its cryptocurrency peg intact. That, among other things, could also have played a part in the Bitcoin value slide.

How are governments reacting to this?

Governments are reacting by talking about regulating stablecoins. CNBC quoted a U.K. government spokesperson as saying that "The government has been clear that certain stablecoins are not suitable for payment purposes as they share characteristics with unbacked cryptoassets." The U.K., the report said, is planning to "bring stablecoins within the scope of electronic payments regulation."

U.S. Treasury Secretary Janet Yellen was quoted as saying in a Congressional hearing, "I wouldn't characterise it at this scale as a real threat to financial stability but they're growing very rapidly."

While the crypto market seems to have stabilised after the big fall early this month, the future course of the prices is anybody's guess. The global inflation risk has still not gone away, nor is the Federal Reserve monetary tightening over.

Source: The Hindu

19. Sugar export curbs and their impact

Relevant for GS Prelims & Mains Paper III; Economics

The government Tuesday decided to "restrict" the export of sugar, effective from June 1. The curbs, the first such move in four years, have been ordered to maintain "domestic availability and price stability of sugar", the government said. India is the biggest producer of sugar and the second largest exporter after Brazil. What do these curbs mean for domestic and the international market?

What are the latest curbs?

The government has moved export of sugar from the 'open category', which requires no government intervention, to 'restricted' category. This means that export of sugar is allowed only with specific permission from the Directorate of Sugar, Department of Food and Public Distribution (DFPD), Ministry of Consumer Affairs, Food & Public Distribution. Also, the curbs come into effect from June 1 and will continue till October 31, or until further orders.

Sugar industry insiders pointed out that unlike wheat, where export has been banned, sugar would continue to be exported, but from June 1, permission would be required to send the shipments out.

Till date, the industry has contracted export orders of 90 lakh tonnes out of which 71 lakh tonnes has been shipped out of the country. From June 1, permission to export would be required for both the pending contracted quantity and any new contracts entered by mills.

How much did India export during the last few seasons?

Thanks to the bumper crops over the last four seasons, exports too boomed. The Centre also extended subsidies to millers to push sales abroad. Before the start of the sugar season (October to September every year), the central government would announce both the quota for export and the subsidy to achieve the target.

In 2017-18, the government set a target to export 20 lakh tonnes of sugar and sanctioned a budget of Rs 1,540 crores to handle internal transport, freight, handling and few other operations. For that season, the industry recorded exports of 6.2 lakh tonnes and with a reported expenditure of Rs 440 crores of the subsidy budget.

For the next season (2018-19), 50 lakh tonnes export target was set with a subsidy budget of Rs 5,538 crores, of which 38 lakh tonnes of sugar was shipped out using Rs 4,263 crores of the subsidy.

After a bumper crop in 2019-20, export quota was hiked to 60 lakh tonnes with a subsidy budget Rs 6,268 crores. Millers clocked exports of 59.60 lakh tonnes using up Rs 6,225 crores of the subsidy budget.

| | EXPORTS (LAKH TONNES) | | SUBSIDY (Rs CRORE) | |
|---------|-----------------------|----------|--------------------|-------|
| | Targeted | Exported | Budgeted | Spent |
| 2017-18 | 20 | 6.2 | 1,540 | 440 |
| 2018-19 | 50 | 38 | 5,538 | 4,263 |
| 2019-20 | 60 | 59.6 | 6,268 | 6,255 |
| 2020-21 | 60 | 70* | 3,600 | 3,500 |

*Including 10 lakh tonnes without using subsidy

The traction in the international market helped sugar exports touch 70 lakh tonnes in 2020-21, out of which 60 lakh tonnes was done using Rs 3,500 crores of government subsidy and 10 lakh tonnes was exported without any government aid. The export without government subsidy was done under the open general license regime.

The current season (2021-22) has seen millers enter into contracts to export 90 lakh tonnes of sugar. Out of this, 71 lakh tonnes of sugar has already left the country. The consignments scheduled to leave after June 1 will need government permission.

What also helped exports grow over the last few seasons is the fact that Brazil produced more ethanol than sugar given the exceptional rise in fuel prices. This, and drought hitting other big sugar producers like Thailand helped India venture in countries which otherwise were dependent on Brazilian sugar. India is the second largest sugar producer in the world after Brazil. However, Brazil has always led in terms of exports.

In the current sugar season, international sugar prices have continued to be bullish. Exports have helped millers ensure that farmers are paid on time.

Why the curbs, now?

Exports, industry insiders say, can continue unabated given the international demand. But for the government, a possible worry is low stocks at the beginning of the next season. This can lead to supply constraints for around three months.

The sugar season officially starts in October, but picks up momentum only after December. If there is scarcity of back-up stocks during this period then prices can escalate in the domestic market. At a time when reining in inflation stays a major priority, the government can ill afford that risk.

Retail prices can see inflation if the October opening stock is anything less than 65-70 lakh tonnes. The present curbs would ensure the government keeps a tab on sugar stock real-time to ensure that there is no shortage at the start of the next season. Retail sugar prices have been almost stagnant year-on-year hovering between Rs 39.50 to Rs 41 per kg.

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What will be the sugar output this season?

The country has seen a bumper sugarcane crop. Of the 521 mills engaged in cane crushing this season, 116 mills are still operating with Maharashtra leading. It is expected that the crushing season will end in the second week of June for most part of the country.

A few mills in Tamil Nadu and Karnataka are expected to continue crushing till September. The final production figure is still anybody's guess given the large number of mills in operation, but most in the industry feel the country will see production of 350 lakh tonnes of sugar. Around 34 lakh tonnes of sugar has already been subsumed for production of ethanol. India's domestic consumption is pegged at 260 lakh tonnes.

What is the industry view on the latest restrictions?

The first reaction to this curb was a Rs 50 per tonne drop in the ex-mill prices, which was on expected lines. International prices have remained more or less the same. Prakash Naiknavare, managing director of the National Cooperative Sugar Factories Federation, believes that India would end up exporting around 100 lakh tonnes of sugar this season even with the curbs. "If the present logistic and port congestion issues are resolved, there would be no problem in reaching this figure," he said. Most millers said the curbs would not affect them much and exports would continue without hassle.

Source: The Indian Express

20. Price rise and GST**Relevant for GS Prelims & Mains Paper III; Economics**

The GST regime, about to complete five years this July, is due for an overhaul in tax rates levied on different products because of structural anomalies and to reduce the multiple tax slabs. A ministerial group of the GST Council, under Karnataka Chief Minister Basavaraj S. Bommai, was tasked last September to suggest immediate changes, as well as a roadmap for short- and medium-term changes to the GST rate structure. The group of ministers (GoM) is yet to conclude its deliberations.

What is the need to rationalise the GST rates?

From businesses' viewpoint, there are just too many tax rate slabs, compounded by aberrations in the duty structure through their supply chains with some inputs taxed more than the final product. There are five broad tax rates of zero, 5%, 12%, 18% and 28%, with a cess levied over and above the 28% on some 'sin' goods. Special lower rates are levied on items like precious stones and diamonds. Tax experts have been flagging that these are far too many rates and do not necessarily constitute a Good and Simple Tax.

For the government, the top priority, apart from simplifying the tax structure in the hope of bolstering compliance, is to rake in more revenues as they believe collections have been underwhelming. At the last full-fledged GST Council meet, Finance Minister Nirmala Sitharaman had stressed that the new indirect tax system was premised on a revenue-neutral tax rate of 15.5%, but actual revenues have been steadily going down taking the effective tax rate to 11.6%. "Knowingly or unknowingly, [the rate] was brought down by reduction

in tax rates of some items,” the Minister had said. Some of these frequent rate cuts were approved by the Council on the eve of critical elections.

The need to shore up revenues was also flagged as the assured compensation period for States under the GST compact expires on June 30, so their fiscal space will depend on actual collections thereafter. The Council set up two GoMs to resolve this – one to examine more technology and schemes to improve tax compliance, and another under Mr. Bommai to rationalise tax rates to correct anomalies and consider the merger of different tax slabs.

Haven't GST revenues been hitting new records?

Yes, they have – GST revenues have scaled fresh highs in three of the first four months of 2022, going past ₹1.67 lakh crore in April. The government terms this a sign of economic recovery and a reflection of the measures to tighten the screws on tax evaders, but there is another key factor — the runaway pace of price rise. Wholesale price inflation, which captures producers' costs, has been over 10% for over a year and peaked at 15.1% in April. Inflation faced by consumers on the ground has spiked to a near-eight year high of 7.8% in April. In a recent note, Ambit Capital analysts Sumit Shekhar and Eashaan Nair stressed that higher GST revenues “should not be confused” with a rise in consumption which is just 2% above pre-pandemic levels. The rise in prices, they said, was “the single most important factor for higher tax inflows” along with higher imports, compliance tweaks and a boom in the consumption of high-ticket items even as mass consumption goods and services languish.

Can we expect the rate reset this year?

Ambit reckoned that a hike in GST rates is ‘almost certain’ this year to ensure that high collections sustain and States get enough money from July onwards. But any rejig and merger of GST rates will entail some products being taxed higher, with concomitant ripple effects on prices. “The Centre and the States are not unmindful of the desperate need to rationalise the rate slabs and structure but we just need to get the timing right. When inflation is the top worry, whether the Council is ready to tackle this, is a key question,” averred a top government official.

The Council is aware of the need to rationalise rates since at least 2019, but has deferred action each year due to macro-level compulsions — starting with slowing growth in 2019-20, followed by the pandemic's onset and the fledgling recovery in 2021-22. With inflation, much of it imported through pricier fuels, commodities and food items, expected to hover high through the year, the GST rate reset hopes appear bleak in 2022-23. Even if the conflict in Europe eases or ceases, its aftermath through sanctions as well as other supply chain disruptions could persist and keep prices high in 2023-24 as well. This may mean an even longer wait for a simpler GST regime, especially as tax hikes are unlikely to be a palatable option ahead of the 2024 general election.

Source: The Hindu

21. Tesla demand to start engine in India: Manufacturing only after nod for sale & services

Relevant for GS Prelims & Mains Paper III; Economics

Tesla Inc will not set up a manufacturing facility in India until it is allowed to sell and service imported cars in the country first, the company's chief executive officer Elon Musk recently said on Twitter.

The company's entry into India has been on hold since 2019 as it wants lower customs duty on imported electric vehicles (EVs) in the country, a demand the government is yet to accept, instead requiring the automaker to set up a manufacturing base in India.

EV maker's duty cut demand

Responding to a user's question on Twitter about the company's manufacturing plans in India, Musk on Friday tweeted, "Tesla will not put a manufacturing plant in any location where we are not allowed first to sell & service cars".

Tesla had last year written to the government seeking a reduction in import duties on fully assembled cars.

At present, customs duty ranging from 60 per cent to 100 per cent is levied on cars imported as completely built units (CBUs), depending on the engine size and cost, insurance and freight (CIF) value less or above \$40,000.

Govt wants production first

Earlier this year, Road Transport Minister and Highways Nitin Gadkari had said that if the US-based auto maker was ready to manufacture its EV in India, then there was "no problem", but the company must not sell imported cars in India. "If he wants to manufacture in China and sell in India, then it cannot be a good proposition for India," the union minister had said.

Tesla's giga factory in Shanghai is currently the closest manufacturing facility the company has to India.

Senior government officials had earlier told The Sunday Express that Tesla, in its proposal, did not detail any setup for manufacturing the electric vehicles.

The government's primary concern was that Tesla is seeking duty cuts and then proposing domestic manufacturing conditional to the sales response in the country.

The tax cut demand hence did not find favour as it was also felt that other firms may seek similar concessions. "Tesla wants customs duty cuts for imports. They are welcome to come and produce. But his argument is first I want to see how many people in India buy my vehicle. For that, he needs a lower customs duty ... if there's enough turnover, I might come. It's not a poor man's car. They are not producing a small EV equivalent for the middle class. They are producing a super class car. Why should we give a Customs exemption? If you can afford it, please pay the duty and take it," a senior government official had earlier said.

Source: The Indian Express

22. How Maharashtra overtook UP to re-emerge as top sugar producer

Relevant for GS Prelims & Mains Paper III; Economics

After a five-year gap, Maharashtra has overtaken Uttar Pradesh (UP) to regain its position as India's top sugar producer.

Shekhar Gaikwad, sugar commissioner of Maharashtra, expects the state's output for the 2021-22 crushing year (October-September) at 138 lakh tonnes (lt). That is an all-time-high, beating the previous 107.21 lt of 2018-19.

Prakash Naiknavare, managing director of the National Federation of Cooperative Sugar Factories, attributes the record production to three factors.

The first is the bountiful rainfall Maharashtra has been receiving since the 2019 southwest monsoon season (June-September). The filling up of reservoirs and recharged groundwater aquifers has induced farmer to plant more area under sugarcane, which is a 12-18 months duration crop. The benefits of abundant water and expanded acreage accrued fully in 2021-22.

The second is higher yields from farmers taking extra care of their crop. Exemplifying this is Vinod Momale, who cultivates sugarcane on 11 out of his total 40-acre holding in Gurdhal village of Latur district's Deoni taluka. He has harvested an average per-acre cane yield of 60 tonnes this year, as against 50 tonnes in 2020-21.

"My five wells and farm pond (which can store 1 crore litres of rainwater) have been full in the last two years," says this farmer, who grows soyabean on 15, tur (pigeon-pea) on 8 and green fodder on his remaining land. Improved water availability, especially after the drought from early-2018 till mid-2019, also emboldened Momale to plant 5 acres under 'adsali', an 18-month cane yielding more than the regular 12-month 'suru' and 15-month 'pre-seasonal' crops. "This was the first time I took adsali (planted in June-July 2020) and reduced the area under suru (planted in December-January 2020-21). My overall yield has, therefore, risen," he explains.

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| TOP SUGAR PRODUCING STATES (IN LAKH TONNES) | | | | | |
|--|-------------|------------------|-----------|---------|-----------|
| YEAR (OCT-SEP) | MAHARASHTRA | UTTAR PRADESH | KARNATAKA | GUJARAT | ALL-INDIA |
| 2013-14 | 76.85 | 64.87 | 41.77 | 11.77 | 243.60 |
| 2014-15 | 105.07 | 71.01 | 49.35 | 11.54 | 283.13 |
| 2015-16 | 84.24 | 68.55 | 40.49 | 11.68 | 251.25 |
| 2016-17 | 42.38 | 87.73 | 21.44 | 8.85 | 202.62 |
| 2017-18 | 107.05 | 120.50 | 36.58 | 10.67 | 323.28 |
| 2018-19 | 107.21 | 118.22 | 44.29 | 11.23 | 331.62 |
| 2019-20 | 61.70 | 126.37 | 35.00 | 9.30 | 273.85 |
| 2020-21 | 106.30 | 110.59 | 44.65 | 10.50 | 311.20 |
| 2021-22* | 138.00 | 104.00 | 60.00 | 12.00 | 355.50 |

*Projected

Top sugar producing states (in lakh tonnes)

Underreported cane

But there is a third factor for Maharashtra's sugar production scaling a new peak. It has to do with a huge jump in "unregistered" cane cultivation. In 2020-21, the state reported a total area of 11.42 lakh hectares (lh) planted under cane. While the sugar commissioner's office has estimated this year's area at 12.4 lh, millers peg it at least one lh higher – and all this is cane that farmers haven't "registered" for supplying to any factory.

The large "unregistered" area has meant that there is un-harvested cane still in the fields and mills will continue to crush till the first week of June. In normal years, crushing operations are over by April-end, rarely extending beyond mid-May. This time, the excess cane has led the Maharashtra government to announce a Rs 20/quintal subsidy to compensate mills for lower sugar recovery (from cane crushed in extreme summer heat) and also requisition the services of mechanical harvesters (including from other states).

The unregistered area is mostly in the Marathwada region and the adjoining districts of Ahmednagar and Solapur. This is a belt, ironically, most prone to drought. Neither the state's revenue nor agriculture departments could assess the actual area planted to cane – registered or otherwise – courtesy of the successive good monsoons.

"The government claims Maharashtra's average cane yield to have hit a historical high of 105 tonnes per hectare, from 85 tonnes in 2020-21. But yields cannot shoot up so much in one year, even if the share of adsali has risen from, say, 10% to 12%. The truth is the area is itself being underreported by one lakh-plus and showing up in the unregistered cane coming to us," states a leading Ahmednagar-based miller.

UP's decline

It isn't Maharashtra alone. Karnataka, too, is poised to produce a record 60 lt sugar this year, while Gujarat's 12 lt would be its best since the 12.35 lt of 2010-11. As the table shows, output in all the three states have staged remarkable rebound from the drought-affected levels of 2019-20, a year that actually saw UP's touching a high of 126.37 lt.

Bakshi Ram, former director of the Sugarcane Breeding Institute at Coimbatore, gives three reasons for UP's sugar production declining after 2019-20.

The first is an estimated 12.60 lt equivalent of sugar from cane crushed by mills getting diverted for making ethanol this year, compared to 7.19 lt in 2020-21, 4.81 lt in 2019-20 and 0.31 lt in 2018-19. UP has, in fact, become India's largest ethanol producer, while also achieving the highest blending-in-petrol ratio among all states.

The second is crop loss from excess rains and water-logging in many low-lying cane-growing areas of eastern UP. The third reason is about 87% of UP's cane area being planted under a single variety, Co-0238. While that variety, developed by Bakshi Ram, helped significantly boost cane yields and sugar recovery in UP from 2013-14 (<https://bit.ly/3GtmVO2>), it has become susceptible to red rot fungal disease. "We are recommending its replacement with two new varieties, Co-0118 and Co-15023, resistant to red rot," the veteran breeder told The Indian Express.

Bumper production

UP's sugar output falling to a five-year-low in 2021-22 has, however, been more than offset by Maharashtra's and Karnataka's soaring to all-time-highs. That has, in turn, translated into a record production of 355.5 lt for India, according to Naiknavare.

But interestingly, this hasn't resulted in any price drop. "Ex-factory prices of S-30 (small crystal size) sugar in Maharashtra are now around Rs 32.5-33 per kg, while at Rs 34.5-35 for M-30 (medium size) grades in UP, more than the government-fixed minimum sale price of Rs 31. In all previous instances of bumper production, prices have crashed," notes Naiknavare.

The reason for that not happening this time is exports. These have crossed 75 lt – surpassing the 71.9 lt record of 2020-21 – and are likely to reach 100 lt in the current sugar year. With opening stocks of 85 lt on October 1, 2021, production of 355.5 lt, domestic consumption of 275-280 lt and exports of 100 lt, the year will close with 60.5-65.5 lt of sugar with mills. These stocks would suffice for over 2.5 months of domestic consumption.

Given the comfortable availability position, the Centre's decision last week to restrict sugar exports and cap it at 100 lt for 2021-22 has taken many by surprise. But one thing is clear: Maharashtra and Karnataka have ensured that sugar will not go the way of wheat this year.

Source: The Indian Express

Environment

1. Why farmers in Punjab are burning wheat stubble when rate of dry fodder is so high?

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Relevant for GS Prelims & Mains Paper III; Environment

'Tudi', which is made from wheat stubble, is considered to be the best dry fodder for cattle because of its nutritional value. So when wheat yield is down this year, the rate of tudi is very high and farmers can earn huge profit by selling it. But despite that 3,895 field fires, including 820 such incidents on Friday, have been reported so far from April 1 to April 29 in Punjab. Why farmers are burning their fields when wheat stubble is pricey this time, and can this be stopped, Anju Agnihotri Chaba explains. Excerpts:

What is the rate of tudi?

The rate of tudi was Rs 950 to Rs 1100 per quintal before wheat harvesting, which started in April, as farmers sold last year's stored fodder then. Now when the season of tudi began post wheat harvesting the rates have not gone down as it is still being sold at the rate of Rs 400 to Rs 800 per quintal in different parts of the state. Whereas in neighbouring states such as Rajasthan, the rate of tudi is Rs 950 per quintal. During tudi season its rates used to remain between Rs 200 and Rs.300/quintal.

Why are the rates of tudi so high?

Experts said that in December last year when reports came that the area under wheat coverage had gone down to some extent in several states in the 2021-22 Rabi sowing season, several big traders started storing dry fodder and the rates also started shooting up. Besides wheat yield was also hit by high temperatures in March which resulted into shrivelled grain and less heavier wheat straw. Farmers getting 15% to 20% less production of tudi, which is much in demand because of its nutritional value, and this led to the high rates even during the season.

What is the output of tudi in the state?

Punjab, which gives around 35 lakh hectares under wheat coverage, produces around 20 million tonnes in normal cropping season, but this time it would be around 14 million tonnes only which could be worth Rs 14,000 crores if the rate reaches Rs 1,000 per quintal.

"If the stubble is heavy then we can make three trollies of 8 quintals each of tudi from one acre but in the current situation, only two trollies or little more is the fodder output per acre," said farmer Satnam Singh of Rajjain village in district Amritsar, who makes tudi in the fields of several farmers by running his straw reaper. He also said that in Punjab if not 100% then 99.9% farmers make tudi whether they keep cattle or not and sell it.

A farmer, who is getting two trollies of fodder per acre, has to pay Rs 1,200 per trolley to the fodder maker, who uses his machinery and tractor to make fodder, and if the rate of fodder increases up to Rs 1,000 to Rs 1,100 per quintal (the chances of which are strong as traders have already started storing it in a big way) then farmer can sell for Rs 16,000 to Rs 17,000 tudi per acre and can earn Rs 13,500 to Rs 14,500 per acre after paying to the fodder maker.

Then why farmers are setting wheat fields on fire post harvesting and can it be stopped?

"Actually they are not burning the stubble but the upper portion of the roots because after making fodder small few centimetres of the upper part of the roots are left and farmer even set that part on fire which can be avoided easily without any damage to the next crop," said agriculture officer Dr Amrik Singh of Pathankot district. He added that they are not realising that they are burning the soil friendly insects, organic matter, and causing considerable loss of nitrogen, DAP, Potassium besides generating huge amount of carbon dioxide

, carbon monoxide, black carbon, which all create environment pollution. It also affects the productivity of the crops and fertility of the soil, he said.

Experts said that a little push from the government and change of farmer's mind set can bring the wheat field burning to 'zero' in the state because this is not as major problem as paddy stubble, which is not used for fodder making.

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Farmers who burn the roots said that they burn because they need clean field for the growing next crop, which is mainly paddy, and burning converts the left over into ash and then they plough the field once which cost them Rs 1000 to Rs 1200 per acre and then they transplant paddy nursery after puddling of field. They said that if they don't burn it then this left over will float over the flooded field prepared for transplanting paddy nursery and the left over will hit the delicate paddy nursery when windy air will blow and causes damage to the crop. Also they said that without burning more operations of field ploughing are required and every operation costs Rs 1,000 to Rs 1200 which is not affordable by majority farmers.

What do the farmers do if they don't set their fields on fire after making fodder?

Farmers who do not burn the leftover of the roots after making fodder said that they plough the field once or twice after fodder making. And during paddy sowing in June, they transplant paddy nursery after three days of puddling of the field because in those three days, the leftover roots of wheat get settled in the soil and when nursery is transplanted, it neither float nor hit nursery. Farmer Satnam Singh, who doesn't burn his fields, said that those who burn upper part of the roots face problem at the time of paddy sowing because the remains of the roots come out during puddling and they start floating because of their light weight on the flooded fields of paddy. To save nursery, farmers are required to clear those by engaging labour which is both time consuming and costly.

Source: The Indian Express

2. Why Punjab's DSR push matters, how much groundwater will it save

Relevant for GS Prelims & Mains Paper III; Environment

The Punjab government recently announced Rs 1,500 incentive per acre for farmers opting for Direct Seeding of Rice (DSR), which is known for saving water. Last year, 18% (5.62 lakh hectares) of the total rice area in the state was under DSR against government target of bringing 10 lakh hectares under it. If this year Punjab manages to overwhelmingly adopt the DSR technique, then how much water will it help save? ANJU AGNIHOTRI CHABA explains:

How much area in Punjab is under rice crop?

According to Punjab Agriculture Department data for last Kharif season (2021-22), 31.45 lakh hectares (over 3.1 million hectares) was under paddy and basmati, including 26.60 under non-basmati rice and 4.85 lakh hectares under basmati. The figure was 31.49 lakh hectares in 2020-21 and 31.42 lakh hectares in 2019-20.

How much water is required to grow one kg rice?

Paddy is non-shelled rice that farmers grow and sell in mandis and then after milling paddy rice is prepared. According to the studies by Punjab Agriculture university (PAU), Ludhiana, around 3,600 litres to 4,125 litres of water is required to grow one kg rice depending upon the paddy variety. Long duration varieties consume more water. In Punjab, 32% area is under the long duration (around 158 days) paddy varieties, and the rest comes under paddy varieties that take 120 to 140 days to grow. So, on an average 3,900 to 4,000 litres water is required to grow one kg rice in the state.

How much water is used in Punjab every year to grow rice?

In 2020-21, Centre procured 203 lakh tonnes of paddy from Punjab. After milling, this procured paddy resulted in 135.98 lakh tonnes of rice. Since PAU studies put average water required to produce one kg rice at

4,000 litres, so in one year – based on last year's estimate – Punjab needed 5,400 billion litres of water to produce 135 lakh tonnes rice.

How much water can DSR help save?

According to an analysis by the PAU, DSR technique can help save 15% to 20% water. In some cases, water saving can reach 22% to 23%. With DSR, 15-18 irrigation rounds are required against 25 to 27 irrigation rounds in traditional method.

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Since area under rice in Punjab is almost stagnant around 3 million hectares for the last three to four years, DSR can save 810 to 1,080 billion litres water every year if entire rice crop is brought under the technique, said experts.

Are there any other benefits of DSR tech?

According to experts, DSR can solve labour shortage problem because as like the traditional method it does not require a paddy nursery and transplantation of 30 days old paddy nursery into the main puddled field. With DSR, paddy seeds are sown directly with machine.

PAU experts said that DSR offers avenues for ground water recharge as it prevent the development of hard crust just beneath the plough layer due to puddled transplanting and it matures 7-10 days earlier than puddle transplanted crop, therefore giving more time for management of paddy straw.

A PAU study said that results from research trials and farmers' field survey have also indicated that yield, after DSR, are one to two quintals per acre higher than puddled transplanted rice.

Experts said that with DSR technique, which is called 'tar-wattar DSR' (good soil moisture), farmers must sow paddy only after pre-sowing (rauni) irrigation and not in dry fields. Further, the field should be laser levelled. They said that spraying of herbicide must be done simultaneously along with sowing, and the first irrigation, which is done at 21 days after sowing.

Any word of caution about using DSR?

Experts said that suitability of soil is the most important factor as farmers must not sow it in the light textured soil as this technique is suitable for medium to heavy textured soils including sandy loam, loam, clay loam, and silt loam which accounts for around 80% area of the state. It should not be cultivated in sandy and loamy sand as these soils suffer from severe iron deficiency, and there is higher weed problem in it. Also, avoid direct seeding of rice in fields which are under crops others than rice (like cotton, maize, sugarcane) in previous years as DSR in these soils is likely to suffer more from iron deficiency and weed problems.

When should farmers sow paddy using DSR?

Though government has said that farmers can sow paddy with DSR after May 20, but PAU experts say that DSR varieties must not be sown before May 25 or yield will get impacted. According to them, June 1-15 is best time to sow DSR-friendly paddy varieties and second fortnight of June is optimum time for direct sowing of basmati.

Experts said that under agricultural extension services, farmers must train extensively at every stage from pre-sowing to harvesting so that they can develop confidence to adopt DSR without any hesitation.

Source: The Indian Express

3. Punjab promoting green manure big time: what are the benefits, productivity

Relevant for GS Prelims & Mains Paper III; Environment

The state agriculture department is promoting the cultivation of green manure these days as Punjab Agro is providing subsidy on the seed at the rate of Rs 2,000 per quintal, which costs Rs 6,300 per quintal without subsidy. The farmers can avail its seed from the block level offices of the agriculture department as limited stock is available with the department and farmers can avail it on first-cum-first-served basis. What are the benefits of green manure for farmers, the soil and crop productivity, ANJU AGNIHOTRI CHABA explains. Excerpts:

What is green manure?

Green manures are crops grown specifically for maintaining soil fertility and structure. They are normally incorporated back into the soil, either directly, or after removal and composting. There are three main varieties of green manure, including Dhaincha, Cowpea, Sunhemp. Also some crops such as summer moong, mash pulses and guar act as green manure. Around 11,000 quintals of subsidised seed, which is provided by Punjab Agro, is available with the department. Green manure varieties are incorporated into the soil when the crop is 42-56 days old. Pulses crops are incorporated in soil after plucking of beans after 60 days. Experts said that green manure must be leguminous in nature, bear maximum nodules on its roots to fix large amount of atmospheric nitrogen in the soil. Experts have also said that seeds of green manure should be easily available to the farmers at a low price.

Why is sowing of green manure important in Punjab?

Punjab's per hectare fertiliser consumption, which is around 244 kg, is one of the highest in the country and is also higher than the national average. Growing green manure can curtail this consumption to a large extent by 25 to 30% and can save huge input cost for the farmers.

Experts said that in Punjab high-intensity agricultural practices are prevalent as farmers take two-three crops in a year, which requires lots of chemical fertilisers such as urea, diammonium phosphate (DAP) etc. And this leads to deficiencies of micronutrients like iron and zinc, especially in the soils where rice is cultivated thus affecting productivity. In such a situation, green manuring helps improve soil health and enhance the productivity of the crops.

Also, even the PH level of the soil in several parts of the state is more than 8.5 and 9 per cent and green manure is beneficial to maintain it at the required level which is 7 per cent.

What is its sowing time?

These can be sown immediately after harvesting the wheat crop. In Punjab, it can be sown from April 15 to the first week of May. Experts said that after wheat harvesting apply rauni irrigation and then pre-soaked seed in water for 8 hours of dhaincha are sown. Around 20 kg dhaincha seed is required per acre. The fields are vacant in the state for 45 to 60 days after wheat harvesting and that is the best period to sow it because these varieties of green manure can be buried in soil when they are 42-56 days old.

For instance, if the farmers go for paddy sowing, which starts from June 10 and continues till early July, then green manure can be incorporated into the soil at the time of puddling, which is needed for transplanting paddy nursery in the field. "Burying 42 to 56 days old dhaincha/cowpea/sunhemp one day before planting paddy will help save 25 kg nitrogen (55 kg urea) per acre. Similarly, burying the residues of summer moong grown as green manure crop after plucking the beans one day before transplanting rice will help save one-third of nitrogen (35 kg urea) per acre. Dhaincha should be preferred in kallar and recently reclaimed soils. In Basmati there is no need to apply nitrogen if 45-55 days old dhaincha or sunhemp or residues of summer mung has been buried in soil just one day before transplanting. To get higher yield of maize, bury 50 days old green manure crop 10 days before sowing maize along with recommended (50 kg nitrogen /acre)dose of nitrogen. It will also help in improving soil health considerably," said Dr RK Gupta, senior soil chemist, department of Soil Sciences at PAU.

How does it benefit the soil and crop?

Experts said that it helps in enhancing the organic matter in the soil, meets the deficiency of the micronutrients and reduces the consumption of the inorganic fertilisers etc. "It is a good alternative to the organic manure and it conserves the nutrients, adds nitrogen and stabilises the soil structure," said Dr RK Gupta, adding that it decomposes rapidly and liberates large quantities of carbon dioxide and weak acids, which act on insoluble soil minerals to release nutrients for plant growth. Also, it contains 15 to 18 quintals of dry matter, which also contains phosphorus, potassium, zinc, copper, iron and manganese, per acre and 20 to 40 kg per acre of nitrogen, Dr Gupta said.

Source: The Indian Express

4. The grim forewarnings of a global study on birds

Relevant for GS Prelims & Mains Paper III; Environment

The State of the World's Birds, an annual review of environmental resources published on May 5 by nine natural sciences and avian specialists across the globe, has revealed that the population of 48% of the 10,994 surviving species of birds is declining. The report led by the Manchester Metropolitan University gives an overview of the changes in the knowledge of avian biodiversity and the extent to which it is imperilled.

What are the key findings of the study?

The study found that 5,245 or about 48% of the existing bird species worldwide are known or suspected to be undergoing population declines. While 4,295 or 39% of the species have stable trends, about 7% or 778 species have increasing population trends. The trend of 37 species was unknown. The study draws from BirdLife International's latest assessment of all birds for the International Union for Conservation of Nature's Red List that shows 1,481 or 13.5% species are currently threatened with global extinction. These include 798 species classified as vulnerable, 460 as endangered and 223 as critically endangered while 52 species were considered to be data deficient. About 73% species are estimated to have fewer than 10,000 mature individuals, 40% have fewer than 2,500 mature individuals, and almost 5% have fewer than 50 mature individuals. The bird species are non-randomly threatened across the avian tree of life, with richness of threatened species disproportionately high among families such as parrots, pheasants and allies, albatrosses and allies, rails, cranes, cracids, grebes, megapodes, and pigeons. The more threatened bird species (86.4%) are found in tropical than in temperate latitudes (31.7%), with hotspots for threatened species concentrated in the tropical Andes, southeast Brazil, eastern Himalayas, eastern Madagascar, and Southeast Asian islands.

What is the importance of birds to ecosystems and culture?

Birds are a truly global taxon, with one or more species occupying all habitats across the earth's terrestrial surface including urban environments with no natural analogues. Birds contribute toward many ecosystem services that either directly or indirectly benefit humanity. These include provisioning, regulating, cultural, and supporting services. The functional role of birds within ecosystems as pollinators, seed-dispersers, ecosystem engineers, scavengers and predators not only facilitate accrual and maintenance of biodiversity but also support human endeavours such as sustainable agriculture via pest control besides aiding other animals to multiply. For instance, coral reef fish productivity has been shown to increase as seabird colonies recovered following rat eradication in the Chagos archipelago. Wild birds and products derived from them are also economically important as food (meat, eggs). Approximately 45% of all extant bird species are used in some way by people, primarily as pets (37%) and for food (14%). The cultural role of birds is perhaps more important than any other taxonomic group, the study says. Beyond its symbolic and artistic values, birdwatching is a global pastime practised by millions of people. Garden bird-feeding is valued at \$5-6 billion per year and growing by four per cent annually.

What are the threats contributing to avian biodiversity loss?

The study lists eight factors, topped by land cover and land-use change. The continued growth of human populations and of per capita rates of consumption lead directly to conversion and degradation of primary natural habitats and consequent loss of biodiversity, it says. Although global tree cover increased between

1982 and 2016, including by 95,000 sq. km in the tropical dry forest biome and by 84,000 sq. km in the tropical moist deciduous forest biome, this has been driven by afforestation with plantations (often of non-native species) plus land abandonment in parts of the global North, with net loss in the tropics. The other factors are habitat fragmentation and degradation, especially in the tropics; hunting and trapping with 11 to 36 million birds estimated to be killed or taken illegally in the Mediterranean region alone; the impact of invasive alien species and disease (971 alien bird species introduced accidentally or deliberately to 230 countries over the centuries have affected the native species); infrastructure, energy demands and pollution; agrochemical and pharmaceutical usage (pesticide ingestion kills an estimated 2.7 million birds annually in Canada alone); global trade teleconnections; and climate change.

Can the avian biodiversity loss be stemmed?

Yes. The study says ornithologists have a good understanding of the spatio-temporal patterns of avian diversity compared to many other taxa and the measures needed to slow down and ultimately reverse avian biodiversity loss. "The growing footprint of the human population represents the ultimate driver of most threats to avian biodiversity, so the success of solutions will depend on the degree to which they account for the social context in which they are implemented, and our ability to effect changes in individual and societal attitudes and behaviours. Emerging concepts of conservation social science can inform efforts to address biodiversity loss and to achieve more effective and sustainable conservation outcomes, linking birds to human well-being, sustainability, climate resilience, and environmental justice," it says.

Source: The Hindu

5. Shallow and deep ecologism

Relevant for GS Prelims & Mains Paper III; Environment

Heat waves are known to have been a reality for hundreds of years. But the long-term effects of climate change have exacerbated them, making the waves more extreme, frequent and prolonged. As India continues to grapple with the unrelenting waves, it becomes pertinent to unpack two strands of environmental philosophy that reinvent the relationship between nature and humans — shallow and deep ecologism.

Two styles of ecologism

The concepts emerged in the 1970s, when Norwegian philosopher Arne Næss sought to look beyond the popular pollution and conservation movements of his milieu to address environmental degradation. In his study of ecological concerns, Næss is more preoccupied with the role of the individual in nature. He believes that owing to increased anthropocentrism, humans have cut themselves off from nature, viewing nature and themselves as competing entities and establishing a master-slave dynamic.

By placing humans at the heart of the environmental crisis, Næss outlines the difference between the two styles of ecologism. He terms the powerful and fashionable fight against pollution and resource depletion as shallow ecologism or environmentalism. Exponents of this philosophy believe in continuing our present lifestyle, but with specific tweaks aimed at minimising the damage to the environment. Also referred to as weak ecologism, it may include the use of vehicles that cause less pollution or air conditioners that do not release chlorofluorocarbons (CFCs). This branch of ecologism primarily serves to maintain the lifestyle of those dwelling in developed countries.

On the other hand, deep ecologism believes that humans should radically change their relationship with nature. Its proponents reject shallow ecologism for prioritising humans above other forms of life, and subsequently preserving the environmentally destructive way of life in modern societies. Deep ecologism maintains that by sustaining this lifestyle, shallow ecologism further widens the inequalities between countries. For instance, despite constituting only five per cent of the world's population, the U.S. accounts for 17% of the world's energy consumption and is the second largest consumer of electricity after China.

Similarly, while low and middle-income countries have recorded lower cumulative and per capita carbon dioxide emissions over the past two centuries, it is the wealthier countries which are most responsible for a majority of carbon emissions.

Objectives of deep ecology

Deep ecology aspires to sustain nature by making large-scale changes to our lifestyle. These may include limiting the commercial farming of meat to preserve forest areas and reduce the artificial fattening of animals, or the reshaping of transport systems which involve the use of internal combustion engines.

However, besides advocating these lifestyle changes, deep ecology shifts the attention from pollution and conservation narratives to robust policy formulation and implementation. According to Næss, policy-making must be aided by the reorientation of technical skills and inventions in new directions that are ecologically responsible. In fact, Næss recommends that ecologists reject work that is supervised by authorities with limited ecological perspectives. As irreplaceable informants, ecologists should not submit to power which does not recognise critical ecological priorities.

Additionally, to recognise the complex richness of different lifeforms, deep ecology calls for a re-evaluation of the 'survival of the fittest' doctrine. Survival of the fittest should be understood through the human ability to cooperate and coexist with nature, as opposed to exploiting or dominating it. Deep ecology thus prioritises a 'live and let live' attitude over an 'either you or me' approach.

The political potential of ecology

Both strands of ecology draw from different frameworks, including socialism, anarchism, feminism, conservatism and sometimes even fascism. Deep ecology in particular borrows from socialism. In his writings on deep ecology, Næss argues that a narrow focus on pollution and conservation movements is counterproductive. He believes that when projects are only implemented to solve pollution, it generates evils of a different kind. For instance, the installation of pollution control devices may increase the cost of living, leading to an increase in class difference. An ethically responsible ecology is one which operates in the interest of all economic classes.

The environment may also become more vulnerable when decisions are strongly influenced by majority rule, without taking local interests into consideration. According to Næss, a solution to this can be found in decentralising the decision-making process and strengthening local autonomy. Næss claims that a chain consisting of a local board, a municipal council, a state-wide institution, a national government institution, a coalition of nations, and a global institution can be reduced to one made up of a local board, a nation-wide institution, and a global institution. A lengthy decision-making chain is unfavourable as it is prone to excluding local interests.

In all, Næss cautions humans against adopting a 'vague, global' approach to the environmental crisis.

A holistic perspective to the crisis is one which acknowledges regional differences and the disparities between under and over-developed nations.

Næss stresses that the political potential of the movement be realised, and that those in positions of power be held accountable. The responsibility of solving the climate crisis falls on policy-makers as much as it does on scientists and ecologists.

Source: The Hindu

6. India topped air pollution death toll in 2019, says report

Relevant for GS Prelims & Mains Paper III; Environment

Air pollution was responsible for 16.7 lakh deaths in India in 2019, or 17.8% of all deaths in the country that year. This is the largest number of air-pollution-related deaths of any country, according to a recent report on pollution and health published in The Lancet Planetary Health.

Globally, air pollution alone contributes to 66.7 lakh deaths, according to the report, which updates a previous analysis from 2015. Overall, pollution was responsible for an estimated 90 lakh deaths in 2019 (equivalent to one in six deaths worldwide), a number that has remained unchanged since the 2015 analysis. Ambient air pollution was responsible for 45 lakh deaths, and hazardous chemical pollutants for 17 lakh, with 9 lakh deaths attributable to lead pollution.

Pollution in India

The majority of the 16.7 lakh air pollution-related deaths in India – 9.8 lakh — were caused by PM2.5 pollution, and another 6.1 lakh by household air pollution. Although the number of deaths from pollution sources associated with extreme poverty (such as indoor air pollution and water pollution) has decreased, these reductions are offset by increased deaths attributable to industrial pollution (such as ambient air pollution and chemical pollution), the report noted.

“The World Health Organization (WHO) has substantially tightened its health-based global air quality guidelines, lowering the guideline value for PM2.5 from 10 micrograms per cubic metre to 5. This means that there is hardly any place in India which follows the WHO norms,” Dr Sundeep Salvi, Chair for Chronic Respiratory Diseases of the Global Burden of Diseases study (GBD-19), told The Indian Express. He was not associated with the latest report in The Lancet Planetary Health.

According to the report, air pollution is most severe in the Indo-Gangetic Plain. This area contains New Delhi and many of the most polluted cities. Burning of biomass in households was the single largest cause of air pollution deaths in India, followed by coal combustion and crop burning.

The number of deaths remains high despite India’s considerable efforts against household air pollution, including through the Pradhan Mantri Ujjwala Yojana programme. India has developed a National Clean Air Programme, and in 2019 launched a Commission for Air Quality Management in the National Capital Region. However, India does not have a strong centralised administrative system to drive its air pollution control efforts and consequently improvements in overall air quality have been limited and uneven, the report has said.

Professor Kalpana Balakrishnan, Dean (Research), Sri Ramachandra Institute of Higher Education and Research (Deemed to be University), Chennai, and one of the authors of the report, stressed the need for a radical shift in the approach to pollution management efforts.

“In India, we need integrated surveillance platforms for health and exposure surveillance. Population exposure surveillance via biological and environmental monitoring can inform risk attributions within health programmes already in place to reduce the burden of maternal and child health as well as non-communicable diseases. Impacts from lead as shown in the report, that impacts children’s IQ, really drive home the point of irreversible long-term damage for multiple generations. Without surveillance at scale it is impossible to know what worked and what didn’t,” she told The Indian Express.

Lead pollution

Dr Salvi too cited the implications of lead pollution. “An estimated 9 lakh people die every year globally due to lead pollution and this number is likely to be an underestimate. Earlier the source of lead pollution was from leaded petrol which was replaced with unleaded petrol. However the other sources of lead exposure include unsound recycling of lead-acid batteries and e-waste without pollution controls, spices that are contaminated with lead, pottery glazed with lead salts and lead in paint and other consumer products,” he said.

“Globally more than 80 crore children (India alone contributes to 27.5 crore children) are estimated to have blood lead concentrations that exceed 5 µg/dL — which was, until 2021, the concentration for intervention established by the US Centers for Disease Control and Prevention. This concentration has now been reduced to 3.5 µg/dL,” he said.

Source: The Indian Express

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7. India's vulnerability to drought

Relevant for GS Prelims & Mains Paper III; Environment

A United Nations report has revealed that many parts of India fall under the list of regions that are vulnerable to drought globally. The report also stated that India's Gross Domestic Product (GDP) reduced by 2 to 5% between 1998 and 2017 due to severe droughts in the country. Globally, droughts in the same period caused economic losses of approximately \$124 billion.

These and other global findings centred on drought were collated in the Drought in Numbers, 2022 report presented by the United Nations Convention to Combat Desertification (UNCCD).

What is the Drought in Numbers report?

The Drought in Numbers report is a collection of data on the effects of droughts on our ecosystem and how they can be mitigated through efficient planning for the future. The report also helps inform negotiations surrounding key decisions by the UNCCD's 197 member parties at the 15th Conference of Parties (COP15), currently underway in Abidjan, Côte d'Ivoire. Drought, land restoration, and related aspects such as land rights, gender equality and youth empowerment are among the top considerations at COP15.

The number and duration of droughts around the world has increased by an alarming 29% since 2000.

UNCCD Executive Secretary Ibrahim Thiaw said that there has been “an upward trajectory in the duration of droughts and the severity of impacts, not only affecting human societies but also the ecological systems upon which the survival of all life depends, including that of our own species,”.

What is COP15?

UNCCD's COP15 focuses on desertification, land degradation, and drought, with the theme for the conference being “Land. Life. Legacy: From scarcity to prosperity.” The conference has brought together government representatives, private sector members, and civil society stakeholders to ensure that land continues to benefit present and future generations.

What does the report entail?

According to World Bank estimates, drought conditions can force up to 216 million people to migrate by 2050. Other factors at play along with drought could be water scarcity, declining crop productivity, rise in sea levels, and overpopulation.

Weather, climate and water hazards have accounted for 50% of all disasters and 45% of all reported deaths since 1970, the World Meteorological Organisation data has revealed. Nine in ten of these deaths have occurred in developing countries.

Between 2020 and 2022, 23 countries have faced drought emergencies. These are Afghanistan, Angola, Brazil, Burkina Faso, Chile, Ethiopia, Iraq, Iran, Kazakhstan, Kenya, Lesotho, Mali, Mauritania, Madagascar, Malawi, Mozambique, Niger, Somalia, South Sudan, Syria, Pakistan, the U.S., and Zambia. According to the report, climate change alone will cause 129 countries to experience an increase in drought exposure in the next few decades.

More than a billion people around the world were affected by drought in 2000-19, making it the second-worst disaster after flooding. Africa was the worst hit, with 134 droughts, of which 70 occurred in East Africa. The World Health Organization has noted that globally, approximately 55 million people are directly affected by droughts annually, making it the most serious hazard to livestock and crops in almost every part of the world.

The impact of drought is, however, not uniform across genders. Research shows that women and girls in emerging and developing countries suffer more in terms of education levels, nutrition, health, sanitation, and safety as a result of droughts.

The burden of water collection also disproportionately falls on women (72%) and girls (9%). The report notes that they may spend up to 40% of their caloric intake fetching water.

In 2022, over 2.3 billion people are facing water stress. Almost 160 million children are exposed to severe and prolonged droughts.

What are the environmental aspects?

According to the report, if predictions are correct and global warming reaches 3°C by 2100, drought losses could be five times higher than today's levels. The largest increase in drought losses is projected in the Mediterranean and the Atlantic regions of Europe.

Australia's megadrought in 2019-2020 contributed to "megafires" resulting in one of the most extensive losses of habitat for threatened species. About three billion animals were killed or displaced in the Australian wildfires. On a related note, 84% of all terrestrial ecosystems are threatened by changing and intensifying wildfires.

According to a 2017 report by the Food and Agriculture Organisation, the percentage of plants affected by drought has more than doubled in the last 40 years. Around 12 million hectares of land are lost each year due to drought and desertification.

Source: The Hindu

8. What Lancet Commission says about the impact of pollution on India's GDP

Relevant for GS Prelims & Mains Paper III; Environment

A latest Lancet Commission on Pollution and Health says that increases in deaths due to modern forms of pollution were particularly evident in south Asia, east Asia and southeast Asia. The factors responsible for this include rising ambient air pollution, rising chemical pollution, ageing populations and increased numbers of people exposed to pollution.

Significantly, India remains one of the worst affected countries when it comes to air pollution.

The report also estimated the present value of future output lost when a person dies prematurely due to pollution in six regions, including India, China, Ethiopia, Nigeria, the US and EU15. It said that in the year 2000, India lost output equivalent to 3.2 per cent of its GDP as a result of pollution.

Further, the study notes that economic losses due to modern forms of pollution have increased as a proportion of GDP between 2000 and 2019 in India, China, and Nigeria, and are now conservatively estimated to amount to approximately 1 per cent of GDP in each of these countries.

Overall, as a result of pollution, 9 million people die prematurely per year, which corresponds to one in six deaths worldwide. In fact, air pollution remains responsible for causing most deaths in the world, causing about 6.7 million deaths in 2019. Water pollution was responsible for about 1.4 million deaths. Even so, there has been some reduction in the deaths attributable to the types of pollution associated with extreme poverty.

Pollution and its cost

The global cost of fossil fuel air pollution is estimated to be about US \$8 billion per day.

Greenpeace, in its World Air Quality Report 2021, which was released in March, noted New Delhi as the most polluted capital in the world, in terms of PM 2.5. PM 2.5, one of the principal pollutants in Northern Indian cities including Delhi, is estimated to cause over 3,000,000 premature deaths.

These deaths lead to the loss of 62,700,000 years of life, 2,700,000 emergency room visits due to asthma, 2,000,000 preterm births and 1,755,200,000 work absences. Of these over 2 million preterm births, over 350,000 are in China and 981,000 in India.

The report mentions that in 2021, Central and South Asia had some of the world's worst air quality and were home to 46 of the world's 50 most polluted cities. Further, according to the United Nations Environment Programme, 70 per cent of global air quality related deaths occur in this region.

In fact, except in Afghanistan, Bangladesh and Sri Lanka, PM2.5 concentrations increased in Central and South Asian countries in 2021, which negated the quarantine-related improvements in the air quality. The global response to the Covid-19 pandemic in the form of stringent lockdowns had led to a dip in greenhouse gases (GHG) emissions and air pollution.

Air pollution in India

About India, the Lancet report says that in 93 per cent of India, the amount of pollution remains well above the WHO guidelines. It says that in 2019, India had the largest estimated number of pollution-related deaths, even though some effort has been made to deal with it through the Pradhan Mantri Ujjwala Yojana programme.

The scheme was launched by the Narendra Modi Government in 2016 and is aimed at making LPG connections available to rural households.

A 2019 study published by the Collaborative Clean Air Policy Centre noted that the single greatest contributor to air pollution in India was the burning of solid fuels in households.

According to the first independent impact assessment of the government's flagship scheme released in March 2022, greater penetration and usage of LPG as a cooking fuel is estimated to have prevented at least 1.5 lakh pollution-related premature deaths in the year 2019.

Source: The Indian Express

9. How scientists plan to use plants to remove toxic metals from soil

Relevant for GS Prelims & Mains Paper III; Environment

Soil contamination can happen due to a variety of reasons, including manufacturing, mineral extraction, accidental spills, illegal dumping, leaking underground storage tanks, pesticide and fertiliser use etc. A study published in the JNKVV research journal in 2015 concluded that heavy metal pollution of soil is "emerging at a speedy rate" in India due to industrialisation.

These toxic heavy metals are then absorbed by food crops and other plants before they eventually make their way into our food chain, directly affecting human life along with ecology. Many technologies have emerged to remediate this soil pollution but according to a paper published in the journal Agriculture, these methods have been “deemed lacking in terms of sustainability as they come with a large cost and have adverse effects themselves.”

Turning toward more sustainable and eco-friendly technologies, scientists have developed methods of “Phytoremediation”, a remediation method that uses living organisms like plants, microalgae, and seaweeds. One particular way to remove toxic heavy metals from the soil includes the use of “hyperaccumulator” plants that absorb these substances from the soil.

A paper published in the MDPI Agriculture journal titled, “Utilizing Mediterranean Plants to Remove Contaminants from the Soil Environment: A Short Review”, studies the development of this method of remediation.

What are hyperaccumulator plants?

Phytoremediation refers to the usage of “hyperaccumulator” plants to absorb the toxic materials present in the soil and accumulate in their living tissue. Even though most plants do sometimes accumulate toxic substances, hyperaccumulators have the unusual ability to absorb hundreds or thousands of times greater amounts of these substances than is normal for most plants.

Most discovered hyperaccumulator plants typically accumulate nickel and occur on soils that are rich in nickel, cobalt and in some cases, manganese. These hyperaccumulator species have been discovered in many parts of the world including the Mediterranean region (mainly plants of the genus *Alyssum*), tropical outcrops in Brazil, Cuba, New Caledonia (French territory) and Southeast Asia (mainly plants of the genus *Phyllanthus*).

How can phytoremediation with hyperaccumulators be used to remove toxic metals from the soil?

Suitable plant species can be used to ‘pick up’ the pollutants from the soil through their roots and transport them to their stem, leaves and other parts. After this, these plants can be harvested and either disposed or even used to extract these toxic metals from the plant.

This process can be used to remove metals like silver, cadmium, cobalt, chromium, copper, mercury, manganese, molybdenum, nickel, lead and zinc; metalloids such as arsenic and selenium; some radionuclides; and non-metallic components such as boron. But it cannot be used to remove organic pollutants from the ground due to metabolic breakdown.

What are the advantages of phytoremediation with hyperaccumulators?

One of the primary advantages of phytoremediation is the fact that it is quite cost-effective in comparison with other remediation methods. The only major costs attached are related to crop management (planting, weed control, watering, fertilisation, pruning, fencing, harvesting etc.). This method is also relatively simple and doesn’t require any new kinds of specialised technology. Also, no external energy source is required since the plants grow with the help of sunlight.

Another important advantage of this method is that it enriches the soil with organic substances and microorganisms which can protect its chemical and biological qualities. Also, while the plants are growing and accumulating toxic heavy metals, they protect the soil from erosion due to wind and water.

What are the disadvantages of phytoremediation with hyperaccumulators?

For all its advantages, this kind of phytoremediation with hyperaccumulators has a big drawback: it is a very slow and time-consuming process. The restoration of an area with this process can take up to 10 years or more. This means that the area in question cannot be used for any other purposes for up to ten years,

including growing other crops and allowing animals to graze it. This comes with a large economic cost, proportional to the size of the area under rehabilitation.

But it also comes with another major drawback. The plants to conduct this rehabilitation must be carefully selected based on a large number of characteristics or they could act as an invasive species, growing out of control and upsetting the delicate ecological balance of not just the area under rehabilitation, but also the entire region it is part of.

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Due to this reason, scientists only propose using species that are native to the region where the phytoremediation project is undertaken. This also has other benefits: these plants will already be acclimatised to the region and there will be no legal problems concerning the procurement, transport and use of seeds.

Source: The Indian Express

10. How SRI method of sowing paddy saves 15-20% water, gives better yield

Relevant for GS Prelims & Mains Paper III; Environment

The Punjab government is promoting Direct Seeding of Rice (DSR) technique of paddy, which saves water and labour cost against the conventional puddling method and farmers can also have one more option of rice sowing, but the old method is not popular and well researched in the state. When the state is not ready to shun paddy sowing, any technique that claims to save groundwater must be researched and promoted in the state. Experts said that this method is beneficial for the soil, environment and farmers. What is this technique, how it is different from puddled transplanting and what are its benefits? The Indian Express explains.

What is this water and environment saving technique?

System of Rice Intensification (SRI) was first developed in Madagascar in the 1980s and since then several countries in the world have been practising it, including India. It promises to save 15 to 20% ground water, improves rice productivity, which is almost at a stagnant point now. Experts said that it gives equal or more produce than the conventional rice cultivation, with less water, less seed and less chemicals. The net effect is a substantial reduction in the investments on external inputs.

How does it take place in the field and in which soil?

First, the field is prepared by ploughing. It should be laser levelled before transplanting for proper water management and efficiency for a good crop stand. Then irrigation is applied in the field which is not a flooding of field like traditional methods but less than that of a well irrigated field. Then 10-12 days old nursery (young paddy plants) along with soil particles around the root with minimum disturbance to the roots are transplanted in lines, which are marked at a distance of 10 inches from each other with the help of a rope meter. The purpose of making lines is to provide a favourable environment for growth and development of rice plants through such spacing. Seedlings or nurseries should be located adjacent to the main field to avoid a time lag between uprooting and planting, which should not be more than 30-40 minutes so that the roots do not dry out.

Experts said that unlike DSR, which is suitable only for mid to heavy textured soils, SRI is suitable in all types of soil including less fertile soil as in such soil the number of seedlings can be increased to double.

Under SRI 2kg seed is required to grow a nursery for one acre against 5kg seed required in the traditional method.

Does the SRI method require continuous flooding after transplantation of nursery?

In traditional sowing from the day of transplanting till the crop turns 35-40 days fields are kept under flood-like conditions. And then fields are filled every week till a few weeks before harvesting. "But SRI doesn't require continuous flooding, it needs intermittent irrigation. Indeed the plants' roots should not be starved for oxygen through flooding. Irrigation is given to maintain soil moisture near saturation initially, and water is added to the field when the surface soil develops hairline cracks. Irrigation intervals will vary according to field conditions. During our experiments in the fields of Gurdaspur district wherein Pusa 1121 was planted, we measured through water meters that 50 lakh litres ground water was used against the 62 lakh litres groundwater used for the same variety in puddled method field," said Dr Amrik Singh, Agriculture Development Officer, Pathankot, who is an expert on SRI method and under whose supervision several demonstration plots were sown with this method in the villages of Gurdaspur over a decade back.

Why does SRI matter in the state?

Any rice sowing method which saves ground water is important for Punjab where 116 of 138 agricultural blocks of the state are under dark zone or semi-dark zone because of overexploitation of groundwater. "Besides, this system increases productivity because of its sowing method more tillers shoots up from a single seedling as 30 to 50 tillers could be seen against 15 to 20 tillers in traditional method," said Dr Amrik, adding that it also maintains soil health, lowers input costs by 10-20% as it requires 25% less urea and its root system is quite strong due to young plants' transplantation which prevents lodging from rain or wind. Also small and marginal farmers can increase their income by spending less and getting more yield. This matures in 5-15 days less time. In Punjab, huge amounts of chemicals are used and this prevents the usage of weedicides which keeps the soil in good health.

How are weeds controlled in SRI?

Unlike DSR when weeds are major problem and weedicides are sprayed simultaneously at the time of sowing, in SRI, which permits greater weed growth because of alternate wetting and drying of fields, the weeds are incorporated into the soil by operating a cono-weeder between rows, which are made at the time of sowing, which adds nutrients to the crop like green manures. First weeding is to be done 10-12 days after planting. Further weedings may be undertaken, depending on the necessity, at 10-15 days intervals, until the crop reaches panicle stage. Each weeding enhances yield through a process of soil aeration. For smoother and easier operation of cono-weeder, it is advisable to coincide the weeding with irrigation.

What are the comparative results of traditional and SRI methods?

Experts said that because of planting in rows and keeping proper spacing, it gives more yield. Dr Amrik Singh said that a large number of demonstrations on SRI have been organised by the Gurdaspur Agriculture department over a decade ago and the results reported clearly indicated the superiority of SRI practices over the traditional method. "SRI plots witnessed around 22.34% more rice yield of Basmati PUSA 1121 as compared to other methods of rice cultivation. There is a great potential of increasing yield under SRI," said he, adding that even net total return is higher per acre with SRI as trials conducted in the field of farmers at Kothe and Khokhar villages said that Rs 21,000 to Rs 40,000 more net return was received against the conventional DSR and mechanical methods.

What are the limitations of SRI?

If unchecked, greater weed growth will cause substantial loss of yield. In Punjab, it is not promoted by the government except demonstration plots sown over a decade ago. Experts said that it can be sustainable if organic inputs in the soil structure are maintained. Also more research is required by the scientists at Punjab Agriculture University (PAU), Ludhiana, along with farmers by conducting trials on small lands in the beginning and proper study records need to be maintained. "In Telangana, a sizeable area was brought under SRI to conduct a study and the results are quite encouraging in terms of water saving, less input cost and improved plant growth, said Devinder Sharma, agriculture and food expert, adding that to save water, Punjab's farmers must have options available with them after proper studies.

Source: The Indian Express

11. New Arunachal monkey named after mountain pass

Relevant for GS Prelims; Environment

A new species of old world monkey recorded from Arunachal Pradesh has been named after a strategic mountain pass at 13,700 ft above sea level.

Sela macaque

Sela macaque (*Macaca selai*), the new-to-science primate was identified and analysed by a team of experts from the Zoological Survey of India (ZSI) and the University of Calcutta. Their study has been published in the latest edition of *Molecular Phylogenetics and Evolution*. Phylogenetics relate to the evolutionary development and diversification of a species or group of organisms.

The phylogenetic analysis revealed that the Sela macaque was geographically separated from the Arunachal macaque (*Macaca munzala*) of Tawang district by Sela. This mountain pass acted as a barrier by restricting the migration of individuals of these two species for approximately two million years, the study said.

Sela is situated between Dirang and Tawang towns in western Arunachal Pradesh.

“We found the new macaque species in western and central Arunachal Pradesh while exploring the Arunachal macaque’s wild population for genetic insights. It was found to be genetically different from the other species of monkeys reported from this region,” ZSI’s Mukesh Thakur, one of the authors of the study said.

Major cause for crop loss

The study describes the Sela macaque as genetically closer to the Arunachal macaque. The two have some similar physical characteristics such as heavy-build shape and long dorsal body hair.

The zoologists identified some distinct morphological traits to differentiate the two species. While the Sela macaque has a pale face and brown coat, the Arunachal macaque has a dark face and dark brown coat.

“According to the villagers, the Sela macaque is a major cause of crop loss in the West Kameng district of the State,” Mr. Thakur said.

The study says the Sela macaque has a tail longer than the Tibetan macaque, Assamese macaque, Arunachal macaque and the white-cheeked macaque but shorter than the bonnet macaque and toque macaque. Sela macaque belongs to the sinica species-group of *Macaca*, but it differs from all other members of this group through attributes such as brown collar hair and muzzle, and the absence of chin whiskers, the study says.

Source: The Hindu

Science and Technology

1. Why are electric vehicles catching fire?

Relevant for GS Prelims & Mains Paper III; Science & Technology

The Union Government has constituted an expert panel to probe the recent series of battery explosions in electric vehicles (EVs). Manufacturers like Okinawa and Pure EV have recalled some batches of electric scooters following fire incidents involving the vehicles. Last Wednesday, an 80-year-old man died at his home in Telangana’s Nizamabad district after the battery of an electric scooter exploded while being charged. After

the enquiry, the Ministry of Road Transport intends to issue guidelines for EVs, including tests for compliance with safety norms.

Why is the world poised to transition to electric vehicles?

The growing concern over climate change has led to global efforts to electrify the transportation sector. In parallel, cost of Li-ion (Lithium-ion) battery technology has decreased by a staggering order of magnitude in the last decade. The convergence of these two factors has resulted in a unique time in our history where we are at the cusp of a dramatic transition in the transportation sector, with electric vehicles poised to replace petrol vehicles.

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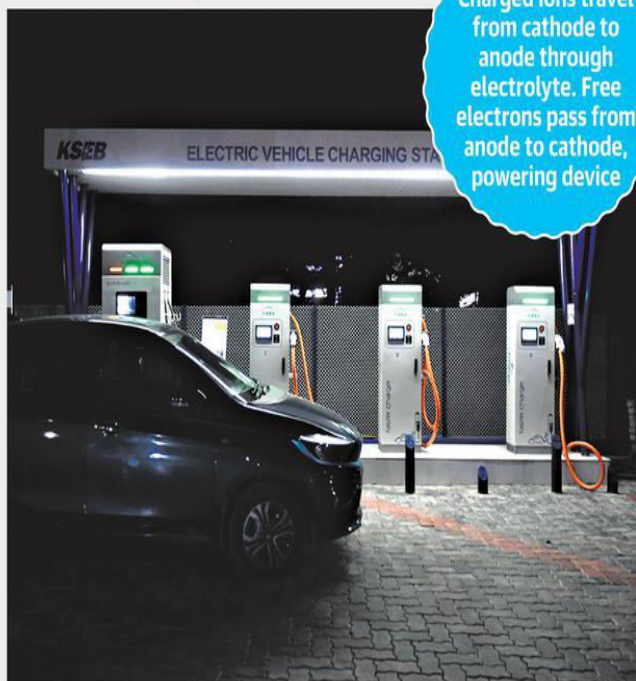
The world has taken note of this moment with governments providing incentives to usher in the transition and private industry ramping up plans for capturing the market. There is a worldwide race emerging, with vehicle companies, battery manufacturers, and material suppliers vying with each other for market share. However, Li-ion batteries are complex devices requiring a level of sophistication that can take years to perfect. Hurrying the development of this complex technology without careful safeguards can lead to increasing safety incidents, as evidenced recently on Indian roads.

What goes into a Li-ion battery?

Every Li-ion battery consists of three active components: the anode, typically graphite; the cathode, typically based on a nickel, cobalt, and manganese-based oxide; and an electrolyte, typically a salt of lithium in an inorganic solvent. Battery manufacturing is a complex operation involving forming sheets of the anode and cathode and assembling them into a sandwich structure held apart by a thin separator.

Separators, about 15 microns in thickness — about a fifth of the thickness of the human hair — perform the critical function of preventing the anode and cathode from shorting. Accidental shorting of the electrodes is a known cause of fires in Li-ion cells. It is important that the various layers are assembled with high precision with tight tolerances maintained throughout the manufacturing process. Safety features, such as thermal switches that turn off if the battery overheats, are added as the sandwich is packaged into a battery cell.

Bits and pieces



Battery:
Charged ions travel from cathode to anode through electrolyte. Free electrons pass from anode to cathode, powering device

Lithium-ion battery (Li-ion):

The technology has reached limit of efficiency

Electrons

Anode (-)

Cathode (+)



Liquid or gel electrolyte:
Highly flammable

Ions

Sources: The Next Web, Nikkei Asia, Make Tech Easier

© GRAPHIC NEWS

■ THULASI KAKKAT

Battery cells are assembled into modules and then further assembled into packs. Li-ion batteries require tight control on the state of charge and the temperature of operation to enhance safety and increase usable life, achieved by adding multiple sensors. Packs are designed to ensure uniform temperature profile with minimal thermal variation during operation. Ensuring robust detection, coupled with battery management systems that interpret the data and change operation based on changes to the batteries state, remain critically important in enhancing battery performance.

Battery packs are integrated into the vehicle in unique formfactors depending on the design of the vehicle. The location of the battery should protect it from external penetration, ensure passenger safety while talking into consideration the overall weight distribution. Close interaction between vehicle manufacturers and battery manufacturers is essential so that the whole is greater than the sum of the parts.

There are multiple tradeoffs in this complex ecosystem: engineering higher safety often results in higher costs and lower driving range. In this competitive landscape where companies are vying for market share, a race to the bottom can compromise safety.

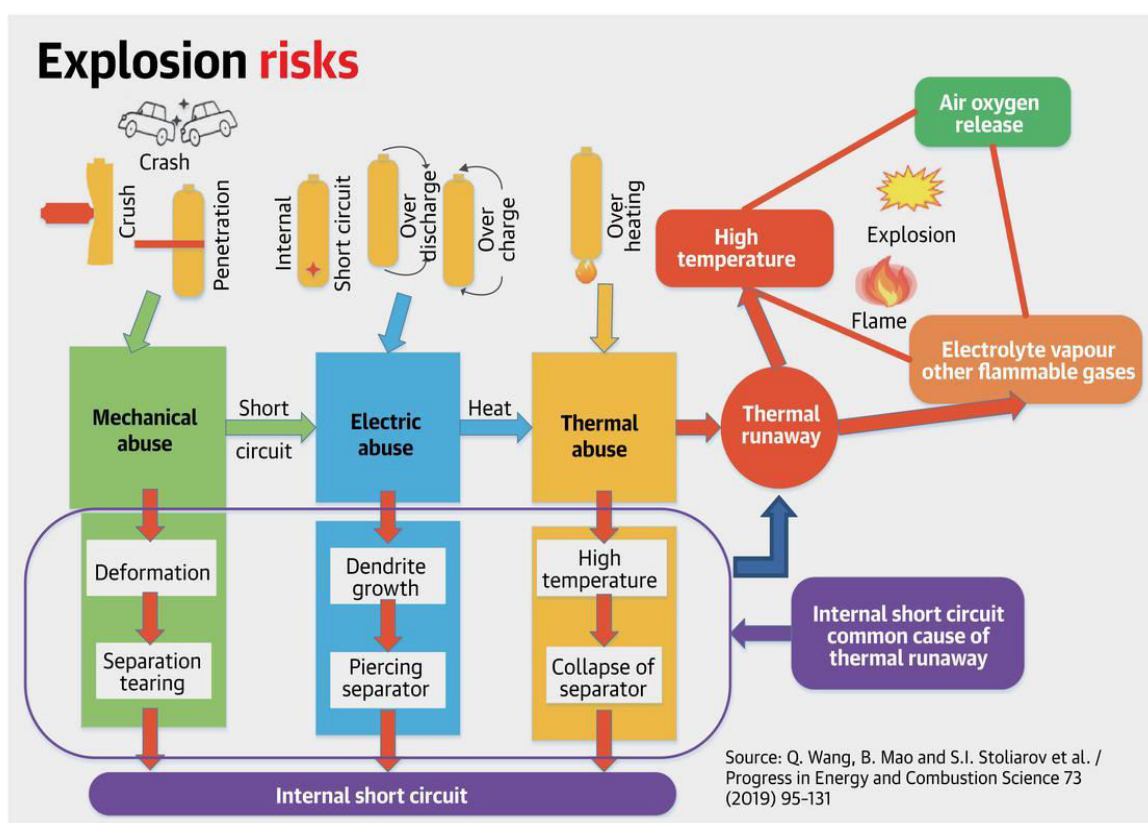
What causes battery fires?

While Li-ion batteries are complex, over the last three decades numerous companies have perfected the art of manufacturing high-quality cells and integrating them into vehicles with minimal safety concerns. The energy density of petrol is five hundred times that of a typical Li-ion battery, therefore safety should be manageable if robust controls are in place. However, batteries do store energy in a small package and if the energy is released in an uncontrolled fashion, the thermal event can be significant.

Battery fires, like other fires, occur due to the convergence of three parts of the “fire triangle”: heat, oxygen, and fuel. If an adverse event such as a short circuit occurs in the battery, the internal temperature can raise as the anode and cathode release their energy through the short. This, in turn, can lead to a series of reactions from the battery materials, especially the cathode, that release heat in an uncontrolled manner, along with oxygen.

Such events also rupture the sealed battery further exposing the components to outside air and the second part of the fire triangle, namely, oxygen. The final component of the triangle is the liquid electrolyte, which is flammable and serves as a fuel. The combination leads to catastrophic failure of the battery resulting in smoke, heat, and fire, released instantaneously and explosively.

The trigger for such events can be a result of internal shorts (like a manufacturing defect that results in sharp objects penetrating the separator), external events (an accident leading to puncture of the cell and shorting of the electrodes), overcharging the battery which leads to heat releasing reactions on the cathode (by a faulty battery management system that does not shut down charging despite the battery achieving its designed charge state), or bad thermal design at the module and pack level (by not allowing the battery internal heat to be released). Any of these triggers may cascade into a significant safety incident.(see graphic).



Are battery fires inevitable?

Over the past three decades, Li-ion batteries have proved to be extremely safe, with the industry increasing controls as safety incidents have surfaced. Safety is a must and is an important consideration that battery and vehicle manufacturers can design for at multiple levels from the choice of battery material to designs at the cell, pack, and vehicle level.

Preventing fires requires breaking the fire triangle. Battery cathodes are a leading cause of the heat release. Some cathodes, such as ones with lower nickel content or moving to iron phosphate, can increase safety. Tightly controlled manufacturing will prevent accidental shorts in the cells, eliminating a leading cause of fires. Many companies now add a ceramic layer on the separator to mechanically prevent shorts. Sensing the state of the battery and integrating this data into sophisticated battery management systems is an important aspect of design. Protecting the cell with robust thermal management is critical, especially in India where ambient temperatures are high. Finally, battery packs need to be protected from external penetration. Any large-scale manufacturing process inevitably has a certain percentage of defects; therefore, such steps are needed to minimise the number of adverse events.

Long term changes are also underway. Safety remains a concern for Li-ion manufacturers worldwide especially as cell sizes become larger for applications like solar-connected storage. Companies are developing internal “switches” that turn off parts of the battery that undergo thermal events to stop them at their inception. Research is now underway to replace the flammable liquid electrolyte with a solid electrolyte to eliminate one part of the fire triangle. A similar thread of research is the development of nonflammable liquid electrolytes. All these changes promise to remove the threat of battery fires as the roll out of mass electrification takes place.

Engineering safety requires commitment from all parts of the battery supply chain and tight integration between vehicle companies and battery companies. Further, regulators play an important role, providing the testing and certification needed to ensure that technology innovations perform at the level that is promised. Li-ion batteries are not forgiving of shoddy engineering and approaches that rely on cutting corners. Companies with tightly controlled manufacturing with years of experience can maintain the number of adverse safety incidents to a minimum. Such batteries maybe more expensive, but safety should not be “just another” metric. Rather, ensuring safety should be the priority for manufacturers.

Source: The Hindu

2. A portable device that turns seawater into drinking water, without using filters

Relevant for GS Prelims & Mains Paper III; Science & Technology



The suitcase-sized device uses electrical power to remove particles from water. MIT News/Video Grab

Massachusetts Institute of Technology (MIT) researchers have developed a portable desalination unit, weighing less than 10 kg, that can remove particles and salts to generate drinking water.

WHAT IT DOES: The suitcase-sized device requires less power to operate than a cell phone charger. It can also be driven by a small, portable solar panel, which can be purchased online for around \$50 (about Rs 3,800 at current exchange rates), MIT said in a news release. It said the device automatically generates drinking water that exceeds World Health Organization (WHO) quality standards. The device runs with the push of one button.

While other portable desalination units that require water to pass through filters, this device utilises electrical power to remove particles from drinking water. Eliminating the need for replacement filters greatly reduces the long-term maintenance requirements. This, the release said, could enable the unit to be deployed in remote and severely resource-limited areas. It could also be used to aid refugees fleeing natural disasters or by soldiers carrying out long-term military operations, it said.

The researchers have described the device in the American Chemical Society journal Environmental Science & Technology.

“We worked for years on the physics behind individual desalination processes, but pushing all those advances into a box, building a system, and demonstrating it in the ocean, that was a really meaningful and rewarding experience for me,” the release quoted senior author Jongyoon Han, a professor of electrical engineering and computer science and of biological engineering, as saying.

HOW IT WORKS: The unit relies on a technique called ion concentration polarisation, which was pioneered by Han’s group more than 10 years ago, the release said. Rather than filtering water, the process applies an electrical field that causes positively or negatively charged particles — including salt molecules, bacteria, viruses — to be repelled as they flow past. The charged particles are funnelled into a second stream of water that is eventually discharged. The process removes solids, allowing clean water to pass through the channel.

PAPER: 'Portable Seawater Desalination System for Generating Drinkable Water in Remote Locations', Junghyo Yoon et al, Environmental Science & Technology.

Source: The Indian Express

3. What are anabolic steroids and how does it impact one's health?

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Relevant for GS Prelims & Mains Paper III; Science & Technology

From two Tokyo Olympians being banned to Noida Police seizing fake drugs and supplements worth Rs 2 crore, anabolic steroids have often been in news, although not for the right reasons.

More than being a drug prescribed by doctors, anabolic steroids are usually used by bodybuilders. We take a look at what anabolic steroids are, why they are used, and how they are different from the ones prescribed by doctors.

What are anabolic steroids?

Anabolic steroids are essentially lab-made versions of the male hormone testosterone and have a similar effect of increasing muscle mass as the natural hormone does. It also increases male characteristics in a person, such as facial hair and a deeper voice.

These are, however, very different from the steroids that are prescribed by doctors for inflammations, several autoimmune diseases, or to suppress the body's immune system during a Covid-19 infection. These medicines are called corticosteroids and are lab-made molecules that mimic the action of the hormone called cortisol that controls the body's stress response, metabolism, and inflammation.

Unlike corticosteroids, anabolic steroids have limited medical use. "Anabolic steroids are mainly misused by athletes and sportspersons nowadays. Years ago, it was rampantly used by bodybuilders and was given to them in pudiyas. Although this practice is fading away, people still take it following the advice of their gym trainers. We keep telling them not to take any unknown supplement as it might have anabolic steroids," Dr Yash Gulati, an orthopaedic surgeon at Apollo hospitals, said.

What are they prescribed for?

The anabolic steroids have a very limited medical role and are mainly used by doctors to help patients gain weight after a severe illness or injury. It could also be prescribed in small doses to the elderly to build muscle mass and in some cases also helps to treat anaemia.

Doctors may also prescribe the medicine to men who have low levels of natural testosterone. "Some doctors use it for the treatment of osteoarthritis (a condition where bones wear down over time), but I personally do not. I think it should not be prescribed unless there is a deficiency," Dr Gulati added. "This is because a misuse can cause damage to the heart and kidneys, and lead to anger issues."

How are anabolic steroids misused?

The anabolic steroids are misused mainly by those who want to bulk up as it helps increase one's muscle mass. A 2019 study from Bhubaneswar of anabolic steroid users showed that only one of the 74 participants was a professional bodybuilder, with 18.9 per cent being students, indicating that it is used by people other than professional athletes.

Although no concrete estimate exists of the number of people using the drug across India, a 2018 study from Jammu and Kashmir found that 7.1 per cent of athletes used it.

What are the health impacts?

Use of anabolic steroids in the short-term can cause acne and hairfall. Extended misuse of the substance can also lead to gynaecomastia (growth of breasts in men) and erectile dysfunction.

In women, it can lead to growth of facial hair. It may also cause extreme anger, paranoia, and impaired judgement.

Long-term use can lead to kidney disease and even failure, liver damage and tumours, enlarged heart, and high blood pressure. It can also lead to stunted growth in teenagers.

Source: The Indian Express

4. Submarine tech that India wants

Relevant for GS Prelims & Mains Paper III; Science & Technology

On April 30, France's Naval Group, one of five shortlisted Original Equipment Manufacturers (OEM) for the Navy's P-75 India (P-75I) project to build six conventional submarines within the country, announced it would not bid for the project. The reason, Naval Group said, was that the Request for Proposal (RFP) "requires that the fuel cell AIP be sea proven, which is not the case for us yet since the French Navy does not use such a propulsion system."

AIP refers to Air-Independent Propulsion, a technology for conventional — that is, non-nuclear — submarines.

What is the P-75I project?

In June 1999, the Cabinet Committee on Security approved a 30-year plan for the Navy to indigenously build and induct 24 submarines by 2030. In the first phase, two lines of production were to be established — the first, P-75; the second, P-75I. Each line was to produce six submarines.

The contract for P-75 was signed in 2005 with the Naval Group, then known as DCNS, in partnership with Mazagon Dock Shipbuilders Ltd (MDL). The first Kalvari Class (Scorpene Class) submarine under the project was commissioned in December 2017. Another five submarines have been built since; the final one, Vagsheer, was launched last month, and will be commissioned by late 2023.

While P-75 deliveries were delayed, P-75I has seen long delays even before it has kicked off. The first Request for Information was issued in 2008, then again in 2010, but the RFP was issued only in July 2021.

This will be India's first project under the Strategic Partnership Model — the government will give the contract to an Indian Strategic Partner (SP), which will partner with a foreign OEM to build AIP-powered submarines in the country. MDL and Larsen and Toubro are the two selected SP; the five selected OEMs are Naval Group (France), ThyssenKrupp Marine Systems (Germany), ROE (Russia), Daewoo Shipbuilding and Marine Engineering (South Korea), and Navantia (Spain).

What is the status of the project?

A Navy representative told the Parliamentary Standing Committee on Defence in 2019-20 that "we are slightly behind the curve" on P-75I. The final bids — one each by the SP in partnership with an OEM — are yet to be finalised. The project faces choppy waters; the Naval Group has already announced it is pulling out, and sources said the Russian and Spanish companies might also not proceed with their bids.

Among the concerns, as Naval Group said, is the requirement to demonstrate a sea-proven fuel cell AIP. While some manufacturers may have the technology, it may not have been proven at sea yet. Some analysts believe that while the RFP was clear about these conditions, it is possible that the OEMs were expecting certain concessions in the requirements eventually.

Another problem for the OEMs, sources said, is the transfer of technology, which is built into the process under the SP model. Sources believe that the OEMs are unwilling to share all their expertise, especially the niche technologies that they have built.

As things stand, sources said, only ThyssenKrupp Marine Systems and the South Korean company seem to be in the fray. According to experts, even if all goes smoothly here onward, the earliest the first P-75I submarine can be commissioned is around 2032.

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Why does the Navy want AIP subs?

Issuing the RFP last year, the government said it “envisages indigenous construction of six modern conventional submarines (including associated shore support, Engineering Support Package, training and spares package) with contemporary equipment, weapons & sensors including Fuel-Cell based AIP (Air Independent Propulsion Plant), advanced torpedoes, modern missiles and state of the art countermeasure systems.”

AIP, it said, “has a force multiplier effect on lethality of a diesel electric submarine as it enhances the submerged endurance of the boat several folds. Fuel cell-based AIP has merits in performance compared to other technologies.”

Simply put, AIP technology allows a conventional submarine to remain submerged for much longer than ordinary diesel-electric submarines. All conventional submarines have to surface to run their generators that recharge the batteries that allow the boat to function under water.

However, the more frequently a submarine surfaces, the higher the chances of it being detected. AIP allows a submarine to remain submerged for more than a fortnight, compared to two to three days for diesel-electric boats.

While the six P-75 submarines are diesel-electric, they can be fitted with AIP technology later in their lives. By the time P-75I is completed under the 30-year project, India is projected to have six diesel-electric, six AIP-powered, and six nuclear attack submarines (yet to be built).

India has been working to develop AIP technology indigenously as well. A tableaux of the Defence Research and Development Organisation (DRDO) at this year’s Republic Day parade showcased AIP. In March 2021, the Defence Ministry had said DRDO had achieved an “important milestone in the development of Air Independent Propulsion (AIP) System by proving the land-based prototype”. However, experts have certain doubts about DRDO’s AIP prototype, and many fear it may not be ready even by the time the first Kalvari Class submarine comes for refitting starting 2024.

Around 10 countries have developed or are close to building AIP technology, and almost 20 nations have AIP submarines.

What submarines does India have now?

India has 16 conventional diesel-electric submarines, which are classified as SSKs. After the last two Kalvari Class subs are commissioned under P-75, this number will go up to 18. India also has two nuclear ballistic submarines, classified SSBN.

Of the 16 SSKs, four are of Shishumar Class, which were bought and then built in India in collaboration with the Germans starting 1980s; eight are Kilo Class or Sindhughosh Class submarines bought from Russia (including erstwhile USSR) between 1984 and 2000; and four are Kalvari Class built in India at MDL.

AIP let’s conventional subs stay submerged for longer

DIESEL-ELECTRIC SUBMARINES must come to the surface or close to it to run their generators to recharge the batteries that propel them underwater. AIP is a mechanism that allows the batteries to be charged even

while the boat is submerged. However, even with AIP, the submarine needs to surface every three weeks or so. According to a 2015 article on the website of the independent strategic and defence think tank Australian Strategic Policy Institute, AIP “offers the possibility of increasing underwater endurance by a factor of up to 3 or 4, which reduces the indiscretion ratio significantly”.

THERE ARE DIFFERENT TYPES of AIP mechanisms available; what India is looking for under the P-751 project is AIP based on fuel cells. These cells convert chemical energy into electrical energy, recharging the batteries of the submarine. Page | 192

THERE ARE DOWNSIDES TO AIP. The Australian paper says “installing AIP increases the length and weight of the boats, requires pressurised liquid oxygen (LOX) storage on-board and supply for all three technologies”. Also, “MESMA and the Stirling engine have some acoustic noise from moving parts; and the...submarine’s unit cost [increases] by around 10%.”

Source: The Indian Express

5. Lapsus\$: how two teenagers hacked big tech firms

Relevant for GS Prelims & Mains Paper III; Science & Technology

On March 22, authentication platform Okta confirmed that hackers had tried intruding into its system three months earlier. The platform confirmed an attacker had access to one of its employees’ laptops in January, and that a portion of its clients may have been affected because of the breach. The firm’s disclosure came after hacking group Lapsus\$ shared screengrabs of Okta’s internal systems on messaging platform Telegram. The images included Okta’s Slack channels and its cloudflare interface. In a recent filing, Okta shared that it has over 15,000 clients globally, which includes bike brand Peloton, speaker maker Sonos, and the Federal Communications Commission (FCC). Just a day prior to sharing the screenshots, on March 21, Lapsus\$ shared on social media that they had stolen source codes from a number of large tech firms. They claimed responsibility for breach and dissemination of confidential data.

How was Okta’s system hacked?

On January 20, 2022, the Okta’s security team was alerted that a new factor was added to a Sitel customer support engineer’s Okta account from a new location. Sitel is Okta’s third-party partner providing customer support engineers to the authentication company. This added factor was a password. The team investigated the alert, and escalated it to a security incident. The company’s service desk was added to the incident to assist in containing the user’s account.

They terminated the user’s Okta sessions and suspended the account until the root cause of suspicious activity could be identified and remediated. Okta claimed that the individual attempt was unsuccessful and they had reset the account and notified Sitel.

Its investigation revealed that the screenshots published by the hackers were obtained through remote access to a Sitel-managed computer using Remote Desktop Protocol (RDP). So, while the attacker never gained access to the Okta’s service via account takeover, the computer that was logged into Okta was compromised and controlled through the RDP session. RDP is a protocol or technical standard that provides a user with a graphical interface to connect to a desktop computer remotely. The user uses RDP client software for this purpose, while the other computer must run RDP server software.

What do we know about Lapsus\$?

The cyber-crime group Lapsus\$ is said to be based in South America. The group is relatively new but has successfully breached major firms like Microsoft. It has also publicly taunted their victims, leaking their source code and internal documents. They have even gone to the extent of joining Zoom calls of companies

they breached, taunting employees and consultants who are trying to clean up their hack, according to a Bloomberg report. The group has an active presence on the messaging app Telegram, and its channel has over 47,000 subscribers.

How does Lapsus\$ work?

Unlike most hacker groups that stay under the radar, Lapsus\$ doesn't cover its tracks. They go as far as announcing their attacks on social media or advertising their intent to buy credentials from employees of target organisations. Their tactics include phone-based social engineering, SIM-swapping to facilitate account takeover, accessing personal email accounts of employees at target organisations, and paying employees, suppliers, or business partners of their targets to get their credentials and multifactor authentication (MFA) approval.

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They even joined crisis-communication calls of their targets and internal discussion boards like Slack, Teams, conference calls to understand the incident response workflow and their corresponding response, according to Microsoft.

Social engineering efforts include gathering data about a target's business operations, employees, team structures, help desks, crisis response workflows, and supply chain relationships. They spam a target with MFA prompts and call the organisation's help desk to reset a target's credentials. The group can also perform SIM-swapping attacks to access a user's phone number and handle phone-based authentication prompts to sign into the corporate network. They even entice employees of target organisations to buy their credentials. For a fee, the employee must provide their credentials and approve the MFA prompt or have the user install AnyDesk or other remote management software on a corporate workstation allowing the actor to take control of an authenticated system, Microsoft said. On obtaining an employee's credentials they connect to that person's organisation's VPN (virtual private network). They then try to discover additional credentials or exploit unpatched vulnerabilities to intrude into internal servers. They also search code repositories and collaboration platforms for exposed credentials and secrets. They can even access the target's cloud assets to create new virtual machines within the target's cloud environment, and use it for further attacks across the organisation.

What is known about the hackers?

The group is said to be led by two teenagers, a 16-year-old and a 17-year-old. The younger of the two is from Oxford and has been accused of being the leader of Lapsus\$. He is also said to be diagnosed with autism. He has been operating under his online alias name "White" or "Breachbase", and is estimated to have made \$14 million from hacking, according to a report by BBC. The teenager was caught after he was doxxed on a hacker website, after falling out with his business partners. The hackers revealed his name, address, and social media pictures. Doxxing refers to searching and publishing private information about an individual on the internet, with malicious intent to reveal the person's actual identity. The cyber researchers and law enforcement authorities have been tracking "White" for almost a year. They used forensic evidence from the hacks as well as publicly available information to link the teen to the hacking group. Both teenagers were taken into police custody after being charged for hacking computer networks.

Who were targeted by Lapsus\$?

The group began targeting organisations in the United Kingdom and South America, and then expanded to global targets. They intrude into computer networks of governments, technology firms, retail outlets, and healthcare organisations.

Besides security firm Okta, the group's other big target was software giant Microsoft. "Our investigation has found a single account had been compromised, granting limited access," Microsoft said in a blog post confirming the breach. Nvidia, Samsung, LG and Globant are some other large firms targeted by the cybercrime gang. The group is also known to take over individual accounts at cryptocurrency exchanges to drain its holdings, Microsoft noted in its blog.

Source: The Hindu

6. What is Shigella, the bacteria that killed a girl after she ate shawarma in Kerala?

Relevant for GS Prelims & Mains Paper III; Science & Technology

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Shigella is a bacterium belonging to enterobacter family. (Centers for Disease Control and Prevention)

The Kerala health department on Tuesday (May 3) identified Shigella bacteria as the cause for the food poisoning incident in Kasaragod, which claimed the life of a 16-year-old girl and led to 30-odd others being admitted to hospital.

The presence of the bacteria was confirmed in the blood and faeces of people undergoing treatment after they consumed chicken shawarma from an eatery at Cheruvathur in Kasaragod last week. Police have arrested the owner and staff of the eatery.

While food poisoning is fairly common and can occur in a range of situations, how common is Shigella infection, what are its symptoms, and when should you consult a doctor?

First, what is Shigella?

Shigella is a bacterium that belongs to the enterobacter family — a group of bacteria that reside in the intestine, not all of which cause disease in humans. It mainly affects the intestine and results in diarrhoea, sometimes bloody, stomach pain, and fever.

The infection spreads easily as it takes only “a small number of bacteria to make someone ill”, says the US Centres for Disease Control and Prevention (CDC). It is a food- and water-borne infection, and can happen when someone consumes contaminated food — like in the case from Kerala — unwashed fruit or vegetables. The disease is easily spread by direct or indirect contact with the excrement of the patient. You can get the infection if you swim or take a bath in contaminated water.

How widespread is Shigella infection?

"Shigellosis happens, but it is not a very common infection. We usually see infections like typhoid and cholera because of contaminated foods. Perhaps one in 100 cases of diarrhoea in our hospital would be shigellosis," Dr Suranjit Chatterjee, senior consultant of internal medicine at Indraprastha Apollo hospital in New Delhi, said.

Shigella outbreaks appear to be exacerbated during pregnancy and in children under five years of age, and in those with weakened immune systems.

There are four types of Shigella bacteria that affect humans — Shigella sonnei, Shigella flexneri, Shigella boydii, and Shigella dysenteriae. The fourth type causes the most severe disease because of the toxin it produces.

But is it common for people to die of the infection?

It is not. Doctors say that the infection does not generally kill, unless the patient has a weak immune system or the pathogen is resistant to the antibiotics that are prescribed. "It is a very treatable condition; if a patient reaches hospital on time they can effectively be treated using IV antibiotics," Dr Chatterjee said.

He said that doctors usually send samples of patients with severe diarrhoea for culture to see what pathogen is causing the symptoms, in order to decide which antibiotics were likely to work the best. "In the meanwhile, doctors prescribe antibiotics for the most common infections that cause diarrhoea, and they will generally work for Shigella as well," Dr Chatterjee said.

The problem though, occurs when the antibiotics do not work because the bacteria are resistant to it.

"The problem with Shigella is that it produces a lot of toxins that can affect all other organs. So, if the bacteria continue to proliferate in the body even after giving the antibiotics, it will continue to produce toxins, which can then affect the kidney, cause seizures, lead to multi-organ failure, and shock, and even turn fatal," Dr Amit Singh, associate professor at the Centre for Infectious Disease Research at the Indian Institute of Science, Bangalore, said.

This, however, does not happen in most cases, Dr Singh said. "The mortality of the infection is less than 1%," he said.

So if you have abdominal discomfort or an upset stomach, at which point should you start worrying?

There is no need to rush to a doctor or a hospital every time you have loose motions, Dr Chatterjee said. However, if you have loose motions accompanied with high fever, blood in the stool, or constant vomiting such that you cannot keep any fluids down, you must get yourself to a doctor.

A person who has severe diarrhoea — which means 20 or more bowel movements in a day — must see a doctor within a day; a patient with mild diarrhoea may wait for three to four days before going to a doctor.

"This", Dr Chatterjee said, "is true of any diarrhoea, whether it is because of Shigella or any other reason". It is possible that the student from Kerala who died after eating the shawarma did not get medical treatment in time, he said.

What precautions should you take?

The measures to prevent a Shigella infection are the same as that of any other food- and water-borne infection. Wash your hands thoroughly before and after a meal. Wash your hands properly after a bowel movement. Ensure the water that you drink is clean and the fruits and vegetables are fresh.

"Products such as milk, chicken, and fish can get infected easily and must be kept at a proper temperature. They must also be properly cooked," Dr Singh said.

Source: The Indian Express

7. What is monkeypox, a smallpox-like disease from Africa that has been reported in the UK?

Relevant for GS Prelims & Mains Paper III; Science & Technology

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Monkeypox virus

The monkeypox virus is an orthopoxvirus, which is a genus of viruses that also includes the variola virus, which causes smallpox, and vaccinia virus, which was used in the smallpox vaccine. Monkeypox causes symptoms similar to smallpox, although they are less severe.

While vaccination eradicated smallpox worldwide in 1980, monkeypox continues to occur in a swathe of countries in Central and West Africa, and has on occasion showed up elsewhere. According to the World Health Organisation (WHO), two distinct clade are identified: the West African clade and the Congo Basin clade, also known as the Central African clade.

Zoonotic disease

Monkeypox is a zoonosis, that is, a disease that is transmitted from infected animals to humans. According to the WHO, cases occur close to tropical rainforests inhabited by animals that carry the virus. Monkeypox virus infection has been detected in squirrels, Gambian poached rats, dormice, and some species of monkeys.

Human-to-human transmission is, however, limited — the longest documented chain of transmission is six generations, meaning the last person to be infected in this chain was six links away from the original sick person, the WHO says. “It is important to emphasise that monkeypox does not spread easily between people and the overall risk to the general public is very low,” Dr Colin Brown, Director of Clinical and Emerging Infections at the UK Health Security Agency (UKHSA) said on Saturday.

Transmission, when it occurs, can be through contact with bodily fluids, lesions on the skin or on internal mucosal surfaces, such as in the mouth or throat, respiratory droplets and contaminated objects, the WHO says.

Symptoms and treatment

According to the US Centers for Disease Control and Prevention (CDC), monkeypox begins with a fever, headache, muscle aches, back ache, and exhaustion. It also causes the lymph nodes to swell (lymphadenopathy), which smallpox does not. The WHO underlines that it is important to not confuse monkeypox with chickenpox, measles, bacterial skin infections, scabies, syphilis and medication-associated allergies.

The incubation period (time from infection to symptoms) for monkeypox is usually 7-14 days but can range from 5-21 days. Usually within a day to 3 days of the onset of fever, the patient develops a rash that begins on the face and spreads to other parts of the body. The skin eruption stage can last between 2 and 4 weeks, during which the lesions harden and become painful, fill up first with a clear fluid and then pus, and then develop scabs or crusts.

According to the WHO, the proportion of patients who die has varied between 0 and 11% in documented cases, and has been higher among young children.

There is no safe, proven treatment for monkeypox yet. The WHO recommends supportive treatment depending on the symptoms. Awareness is important for prevention and control of the infection.

Occurrence of disease

The CDC's monkeypox overview says the infection was first discovered in 1958 following two outbreaks of a pox-like disease in colonies of monkeys kept for research — which led to the name ‘monkeypox’.

The first human case was recorded in 1970 in the Democratic Republic of the Congo (DRC) during a period of intensified effort to eliminate smallpox.

According to the WHO, 15 countries on four continents have so far reported confirmed cases of monkeypox in humans.

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Locally acquired cases have been confirmed in the DRC (which has the largest incidence of the infection in the world), Central African Republic, Republic of the Congo, Gabon, Cameroon, Nigeria, Côte d'Ivoire, Liberia, and Sierra Leone.

Imported cases have been found in South Sudan and Benin in Africa, and in the United States, UK, Israel, and Singapore.

Source: The Indian Express

8. The search algorithm in action

Relevant for GS Prelims & Mains Paper III; Science & Technology

Algorithms play a crucial role for search engines as they process millions of web searches every day. With the quantity of information available on the internet growing steadily, search algorithms are becoming increasingly complex, raising privacy and other concerns and drawing the attention of regulators. Last month, U.K.'s digital watchdog said they will take a closer look at algorithms, seeking views on the benefits and risks of how sites and apps use algorithms, as well as inputs on auditing algorithms, the current landscape and the role of regulators.

How do search algorithms work?

An algorithm, essentially, is a series of instructions. It can be used to perform a calculation, find answers to a question or solve a problem. Search engines use a number of algorithms to perform different functions prior to displaying relevant results to an individual's search request.

Tech giant Alphabet Inc's Google, whose flagship product is the Google search engine, is the dominant player in the search market. Its search engine provides results to consumers with the help of its ranking systems, which are composed of a broad set of algorithms, that sort through web pages in its search index to find the most appropriate results in quick time. Its search algorithms consider several factors, including the words and expressions of a user's query, relevance and usability of pages, expertise of sources, and the user's location and settings, according to the firm.

While Google captures a significant chunk of the general search market, there are alternative search engines such as Microsoft's Bing and DuckDuckGo available for users to explore. The latter, a privacy-focused search engine, claims it does not collect or share users' personal information.

In January, market leader Google generated 61.4% of all core search queries in the U.S., according to database company Statista. During the same period of time, Microsoft sites handled a quarter of all search queries in the U.S.

As the algorithms used to deliver results would vary from one search engine to another, when a user inputs a query, the results would also differ. Moreover, results from different users would be rarely similar, even when searching for the same things, since the algorithms take into account multiple factors, like their location.

How are they developed?

Algorithms are often built using historical data and for specific functions. Once developed, they go through frequent updates from the companies to enhance the quality of search engine results presented to users. Most large search engine providers also bank on machine learning to automatically improve their users' search experience, essentially by identifying patterns in previous decisions to make future ones.

Over the years, Google has developed search algorithms and updated them constantly, with some major updates like Panda, Penguin, Hummingbird, RankBrain, Medic, Pigeon, and Payday, meant to enhance some function or address some issue. In March, it introduced another update to improve the search engine's ability to identify high-quality product reviews.

Search engines exert huge control over which sites consumers can find. Any changes or updates in their algorithms could also mean that traffic is steered away from certain sites and businesses, which could have a negative effect on their revenue.

What are the concerns?

The search giant's trackers have allegedly been found on majority of the top million websites, as per a DuckDuckGo blog post. "This means they are not only tracking what you search for, [but] they're also tracking which websites you visit, and using all your data for ads that follow you around the internet," it added.

According to a Council of Europe study, the use of data from profiles, including those established based on data collected by search algorithms and search engines, directly affects the right to a person's informational self-determination. Most of Google's revenues stem from advertisements, such as those it shows consumers in response to a search query.

DuckDuckGo, in addition to providing an alternative to Google's search engine, offers mobile apps and desktop browser extensions to protect users' privacy while browsing the web. The privacy-focused firm, in a blog post, said that editorialised results, informed by the personal information Google has on people (like their search, browsing, and purchase history), puts them in a "Filter Bubble" based on what Google's algorithms think they are most likely to click on.

What's the current state of these algorithms?

These search algorithms can be used to personalise services in ways that are difficult to detect, leading to search results that can be manipulated to reduce choice or artificially change consumers' perceptions.

Additionally, firms can also use these algorithms to change the way they rank products on websites, prioritising their own products and excluding competitors. Some of these concerns have caught the eye of regulators and as a result these search algorithms have come under their scrutiny.

The European Commission has fined Google €2.42 billion for abusing its market dominance as a search engine by giving an illegal advantage to another Google product, its comparison-shopping service.

Moreover, under the Commission's proposal on the Digital Services Act, transparency measures for online platforms on a variety of issues, including the algorithms used for recommending content or products to users are expected to come into force.

"Majority of algorithms used by private firms online are currently subject to little or no regulatory oversight," U.K.'s Competition and Markets Authority has said earlier in a statement, adding that "more monitoring and action is required by regulators."

Source: The Hindu

9. The standard model of particle physics gets a jolt

Relevant for GS Prelims & Mains Paper III; Science & Technology

On April 7, researchers from Collider Detector at Fermilab (CDF) Collaboration, in the U.S., announced, through a paper in Science, that they have made a precise measurement of the mass of the so-called W boson. They stated that this precisely determined value did not match with what was expected from estimates using the standard model of particle physics. This result is highly significant because this implies the incompleteness of the standard model description. This is a major claim, since the standard model has been extraordinarily successful in the past decades. Hence, physicists are looking for corroboration from other, independent, future experiments.

What is the standard model of elementary particle physics?

The standard model of elementary particles is a theoretical construct in physics that describes particles of matter and their interaction. It is a description that views the elementary particles of the world as being connected by mathematical symmetries, just as an object and its mirror image are connected by a bilateral (left-right) symmetry. These are mathematical groups generated by continuous transformations from, say, one particle to another. According to this model there are a finite number of fundamental particles which are represented by the characteristic “eigen” states of these groups. The particles predicted by the model, such as the Z boson, have been seen in experiments and the last to be discovered, in 2012, was the Higgs boson which gives mass to the heavy particles.

Why is the standard model believed to be incomplete?

The standard model is thought to be incomplete because it gives a unified picture of only three of the four fundamental forces of nature — electromagnetic, weak nuclear, strong nuclear and gravitational interactions — it totally omits gravity. So, in the grand plan of unifying all forces so that a single equation would describe all the interactions of matter, the standard model was found to be lacking.

The other gap in the standard model is that it does not include a description of dark matter particles. So far these have been detected only through their gravitational pull on surrounding matter.

How are the symmetries related to particles?

The symmetries of the standard model are known as gauge symmetries, as they are generated by “gauge transformations” which are a set of continuous transformations (like rotation is a continuous transformation). Each symmetry is associated with a gauge boson.

For example, the gauge boson associated with electromagnetic interactions is the photon. The gauge bosons associated with weak interactions are the W and Z bosons. There are two W bosons — W^+ and W^- .

Inspired by the success of quantum electrodynamics, in the sixties, Sheldon Glashow, Abdus Salam and Steven Weinberg developed the similar but more general, ‘electroweak’, theory in which they predicted these three particles and how they mediated the weak interactions. They were given the Nobel prize for their efforts in 1979. The W boson was first seen in 1983 at CERN, located in the Franco-Swiss border. Unlike the photon, which is massless, the W bosons are quite massive, which results in the force they mediate — the weak force — being very short ranged.

Unlike the photon, which is electrically neutral, the W^+ and W^- are both massive and charged. By exchanging such W bosons, a neutron can change into a proton, for example. This is what happens in beta decay, a radioactive interaction that takes place in the sun. Thus, the W boson facilitates the interactions that make the sun burn and produce energy.

What is the main result of the recent experiment? What is the discrepancy they obtained?

The recent experiment at CDF, which measured the mass of the W boson as $80,433.5 \pm 9.4 \text{ MeV}/c^2$, which is approximately 80 times the mass of a hydrogen nucleus, showed this to be more than what is expected from the standard model. The expected value using the standard model is $80,357 \pm 8 \text{ MeV}/c^2$. This is estimated

from a combination of analytical calculations and high-precision experimental observation of a few parameters that go into the calculation like the W boson mass, strength of the electromagnetic interaction, Fermi constant, Higgs boson mass and Top quark mass. Thus, the W boson mass itself is a prediction of the standard model. Therefore, any discrepancy in its mass means a lack of self-consistency in the standard model.

However, this is not the last word, as the mass discrepancy of the W boson needs to be checked and confirmed to the same accuracy by other facilities, for example, the Large Hadron Collider (LHC).

Where do we stand now in terms of new physics?

New physics is in the air, and experiments have been gearing up for some years now to detect new particles. The Large Hadron Collider itself has been revamped for "Run3" that will carry out special experiments to look for physics beyond the standard model. A Perspective article by Claudio Campagnari and Martijn Mulders in Science points out several high-precision experiments which are in the pipeline such as the International Linear Collider in Japan, the Compact Linear Collider and the Future Circular Collider in CERN, the Circular Electron-Positron Collider in China etc. With its high-precision determination of the W boson mass, the CDF has struck at the heart of the standard model, so it is a significant finding and if this is confirmed by the LHC and other experiments, it will throw open the field for ideas and experiment.

Source: The Hindu

10. What is tomato flu? Who does it affect?

Relevant for GS Prelims & Mains Paper III; Science & Technology

Tamil Nadu has ramped up surveillance at its borders in the wake of "tomato flu" cases being detected in Kerala. The flu that gets its name because of the red blister it causes, has raised concern in Coimbatore, with a team of officials deployed at the Tamil Nadu-Kerala border screening people coming from the neighbouring state.

Dr P Aruna, the deputy director of health services, Coimbatore, told The Indian Express, "Three teams comprising revenue inspectors, health inspectors and police have been deployed on a shift basis. They will note down if someone has fever and rashes."

What is tomato flu? Who does it affect?

Dr Aruna informed that the flu affects children below five years of age. The symptoms of this flu, also called Tomato fever, include rashes, skin irritation and dehydration. According to several reports, the flu can also cause tiredness, joint pain, stomach cramps, nausea, vomiting, diarrhoea, coughing, sneezing, runny nose, high fever, and body ache. In some cases, it may also change the colour of the legs and the hands.

"This flu is a self-limiting one and there is no specific drug for this," Dr Aruna noted. This means that the symptoms will resolve overtime on their own if supportive care is given.

How can tomato flu be treated? How to take care of it?

Like other cases of flu, tomato fever is also contagious. "If someone is infected with this flu, they need to be kept in isolation as this could spread rapidly from one person to another," Dr Aruna said.

It is essential to prevent children from scratching the blisters caused by the flu. Proper rest and hygiene is also advised. Utensils, clothes and other items used by the infected persons must be sanitised to prevent the flu from spreading.

Fluid intake would also help counteract dehydration. Most importantly, it is important to seek your doctor's advice if you notice the above-mentioned symptoms.

Preventive measures in Tamil Nadu

A team of revenue, health and police officials have been deployed at the Walayarcheckpoint located on the Tamil Nadu-Kerala border to screen people coming from the neighbouring state.

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The Coimbatore district has deployed three teams to monitor the border round-the-clock on a shift basis. They will note if someone displays symptoms like fever or rashes.

With the flu largely affecting children, authorities are also screening anganwadicentres across the district and close to 24 mobile teams with health officers have been deployed to carry out the process, Dr Aruna said.

Source: The Indian Express

11. What is a 'marsquake', and what causes it?

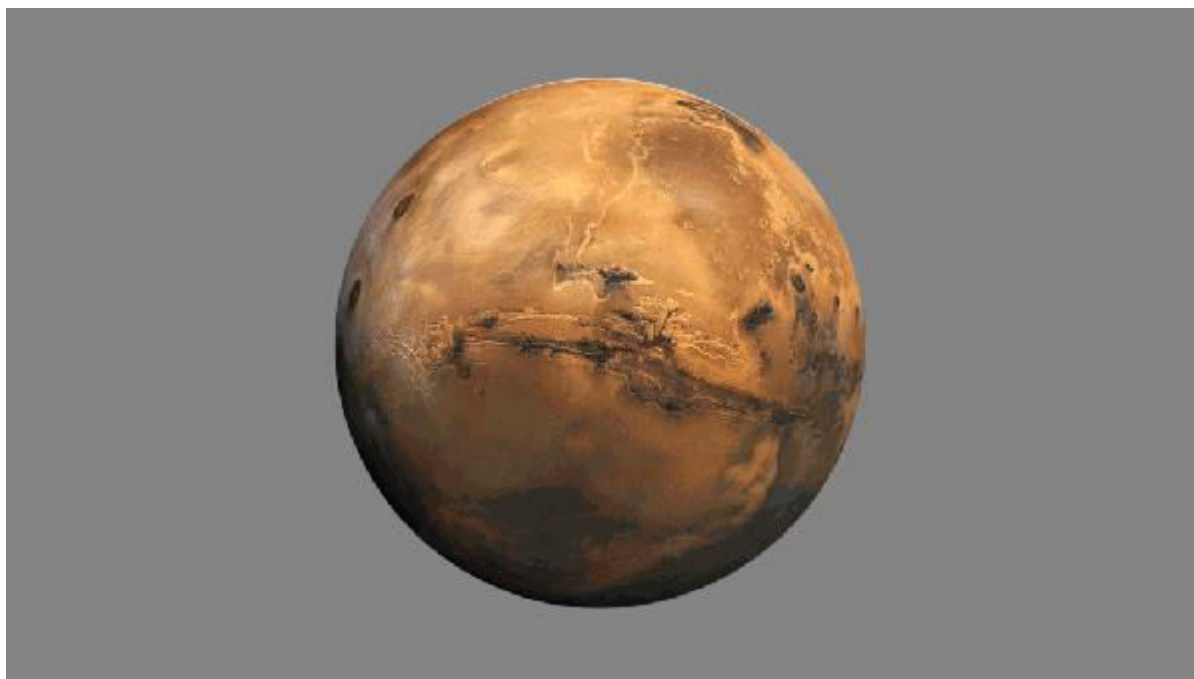
Relevant for GS Prelims & Mains Paper III; Science & Technology



An artist's concept of InSight lander on Mars. (Source: NASA)

NASA has reported that on May 4, its InSight Mars lander detected the largest quake ever observed on another planet.

The rover first landed on Mars in November 2018, and has since heard 1,313 quakes. The largest previously recorded "marsquake" was detected in August 2021.



How a marsquake takes place. (Source: NASA/JPL-Caltech/ETH Zurich/ Van Driel)

What are marsquakes, and why do they happen?

On Earth, quakes are caused by shifts in tectonic plates. Mars, however, does not have tectonic plates, and its crust is a giant plate. Therefore, NASA notes, 'marsquakes' are caused due to stresses that cause rock fractures or faults in its crust.

"Since we set our seismometer down in December 2018, we've been waiting for 'the big one,'" Bruce Banerdt, InSight's principal investigator at NASA's Jet Propulsion Laboratory, said in a statement. "This quake is sure to provide a view into the planet like no other. Scientists will be analysing this data to learn new things about Mars for years to come."

What is InSight doing on Mars?

InSight is not looking for life on Mars, but is studying what Mars is made of, how its material is layered, and how much heat seeps out of it.

This is important because Earth and Mars used to be similar — warm, wet and shrouded in thick atmospheres — before they took different paths 3-4 billion years ago. Mars stopped changing, while Earth continued to evolve.

With InSight, scientists hope to compare Earth and Mars, and better understand how a planet's starting materials make it more or less likely to support life.

There are other missions to Mars that are looking for life on the planet, which makes InSight's mandate unique. It mostly boils down to the possibility that the atmosphere of Mars was once warm enough to allow water to flow through its surface, which could mean life existed there too.

In fact, what makes scientists curious about Mars is the "defining question" of the existence of life on the planet, because of the possible presence of liquid water on it, either in the past or preserved in its subsurface. This question makes the planet more intriguing for scientists since "almost everywhere we find water on Earth, we find life," as NASA puts it.

Further, if Mars harboured a warmer atmosphere enabling water to flow in its ancient past (3.5-3.8 billion years ago), and if microbial life existed on it, it is possible that it exists in “special regions” even today. But regardless of life having existed on Mars or not, there is the idea that humans themselves might be able to inhabit the planet one day.

Some missions studying the possibility of life on Mars include UAE’s Hope, China’s Tianwen-1, and NASA’s Perseverance.

Source: The Indian Express

12. What are the Protected Mobility Vehicles that the Army wants to purchase?

Relevant for GS Prelims & Mains Paper III; Science & Technology

The Army has floated a Request for Information (RFI) to purchase Protected Mobility Vehicles (PMV) for high-altitude areas and for deserts and plains. What are PMVs, how are they utilised and who manufactures them?

What is the operational role of PMVs?

The PMV is essentially a wheeled armoured personnel carrier. It provides protection to the soldiers travelling inside the vehicle from mine blasts and sudden attack by small arms.

The troops in these vehicles could be members of any quick reaction team heading to a point of conflict, or members of patrolling parties heading to border areas. They could also be members of a reconnaissance squad operating behind enemy lines or in forward positions of own troops.

What kind of vehicles does the Army intend to procure?

The Army floated an RFI on May 12 for information from vendors for PMV to deploy in areas above the height of 4000 metres and for deserts and plains.

The detailed instructions given by the Army along with the RFI specifies that these vehicles should be wheeled, 4X4 drive mode and should have automatic transmission. These vehicles should be able to carry ten personnel excluding the driver and co-driver with each person carrying a combat load of not less than 30 kg.

What are the technical specifications for such vehicles?

The PMVs must have ballistic protection and should be able to protect the vehicle from grenade and mine blasts. It should have a maximum speed of 90 km on road and 40 km per hour on cross country terrain. They should be able to operate in temperature range of 40 degree centigrade to minus 15 degree in high-altitude areas.

The vehicles are required to have a weapon mount to enable a 7.62 mm Light Machine Gun (LMG) to be fitted and a turret with 360 degree rotation for a LMG. It is also required to have 11 firing ports with five each on the starboard and port side of the vehicle and one at the rear. The PMV should be able to ford in water with depth of 1000 mm without any special preparation.

When will these vehicles be procured?

After going through the responses of the RFI, the Army is expected to float a Request for Proposal (RFP) in the month of November which will be followed by trials at areas above 17,000 feet and in the plains and deserts. These trials will be held within a period of six to nine months of issuing of the RFP.

Does India produce such vehicles?

India has the capability of producing PMVs. In April this year, the Tata Advanced Systems Limited (TASL) handed over the first of such Infantry Protected Mobility Vehicles (IPMVs) to the then Chief of Army Staff, Gen

MM Naravane. The TASL is now the first private sector company in the country to produce such wheeled armoured personnel carriers and has developed the IPMV in collaboration with the Defence Research and Development Organisation (DRDO).

These vehicles are produced at the TASL's Pune establishment and have been built on the strategic 8X8 wheeled armoured platform jointly developed by TASL with Vehicles Research and Development Establishment (VRDE) of DRDO.

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Source: The Indian Express

13. What do we know about the debris that 'fell from the sky' in Gujarat?

Relevant for GS Prelims & Mains Paper III; Science & Technology



The debris found in Gujarat's villages. (Express photo)

On May 12, villagers in Gujarat remained confused and curious as fragments of suspected debris "fell from space" at three locations — Bhalej, Khambholaj, and Rampura.

As a team from the Forensic Science Laboratory probes the debris, we take a look as to what has been found so far, how it is different from the debris from meteoroids and whether there have been similar incidents in the past in India.

What do we know about the debris?

According to the local police, at around 4.45 pm on May 12, "the first large, black metal ball" weighing around five kilograms fell "from the sky" in Bhalej village in Anand, followed by two similar fragments at two other villages — Khambholaj and Rampura. The three villages are located within a 15-kilometre radius, with one piece of the debris falling in Chimanbhai's field. Luckily, no one was injured, the authorities informed.

On May 14, similar sphere-shaped debris was reported at Chaklasi village in Anand, about 8 km away from Bhalej.

While Indian authorities have not issued any statement ascertaining what it might be, astronomer Jonathan McDowell at the Harvard Smithsonian Center for Astrophysics tweeted that it could possibly be debris from the re-entry of the Chang Zheng 3B serial Y86 — China's orbital launch vehicle.

Responding to a query by The Indian Express, McDowell said that his deduction is based on the fact that this object "is the only re-entry that day (May 12) that went anywhere near India," based on data from the US Space Force that he monitors. Page | 205

Aerospace.org also predicted the same, saying that the launch vehicle will re-enter the Earth's space on May 12 at around 10.37 am (IST).

However, McDowell adds that "the predicted path was a few hundred km north of the villages in question, but that's within the uncertainties for this particular object since its orbit was more uncertain than usual".

"The problem is that the orbit was rapidly changing due to atmospheric drag. So, the last Space Force Orbit we had was several hours old. The projection forward of that orbit is reliable in terms of its path through space. But the position of the rocket along its track is uncertain, and you have to take into account that if it's five minutes late, the Earth has turned underneath the orbit by 5 minutes, which is equal to 0.25 degrees in that said amount of time. As such, the predicted ground location also changes accordingly," McDowell said.

Gujarat's Anand district collector M Y Daxini stated that a Forensic Sciences Laboratory team is examining the samples and that the district collectorate is "in touch with" Physical Research Laboratory, Ahmedabad, and Indian Space Research Organisation's (ISRO) Space Application Centre (SAC) to determine if the debris is from a satellite or a rocket.

What is space debris?

Space debris can include natural space debris such as meteoroids, or man-made ones which can include defunct spacecrafts and satellites, stages of rockets which have launched payloads, dead satellites, satellite explosions and collisions.

According to NASA, "more than 25,000 objects larger than 10 cm are known to exist" as space debris and the estimated population of particles between 1 and 10 cm in diameter is approximately 500,000. According to NASA's estimates, as of January 2022, the amount of material orbiting the Earth exceeded 9,000 metric tons.

What is Chang Zheng 3B serial Y86, from where the debris is suspected to have fallen?

Chang Zheng 3B, commonly known as CZ 3B, is China's orbital launch vehicle, similar to India's GSLV or PSLV. 'Long March' rockets are a family of carrier rockets operated by the China National Space Administration, which carry the satellites or payloads. The 3B denotes the Long March 3B model in this family of rockets.

The model has conducted as many as 84 flights, the last being in April 2022, carrying communications satellites. Y86 denotes the designated serial number of the 78th flight mission. This mission was launched on September 9, 2021, carrying the 5,500 kg ChinaSat 9B communication satellite to the geostationary transit orbit.

Usually, the first and second stage of rockets make it back to earth after take-off within a week or so because of the release of these stages at lower altitudes. In such cases, the re-entry can then be manoeuvred in such a way that they do not affect populated landmass and cause damage. However, the third stage, which releases the satellite at the required orbit following which it remains in sub-orbital flight, remains outside the purview of being controlled by human intervention and ultimately re-enters earth. It is this third stage of the Long March 3B Y 86 rocket launch that is now suspected to have re-entered earth, leading to debris falling in Gujarat.

The difference in impact made by a natural and man-made debris

Most pieces of space debris burn up as they enter the Earth's atmosphere, the process starting from around a height of 100 km from Earth's surface to 20 km. However, sometimes, very heavy pieces may not burn completely, and some part of the object may make it down to the surface, either hitting a landmass or a waterbody.

Notably, with constellation satellites gaining traction such as SpaceX's Starlink project, OneWeb Constellation by London-based OneWeb and Project Kuiper of Amazon, the common criticism has been the increase in space debris and the risk of collision.

In cases of man-made debris, it often disintegrates into fragments, thus hardly ever creating large-scale impact. It is usually natural debris, such as asteroids and meteoroids, that cause relatively large-scale craters, if it ends up hitting a landmass.

How does space debris move and how are they tracked?

Tracking space debris has become an area of interest for many astronomers. NASA, for example, says that "large orbital debris (> 10 cm) is tracked routinely by the US Space Surveillance Network" as objects as small as 3 mm can be detected by ground-based radars, "providing a basis for a statistical estimate of their numbers".

In the lower parts of Earth's orbit (below 2,000 km), debris circles the Earth at speeds of about 7-8 km per second. However, the average impact speed of orbital debris with another space object is approximately 10km/s, and can go up to about 15 km/s, which is about 10 times the speed of a bullet. Consequently, collisions with even a small piece of debris will involve considerable energy.

Assessments of the population of orbital debris smaller than 1 mm can be made by examining impact features on the surfaces of returned spacecraft, although this has been limited to those operating in altitudes below 600 km. According to NASA Orbital Debris Programme Office, "The intentional destruction of the Fengyun-1C weather satellite by China in 2007, and the accidental collision of the American communications satellite, Iridium-33, and the retired Russian spacecraft, Cosmos-2251, in 2009 greatly increased the number of large debris in the orbit — represent one-third of all catalogued orbital debris.

Have there been similar incidents in the past?

In India, a similar event was reported in April this year when six metallic balls and a metal ring, also suspected to be from China's Long March 3B rocket, fell from the sky in parts of Maharashtra and Madhya Pradesh. A team from ISRO was roped in to determine the specific nature of it.

McDowell told The Indian Express that the third-stage re-entries over populated areas occur "once every few months".

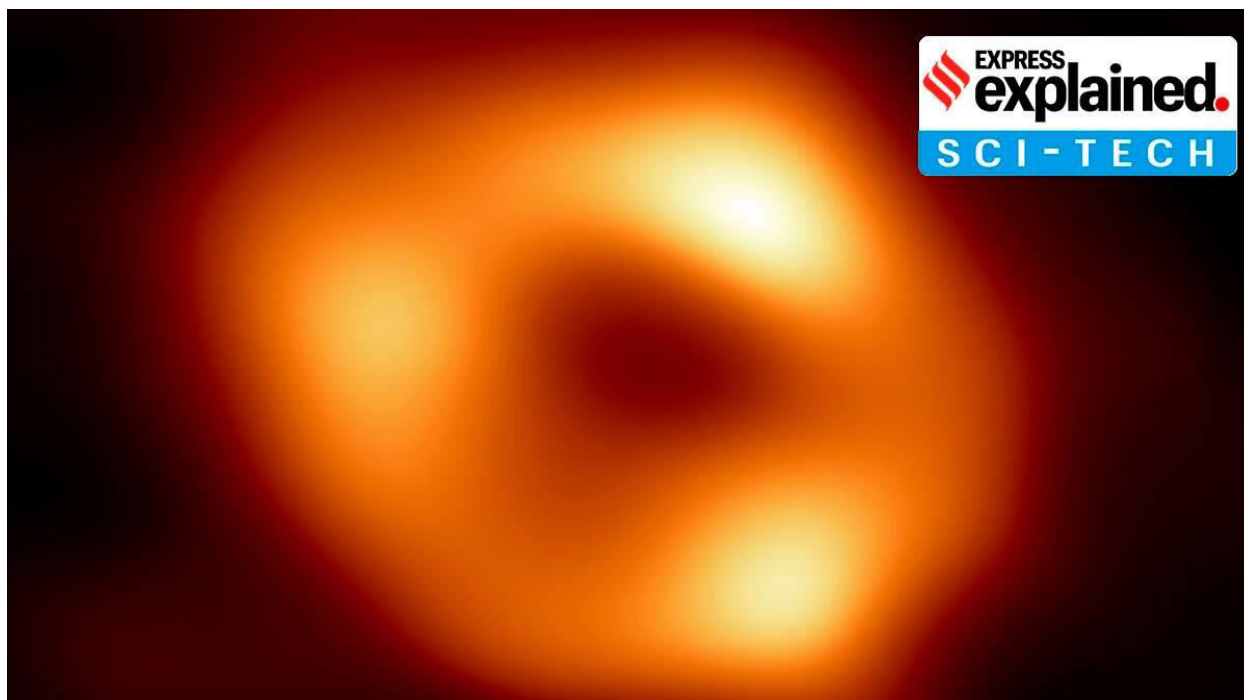
An event that stands out in terms of the damage caused by space debris is one from February 1996. A Long March 3B rocket launch failure resulted in debris from the satellite's payload, US-made Intelsat 708, falling from the sky minutes after the lift off, which reportedly killed six and injured 57 others in China, according to news agency Xinhua. The first reported incident of damage from space debris was in 1978 after the crash of the then USSR's nuclear-powered Cosmos 954 satellite, which fell over Canada nearly four months after the take-off, requiring extensive clean-up of radioactive material.

Under the Convention on International Liability for Damage Caused by Space Objects, countries can claim compensation from other countries for damages incurred from space debris.

Source: The Indian Express

14. The black hole at the centre of Milky Way, photographed for the first time

Relevant for GS Prelims & Mains Paper III; Science & Technology



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This image released by the Event Horizon Telescope Collaboration on Thursday shows a black hole at the center of our Milky Way galaxy. (Photo: AP)

The first photograph of Sagittarius A* (pronounced as sadge-ay-star), a supermassive black hole about 26,000 light years from Earth and situated at the centre of the Milky Way, was revealed by astronomers of the Event Horizon Telescope (EHT) on Thursday. More than 300 researchers from 80 institutions collaborated on this project.

In April 2019, astronomers captured the first ever photograph of a black hole M87, which was located in a distant galaxy called Messier 87.

We take a look at how the picture, which is regarded as a technical tour de force, was captured.

What are black holes?

A black hole is formed when stars collapse, leading to a space in the universe with an escape velocity — the speed at which an object must travel to override a planet or an object's gravitational force. For instance, for a spacecraft to leave the surface of the Earth, it needs to be travelling at a speed of about 40,000 km per hour which is so great that even light cannot escape it.

Because light cannot get out, black holes are invisible and can only be tracked with the help of spatial telescopes and special tools. The light cannot go out because the gravity inside a black hole is very strong as a result of a lot of matter being squeezed into a small space.

In 2020, the Royal Swedish Academy of Sciences decided to award one half of the year's Nobel Prize in physics to Roger Penrose and the other half jointly to Reinhard Genzel and Andrea Ghez for furthering the understanding of black holes, the most "enigmatic" objects in the universe.

Genzel and Ghez discovered that an invisible and an extremely heavy object governs the stars' orbit at the centre of the Milky Way. This extremely heavy object has the mass equivalent to 4 million solar masses and is packed into an area about the size of our solar system.

Essentially, their work tells us that at the centre of the Milky Way lies an invisible supermassive object, of which a black hole provides a reasonable explanation. Physicists have been suspecting the existence of a black hole at the centre of our galaxy for over 50 years now.

In order to see through to the middle of the Milky Way, Genzel and Ghez worked on developing methods and used some of the world's largest telescopes.

By observing the orbits of the stars' that are closest to the centre of the Milky Way, the physicists think that the black hole could most likely be hiding in Sagittarius A*, a source of radio waves around which all stars in the Milky Way orbit.

Why and how was the blackhole photographed?

The photograph provides evidence that the object at the centre of the Milky Way, which has been a subject of speculation for decades, is indeed a black hole. Since the black hole is far away from Earth, to the astronomers looking at the sky, it appeared to be about the same size as a donut on the Moon.

To take its photograph, the team created a powerful Event Horizon Telescope after which Sagittarius A was observed on multiple nights and data was collected for hours in a row, an exercise similar to using a long exposure time on a camera.

A statement released by EHT said that scientists are excited about having images of two black holes that are of very different sizes, "which offers the opportunity to understand how they compare and contrast."

Source: The Indian Express

15. CERT-In's new cybersecurity norms, and why it is likely to issue a clarification about them

Relevant for GS Prelims & Mains Paper III; Science & Technology

The cybersecurity norms announced by the Indian Computer Emergency Response Team (CERT-In) last month requiring virtual private networks (VPNs) to preserve a wide range of data on their customers for five years may not apply to enterprise and corporate VPN providers, The Indian Express has learnt.

CERT-In is learnt to be working on releasing more details of the cybersecurity directive issued in April, which has been opposed by industry stakeholders. According to sources, the agency could clarify that the norms apply only to VPN providers who offer "Internet proxy like services" to "general Internet subscribers", and not to corporate VPN service providers.

What are these norms that CERT-In is clarifying?

The norms, released on April 28, asked VPN service providers along with data centres and cloud service providers, to store information such as names, email IDs, contact numbers, and IP addresses (among other things) of their customers for a period of five years. Entities are also required to report cybersecurity incidents to CERT-In within six hours of becoming or being made aware of them.

The norms have triggered concerns over privacy, and CERT-In is expected to clarify that private information of individuals will not be affected by the directions.

“These directions do not envisage seeking of information by CERT-In from service providers on a continual basis as a standing arrangement. CERT-In may seek information from service providers in case of cyber security incidents and cyber incidents, on a case-to-case basis, for discharge of its statutory obligations to enhance cyber security in the country,” according to a person aware of the clarifications that CERT-In is in the process of finalising.

The agency is also likely to include in its clarifications that the April 28 directive to store such information and share it with CERT-In will “override” any contractual obligation VPN providers may have with their customers of not disclosing such information.

Queries sent to the IT Ministry and CERT-In Director General Sanjay Bahl were not immediately answered.

But why has CERT-In felt the need to issue a clarification?

Prominent VPN providers, a large part of whose value proposition is ensuring anonymity of their users on the Internet, have questioned the directives, and some providers like NordVPN are even considering pulling their servers from India should the directive be enforced on them.

“At the moment, our team is investigating the new directive recently passed by the Indian government and exploring the best course of action. As there are still at least two months left until the law comes into effect, we are currently operating as usual. We are committed to protecting the privacy of our customers, therefore, we may remove our servers from India if no other options are left,” Laura Tyrylyte, head of public relations at Nord Security, said.

VPN providers like Surfshark have claimed that their technology does not allow the logging of users’ information. “Surfshark has a strict no-logs policy, which means that we don’t collect or share our customer browsing data or any usage information,” Gytis Malinauskas, head of the legal department at Surfshark, said.

“Moreover, we operate only with RAM-only servers, which automatically overwrite user-related data. Thus at this moment, we would not be able to comply with the logging requirements even technically. We are still investigating the new regulations and its implications for us, but the overall aim is to continue providing no-logs services to all of our users,” Malinauskas said.

How has the government responded to these concerns?

Speaking to The Indian Express earlier this month, IT Minister Ashwini Vaishnaw had said there was “nothing to worry about” CERT-In’s norms. “There is no privacy concern. Suppose somebody takes a mask and shoots, wouldn’t you ask them to remove that mask? It is like that,” Vaishnaw had said during an interview.

Explaining the need for the rules, he had said, “Cybersecurity is something which is continuously evolving. So we have issued very comprehensive guidelines from CERT-In. Ultimately, if there is a threat to you, the police and you would both have to work together.”

“The basic concept (of the guidelines) is that the people who are actually running the infrastructure should take all possible steps to make sure that things are in place and if there is any breach, immediately inform us so that we can take action,” Vaishnaw said.

Source: The Indian Express

16. Google I/O 2022: Google’s artificial intelligence and machine learning breakthroughs, explained

Relevant for GS Prelims & Mains Paper III; Science & Technology

Google, which held its developer conference I/O 2022 late Wednesday, has doubled down on artificial intelligence (AI) and machine learning (ML) development. It is focusing not only on research, but also product development.

One of Google's focus areas is making its products, especially those involving communication, more "nuanced and natural". This includes development and deployment of new language processing models.

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Take a look at what the company has announced:

AI Test Kitchen

After launching LaMDA (Language Model for Dialog Applications) last year, which allowed Google Assistant to have more natural conversations, Google has announced LaMDA 2 and the AI Test Kitchen, which is an app that will bring access to this model to users.

The AI Test Kitchen will let users explore these AI features and give them a sense of what LaMDA 2 is capable of.

Google has launched the AI Test Kitchen with three demos — the first, called 'Imagine It', allows users to suggest a conversation idea and Google's language processing model then returns with "imaginative and relevant descriptions" about the idea. The second, called 'Talk About it', ensures the language model stays on topic, which can be a challenge. The third model, called 'List It Out', will suggest a potential list of to-dos, things to keep in mind or pro-tips for a given task.

Pathways Language Model (PaLM)

PaLM is a new model for natural language processing and AI. According to Google, it is their largest model till date, and trained on 540 billion parameters.

For now, the model can answer Math word problems or explain a joke, thanks to what Google describes as chain-of-thought prompting, which lets it describe multi-step problems as a series of intermediate steps.

One example that was shown with PaLM, was the AI model answering questions in both Bangla and English. For instance, Google and Alphabet CEO Sundar Pichai asked the model about popular pizza toppings in New York City, and the answer appeared in Bangla despite PaLM never having seen parallel sentences in the language.

Google's hope is to extend these capabilities and techniques to more languages and other complex tasks.

Multisearch on Lens

Google also announced new enhancements to its Lens Multisearch tool, which will allow users to conduct a search with just an image and some words.

"In the Google app, you can search with images and text at the same time – similar to how you might point at something and ask a friend about it," the company said.

Users will also be able to use a picture or screenshot and add "near me" to see options for local restaurants or retailers that have apparel, home goods, and food, among other things.

With an advancement called "scene exploration", users will be able to use Multisearch to pan their camera and instantly glean insights about multiple objects in a wider scene.

Immersive Google Maps

Google announced a more immersive way to use its Maps app. Using computer vision and AI, the company has fused together billions of Street View and aerial images to create a rich, digital model of the world. With

the new immersive view, users can experience what a neighbourhood, landmark, restaurant or popular venue is like.

Google has also added 24 new languages to Translate, including Assamese, Bhojpuri, Konkani, Sanskrit and Mizo. These languages were added using 'Zero-Shot Machine Translation', where a machine learning model only sees monolingual text – meaning, it learns to translate into another language without ever seeing an example.

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However, the company noted that the technology is not perfect and it would keep improving these models.

Source: The Indian Express

17. Long COVID impacts quality of life for two years after infection: Lancet study

Relevant for GS Prelims & Mains Paper III; Science & Technology

Need more research on Long Covid in India, say experts

The story so far Months after the first cases of COVID-19 were detected in the world outside China, concerns about persistent symptoms post infection cropped up. Systems were then set up to study this phenomenon and provide possible solutions to those suffering from sequelae related to their COVID infection. The Lancet's May 11 publication ([https://doi.org/10.1016/S2213-2600\(22\)00126-6](https://doi.org/10.1016/S2213-2600(22)00126-6)) has provided more grist to the mill for those calling for greater attention to Long COVID, establishing that the burden of symptomatic sequelae remained fairly high even two years after COVID. Pandemic survivors also had a remarkably lower health status than the general population at two years, it said.

What is long COVID?

With the ongoing COVID-19 pandemic, evidence showed that a considerable proportion of people who have recovered from COVID-19 continue to face long-term effects on multiple organs and systems. These sequelae have been noticed in people who did not exhibit any symptoms during their infection stage. In the absence of a universally-accepted definition, post-COVID Syndrome, by consensus, is defined as signs and symptoms that develop during or after an infection consistent with COVID-19 which continue for more than 12 weeks and are not explained by alternative diagnosis. Technically, post Covid defines symptoms that persist four weeks after infection and Long Covid, 12 weeks past a COVID-19 infection.

The effects range from skin rash, sleep difficulties fatigue or muscle weakness, hair loss, joint pain, palpitations, dizziness, cough, headache, sore throat, to chest pain, smell and taste disorders, anxiety disorders and mobility issues. The Lancet paper chronicled these and many more side effects, but only in patients who were hospitalised for COVID.

How long does long COVID last for?

The study, perhaps for the first time, described Long COVID for the longest time possible – two years. It characterises the longitudinal evolution of health outcomes in hospital survivors with different initial disease severity throughout the two years after an acute COVID-19 infection. A matched control group of adults without a COVID-19 infection were studied against patients who tested positive for SARS-CoV-2, and had been discharged from Jin Yin-tan Hospital in Wuhan, China, between January 7 and May 29, 2020. Health outcomes were measured at six months, 12 months and two years after symptom onset.

The study did note that the proportion of individuals with at least one sequelae symptom decreased significantly from 68% at six months to 55% at two years, (with fatigue or muscle weakness being the most frequently reported symptom throughout follow-up). The scene continued to improve in almost all domains, especially in terms of anxiety or depression, with the proportion of participants reporting symptoms of anxiety or depression dropping significantly from 23% at six months to 12% at two years. About 89 % of those who had been hospitalised for COVID had returned to their regular work at the end of two years. At the

two-year follow-up, notably, long COVID symptoms were related to a decreased health-related quality of life and exercise capacity, psychological abnormality, and increased use of health care after discharge.

COVID-19 survivors still had more prevalent symptoms and more problems with pain or discomfort, as well as anxiety or depression, at two years, than did the control group, as per the study. Additionally, a significantly higher proportion of survivors who had received higher-level respiratory support during hospitalisation continued to have lung issues. The study findings indicate that there was an urgent need to explore the pathogenesis of Long COVID and develop effective interventions to reduce the risk of such side effects.

What is the status in India?

The government of India developed its own National Comprehensive Guidelines for the management of post-COVID sequelae. This document sets out detailed techniques to treat post-COVID complications affecting cardiovascular, gastrointestinal, nephrological, neurological and respiratory systems. Several hospitals, both government and private, set up COVID wards to treat persons who complain of what seemed like post-COVID symptoms.

In January 2022, Indraprastha Apollo Hospital, New Delhi, reported that people infected in the second wave of COVID have experienced four times more Long COVID conditions than those from the first wave. According to doctors at the hospital, people who contracted the virus in the second wave showed multiple symptoms including high grade fever, diarrhoea and severe lung infection. They added that even after a year of testing positive, the road to recovery for patients had been very difficult, with acute weakness and fatigue plaguing their everyday lives.

But, said Jacob John, senior virologist, formerly with the Christian Medical College, Vellore, there was very little evidence for Post Covid or Long Covid in India, "As far as I know, for some reason, we have not seen it so much in India," he told this writer.

Chandrakanth Lahariya, epidemiologist and public policy and health systems specialist, said it appeared that both Post Covid and Long Covid had fewer numbers in India. "We need to remember," he hastened to explain to this correspondent, "Post covid and Long Covid are realities. A small proportion of people will continue to have symptoms, beyond four weeks, and beyond 12 weeks."

The broader principles of immunology – how the immune system works, how vaccination helps – are universal principles -- they worked the same way, largely, in any part of the world, Dr. Lahariya explained. This was not the same for Long Covid, because these were health conditions, and these need not necessarily be the same across the world.

"In the absence of the data, from India, it is difficult to say exactly what the situation is, we can only make inferences on empirical understanding. Long Covid is a reality, it is likely in all settings, but it is very possible that numbers will vary from setting to setting. The rates of Post Covid and Long Covid seem lower, in India, but only data can answer this confidently. We need a more systematic, robust study to generate such data, and we cannot base it merely on anecdotes or people visiting the health care facility."

How should we prepare for the future?

Dr. Lahariya pointed out that in the last two years, the focus, quite naturally, was in taking care of people who were ill, and very little research, and therefore data, existed on Long Covid from a longitudinal basis (multiple engagements over a long period of time, as in the case of The Lancet paper). But since the world seems to be at the fag end of the pandemic, it is necessary for every health system to gear up to deliver both Post Covid and Long Covid services, irrespective of the number of people who might require them, he added.

Source: The Hindu

18. What is Apple's new 'Door Detection' feature and how does it work?

Relevant for GS Prelims & Mains Paper III; Science & Technology

iPhone maker Apple has unveiled a set of new software features combined with the hardware capabilities on some of its high-end devices to help users with certain physical disabilities. These features include Door Detection on the iPhone and the iPad; live captions on iPhone, iPad and Mac, and more. These features, Apple said, will be available later this year through software updates on Apple devices.

What is Door Detection and how does it work?

Apple said in a statement that this feature can help users, who are blind or have low vision, locate a door upon arriving at a new destination, understand how far they are from it, and describe door attributes — including if it is open or closed, and when it's closed, whether it can be opened by pushing, turning a knob, or pulling a handle. Door Detection can also read signs and symbols around the door, like the room number at an office, or the presence of an accessible entrance symbol, the company claimed. This feature uses LiDAR, camera, and on-device machine learning, and will be available on iPhone and iPad models with the LiDAR Scanner.

What are live captions?

With this feature, users in the deaf or hard of hearing community can follow any audio content on their iPhones, iPads and Macs through real-time captioning. This includes use cases such as a phone call, a FaceTime call, a video-conferencing or a social media app, in addition to streaming media content or even having a conversation with someone next to them. The company said that when Live Captions are used for calls on Mac, users have the option to type a response and have it spoken aloud in real time to others who are part of the conversation. "And because Live Captions are generated on device, user information stays private and secure," it added.

What are some of the other features?

Some of the other features include Apple adding a way for people with motor disabilities to mirror some of the Apple Watch apps to the iPhone and hand gestures for people with amputations to do certain actions like taking a picture, answering a phone call, etc with a gesture like a 'double pinch'.

Are there any concerns around the introduction of these features?

According to a TechCrunch report, some of these features and services that Apple will introduce are already being provided by third-party providers and apps. And bringing these services as in-built features on Apple devices could "clip the wings of independent service providers of similar services" — something that may potentially hamper competition and the resultant increase in quality. Furthermore, functionalities like Door Detection will be available only on a limited number of high-end Apple devices with a LiDAR scanner including iPhone 13 Pro, iPhone 13 Pro Max, iPhone 12 Pro, iPhone 12 Pro Max, iPad Pro 11-inch (2nd and 3rd generation), and iPad Pro 12.9-inch (4th and 5th generation). Similarly, the Apple Watch mirroring will be available only on Apple Watch Series 6 and later.

Source: The Indian Express

19. Ethanol blend in petrol to be raised to 20% in 3 years

Relevant for GS Prelims & Mains Paper III; Science & Technology

20% Ethanol blending by 2025

The Union Cabinet recently approved amendments to the National Policy on Biofuels, 2018, to advance the date by which fuel companies have to increase the percentage of ethanol in petrol to 20%, from 2030 to 2025. The policy of introducing 20% ethanol will take effect from April 1, 2023.

Expected benefits

A press statement from the government said the new policy would allow more feed stock for producing biofuel and foster the development of indigenous technologies.

A 2021 report by the NITI Aayog said that “immense benefits” could accrue to the country by 20% ethanol blending by 2025, such as saving ₹30,000 crore of foreign exchange per year, increased energy security, lowered carbon emissions, better air quality, self-reliance, better use of damaged foodgrains, increased farmers’ incomes and greater investment opportunities.

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Present status

India achieved 9.45% ethanol blending as on March 13, 2022, according to the Ministry of Petroleum and Natural Gas (MoPNG). The Centre projects that this will reach 10% by the end of financial year 2022. The government first announced its plans of advancing the 20% blending target in December 2020.

Impact on engines

A 10% blending of petrol does not require major changes to engines but a 20% blend could require some changes and may even drive up the prices of vehicles. A greater percentage of blending could also mean more land being diverted for water-intensive crops such as sugar cane, which the government currently subsidises. The NITI Aayog projects an ethanol demand of 10.16 billion litres by 2025, based on the adoption of vehicles. The current ethanol production capacity in India of 4.26 billion litres derives from molasses-based distilleries, and 2.58 billion litres from grain-based distilleries. This is expected to expand to 7.6 billion litres and 7.4 billion litres respectively, and will require six million tonnes of sugar and 16.5 million tonnes of grains per annum by 2025.

The increased allocation of land also puts into question the actual reduction in emissions that blending ethanol with petrol brings about.

Source: The Hindu

20. What are BA.4 and BA.5 sub-variants of Omicron, and can they lead to a Covid surge in India?

Relevant for GS Prelims & Mains Paper III; Science & Technology

The European Centre for Disease Control and Prevention has declared the BA.4 and BA.5 sub-variants of Omicron as ‘variants of concern’. Being sub-variant of Omicron, the World Health Organisation (WHO) already considers both to be ‘variants of concern’.

How are these two sub-variants of Omicron different from the previously reported ones – BA.1 and BA.2 – that caused the third wave in India in January? Can the two new sub-variants lead to another wave of Covid-19 in the country? Can previous infections and high levels of vaccination protect against severe disease and hospitalisations?

How are the two new Omicron sub-variants different from the ones that caused the third wave of Covid-19 in India?

Firstly, the new sub-variants are not all that new. They were first identified in South Africa in January this year, while India was witnessing the third wave of Covid-19. Over the next four months, BA.4 and BA.5 became the dominant variants in circulation in that country – collectively replacing 55 per cent of the other Covid-19 variants, according to the National Institute of Communicable Disease-South Africa.

The two sub-variants have since been detected in several European countries and the United States. The European CDC has declared the two as 'variants of concern', anticipating "a significant overall increase in Covid-19 cases in the coming weeks and months."

What concerned scientists the most were two mutations that both the sub-variants carried on their receptor binding domain – the part of the virus' spike that attaches to the human cells and enters the body.

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The F486V mutation, previous lab studies show, is one of the biggest escape mutations for other Omicron sub-variants, meaning it makes the virus better able to evade the antibodies from previous infection or vaccination.

Dr Anurag Agarwal, former head of INSACOG and the chair of WHO's Technical Advisory Group on Virus Evolution, in a tweet said, "Antigenically – quite dissimilar to BA.1, so humoral cross-protection will decline. (Antibodies will be less effective)."

This, coupled with the waning immunity from vaccines, is likely to lead to the two sub-variants propagating, the European CDC said.

The other L452R mutation, which was previously found in the Delta variant, is known to enhance the virus' ability to enter human cells. A laboratory study from China also shows that Omicron variants with the L452R mutations are better able to infect lung cells in mice. The Omicron variant led to less severe disease in most places, including India, because it mainly affected the upper respiratory tract, unlike Delta that severely affected the lungs leading to higher hospitalisations, requirement for oxygen, and deaths.

Are the two sub-variants likely to cause more severe disease, hospitalisations?

The good news, however, is that on-ground, BA.4 and BA.5 don't seem to be causing an increase in hospitalisations and deaths in South Africa. "Wave of infections in SA has peaked with, so far, low hospitalisations and deaths," said director of Centre for Epidemic Response and Innovation-South Africa Tulio de Oliveira in a tweet. He is also a member of the WHO group tracking the evolution of Covid-19. He added, "Interesting that, so far, in countries with a large BA.2 wave, the BA.4 and BA.5 seem to be increasing slowly."

BA.2 was the dominant sub-variant in India during the third wave. In fact, an analysis of the global database of Covid-19 genome sequences shows that BA.2 accounted for 62 per cent of the sequences from India over the last two months.

The European CDC also said, "There is currently no indication of any change in severity for BA.4/BA.5 compared to previous Omicron lineages."

Dr Sudhanshu Vrat, the current head of India's genomic sequencing consortium INSACOG, agreed.

So, are the variants likely to cause another surge in cases in India?

Dr Vrat said, "We already have a four-month experience from other countries on the two sub-variants; the initial concern was because of the L452 mutation seen in the Delta variant. However, so far, there has been no co-relation of these with an increase in the severity of disease, hospitalisations or deaths. And, that is likely to be the case in India as well."

As for the increase in the number of cases – as seen during the January Omicron-variant driven wave when cases shot up but hospitalisations did not increase proportionally – he said, "A significant proportion of our population has had the infection and been vaccinated. The sub-variants are unlikely to cause havoc. As for increase in the number of cases, we saw that even now with the standard Omicron variant in Delhi-NCR, the virus will always find the ones with lower immunity."

He added that there was no need for people to be worried, but that genomic sequencing must continue to watch out for new variants that might lead to more cases or severe disease.

Source: The Indian Express

21. What is Sudden Infant Death Syndrome?

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Relevant for GS Prelims & Mains Paper III; Science & Technology

A team of scientists from Australia have found that babies at risk of the mysterious Sudden Infant Death Syndrome, or SIDS, generally have low levels of an enzyme called butyrylcholinesterase (BChE) in their blood. SIDS, also known as 'cot death', has claimed the lives of thousands of children across the West. In the United States, the Centers for Disease Control and Prevention (CDC) estimates that about 3,400 babies die suddenly and unexpectedly every year. Meanwhile, the United Kingdom reports about 200 such deaths annually, according to NHS data.

The illness, however, is shrouded in mystery — experts have been unable to identify what causes the deadly disease. While the Australian study could potentially pave the way for early intervention and diagnosis, health experts warn there is still a long way to go before the true cause of SIDS is identified.

So, what is Sudden Infant Death Syndrome?

Sudden Infant Death Syndrome refers to the sudden and unexpected death of an otherwise healthy infant under the age of one, generally while they are sleeping. Most SIDS-related deaths occur in infants between the age of 1-4 months.

According to the NHS website, parents can reduce the risk of SIDS by not smoking while pregnant or after the baby is born and ensuring that the baby is placed on their back when they sleep.

Some health experts have said that it is associated with issues in the part of an infant's brain that controls breathing and waking up, CNN reported.

What does the new study say?

Published earlier this month in the journal eBioMedicine, the study assessed whether there was something inherently different in babies that succumbed to SIDS. The team that carried out the research was led by Dr. Carmel Harrington from the Children's Hospital at Westmead, in Sydney, Australia, who lost one of her own children to SIDS nearly 30 years ago.

The researchers compared dried blood samples from 655 healthy babies, 26 babies who died due to SIDS and 41 babies who died of other causes. The team found that around nine of ten babies who died from SIDS had lower levels of BChE enzymes than the babies in the other two groups.

What is the BChE enzyme responsible for?

These enzymes are responsible for sending out signals that make a baby wake up, turn her head, or gasp for breath, the New York Times reported. It is part of the autonomic system, and controls functions like blood pressure and breathing.

The study refers to earlier research, which showed that animals in contact with second-hand smoke tend to exhibit lower BChE levels. It notes that several other factors and changes in the first six month of an infant's life can also contribute to low levels of these enzymes.

"Babies have a very powerful mechanism to let us know when they are not happy. Usually, if a baby is confronted with a life-threatening situation, such as difficulty breathing during sleep because they are on

their tummies, they will arouse and cry out. What this research shows is that some babies don't have this same robust arousal response," Dr Harrington told the Sydney Children's Hospitals Network.

Why the study must be approached with caution

While the findings of this study are significant, scientists are still some time away from identifying the cause and cure of SIDS.

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While the study has found that babies with SIDS reported lower BChE levels than infants without the disease, it has not laid down what a "normal" level of the enzyme looks like, a New York Times report points out.

Further, the study looks at blood samples that are at least a few years old. This means that they were unable to measure the absolute levels of the enzymes in fresh blood.

Even if babies are found to have low BChE levels, doctors have not been able to identify a treatment for this condition.

Source: The Indian Express

22. Understanding India's ethanol blending policy

Relevant for GS Prelims & Mains Paper III; Science & Technology

The Union Cabinet on Wednesday approved amendments to the National Policy on Biofuels, 2018, to advance the date by which fuel companies have to increase the percentage of ethanol in petrol to 20%, from 2030 to 2025. The policy of introducing 20% ethanol is expected to take effect from April 1, 2023.

What is the history of ethanol-blending in India?

Since two decades, India has been moving towards putting in place an ecosystem to have more ethanol blended into petrol for use vehicles, particularly two and four wheelers. Government records suggest about 75% of India's 220 million vehicles are two wheelers and 12% four wheelers. Ethanol, or ethyl alcohol, is a hydrocarbon that when burnt can generate heat and power engines.

However, it takes much more ethanol to power a vehicle's engine than petrol. It also leaves residual by-products that can corrode and damage the vehicle which is why, while vehicles can be run on ethanol, they need to be tuned accordingly so that they don't compromise on efficiency and usability. On the other hand, the gains are potentially significant as ethanol can be sourced from sugarcane, molasses, maize, which given India's agricultural base, can substantially reduce India's dependence on petroleum.

Since 2001, India has tested the feasibility of ethanol-blended petrol whereby 5% ethanol blended petrol (95% petrol-5% ethanol) was supplied to retail outlets. In 2002, India launched the Ethanol Blended Petrol (EBP) Programme and began selling 5% ethanol blended petrol in nine States and four Union Territories that was extended to twenty States and four UTs in 2006. Until 2013-14, however, the percentage of blending never crossed 1.5%.

In 2015, the Ministry of Road Transport and Highways notified that E5 [blending 5% ethanol with 95% gasoline] petrol and the rubber and plastic components used in gasoline vehicles produced since 2008 be compatible with the E10 fuel. In 2019, the Ministry notified the E10 fuel [blending 10% ethanol with 90% gasoline]. The rubber and plastic components used in petrol vehicles are currently compatible with E10 fuel. Financial incentives for distilleries coupled with policy support has seen average blending touch 5%. Standards for E20, E85 and even E100 fuel have already been laid. This includes standards for ethanol blended diesel. Since 2020, India has been announcing its intent to achieve 10% blending by the end of 2022 and 20% blending by 2030. The Centre has also targeted 5% blending of biodiesel with diesel by 2030.

What does switching to E20 entail?

A NITI Ayog Committee report of June 2021 lays out a comprehensive picture of ethanol blending, the challenges and a roadmap. India's net import of petroleum was 185 million tons at a cost of \$55 billion in 2020-21. Most of the petroleum is used by vehicles and therefore a successful 20% ethanol blending programme could save the country \$4 billion per annum, or about ₹30,000 crore. To achieve such savings, the committee estimates an ethanol demand of 1,016 crore litres based on expected growth in vehicle population. Because electric vehicles are also likely to increase, this should partially offset demand for ethanol leading to a requirement of 722-921 crore litres in 2025.

This however is an "optimistic" projection as the NITI report itself notes. India's current ethanol production capacity consists of 426 crore litres from molasses-based distilleries, and 258 crore litres from grain-based distilleries. This is expected to increase to 760 crore litres and 740 crore litres respectively and would suffice to produce 1016 crore litres of ethanol required for EBP and 334 crore litres for other uses. This will require six million tonnes of sugar and 16.5 million tonnes of grains per annum in ESY 2025.

How does this affect engines?

When using E20, there is an estimated loss of 6-7% fuel efficiency for four wheelers which are originally designed for E0 and calibrated for E10, 3-4% for two wheelers designed for E0 and calibrated for E10 and 1-2% for four wheelers designed for E10 and calibrated for E20. Car makers have said that with modifications in engines (hardware and tuning), the loss in efficiency due to blended fuel can be reduced. To compensate the consumers for a drop in efficiency from ethanol blended fuels, tax incentives on E10 and E20 fuel may be considered. The test vehicles worked well in several test-situations, the report noted.

What is the international experience?

Flex Fuel Engine technology (FFE), or vehicles that run entirely on ethanol, are popular in Brazil and comprise nearly 80% of the total number of new vehicles sold in 2019. The cost of flex fuel vehicles (four-wheelers) could cost about ₹17,000 to ₹25,000 more than the current generation of vehicles.

The two-wheeled flex fuel vehicles would be costlier by ₹5,000 to ₹12,000 compared to regular petrol vehicles. The global production of fuel ethanol touched 110 billion litres in 2019, or about an average growth of 4% year per year during the last decade. The U.S. and Brazil make up 92 billion litres, or 84% of the global share, followed by European Union (EU), China, India, Canada and Thailand.

The prices of ethanol produced in India are higher compared to U.S. and Brazil, because of the minimum support prices that the government provides.

What are the environmental costs of ethanol blending?

Because ethanol burns more completely than petrol, it avoids emissions such as carbon monoxide. However, tests conducted in India have shown that there is no reduction in nitrous oxides, one of the major environmental pollutants. A report by the Institute for Energy Economics and Financial Analysis (IEEFA) says that for India to meet its target of 20% ethanol blended in petrol by the year 2025, it will need to bring in 30,000 additional sq km of land to come under maize cultivation. Half that land can be used more efficiently to produce clean electricity from solar energy, they contend.

For India, sugarcane is the cheapest source of ethanol. On average, a ton of sugarcane can produce 100 kg of sugar and 70 litres of ethanol but that would mean 1,600 to 2,000 litres of water to produce 1 kg of sugar, implying that a litre of ethanol from sugar requires about 2,860 litres of water.

Source: The Hindu

23. 1G to 5G and further: What changes with each 'G'?

Relevant for GS Prelims & Mains Paper III; Science & Technology

Website: www.prepmate.in

Telegram Channel: [@upscprepmate](https://t.me/upscprepmate)

Prepmate Cengage Books Preview: <https://prepmate.in/books/> Youtube channel: [PrepMateEduTech](https://www.youtube.com/channel/UCPrepMate)

As Prime Minister Narendra Modi launched the country's first 5G testbed on May 17 to help industry validate its products locally, he also set a target for India to roll out 6G services by the end of this decade. From generation one (1G) to the fifth, each generation of telecom technology has sought to change for the better the way humans interact with each other and the world around them. This is what changed with each 'G' (generation) and what the future holds.

From 1G to 2G: The Big Jump

Launched in the late 1970s in Japan, 1G was the first generation of mobile telecommunication technology that offered voice calls only. But it came with low sound quality, low coverage, and without any roaming support.

The major leap for telecom tech of that time came in 1991 with the introduction of 2G. The analog signals of 1G became completely digital in the second generation.

Apart from introducing the CDMA and the GSM concepts, it allowed users to roam and offered small data services like SMS and MMS at a maximum speed of around 50 kbps. While the focus was still on voice calling, data support was introduced.

2G continues to be popular in India even as it is being gradually phased out in many parts of the world. Jio, a major service provider in the country, last year set itself a goal of '2G-mukt Bharat' — to "free 300 million subscribers still trapped in the 2G era".

The 3G Revolution

Mobile technology kept its date with generational leap every decade with the introduction of 3G services in 2001. It promised four times faster data transmission with access to mobile Internet. This is the generation that brought emails, navigational maps, video calling, web browsing and music to mobile phones.

It was also during this generation that BlackBerry phones became the rage, and subsequently, Steve Jobs introduced the world to the 'App Store' with the launch of iPhone 3G in 2008. More than a decade on, there is talk that Apple may drop 3G from its devices in the next couple of years.

The World in 4G

High speed, high quality, high capacity voice and data services – that's the promise that 4G, the network most of us use today, brought with it around 2010. Standard 4G came with five to seven times faster speeds than 3G.

Compared to 3G, a phone on a 4G network got quicker response to its requests (lower latency). This is what made our phones more like hand-held computing devices.

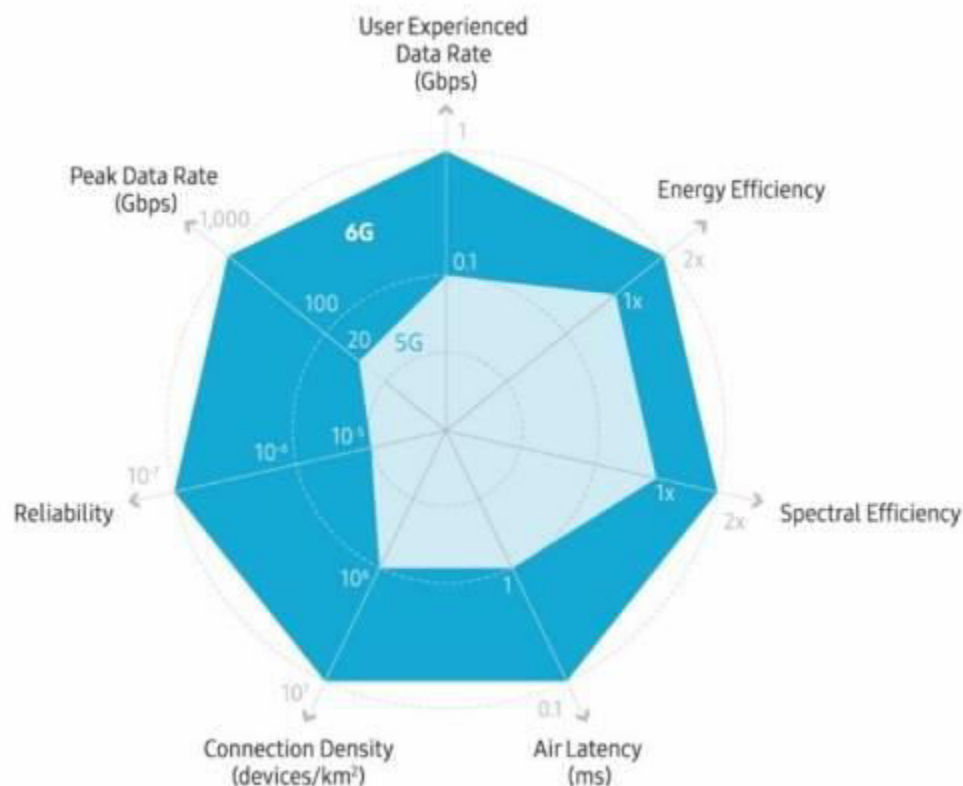
The 5G Promise

Hailed as the new frontier of mobile technology, 5G promises latency (the delay users face as data make a round trip) of just one millisecond compared to 50 milliseconds of a 4G network. The devices, according to the MIT Technology Review, will have low power requirement that will boost the battery life of devices multiple times.

But 5G is expected to be more than just faster download speeds. With increase in cellular bandwidth, blazing speed and low latency, it promises to boost the 'Internet of Things' by making it easy for several devices to connect to each other to communicate and to be controlled remotely.

A 5G world of the future is billed to have smart city infrastructure, self-driving cars, and robotic surgeries as real-use cases. 5G is being rolled out in many places including South Korea, the United States, and Canada, and is expected in India soon.

Also, the technological force of this next generation has already made major world powers face off in the race to get an edge.



A comparison of key performance requirements between 6G and 5G (Source: Samsung White Paper on 6G)

The Future Gs

Not a functioning technology as of now, 6G only promises to do better what 5G should. But then, the 'future Gs' will not be just about your phone.

Experts envision a communication web with zero lag, where it will be possible to seamlessly perform remote surgery and even beam sports events live using hologram technology. In a white paper on 6G published in 2020 ('The Next Hyper-connected Experience for All'), Samsung said it expected that "the completion of the 6G standard and its earliest commercialisation date could be as early as 2028, while mass commercialisation may occur around 2030".

"Both humans and machines will be the main users of 6G, and 6G will be characterised by provision of advanced services such as truly immersive extended reality (XR), high-fidelity mobile hologram and digital replica," it said.

India's 5G Testbed & 6G Goal

On Tuesday, the PM launched India's first 5G testbed developed at the cost of Rs 220 crore. It will allow start-ups and industry players to test their products and make them 5G ready. Till now, this test was only possible abroad.

The testbed is a collaborative project involving eight institutions led by IIT-Madras. At the launch, Modi said that India planned to roll out 6G by 2030, and a taskforce was working in that direction. "Connectivity will determine the pace of progress in 21st century India," he said.

Source: The Indian Express

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24. Why the anti-ship missile tested by the Navy matters

Relevant for GS Prelims & Mains Paper III; Science & Technology

The Navy recently tested an indigenous Naval Anti-Ship Missile (Short Range) or NASM-SR from a Sea King helicopter at the Integrated Test Range in Balasore, Odisha. A look at its efficacy and the significant role it can play in modern naval warfare.

What is the NASM-SR tested by the Navy?

The NASM-SR has been developed by the Defence Research and Development Organisation (DRDO). The first time its development was revealed to the general public was in 2018 when then Defence Minister Nirmala Sitharaman made a reference to it in Parliament. Later, it was also part of the display at the 2020 Defence Exposition held in Lucknow.

The NASM-SR has a range of 55 km and weighs 385 kg. This missile will replace the Sea Eagle missiles which are currently in use with the Navy. With the Sea King helicopters too being phased out, it is expected that the NASM-SR will be used with the new MH-60R multi-role helicopters, which are being inducted into the Navy.

What are the technical aspects of the missile?

The NASM-SR carries a warhead of 100 kg and has sub-sonic capabilities, which means that it flies below the speed of sound at 0.8 Mach. The sub-sonic flight speed makes it difficult for the naval vessels on target to detect it.

It has a launch altitude of maximum of 3 km and can skim 5 metres above sea level when on final approach to the target.

The NASM-SR can also be fired from the shore to target vessels in the sea.

This kind of land-based missile launch capability was shown by the Ukrainian military recently when they used a anti-ship cruise missile to sink the Russian ship Moskva.

Is the small warhead size enough to sink ships?

The NASM-SR is very effective against smaller vessels like patrol boats and can also cause widespread damage on larger vessels. The smaller payload of the missile can still be effective if it targets certain key areas of a ship like the ones where fuel and ammunition is stored.

It has been proven in modern naval conflict that a modest strike by a missile can still sink a ship because of the implosion caused by on-board fuel and ammunition.

Also, the lighter size of the missile makes it easier to be carried by helicopters and in turn provides Naval Commanders with more options to choose from in the tactical battlefield on the seas.

Source: The Indian Express

25. India registers success with BP treatment, control

Relevant for GS Prelims & Mains Paper III; Science & Technology

Website: www.prepmate.in

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Cardiovascular diseases (CVD) are the leading cause of death among adults in India. One of the major drivers of heart attack and stroke is untreated high blood pressure or hypertension. Hypertension is a silent killer as most patients do not have any symptoms.

India has more than 200 million people with hypertension, and only 14.5% of individuals with hypertension are on treatment. Unlike many other diseases, hypertension is easy to diagnose and can be treated with low-cost generic drugs.

India Hypertension Control Initiative (IHCI) is a multi-partner initiative involving the Indian Council of Medical Research, WHO-India, Ministry of Health and Family Welfare, and State governments to improve blood pressure control for people with hypertension. The project initiated in 26 districts in 2018 has expanded to more than 100 districts by 2022. More than two million patients were started on treatment and tracked to see whether they achieved BP control.

The project demonstrated that blood pressure treatment and control are feasible in primary care settings in diverse health systems across various States in India. Before IHCI, many patients travelled to higher-level facilities such as community health centres (block level) or district hospitals in the public sector for hypertension treatment. Over three years, all levels of health staff at the primary health centres and health wellness centres were trained to provide treatment and follow-up services for hypertension.

Five scalable strategies

Nearly half (47%) of the patients under care achieved blood pressure control. The BP control among people enrolled in treatment was 48% at primary health centres and 55% at the health wellness centres. The most encouraging finding was that BP control in the primary care facilities was higher when compared with hospitals. The availability of medications in the peripheral facilities made it easier for the patient to continue treatment, thus improving BP control.

The project was built on five scalable strategies: First, a simple treatment protocol with three drugs was selected in consultation with the experts and non-communicable disease programme managers. Second, the supply chain was strengthened to ensure the availability of adequate antihypertensive drugs. Third, patient-centric approaches were followed, such as refills for at least 30 days and assigning the patients to the closest primary health centre or health wellness centre to make follow-up easier. Fourth, the focus was on building capacity of all health staff and sharing tasks such as BP measurement, documentation, and follow-up. Finally, there was minimal documentation using either paper-based or digital tools to track follow-up and BP control.

Data-driven approach

One of the unique contributions of the project was a data-driven approach to improving care and overall programme management. The list of people who did not return for treatment was generated through a digital system or on paper by the nurse/health workers. Patients were reminded either over the phone or by home visit (if feasible). This strategy motivated a large number of patients to continue treatment. In addition, programme managers reviewed aggregate data at the district and State levels to assess the performance of facilities in terms of follow-up and BP control.

Scaling hypertension treatment is feasible given the enablers in India's health system. When procured at scale, the generic antihypertensive drugs cost only ₹200 per patient per year.

India has a vast network of primary health centres where doctors and nurses can be trained to diagnose and treat hypertension.

Health wellness centres under Ayushman Bharat Yojna have specially trained nurses who can measure blood pressure and provide refills for patients initiated on treatment by doctors at the higher health facility.

In addition, E-Sanjeevani, a telemedicine initiative, facilitates teleconsultations.

Making progress

Since 2018, the project team has worked hand-in-hand with State health departments to strengthen the hypertension component within the framework of ongoing initiatives for the control of noncommunicable diseases. Based on the positive experience, several States have already started implementing the strategies beyond project districts.

We need to address a few challenges to reduce the treatment gap. Many people with hypertension are not aware of their high BP. All health facilities can measure BP at the entry point for people who visit the doctor for any health problem. This strategy, also known as opportunistic screening, does not require additional resources.

The availability of good quality blood pressure monitors is a prerequisite for accurate BP measurement. Extended refills up to 60 days can reduce visits to health facilities.

One of the challenges is the involvement of the private sector, where a large number of people with hypertension currently seek care. We must overcome the challenges to ensure early detection and treatment of hypertension to reduce preventable deaths and disability due to heart attack, stroke, and chronic kidney disease.

Source: The Hindu

26. Battery-like device that captures carbon dioxide while charging**Relevant for GS Prelims & Mains Paper III; Science & Technology**

Researchers have developed a low-cost device that can selectively capture carbon dioxide gas while it charges. Then, when it discharges, the carbon dioxide can be released in a controlled way and collected to be reused or disposed of responsibly, the University of Cambridge said in a press release. The device has been described in the journal *Nanoscale*.

The supercapacitor device, which is similar to a rechargeable battery, is the size of a coin, and is made in part from sustainable materials including coconut shells and seawater. The University of Cambridge said the supercapacitor could help power carbon capture and storage technologies at much lower cost. The most advanced carbon capture technologies currently require large amounts of energy and are expensive.

The supercapacitor consists of two electrodes of positive and negative charge. The team tried alternating from a negative to a positive voltage to extend the charging time from previous experiments. This improved the supercapacitor's ability to capture carbon.

"We found that that by slowly alternating the current between the plates we can capture double the amount of carbon dioxide than before," the release quoted lead researcher Dr Alexander Forse as saying. "The charging-discharging process of our supercapacitor potentially uses less energy than the amine heating process used in industry now. Our next questions will involve investigating the precise mechanisms of carbon dioxide capture and improving them. Then it will be a question of scaling up."

Source: The Indian Express

27. The rise of AI chips**Relevant for GS Prelims & Mains Paper III; Science & Technology**

The adoption of Artificial Intelligence (AI) chips has risen, with chipmakers designing different types of these chips to power AI applications such as natural language processing (NLP), computer vision, robotics, and network security across a wide variety of sectors, including automotive, IT, healthcare, and retail. Market leader Nvidia recently announced its H100 GPU (graphics processing unit), which is said to be one of the world's largest and most powerful AI accelerators, packed with 80 billion transistors. Earlier this month, Nvidia's rival Intel launched new AI chips to provide customers with deep learning compute choices for training and inferencing in data centres. The increasing adoption of AI chips in data centres is one of the major factors driving the growth of the market.

What are AI chips?

AI chips are built with specific architecture and have integrated AI acceleration to support deep learning-based applications. Deep learning, more commonly known as active neural network (ANN) or deep neural network (DNN), is a subset of machine learning and comes under the broader umbrella of AI. It combines a series of computer commands or algorithms that stimulate activity and brain structure. DNNs go through a training phase, learning new capabilities from existing data. DNNs can then inference, by applying these capabilities learned during deep learning training to make predictions against previously unseen data. Deep learning can make the process of collecting, analysing, and interpreting enormous amounts of data faster and easier.

These chips, with their hardware architectures and complementary packaging, memory, storage and interconnect technologies, make it possible to infuse AI into a broad spectrum of applications to help turn data into information and then into knowledge. There are different types of AI chips such as application-specific integrated circuits (ASICs), field-programmable gate arrays (FPGAs), central processing units (CPUs) and GPUs, designed for diverse AI applications.

Are they different from traditional chips?

When traditional chips, containing processor cores and memory, perform computational tasks, they continuously move commands and data between the two hardware components. These chips, however, are not ideal for AI applications as they would not be able to handle higher computational necessities of AI workloads which have huge volumes of data. Although, some of the higher-end traditional chips may be able to process certain AI applications.

In comparison, AI chips generally contain processor cores as well as several AI-optimised cores (depending on the scale of the chip) that are designed to work in harmony when performing computational tasks. The AI cores are optimised for the demands of heterogeneous enterprise-class AI workloads with low-latency inferencing, due to close integration with the other processor cores, which are designed to handle non-AI applications.

AI chips, essentially, reimagine traditional chips' architecture, enabling smart devices to perform sophisticated deep learning tasks such as object detection and segmentation in real-time, with minimal power consumption.

What are their applications?

Semiconductor firms have developed various specialised AI chips for a multitude of smart machines and devices, including ones that are said to deliver the performance of a data centre-class computer to edge devices. Some of these chips support in-vehicle computers to run state-of-the-art AI applications more efficiently. AI chips are also powering applications of computational imaging in wearable electronics, drones, and robots.

Additionally, the use of AI chips for NLP applications has increased due to the rise in demand for chatbots and online channels such as Messenger, Slack, and others. They use NLP to analyse user messages and conversational logic. Then there are chipmakers who have built AI processors with on-chip hardware

acceleration, designed to help customers achieve business insights at scale across banking, finance, trading, insurance applications and customer interactions.

As AI becomes pervasive across different workloads, having a dedicated inference accelerator that includes support for major deep learning frameworks would allow companies to harness the full potential of their data.

What firms are making these chips?

Nvidia Corporation, Intel Corporation, IBM Corporation, Advanced Micro Devices, Alphabet Inc., Samsung Electronics Co., Ltd, Qualcomm Technologies, Inc., and Apple Inc. are some of the key players in the AI chip market.

Nvidia, which dominates the market, offers a wide portfolio of AI chips including Grace CPU, H100 and its predecessor A100 GPUs, capable of handling some of the largest AI models with billions of parameters. The company claims that twenty H100 GPUs can sustain the equivalent of the entire world's internet traffic.

The American firm's next-generation accelerated computing platform, announced in March, with Nvidia Hopper architecture is designed to power data centres, which "are becoming AI factories — processing and refining mountains of data to produce intelligence," according to Nvidia CEO Jensen Huang.

Intel offers AI hardware that can train massive, unstructured data sets, to extremely low power silicon for on-device inference. Intel's Habana Labs launched its second-generation deep learning processors — Gaudi2 and Greco. Intel claims its Gaudi2 processor demonstrates two times throughput (the amount of material or items passing through a system or process) over Nvidia's A100 GPU.

IBM's new AI chip, announced last year, can support financial services workloads like fraud detection, loan processing, clearing and settlement of trades, anti-money laundering and risk analysis.

What can be expected in the future?

AI company Cerebras Systems set a new standard with its brain-scale AI solution, paving the way for more advanced solutions in the future. Its CS-2, powered by the Wafer Scale Engine (WSE-2) is a single wafer-scale chip with 2.6 trillion transistors and 8,50,000 AI optimised cores. The human brain contains on the order of 100 trillion synapses, the firm said, adding that a single CS-2 accelerator can support models of over 120 trillion parameters (synapse equivalents) in size.

Another AI chip design approach, neuromorphic computing, utilises an engineering method based on the activity of the biological brain.

An increase in the adoption of neuromorphic chips in the automotive industry is expected in the next few years, according to ResearchAndMarkets.

Additionally, the rise in the need for smart homes and cities, and the surge in investments in AI start-ups are expected to drive the growth of the global AI chip market, as per a report by Allied Market Research. The Worldwide AI chip industry accounted for \$8.02 billion in 2020 and is expected to reach \$194.9 billion by 2030, growing at a compound annual growth rate (CAGR) of 37.4% from 2021 to 2030.

Source: The Hindu

28. Engineering tomatoes to produce vitamin D

Relevant for GS Prelims & Mains Paper III; Science & Technology

Reading the pages of the World Sustainable Development Goals 2 (SDG2) — Eradicating Hunger — is depressing to say the least. According to the estimates made in 2020, nearly 690 million people, who make up close to 8.9% of the world's population, are hungry. This number has increased by 60 million in the preceding five years. The index which was initially decreasing has started to rise since 2015. This does not portend well for the SDG2 which has as its target zero hunger by 2030, and the guess is, if this trend continues, that the world will have 840 million people affected by hunger by 2030.

The 'invisible' hunger

There are various ramifications to hunger, and an important part of it is micronutrient malnutrition. This is a term used for diseases caused by deficiency of vitamins and minerals in the diet. This is particularly a problem in developing countries and the number of those suffering from this so-called invisible hunger is

huge. Some methods of combating this are to provide micronutrient supplements in the form of tablets or capsules and to fortify food products such as flour or salt by enhancing micronutrients in them. There is also the route of genetically modifying plants to produce biofortified leaves and fruit which can be consumed to alleviate micronutrient hunger.

In this line, a paper in Nature Plants by Jie Li et al tries to address vitamin D deficiency by genetically modifying tomato (*Solanum lycopersicum*) plants so that the fruit contains a significant amount of provitamin D3 which is a precursor from which humans can make vitamin D. Provitamin D3 has the chemical name 7-dehydrocholesterol, or 7-DHC for short. Humans can synthesise Vitamin D from 7-DHC when they are exposed to ultraviolet B (UVB) light. Vitamin D is needed for a process known as calcium homeostasis which is the maintenance of constant concentration of calcium ions in the body. This is needed for, among other things, bone development and strength, and its deficiency is a cause of conditions such as rickets and osteoporosis.

Other diseases that are associated with vitamin D deficiency are cancer, Parkinson's disease and dementia. Vitamin D3 is present in fish and dairy products. Vegetarian diets are particularly deficient in Vitamin D.

Mutant tomatoes

The recommended intake of vitamin D is 15 microgram per day for children and 20 microgram per day for elders. This can be given through supplements or a careful exposure to sunlight, but there are various caveats for the latter. It is in this context that the work of J. Li et al is significant. The authors of the paper, published in Nature Plants, tweaked a recently discovered pathway in tomato plants to produce cholesterol and a substance called steroidal glycoalkaloid (SGA for short) using the CRISPR-Cas9 gene editing tool. This inhibits the conversion of 7-DHC to cholesterol and instead the former accumulates in the leaves, green and ripe fruits.

Usually, in untreated tomato plants, 7-DHC is present in leaves and to a lower extent in green fruit, but not in ripe fruit — which is the most consumed of the lot. The researchers showed that in their modified plants, the suppression of the activity of a particular gene, "led to substantial increases of 7-DHC levels in leaves and green fruit," and, according to the paper, while levels of 7-DHC were lower in ripe fruits of the mutant, they remained high enough that if converted to Vitamin D3 by shining UVB light, the amount in one tomato would be equivalent to that in two eggs or 28 grams of tuna, both of which are recommended sources of vitamin D. In addition, the researchers report that the mutants showed a reduction in their leaves of a substance called alpha-tomatine, and they comment that this may even be beneficial because of alpha-tomatine's reported toxicant or antinutritional activity. Surprisingly, the cholesterol levels in both fruit and leaves of the mutants was higher than that of the wild-type. This was despite having blocked the conversion of 7-DHC to cholesterol.

Need for deeper understanding

Prof P. V. Shivaprasad, whose group in National Centre of Biological Sciences, Bengaluru, studies the effect of small RNA biogenesis in establishment of epigenetics (epigenetics is the study of how your behaviors and environment can cause changes in the way your genes work), and who is not involved in this work comments

that while the study throws open a welcome new angle to increase vitamin D intake, it needs better understanding. Alpha-tomatine is believed to have a role in the plant's resistance to viral, fungal, insect and herbivorous attacks. Thereby it is important in safeguarding the plant and its self-preservation, and the reduction of alpha-tomatine in the mutants may not necessarily be a good thing. The unexplained levels of cholesterol are also surprising and need to be explained. So, while this experiment is an important one and promises to be fruitful in replenishing vegetarian diets with vitamin D, it needs further scrutiny and a deeper look.

Source: The Hindu

29. Treating monkeypox with antivirals: findings

Relevant for GS Prelims & Mains Paper III; Science & Technology

A new study on monkeypox suggests that some antiviral medications might have the potential to shorten symptoms and reduce the amount of time a patient is contagious. The retrospective study, published in The Lancet Infectious Diseases journal, was conducted on seven patients diagnosed with monkeypox in the United Kingdom between 2018 and 2021.

The medications

The study documents patients' response to two antiviral medications – brincidofovir and tecovirimat. These were developed to treat smallpox, and have previously demonstrated some efficacy against monkeypox in animals.

The study found little evidence that brincidofovir was of clinical benefit, but concluded that further research into the potential of tecovirimat would be warranted.

Between 2018 and 2019, four patients were treated for monkeypox in High Consequence Infectious Disease (HCID) units in England. Three of these cases were imported from West Africa. The fourth occurred in a healthcare worker, the first example of monkeypox transmission in a hospital setting outside of Africa.

Three further cases were reported in the UK in 2021 in a family travelling from Nigeria, with two of these cases being the first examples of household transmission outside of Africa.

How they responded

The three patients of 2018-19 whose infections were imported from West Africa were treated with brincidofovir seven days after the onset of the rash. Brincidofovir was not observed to have any convincing benefit. The researchers noted, however, that it is not known whether brincidofovir administration earlier in the course of the disease or at a different dosing schedule would have yielded different outcomes. All four patients fully recovered.

The three patients of 2021 included a child, who experienced mild illness and recovered. One of them was treated with tecovirimat and experienced a shorter duration of symptoms and upper respiratory tract viral shedding than the other cases in this cluster. However, the authors noted that conclusions cannot be drawn on antiviral effectiveness in such a small cohort. They called for further research into antivirals.

None of the patients experienced the common severe complications of monkeypox such as pneumonia or sepsis.

Implications

Monkeypox, a rare disease, is caused by a virus that is a close relative of the smallpox virus. There are currently no licensed treatments.

As optimum infection control and treatment strategies for this disease are not yet established, data from the study could help inform global efforts to further understand the clinical features of the disease as well as transmission dynamics, the authors said.

“As public health officials are trying to understand what is causing the May 2022 monkeypox outbreaks in Europe and North America – which have affected several patients who reported neither travel nor an identified link to a previously known case – our study offers some of the first insights into the use of antivirals for the treatment of monkeypox in humans,” said Dr Hugh Adler of the Liverpool University Hospitals NHS Foundation Trust, lead author on the paper.

Source: The Indian Express

30. The monkeypox virus: origins and outbreaks

Relevant for GS Prelims & Mains Paper III; Science & Technology

With cases being reported from across the world, monkeypox has caught everyone's attention. The present outbreak has a toll of over 220 confirmed cases spread across 19 countries. U.K., Spain and Portugal are leading the pack with the highest number of confirmed cases but no deaths reported till date.

The present outbreak has been interesting in many ways. While sporadic outbreaks have occurred in Africa and a few outside of Africa in regions which had recorded travel from areas where outbreaks have occurred, such massive flare-ups spanning multiple countries simultaneously has not happened before. Additionally many of the affected patients did not travel to regions where the disease is considered prevalent and the initial cases were largely, but not exclusively among young individuals who identify themselves as men who have sex with men (MSM).

What is the monkeypox virus?

Monkeypox is not a new virus. The virus, belonging to the poxvirus family of viruses, was first identified in monkeys way back in 1958, and therefore the name. The first human case was described in 1970 from the Democratic Republic of Congo and many sporadic outbreaks of animal to human as well as human to human transmission has occurred in Central and West Africa in the past with significant mortality. After the elimination of smallpox, monkeypox has become one of the dominant poxviruses in humans, with cases increasing over years along with a consequent reduction in the age-group affected. Since the transmission occurs only with close contact, the outbreaks have been in many cases self-limiting. Since in the majority of affected people, the incubation period ranges from five to 21 days and is often mild or self-limiting, asymptomatic cases could transmit the disease unknowingly. The outbreaks in Central Africa are thought to have been contributed by close contact with animals in regions adjoining forests. While monkeys are possibly only incidental hosts, the reservoir is not known. It is believed that rodents and non-human primates could be potential reservoirs.

Does the virus mutate?

Monkeypox virus is a DNA virus with a quite large genome of around 2,00,000 nucleotide bases. While being a DNA virus, the rate of mutations in the monkeypox virus is significantly lower (~1-2 mutations per year) compared to RNA viruses like SARS-CoV-2. The low rate of mutation therefore limits the wide application of genomic surveillance in providing detailed clues to the networks of transmission for monkeypox, unlike what was possible for SARS-CoV-2.

A number of genome sequences in recent years from Africa and across the world suggest that there are two distinct clades of the virus — the Congo Basin/Central African clade and the West African clade. Each of the clades further have many lineages. The Central African/Congo basin clade is thought to have a higher transmission and virulence compared to the West African clade. It is remarkable and noteworthy that the

enormous capacity and expertise in sequencing and analysis of genome sequences of viral pathogens built during the COVID-19 pandemic has come in handy for investigating the present outbreaks.

What do the genomes say?

With over a dozen genome sequences of monkeypox now available from across the world due to the current outbreak, it is reassuring that the sequences are quite identical to each other suggesting that only a few introductions resulted in the present spread of cases. Additionally, almost all genomes have come from the West African clade, which has much lesser fatality compared to the Central African one.

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This also roughly corroborates with the epidemiological understanding that major congregations in the recent past contributed to the widespread transmission across different countries. While unlike COVID-19, the slow rate of mutations preclude us from using genomic sequences for fine-tracing of the contact networks, the sequences largely belong to the West African lineage of the virus, which has shown to be associated with lesser virulence. The virus genomes also show very close similarity with those from the recent outbreak in Nigeria during the 2017-2019 period suggesting that the present outbreak is not driven by a particular new variant, but possibly related to unique transmission networks.

Does it have an effective vaccine?

It is reassuring that we know quite a lot more about the virus and its transmission patterns. We also have effective ways of preventing the spread, including a vaccine. The smallpox/vaccinia vaccine provides protection. While the vaccine has been discontinued in 1980 following the eradication of smallpox, emergency stockpiles of the vaccines are maintained by many countries. Younger individuals are unlikely to have received the vaccine and are therefore potentially susceptible to monkeypox which could partly explain its emergence in younger individuals.

Learning from the enormous wealth of knowledge from African countries which have effectively managed the monkeypox outbreaks in the past would go a great way in containing the present outbreak. While we have many effective ways of containing the outbreak, including contact-tracing and a vaccine, efforts to bridge the divide in health, knowledge, experience and infrastructure could contribute to long-lasting impact in preventing and managing future outbreaks and contribute to an equitable and global public health.

The authors are researchers at the CSIR Institute of Genomics and Integrative Biology (CSIR-IGIB). All opinions expressed are personal.

Source: The Hindu

31. Knotty supply chains deepen global chip shortage

Relevant for GS Prelims & Mains Paper III; Science & Technology

If the pandemic had a partner in crime, it must be the global chip shortage. The duo has hit established economic systems world-wide, and made several organisations scale back production and rework their manufacturing and supply chain processes.

Toyota Corporation on Tuesday apologised to its suppliers and customers a third time in less than two months for delaying making new vehicles and changing production plans for the June ending quarter. On March 17, the Japanese automaker said it is pressing the brakes on production targets to rework a plan that will not max out factory capacity, push employees to their limits, and make do through overtime work. A month later, the Japanese automaker cut its global production target for the period between April and June by 1,00,000 to 7,50,000 vehicles in May. And then again, on May 24, it said, "Due to the impact of semiconductor shortages, we have adjusted our production plan by tens of thousands of units globally from the number provided to our suppliers at the beginning of the year."

CEOs of AMD, Nvidia and Intel have said at different forums last year that the chip situation will remain tight for the rest of 2022.

Genesis of shortage

After reaching its peak in 2011, the laptop market growth slowed down with the rise of alternatives such as smartphones and tablets. Then, the pandemic hit. People switched to work from home, children connected to schools through laptops, and get-togethers happened over video calls. This shift led to a surge in demand for laptops and tablets. The stay-at-home rules also made several people pick up console-based gaming. This demand was driven by console hardware, and subscription-based mobile games. Each of these devices were in high demand and are run on thumbnail-sized semiconductors, performing various functions on a single device.

Manufacturers produce them as 200mm or 300mm wafers. These are further split into lots of tiny chips. While the larger wafers are expensive and mostly used for advanced equipment, the devices that were in high demand needed smaller diameter wafers. But the manufacturing equipment needed to make them were in short supply even before the pandemic began. That's because the industry was moving in the direction of 5G and advanced communication, which required expensive wafers.

High consumer demand for low-end products, coupled with large orders from tech firms choked chip makers whose factories were also closed during lockdowns. As the industry gradually tried to pull itself out of the supply crunch, and logistical complexities have exacerbated the problem.

The lockdown has had a domino effect on global supply chains. Separately, Russia's invasion of Ukraine has strained exports of essential commodities used to make chip sets. Moscow supplies rare materials like palladium, and Kyiv sells rare gases to make semiconductor fab lasers. This combination is required to build chipsets that power a range of devices, from automobiles to smartphones.

Intricate networks

About a decade and half back, semiconductors barely drew attention from large companies that have now come to rely on the thumbnail-sized semiconductor piece. During this period, firms developed a system to make chip sets. The system was made by interconnecting several parts of the world to make a single device. It is what we now call as the global supply chain. While it is hard to pinpoint when this system was developed, its roots go back to the time when companies began cutting up their businesses into smaller parts and outsourcing them to places where land, labour or capital was cheap.

Semiconductor-making firms applied this knowledge to their industry. The process to make a chip was divided into front-end and back-end parts. Wafer fabrication and probe are generally referred to as front-end operations, and assembly and test as back-end operations. The front and back-end processes were further broken down into micro units, and were spread out across the globe, creating a global chip-making ecosystem. This ecosystem is so vast that each segment of the semiconductor manufacturing involves roughly 25 countries in the direct supply chain, and 23 countries in allied functions, according to a joint study by Global Semiconductor Alliance and Accenture.

The report estimates a semiconductor-based product could cross international borders about 70 times before finally making it to the end customer. Wafer fabrication is the most globally dispersed, with 39 countries directly involved in the supply chain and 34 involved in allied activity. They provide services like photolithography, etching and cleaning. Designing happens across 12 countries; product testing and manufacturing each are done across 25 countries.

That's a complex, interconnected ecosystem with its own ebb and flow. The industry faced its share of glut and shortage in the past decade as consumer preferences shifted from one electronic fad to another. And this time, around the shortage in the system coincided with the pandemic. It also came at a time when the semiconductor supply chain's chief strength became its weakness.

Strength becomes weakness

Developed during the World War II era, Just-In-Time (JIT) was used by Japanese companies that lacked resources and space to rebuild factories by carefully using what they had in the leanest way as possible.

Taiichi Ohno, the father of Toyota Production System, later conceptualised JIT and the Kanban technique to create an efficient production system for automobiles. Most companies, including chip makers, used JIT to run their supply chains smoothly and efficiently. JIT lets firms take inputs from suppliers only when they are needed. It helps them cut inventory storage cost, shorten production cycles and free up cash flow for other investment activities.

This important aspect of supply chains back fired due to the pandemic, and the recent geopolitical events. When the pandemic began, carmakers stopped requesting chips from suppliers due to low demand for new vehicles. And now, as they ramp up production to meet consumer demand, chip makers are down on supply because they have cut deals with other industries. As the geopolitical events in Central Europe and production shutdowns in China continue to add pressure to the already complicated semiconductor supply chain, the chip shortage tunnel only seems to be getting longer.

Intel CEO Pat Gelsinger, in an interview to Bloomberg TV at Davos, Switzerland, said, “The supply and demand will balance out only in 2024.” He also pointed out that the European Chips Act (45 billion euros) and CHIPS for America Act (\$52 billion) would incentivise fab makers to set up their units in these regions and balance. Together, these two will enable the semiconductor manufacturers to have equal investments in the East and West by 2030, from the current tally at 80% in Asia, and 20% in Europe and the U.S.

Perhaps semiconductor-hungry firms may see light at the end of the tunnel when the shift in chip production capacities show up more prominently in the West.

Source: The Hindu

32. Green hydrogen: Fuel of the future?**Relevant for GS Prelims & Mains Paper III; Science & Technology**

At the World Economic Forum in Davos, Switzerland, a few days ago, Minister of Petroleum and Natural Gas Hardeep Singh Puri said India will emerge as the leader of green hydrogen by taking advantage of the current energy crisis across the globe. His assertion came almost a month after Oil India Limited (OIL) commissioned India's first 99.99% pure green hydrogen plant in eastern Assam's Jorhat.

What is green hydrogen?

A colourless, odourless, tasteless, non-toxic and highly combustible gaseous substance, hydrogen is the lightest, simplest and most abundant member of the family of chemical elements in the universe. But a colour — green — prefixed to it makes hydrogen the “fuel of the future”. The ‘green’ depends on how the electricity is generated to obtain the hydrogen, which does not emit greenhouse gas when burned.

Green hydrogen is produced through electrolysis using renewable sources of energy such as solar, wind or hydel power. Hydrogen can be ‘grey’ and ‘blue’ too. Grey hydrogen is generated through fossil fuels such as coal and gas and currently accounts for 95% of the total production in South Asia. Blue hydrogen, too, is produced using electricity generated by burning fossil fuels but with technologies to prevent the carbon released in the process from entering the atmosphere.

Why is India pursuing green hydrogen?

Under the Paris Agreement (a legally binding international treaty on climate change with the goal of limiting global warming to below 2°C compared to pre-industrial levels) of 2015, India is committed to reducing its greenhouse gas emissions by 33-35% from the 2005 levels. At the 2021 Conference of Parties in Glasgow,

India reiterated its commitment to move from a fossil and import-dependent economy to a net-zero economy by 2070. India's average annual energy import bill is more than \$100 billion and the increased consumption of fossil fuel has made the country a high carbon dioxide (CO₂) emitter, accounting for nearly 7% of the global CO₂ burden. In order to become energy independent by 2047, the government stressed the need to introduce green hydrogen as an alternative fuel that can make India the global hub and a major exporter of hydrogen. The National Hydrogen Mission was launched on August 15, 2021, with a view to cutting down carbon emissions and increasing the use of renewable sources of energy.

How much green hydrogen is India producing?

India has just begun to generate green hydrogen with the objective of raising non-fossil energy capacity to 500 gigawatts by 2030.

It was on April 20, 2022 that the public sector OIL, which is headquartered in eastern Assam's Duliajan, set up India's first 99.99% pure green hydrogen pilot plant in keeping with the goal of "making the country ready for the pilot-scale production of hydrogen and its use in various applications" while "research and development efforts are ongoing for a reduction in the cost of production, storage and the transportation" of hydrogen.

The plant was set up at the petroleum exploration major's Jorhat pump station, also in eastern Assam.

Powered by a 500 KW solar plant, the green hydrogen unit has an installed capacity to produce 10 kg of hydrogen per day and scale it up to 30 kg per day.

A specialised blender has also been installed for blending green hydrogen produced from the unit with the natural gas supplied by the Assam Gas Corporation Limited and supplying the blended gas to the Jorhat area for domestic and industrial use.

OIL has engaged experts from the Indian Institute of Technology-Guwahati to assess the impact of the blended gas on the existing facility.

What are the advantages of hydrogen as a fuel?

The intermittent nature of renewable energy, especially wind, leads to grid instability. Green hydrogen can be stored for long periods of time. The stored hydrogen can be used to produce electricity using fuel cells. In a fuel cell, a device that converts the energy of a chemical into electricity, hydrogen gas reacts with oxygen to produce electricity and water vapour. Hydrogen, thus, can act as an energy storage device and contribute to grid stability. Experts say the oxygen, produced as a by-product (8 kg of oxygen is produced per 1 kg of hydrogen), can also be monetised by using it for industrial and medical applications or for enriching the environment. The possibilities of hydrogen have made many countries pledge investments with Portugal having unveiled a national hydrogen strategy worth \$7.7 billion in May. Renewable developers see green hydrogen as an emerging market and some have targeted the transport sector, although electric vehicles have begun to catch the imagination of consumers today.

Source: The Hindu

33. 5G: Under the hood

Relevant for GS Prelims & Mains Paper III; Science & Technology

Lately there has been a lot of buzz around 5G. Last week Prime Minister Narendra Modi inaugurated the country's first indigenous test bed to help support the ecosystem around 5G. Earlier this year, the Government reiterated its plans to conduct auctions for 5G spectrum in June and expected services to be rolled out by the third quarter of the year.

Service providers have been conducting 5G trials and 5G ready phones have been flooding the market.

But what exactly is 5G? What lies behind the promise of faster downloads and better call quality?

Radio electronics refers to a broad range of technologies that can transmit, receive and process wireless signals. While these technologies can utilise electromagnetic spectrum that goes all the way up to 300GHz, the lower frequencies of this spectrum are particularly attractive. Lower frequency signals can travel longer distances and penetrate obstacles with lesser attenuation. Electronic components (amplifiers, transmitters, receivers) operating at lower frequencies are also easier to design and manufacture. Consequently, much of the bandwidth in the lower frequencies of this spectrum has already been allocated for several applications (mobile communications currently use the spectrum from 800MHz to 2.5 GHz).

New spectrum for 3GHz

With the increasing demand for mobile services, the currently allocated spectrum is proving inadequate. At the simplest level, 5G represents the allocation of new spectrum to increase capacity. Since most of the spectrum at lower frequencies is already being utilised — much of this new spectrum is being allocated at higher frequencies. The first deployments in India will be around 3GHz, but will expand to 25 GHz and beyond.

As 5G services evolve to occupy higher frequencies, it will significantly increase the bandwidth available for mobile services. However, at these frequencies the design of the transmitting and receiving equipment becomes more complex. Signal attenuation also increases. So, the coverage area of each cell tower will decrease which will require the towers to be more closely spaced.

An interesting fact related to the physics of signal transmission is that at higher frequencies it becomes easier to direct a signal in specific direction. So, signals transmitted from a cell tower can be more precisely directed at a specific user (rather than spreading out in various directions which is just a waste of energy).

Intuitively, this enhanced directivity results in less interference between signals meant for different users which directly translates to increased capacity. Thus, while operating at higher frequencies has some fundamental challenges, it offers some unique opportunities as well.

Evolving communication needs

Since much of the 5G infrastructure is being built from ground up, there is a chance to redesign the technology to make it more suitable for the evolving communication needs of the future. 5G places special emphasis on low latency, energy efficiency and standardisation.

Existing wireless communication infrastructure is primarily designed around the needs of mobile phones. However, several emerging applications in factory automation, gaming and remote healthcare have more stringent latency requirements. Self-driving cars is an illustrative example. Low delays between transmission and reception of messages are extremely critical when these cars have to co-operate with each other to avoid accidents.

As 5G rolls out, over the next several years the volume of data is expected to exponentially increase. To ensure that there isn't a corresponding increase in the energy usage, 5G places a lot of importance on energy efficiency. This will mean lower energy bills for service providers and longer battery life for mobile devices. Greater attention to standardisation is another important aspect of 5G. Today most of the components that make up wireless telecom interact with each other using proprietary protocols that are vendor specific. To enable the rapid deployment of 5G infrastructure there is an industry-wide effort to standardise interaction between components. Greater standardisation would enable service providers to build their infrastructure, 'mixing and matching' components from multiple vendors. Switching vendors would also be easier which would foster competition and lower costs.

Advanced R&D

There is a lot of research in both industry and academia centred around 5G. An interesting topic is the convergence of positioning, sensing and communication. Traditionally, positioning, sensing and

communication have been seen as separate technologies (for e.g., GPS is used for positioning, and radar for sensing). However, all three technologies involve transmission and reception of radio signals — hence it is possible for positioning and sensing to piggy back on 5G infrastructure that is primarily meant for communication. While this is not a new concept, 5G is expected to significantly improve the state of art. It turns out that some of the key features of 5G (such as increased bandwidth availability and antenna directionality) are also useful for improved accuracy of positioning and sensing.

There is also a lot of research around cost and energy efficient electronic devices that can transmit and receive high frequency signals. This involves delving into the fundamental physics of semiconductor technologies and is expected to lay the foundation for the growth of wireless technology into higher frequency bands.

In fact, engineers are already busy prototyping a 6G system which would utilise the large amounts of available spectrum at frequencies above 100 GHz. As one of my colleagues who works in this domain pointed out — engineers are perhaps having more fun developing these technologies than consumers are using them!

Source: The Hindu

Social Issues

1. Alcohol consumption among men in India has decreased by 7% since 2015, finds NFHS-5 report

Relevant for GS Prelims & Mains Paper I; Social Issues

Overall Trend of alcohol consumption

While it is known that alcohol consumption has always been high among men, the recently released National Family Health Survey (NFHS-5) for 2019-2021 has found that only 1% of women, aged 15-49, drink alcohol in the country, compared to 22% of men. The overall consumption is high in rural areas, stated the report.

Trends among States

In Karnataka, 0.3% of women consume alcohol, below the national average. But 23.1% of men do so, which is higher than the national average.

The percentage of women who consume alcohol is the highest in Arunachal Pradesh (18%), followed by Sikkim (15%). Alcohol use among men is the highest in Goa (59%), followed by Arunachal Pradesh (57%), and Telangana (50%), while it is the lowest in Lakshadweep (1%).

Among women who drink alcohol, 17% consume it almost every day and 37% drink about once a week. Among men, while 15% consume almost daily, 43% drink about once a week, and 42% do less than once a week.

Drinking alcohol is more common among women from Scheduled Tribes (4%) than from any other caste/tribe group.

Consumption is also most common among Christian men (36%) and men belonging to “other” religions (49%). The “other” religions here are those apart from the Hindu, the Muslim, the Christian, the Sikh, the Buddhist/Neo-Buddhist, and the Jain communities.

Drinking is also seen in 33% of men with less than 5 years of schooling, 34% of those from Scheduled Tribes, and 30% of those in the age group of 35-49.

Overall the proportion of men who drink alcohol decreased from 29% to 22% between NFHS-4 in 2015-2016 and NFHS-5 in 2019-2021. During that period, the proportion of women who drink has remained unchanged, according to the report.

NIMHANS study

NIMHANS Director Pratima Murthy, who was part of a study that found that excessive alcohol consumption can cause irreversible changes to the DNA and that changes may persist even when it is no longer consumed, said the reduction in consumption as per the NFHS-5 report could also be due to the non-availability during the COVID-19 lockdown, as the report is for 2019-2021.

The study by NIMHANS, published last year in the American Journal of Medical Genetics, found that the effects of alcohol were more pronounced in those who had started at an early age.

Dr. Murthy told The Hindu that the findings suggest that starting to drink early may physically alter many genes, including those of the brain. "This may have a significant effect on brain development and maturation that may persist to the later adult life," she said.

Increase in sales

Vivek Benegal, Professor of Psychiatry, who heads the Centre for Addiction Medicine at NIMHANS, said that the overall reduction in consumption is a welcome change. However, it needs to be seen in the perspective of the consistent increase in sales and production of alcohol.

"The findings will have to be balanced with consistent increase in sales and production of alcohol during the period when the reduction has been observed. It is essential to get more data through new studies which will support the NFHS-5 findings. If the per capita consumption reduces, it will help in bringing down social and health costs attributable to alcohol," Dr. Benegal pointed out.

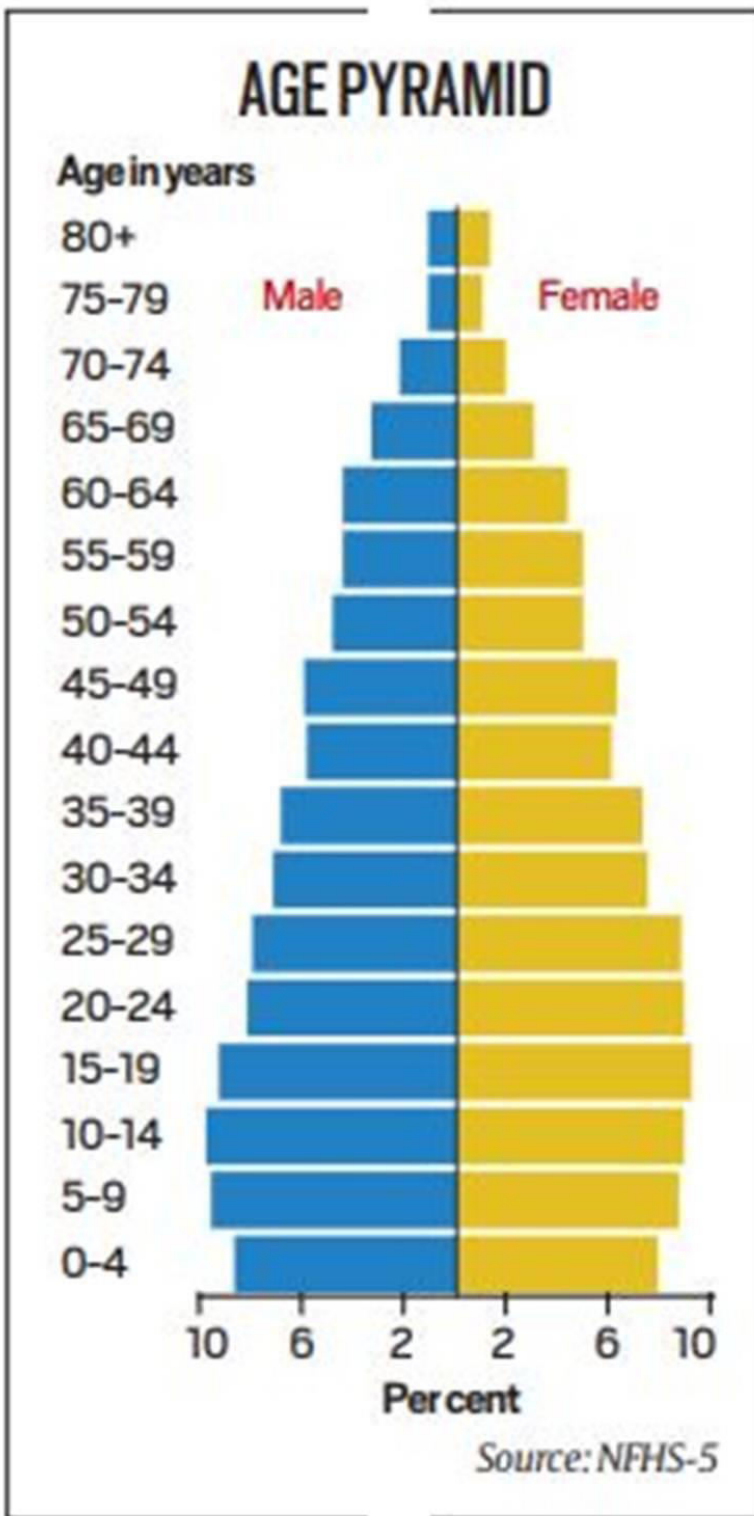
Source: The Hindu

2. Over half of India's population is still under age 30, slight dip in last 5 years

Relevant for GS Prelims & Mains Paper I; Social Issues

India's population remains young, with more than one-fourth aged under 15 years and less than an eighth over 60. There has been only a slight dip in the young population's share in the last five years: Between the National Family Health Survey-4 (2015-16) and NFHS-5 (2019-21), released last week, the under-15 population has declined by 2 percentage points, from 29% to 27%, while the over-60 population has increased by as many points, from 10% to 12%.

Over half the population (52%) is below 30, compared to 55.5% in NFHS-4. The NFHS divides the population into 5-year age groups from 0-4 years to 75-79, while those over 80 are counted in a single age group.



Age pyramid. Source: NFHS-5

The age pyramid shows India's population is young, which, NFHS-5 notes, is typical of developing countries with low life expectancy. The pyramid also shows that fertility has decreased considerably in the last 5 years, it says.

NFHS-5 is based on 27,68,371 individuals in 6,36,699 sample households. The NFHS defines a household as a person or group of related or unrelated persons who live together in the same dwelling unit(s), who acknowledge one adult male or female as the head of the household, who share the same housekeeping arrangements, and who are considered a single unit.

The average household size has decreased slightly between 2015-16 and 2019-21 (from 4.6 persons to 4.4). Just over one-sixth of households (18%) have female heads, up from 15% in NFHS-4.

Source: The Indian Express

3. Who is Devasahayam Pillai, first Indian layman to be declared a saint by Vatican?

Relevant for GS Prelims & Mains Paper I; Social Issues



The tapestry depicting Titus Brandsma, top, and Lazzaro alias Devasahayam hangs in St. Peter's Square at The Vatican, Sunday, during their canonisation mass celebrated by Pope Francis. (AP)

Devasahayam Pillai, who was born a Hindu in Kanyakumari district of Tamil Nadu and converted to Christianity in the 18th century, became the first Indian layman to be declared a saint by the Vatican on Sunday.

Pope Francis canonised Blessed Devasahayam during the Canonisation Mass in St Peter's Basilica, which was attended by over 50,000 faithful from all over the world, as well as government delegations honouring him and nine other new saints, PTI reported.

Besides Devasahayam, the Pope proclaimed five other men — Titus Brandsma, Cesar de Bus, Luigi Maria Palazzolo, Giustino Maria Russolillo, and Charles de Foucauld — and four women — Maria Rivier, Maria Francesca of Jesus Rubatto, Maria of Jesus Santocanale, and Maria Domenica Mantovani — as saints.

Life and death

Devasahayam was born on April 23, 1712 in Nattalam village in Kanyakumari district, and went on to serve in the court of Marthanda Varma of Travancore. After meeting a Dutch naval commander at the court, Devasahayam was baptised in 1745, and assumed the name 'Lazarus', meaning 'God is my help'.

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"His conversion did not go well with the heads of his native religion. False charges of treason and espionage were brought against him and he was divested of his post in the royal administration," the Vatican said in a note in February 2020. According to the Vatican, "while preaching, he particularly insisted on the equality of all people, despite caste differences", which "aroused the hatred of the higher classes, and he was arrested in 1749".

On January 14, 1752, Devasahayam was shot dead in the Aralvaimozhy forest. He is widely considered a martyr, and his mortal remains were interred inside what is now Saint Francis Xavier's Cathedral in Kottar, Nagercoil.

Sainthood road

In 2004, the diocese of Kottar along with Tamil Nadu Bishops' Council and Conference of Catholic Bishops of India recommended Devasahayam for beatification. He was declared blessed by the Kottar diocese in 2012, 300 years after his birth.

During the midday 'Angelus' prayer in the Vatican that day, Pope Benedict XVI described Devasahayam as a "faithful layman", and urged Christians to "join in the joy of the Church in India and pray that the new Blessed may sustain the faith of the Christians of that large and noble country", the note from the Vatican said.

In 2014, Pope Francis recognised a miracle attributed to Devasahayam, clearing the path to his canonisation. He was approved for sainthood in February 2020 for "enduring increasing hardships" after he decided to embrace Christianity, according to the Vatican, which last November announced May 15, 2022 as the date for the ceremony.

While clearing Devasahayam for sainthood in 2020, the Vatican dropped 'Pillai' from his name, and referred to him as "Blessed Devasahayam".

Source: The Indian Express

4. Indians' preference for sons, and why Meghalaya women prefer more daughters

Relevant for GS Prelims & Mains Paper I; Social Issues

The newly released National Family Health Survey (NFHS-5) reconfirms that a large number of Indians have a preference for sons. The only exception is women in Meghalaya, among whom the preference for more daughters than sons is more prevalent than the preference for more sons than daughters. NFHS-5 covers the period 2019-21.

Broad takeaways

*The number of married people (age 15-49) who want more sons than daughters is several times the number who want more daughters than sons;

* A married person who has at least one son is less likely to want more children than another married person whose existing children do not include a son; and

* In spite of these preferences, most Indians still believe an ideal family should include at least one daughter.

The ideal family

The number of married men who want more sons than daughters (16%) is four times the number who want more daughters than sons (4%). Among women, the former preference is 5 times more prevalent than the latter, at 15% and 3% respectively.

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TABLE 1

MORE SONS OR MORE DAUGHTERS?

| | WOMEN WHO PREFER... | | MEN WHO PREFER... | |
|---------------|--------------------------|--------------------------|--------------------------|--------------------------|
| | MORE SONS THAN DAUGHTERS | MORE DAUGHTERS THAN SONS | MORE SONS THAN DAUGHTERS | MORE DAUGHTERS THAN SONS |
| All India | 15.40% | 3.40% | 16% | 4.10% |
| Bihar | 31.30% | 1.90% | 22% | 2.80% |
| Uttar Pradesh | 23.10% | 1.90% | 22.40% | 3% |
| Jharkhand | 24.30% | 2.10% | 16.40% | 2% |
| Rajasthan | 15.60% | 1.70% | 15.90% | 2.10% |
| Meghalaya | 15.40% | 21.20% | 18.40% | 11.60% |

The number of married men who want more sons than daughters (16%) is four times the number who want more daughters than sons (4%). (Source: NFHS)

That said, most of the respondents want at least one son and at least one daughter. About four-fifths of both men and women (81%) want at least one son while a similar proportion of women (79%) wants at least one daughter, compared to three-fourths of men (76%).

Men and women would both want to have an average of 2.1 children — 1.0 sons, 0.9 daughters, and 0.2 children of either sex. This, NFHS-5 notes, is almost the same as the current total fertility rate. In NFHS-4 (2015-16), the ideal family size was slightly larger, at 2.2.

Trends by state

Among the states and Union Territories, men in Mizoram (37%), Lakshadweep (34%) and Manipur (33%), and women in Bihar (31%) show the strongest preference for more sons than daughters. Compared to the corresponding preference for more daughters than sons, the difference is sharpest among Bihar's women — the 31% who want more sons are 16 times the 2% who want more daughters.

Across all states and both genders, Meghalaya women are the only section in which a higher proportion prefers more daughters than sons than the proportion that want more sons than daughter. In a state where the predominant tribes follow a matrilineal system of inheritance, 21% of women want more daughters, compared to 15% who want more sons.

TABLE 2

WOMEN WHO DON'T WANT ANY MORE CHILDREN (%)

| NO OF LIVING SONS | NUMBER OF LIVING CHILDREN | | | | | TOTAL |
|-------------------|---------------------------|------|------|------|-----------|-------|
| | 0 | 1 | 2 | 3 | 4 or more | |
| 0 | 5.4 | 21.8 | 65.3 | 67.3 | 66.3 | 32.8 |
| 1 | — | 39.5 | 89 | 91.2 | 91 | 77.5 |
| 2 | — | — | 90.8 | 93.6 | 92.8 | 92.2 |
| 3 | — | — | — | 92.7 | 91.3 | 92.2 |
| 4 or more | — | — | — | — | 90.9 | 91.1 |
| Total | 5.4 | 30.9 | 85.8 | 90.3 | 90.4 | 70.1 |

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Those who already had a son are less likely to want another child than those who already have children but no sons. (Source: NFHS)

Meghalaya also has the highest proportion of men in any state (11%) who want more daughters than sons. But as in other states, a higher proportion in Meghalaya too (18%) wants more sons than daughters.

The explanation for Meghalaya women's preference for daughters may be obvious — “We are a matrilineal society,” said Shillong-based social activist Angela Rangad — but why should the state's men prefer more sons than daughters?

“Because, in their view of things, the things that matter, leading the darbars, it's all about men — and they are also very patriarchal. In fact, there is a whole section of men who think that we are being held back because we are matrilineal,” she said.

Patricia Mukhim, Editor of The Shillong Times, raised questions about the sample size of the survey, the number of districts covered, and the educational level of the respondents. “In rural Meghalaya most women don't want to reveal anything about their families. Khasis believe in privacy and don't usually volunteer answers unless prodded or prompted,” she said.

She noted that NFHS-5 refers to Meghalaya as a “matriarchal society”. “Meghalaya is a matrilineal society where a deeper study on gender equality and equity will reveal a gender bias in traditional institutions, where women are not allowed to hold office. Only lineage is from the mother's clan line. And women are perpetrators of the clan. Which also means that when a woman is abandoned by the husband/partner then the responsibility of looking after the children are solely hers. So defining Meghalaya society as matriarchal could mean that the survey itself is faulty,” she said.

TABLE 3

MEN WHO DON'T WANT ANY MORE CHILDREN (%)

| NO OF LIVING SONS | NUMBER OF LIVING CHILDREN | | | | | TOTAL |
|-------------------|---------------------------|------|------|------|-----------|-------|
| | 0 | 1 | 2 | 3 | 4 or more | |
| 0 | 39.1 | 25.1 | 65.8 | 66.5 | 69.6 | 32.8 |
| 1 | — | 41.8 | 88.6 | 91.7 | 90.8 | 77.5 |
| 2 | — | — | 90.4 | 93.1 | 94.7 | 92.2 |
| 3 | — | — | — | 94.7 | 94.3 | 92.2 |
| 4 or more | — | — | — | — | 92.4 | 91.1 |
| Total | 39.1 | 33.7 | 85.5 | 90.1 | 91.9 | 70.1 |

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Among those whose two children included at least one son, 9 in 10 said they did not want a third. (Source: NFHS)

Third child or not

The survey also asked married people with children if they wanted more children. Those who already had a son are less likely to want another child than those who already have children but no sons.

For example, among those whose two children included at least one son, 9 in 10 said they did not want a third. In contrast, among those with two children but no sons, only two-thirds said they did not want any more children.

This is much the trend across married men and women who have one, three, or four or more children (Tables 2 & 3).

Source: The Indian Express

5. The child online safety toolkit

Relevant for GS Prelims & Mains Paper I; Social Issues

The story so far: The child online safety toolkit was launched earlier this week in an attempt to make the online experience safe for children. Scripted and put together by the Britain-based NGO 5Rights that works to ensure that children's rights and needs are prioritised in the digital world, the toolkit provides a practical and accessible roadmap to create a digital world where children and young people "are safe and fulfilled". This includes step by step instructions to help assess and inform policy development at all stages of the process. As such, any government can use the toolkit as a building block to work out its own culturally specific set of guidelines for online safety.

The toolkit can be downloaded for free from childonlinesafetytoolkit.org and by contacting info@5rightsfoundation.com.

Why an online safety tool kit?

Children want to be online and they need to be online. If two years of the pandemic have taught us anything, it is that a good portion of the future is going to be online. Education migrated almost entirely online for a significant period during the pandemic and children were linked to schools through their devices. While the

merits or otherwise of such an arrangement has been discussed at length, it is undeniable that moving forward would entail significant involvement with technology, particularly going online.

However, the two years we spent at home have also shown us how the world can come indoors online, in more ways than one, dragging along its predators and its risks as well. Earlier research conducted by 5Rights and its partner Revealing Reality indicated that “within 24 hours of a social media profile being created, children were being targeted with graphic content.” They went on to state that internet majors such as Facebook, Instagram and TikTok were enabling unsolicited contact from adult strangers who sometimes recommend unsavoury content — from “material related to eating disorders, extreme diets, self-harm and suicide as well as sexualised imagery and distorted body images.”

As Baroness Beeban Kidron, founder and chair, 5Rights Foundation, says in the introduction to the toolkit: “In an increasingly connected world, the need for a safe and enabling digital environment for children has never been greater. Policy makers across the globe are working to define the rules of engagement between children and the digital world.”

The prevalence of child sexual exploitation and abuse is also a major concern, offline, but certainly online too. In 2020, 65 million pieces of child sexual abuse material were reported to the National Center for Missing and Exploited Children of the United States, while many more went undetected.

The toolkit argues that guaranteeing online safety is not just about responding to risks and harms: it means actively designing a digital environment that is safe for every child. “With one in three people online under the age of 18, the centrality of digital technology in children’s lives means that it must be formed with their privacy, safety and rights by design and by default.” Safety online allows young people to thrive, and the toolkit will help build a digital world that young people need.

What does the toolkit provide?

The child online safety toolkit claims that it is a hands-on, comprehensive guide to making the online world free from harm for children. It builds on existing international agreements and best practices, developed in consultation with international experts from a range of backgrounds. It has accessible worksheets and resources both online and in print to help make child online safety a reality.

Among other things, it contains — five things every policymaker needs to know to enshrine child online safety into law and practice, 10 policy action areas with detailed roadmaps and key practical steps needed to make child online safety a reality, a model policy that policymakers can adopt and adapt for their requirements, and downloadable worksheets to create a policy fit for practice. It also holds a glossary of key terms used in online safety and child online safety policy to best practice examples from various countries.

The toolkit separates its obligations into ten subject areas to support the implementation of the following key international agreements and frameworks: the Sustainable Development Goals (SDGs); the United Nations Convention on the Rights of the Child (UNCRC) General comment No. 25 (2021) on children’s rights in the digital environment; the WeProtect Global Alliance Model National Response; and the International Telecommunication Union’s Guidelines on Child Online Protection. It also tapped into UNICEF’s Draft Policy Guidance on AI for Children, designed to promote children’s rights in government and private sector AI (artificial intelligence) policies and practices, and to raise awareness of how AI systems can uphold or undermine these rights.

What next?

The authors say the toolkit is designed to be adaptable to any context. While national contexts may necessarily be different, it is essential that laws and regulations, to the greatest extent possible, use concepts, language and definitions that are aligned and allow for cooperation between law enforcement agencies, as well as cross-border cooperation and understanding.

Ultimately, it depends on nations or organisations within nations entirely — if they want to pick up the toolkit to ensure a safe environment online for children, as well as deliver their commitments to various international conventions that they have signed.

Source: The Hindu

6. Why are tribals of Rajasthan and Gujarat demanding a separate state of Bhil Pradesh?

Relevant for GS Prelims & Mains Paper I; Social Issues

The demands for a “Bhil Pradesh”, a separate state for tribal people in western India, have of late begun to be raised again. What is the basis of the demand, and who is raising them?

What is ‘Bhil Pradesh’?

The Bharatiya Tribal Party (BTP), a political party based in Gujarat, envisions Bhil Pradesh as a separate state carved out of 39 districts spread over four states: 16 in Gujarat, 10 in Rajasthan, seven in Madhya Pradesh, and six in Maharashtra.

BTP Rajasthan president Dr VelamGhogra said that Bhil social reformer and spiritual leader Govind Guru first raised the demand for a separate state for tribals back in 1913 after the Mangarh massacre. The massacre, which took place six years before Jallianwalla Bagh and is sometimes referred to as the “Adivasi Jallianwala”, saw hundreds of Bhil tribals being killed by British forces on November 17, 1913 in the hills of Mangarh on the border of Rajasthan and Gujarat.

“Post-Independence, the demand for Bhil Pradesh was raised repeatedly,” Ghogra said. Over the decades, the demand was raised and amplified by, among others, the multi-term Congress MP from Dahod SomjibhaiDamor; former Ratlam MP Dileep Singh Bhuria, also of the Congress; and the former CPI member of the Rajasthan Assembly, MeghrajTawar.

But why do the tribals want a separate state of their own?

Ghogra said, “Earlier, the Dungarpur, Banswara, Udaipur region in Rajasthan and Gujarat, MP, etc. was part of a single entity. But post-Independence, the tribal majority regions were divided by the political parties, so that the tribals don’t organise and unite.”

According to Ghogra, over the decades, several Union governments brought various “laws, benefits, schemes, and committee reports” on tribals, but went slow on their execution and implementation.

“There were various measures such as the protection of tribal interests through the Fifth Schedule under Article 244(1) of the Constitution, but most of these were mere assurances by the ruling party, whether it was the Congress or the BJP,” he said.

Ghogra cited the example of The Provisions of the Panchayats (Extension to Scheduled Areas) Act, 1996. “The law was enacted in 1996. The Rajasthan government adopted the law in 1999, and came out with its Rules in 2011. But even in my village Paldeval in Dungarpur, 25 years on, people don’t even know about the law. Even the MLAs and ministers of the BJP and Congress don’t have proper knowledge about the law.”

Ghogra recalled that during the Congress’s recent Chintan Shivir in Udaipur, Chief Minister Ashok Gehlot had said, “Next time, the Congress will leave no stone unturned in fulfilling the demands of the tribals.” But it was always “the next time”, Ghogra said — “Seventy-five years have passed and it’s still the next time. Ever since Independence, parties haven’t seen tribals beyond vote bank politics.”

The nervousness of the Congress and BJP about the BTP can be gauged from the Rajasthan Zila Parishad election results in December 2020. The ZP members of the ruling Congress and Opposition BJP joined forces to defeat a Zila Pramukh candidate supported by the BTP at Dungarpur in Rajasthan; BTP-backed Independents had won 13 out of the 27 seats in the Dungarpur Zila Parishad, while the BJP and Congress had won 8 and 6 seats respectively.

Is the demand for Bhil Pradesh gaining ground?

The creation of a separate Bhil Pradesh is one of the main objectives of the BTP, which was formed in 2017 in Gujarat. Ghogra said that he had been directly involved with the demand for over a decade. Meetings and gatherings are routinely held to mobilise tribals and spread awareness.

“Tribal youths have lost confidence in both the Congress and BJP,” Ghogra said. “With the spread of social media, you can read up and verify things for yourself now,” he said. “Seeing how we have fared in 75 years, there is no other way but to have our own separate Bhil Pradesh.”

Ahead of the Rajya Sabha elections, the BTP’s immediate demand is that the Congress should send a tribal to the Upper House. “The last tribal from our region to be sent to the Rajya Sabha by Congress was decades ago: Dhuleshwar Meena,” Ghogra said.

The BJP has had a Rajya Sabha MP from the tribal belt in Kanakmal Katara, who is currently the Lok Sabha MP from Banswara.

Source: The Indian Express

7. Go on the Ramayana Circuit by train — here’s all you need to know

Relevant for GS Prelims & Mains Paper I; Social Issues

On June 21, when the first Bharat Gaurav Tourist Train starts on its maiden journey, it will breach a new frontier — becoming the first tourist train from India to cross the international border into Nepal.

The train will run on the Ramayana Circuit identified under the Ministry of Tourism’s Swadesh Darshan scheme, covering prominent places associated with the life of Lord Ram. A visit to the Ram Janaki temple in Janakpur in Nepal will be part of the tour itinerary, senior officials from the Indian Railway Catering and Tourism Corporation (IRCTC) said.

The train and the cost

The 14-coach train, to be run by IRCTC, will have 11 air conditioned three-tier coaches for tourists, along with a pantry car, a restaurant car, and a separate coach for use by the train staff.

“The tourists will be offered strict vegetarian meals, freshly cooked on board. The train will have an infotainment system, and CCTV cameras and guards will ensure security on board,” an IRCTC official said. The train can accommodate up to 600 tourists, and IRCTC officials said 293 individuals — almost half the capacity — had booked themselves on it by May 26.

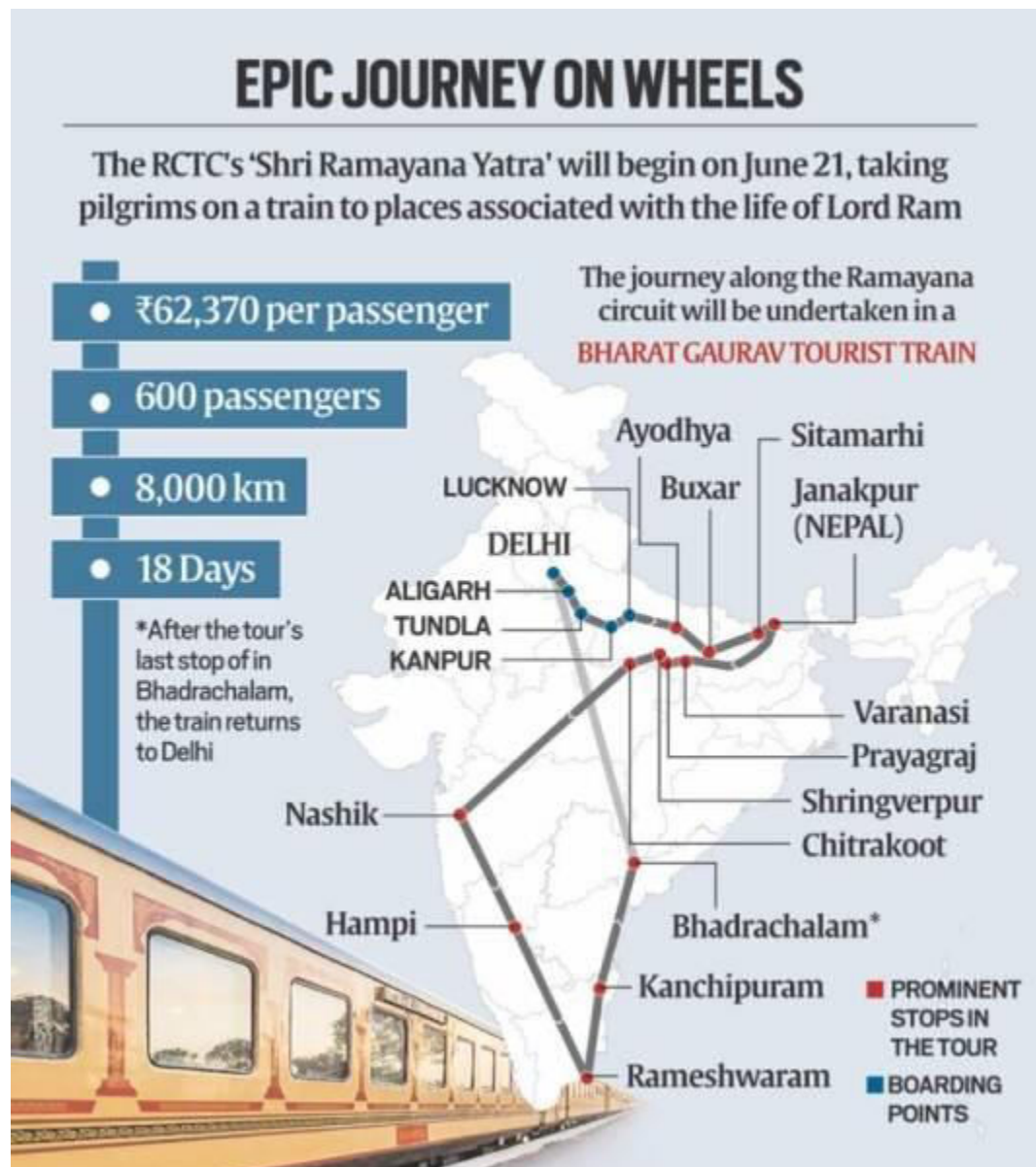
The 18-day tour will start from Delhi’s Safdarjung Railway Station. Tickets start from Rs 62,370 per person for the all-inclusive package. A final certificate of Covid-19 vaccination is mandatory to get on board.

Stops on the tour

Ayodhya will be the Bharat Gaurav Train’s first stop, where tourists will visit the Ram Janmabhoomi Temple and the Hanuman temple, besides Bharat Mandir at Nandigram.

The train will then head to Buxar in Bihar, where tourists will visit the hermitage of Vishwamitra and Ramrekha Ghat on the Ganga.

The visit to Janakpur in Nepal via Jainagar in Bihar's Madhubani district will follow. Tourists will stay overnight at hotels in Janakpur, and visit the Ram-Janaki Temple in the town.



The train will then head to Bhadrachalam in Telangana, also referred to as the Ayodhya of the South, and end its 8,000-km journey in Delhi. (Express)

From Janakpur, the train will cross back into India and proceed to Sitamarhi in Bihar, which is believed to have been the birthplace of Sita.

The next stop is Varanasi. Tourists will visit the various temples in the ancient city, and will go to Shringverpur, the place where Ram, Sita and Laxman are believed to have crossed the Ganga, and Chitrakoot by road.

The train will then move west and south — to Nasik for visits to the Trayambakeshwar temple and Panchvati, and then to Krishkindha, Hampi, which is believed to be the birthplace of Lord Hanuman.

The next destination will be Rameshwaram, for visits to the Ramanathaswamy temple and Dhanushkodi. The train will then head to Kanchipuram for a day's excursion to the Shiv Kanchi, Vishnu Kanchi, and Kamakshi temples. The train will then head to Bhadrachalam in Telangana, also referred to as the Ayodhya of the South, and end its 8,000-km journey in Delhi.

To Nepal for first time

In the previous Ramayana Circuit tours covered by tourist trains from India, Janakpur was covered from Sitamarhi station. But now, the Indian Railways, with support from Nepal Railway, has extended the track from Jainagar station in India to Janakpur in Nepal, IRCTC officials said.

Recently, during his visit to Lumbini, Prime Minister Narendra Modi had remarked: "I had said in Janakpur that 'without Nepal, our Lord Ram is also incomplete'. I am aware that the people of Nepal are feeling equally happy as an elegant temple for Lord Shri Ram is being built in India."

After the Ramayana Circuit, other itineraries too will be drawn up, officials said. The Indian Railways launched the Bharat Gaurav trains last year, to be operated by private players on theme-based circuits. According to the Bharat Gaurav policy, any operator or service provider can lease a train to run on a theme-based circuit as a special tourism package.

Source: The Indian Express

Internal Security

1. The SpiceJet 'accident'

Relevant for GS Prelims & Mains Paper III; Internal Security

What are the factors that might have caused the flight to experience severe turbulence? What about adverse weather?

On the evening of May 1, a Boeing 737-800 aircraft of low-cost private carrier SpiceJet, on a scheduled flight (SG-945) operating from Mumbai to Andal (Durgapur, West Bengal) with 195 passengers on board (189 passengers and six crew), experienced severe turbulence, at around 16,000 feet, while on approach to the destination airport.

What happened on the flight?

Due to severe turbulence, nearly 17 passengers suffered head, shoulder, spinal, forehead and facial injuries that were serious enough to warrant hospitalisation. The aircraft too experienced damage in the cabin. Visuals showed oxygen mask compartments open, sections of the cabin ceiling having come apart exposing ducts, damage to some seat handrests and the cabin being in a state of disarray, with items from the galley as well as passenger belongings strewn around. The flight crew took manual control of the aircraft (from autopilot mode) and the aircraft made a safe landing about 20 minutes later.

A preliminary report by India's civil aviation regulatory body, the Directorate General of Civil Aviation (DGCA), categorised it as an "accident". It said: "... the vertical load factor [which is related to aviation] varied

from 2.64G and minus 1.36G, and during this period, the autopilot got disengaged for two minutes....” In addition, there were speed variations. The crew have been off rostered. The airline’s aircraft maintenance engineer who released the aircraft from Durgapur (the plane was flown from Andal to Kolkata later) has also been derostered. The aircraft has been grounded and the DGCA has ordered a full inspection of the SpiceJet aircraft fleet.

Why has it been called an ‘accident’?

The occurrence would fall under one of the conditions that defines an “accident” in aviation, i.e., “an occurrence associated with the operation of aircraft which ... i) in the case of a manned aircraft, takes place between the time any person boards the aircraft until such time as all such persons have disembarked.... a) a person is fatally injured or seriously injured as a result of: i) being in the aircraft ii) direct contact with any part of the aircraft including parts of which have become detached from the aircraft....”

India’s Aircraft Accident Investigation Bureau (AAIB), has taken over investigation into the occurrence. The AAIB is responsible for “classification of safety occurrences” that involve aircraft operating in Indian airspace falling under the categories ‘accidents’, ‘serious incidents’ and ‘incidents’. The AAIB says it investigates any ‘accident’ and ‘serious incident’ involving aircraft having what is called an ‘all up weight (AUW) of more than 2,250 kg’.

Was there awareness of turbulence? What could have happened?

A pilot says air turbulence can be graded as light, moderate, severe and extreme. In the last classification, there may be even structural damage and possible loss of aircraft control. In terms of the categorisation of turbulence, there is (in general): convective turbulence (or turbulence linked to cloud convection); mechanical turbulence (low-level turbulence); orographic turbulence (linked to elevated terrain such as mountains); clear air turbulence; low-level jet streams, and also wake turbulence caused by other aircraft.

In a tweet, MadhavanRajeevan, former Secretary, Ministry of Earth Sciences, who has “research interests on monsoons” has said: “In my understanding Spice jet has their own weather forecasting team for their planning. They don’t take [the] services of [the] IMD [India Meteorological Department]. All airlines should take weather services very seriously for their operations....”

It must be reiterated, however, that airlines do invest considerable resources in the training of crew in aviation meteorology.

Captain A. (Mohan) Ranganathan, a former airline instructor pilot and aviation safety adviser, who shared resource material with The Hindu from an ‘Adverse Weather Operations training kit’ prepared on behalf of the DGCA in 2001, said that from initial analysis, it appeared that the flight crew had not followed the speed for turbulence penetration. This, he said, was probably why severe conditions were encountered. The aviation expert highlighted the important factor of Total Air Temperature (TAT), which is the best guide for turbulence. TAT monitoring by crew is essential while in flight, more so during the crucial phases of aircraft climb and descent, he said. A key point highlighted in the training kit was for a pilot to be alert to a temperature inversion between 16,000 feet and 24,000 feet as being an indicator of adverse weather conditions. He said that aviation awareness about TAT is low these days.

More importantly, the aviation expert drew attention to a weather phenomenon (and an aviation hazard) called the Norwester over eastern and northeastern India which occurs in March, with its frequency increasing in May and early June (almost eight occurrences a month). This subject is in focus as the flight path of the SpiceJet aircraft was over Maharashtra, Chhattisgarh and Jharkhand, with its descent into West Bengal. Norwesters are destructive squalls which take place in the afternoon/evening; what is more, cells of weakening down drafts regenerate themselves as new storm cells. An aircraft can experience a stall and loss of lift when flying near or through them. There is also an additional high risk of hail damage. The professional aviation advice is to avoid making an approach if in the vicinity of a Norwester. Captain Ranganathan also gave the example of the kind of turbulence that can be expected, when in the 1980s, a Boeing 737 on the

Agartala-Calcutta sector got into one such cell and was buffeted so severely that it caused several rivets on the aircraft fuselage to go missing; this was discovered after landing.

In a typical Norwester, if flying in proximity of what is called its downwind wake area (these can be generated given the way a Norwester is formed), an aircraft can get sucked into the centre of the storm cell and experience damage and severe turbulence.

A senior commander who flies Airbus aircraft said turbulence detection, in general, would also depend on whether it was clear air turbulence or, separately, what is called avoidable weather. If it was weather that was visibly noticeable, or read on the aircraft's weather radar, the question during the investigation would be whether the crew were monitoring this and had situational awareness. While the weather radar system fitted in the new generation of aircraft is technologically advanced — some models can perform 3D picturisation using multibeam for hundreds of kilometres ahead and autoscan from the ground up to 60,000 feet — management of adverse weather flying calls for good meteorological knowledge, a thorough understanding of the aircraft's radar functions, planning, anticipation, and, most importantly, the crew's overall assessment of the weather situation.

Source: The Hindu

2. What is the NSCN and where do the Naga peace talks stand now?

Relevant for GS Prelims & Mains Paper III; Internal Security

What is the role played by the factions of the Naga insurgent group? What are their demands and what has happened since the peace talks began in 1997?

The annual report of the Ministry of Home Affairs (MHA) released recently said that the Isak-Muivah faction of the National Socialist Council of Nagaland (NSCN-IM) was involved in 44% of insurgency-related incidents in Nagaland in 2020.

One of the largest Naga groups, the NSCN-IM, which signed a formal ceasefire agreement with the Centre in 1997 when the peace talks began, is the main party to the negotiations. The Union government had signed a framework agreement with the NSCN-IM in 2015 to find a solution to the Naga political issue. The negotiations are yet to be concluded, 24 years on.

Why did the Naga insurgency begin?

The Naga tribes are said to have migrated from southwest China to Burma (now Myanmar) and Thailand, eventually settling in North East India and North West Myanmar. The term Naga was created by the British for administrative convenience to refer to a group of tribes with similar origins but distinct cultures, dialects, and customs. The Naga tribes are accumulated in Nagaland, Arunachal Pradesh, Manipur, and Myanmar.

Residing in the Naga Hills of Assam during the advent of the British and the annexation of Assam in 1820, living in isolation and wanting no interference in their cultural ways and customs, the Nagas did not consider themselves a part of British India. The British adopted a way of governance over the Nagas that involved keeping in place to a large extent, their traditional ways of life, customs, and laws while putting British administrators at the top. Finding this approach favourable, the colonial government later declared the Naga hills an "excluded area" in the Assam province in 1935.

At the time of the withdrawal of the British, insecurity grew among the Naga tribes about the future of their cultural autonomy after India's independence, which was accompanied by the fear of the entry of 'plains people' or 'outsiders' into their territory. These gave rise to the formation of the Naga Hills District Tribal Council in 1945, which was renamed the Naga National Council (NNC) in 1946.

Amid uncertainties over the post-independence future of the Nagas, a section of the NNC, led by Naga leader A.Z. Phizo declared the independence of the Nagas on August 14, 1947, a day before India's.

The underground insurgency began in the early 1950s when Mr. Phizo founded the Naga Federal Government (NFG) and its armed wing, the Naga Federal Army (NFA). The Central Government sent the armed forces into Naga areas to curb the insurgency and imposed the contentious Armed Forces Special Powers Act (AFSPA), which is still in place in parts of Nagaland.

The Nagas, led by Mr. Phizo, demanding an independent state outside of India, boycotted the 1952 and 1957 general elections and armed clashes grew. Unlike multiple other areas in the North East, where groups were accepting some form of autonomy by forming district and hill councils under the sixth schedule of the Constitution, Nagas rejected this in favour of sovereignty.

Some leaders among the NNC formed their own group to hold discussions with the government, leading to the formation of the state of Nagaland in 1963. This, however, did not satisfy many in the NNC and NFG, who, following years of negotiations with the government, eventually signed the Shillong Accord of 1975, agreeing to surrender arms and accept the Constitution.

When did the NSCN come into the picture?

This signing of the Shillong Accord was not agreeable with many top leaders of the NNC and those operating from Burma as the agreement did not address the issue of Naga sovereignty and coerced them to accept the Constitution.

Three NNC leaders- Thuingaleng Muivah of the Tangkhul Naga tribe of Manipur's Ukhrul district, Isak Chishi Swu of the Sema tribe, and S SKhaplang from Myanmar's Hemis tribe, formed the National Socialist Council Of Nagaland (NSCN) to continue the armed movement. The motto of the NSCN was to create a People's Republic of Nagaland free of Indian rule and based on the principle of socialism as an economic solution and Christianity as religious affiliation. With an initial cadre of 150, the NSCN soon had 3,000 recruits mainly from the Konyak and Tangkhul Naga tribes.

In 1988, after years of infighting and violent clashes along tribal lines and over the main cause of the movement, the NSCN split into two factions. One, led by Mr. Muivah and Swu called the NSCN-IM and the other, led by Mr. Khaplang called the NSCN-K.

The NSCN-IM demanded and continues to demand 'Greater Nagaland' or Nagalim — it wants to extend Nagaland's borders by including Naga-dominated areas in neighbouring Assam, Manipur and Arunachal Pradesh, to unite 1.2 million Nagas. The NSCN-K on the other hand was suspicious of the IM secretly holding parleys with the government.

After the death of Mr. Phizo in 1990 and the split of the NNC, the NSCN-IM became the most powerful insurgent group, also playing a role in the creation of smaller groups in other states. Its armed operations intensified along with illegal activities like tax extortion, smuggling of weapons and so on.

The NSCN-IM and its activities became a political roadblock for three consecutive administrations at the Centre, with Prime Ministers P V Narasimha Rao, H D Deve Gowda, and Atal Bihari Vajpayee holding multiple meetings with NSCN-IM leaders Mr. Muivah and Mr. Swu in Paris, Zurich, Geneva, and Bangkok. In 1997, the Government of India got the NSCN-IM to sign a ceasefire agreement to begin the holding of talks with the aim of signing a Naga Peace Accord.

Where do the peace talks stand now?

After the 1997 ceasefire with NSCN-IM, there have been over a hundred rounds of talks spanning over 24 years between the Centre and the insurgent group, while a solution is still awaited. The NSCN-K which initially refused to take part in any ceasefire agreement or talks with the Centre later agreed to a two-month

ceasefire in 1998, which was followed by countless ceasefire extensions over the years. In 2015, the NSCN-K violated its ceasefire agreement, later signing an extension.

New Delhi has been holding peace parleys simultaneously with the NSCN-IM, and the Naga National Political Groups (NNPGs) comprising at least seven other extremist groups, including the NSCN (K).

In 2015, it signed a Framework Agreement with the NSCN (I-M), the first step towards an actual Peace Accord. The then Joint Intelligence Chief R.N. Ravi was appointed the interlocutor for Naga peace talks and signed the agreement on behalf of the Centre. He was later appointed as Nagaland's Governor in 2019 to further the negotiations. Mr. Ravi, on the Centre's behalf, also signed an Agreed Position with the NNPGs in November 2017. Both the insurgent groups and the Centre said in late 2019 that formal talks had concluded. Despite this, an Accord remained elusive, resulting in further talks.

The negotiations hit an impasse in 2020, with the NSCN-IM demanding the removal of Mr. Ravi as interlocutor, accusing him of "high handedness" and tweaking the agreement to mislead other Naga groups. The NSCN-IM continued to demand a separate flag and constitution for the Nagas and the creation of Nagalim, which it claimed was agreed upon in the Agreement. R.N. Ravi, however, said none of that was on the table, also upsetting the NSCN-IM by calling it an armed gang.

After Ravi's removal as the interlocutor last year, IB officer A.K. Mishra, who retired as special director, was first appointed as the centre's adviser and then the interlocutor for the peace talks. On April 19 this year, Mr. Mishra visited the NSCN-IM's camp in Dimapur to hold closed-door talks but issues over the Naga flag and constitution remain to be ironed out.

Source: The Hindu

Disaster Management

1. The devastation in Dima Hasao and its after-effects

Relevant for GS Prelims & Mains Paper III; Disaster Management

Disaster struck Dima Hasao, central Assam's hill district, in mid-May after incessant heavy rainfall. The 170 km railway line connecting Lumding in the Brahmaputra Valley's Hojai district and Badarpur in the Barak Valley's Karimganj district was severely affected. The Assam government and Railway Ministry's assessments said the district suffered a loss of more than ₹1,000 crore, but ecologists say the damage could be irreversibly higher.

How severe has the rain been in Assam?

Assam is used to floods, sometimes even four times a year, resultant landslides and erosion. But the pre-monsoon showers this year have been particularly severe on Dima Hasao, one of three hill districts in the State. Landslips have claimed four lives and damaged roads. The impact has been most severe on the arterial railway, which was breached at 58 locations leaving the track hanging in several places. The New Haflong station catering to district headquarters Haflong bore the brunt of nature's fury when a passenger train, whose passengers were evacuated in time, was almost buried in mud. The disruption of train services, unlikely to be restored soon, has cut off the flood-hit Barak Valley, parts of Manipur, Mizoram and Tripura.

Why is the railway in focus post-disaster?

Dima Hasao straddles the Barail, a tertiary mountain range between the Brahmaputra and Barak River basins. The district is on the Dauki fault (the prone-to-earthquakes geological fractures between two blocks of rocks) straddling Bangladesh and parts of the northeast. British engineers were said to have factored in the fragility

of the hills to build the railway line over 16 years by 1899. The end result was an engineering marvel 221 km long over several bridges and through 37 tunnels, laid along the safer sections of the hills. A project to convert the metre gauge track to broad gauge was undertaken in 1996 but the work was completed only by March 2015 because of geotechnical constraints and extremist groups. The broad-gauge track was realigned to be straighter, but a 2009-10 audit report revealed that the project had been undertaken without proper planning and visualisation of the soil strata behaviour.

Citing an engineering and geology expert, the report gave the example of the disaster-prone Tunnel 10 on the realigned track that was pegged 8 meters below the bed of a nearby stream. Retired railway officials admitted that faulty experiments and the “greed” of a few not only made the track vulnerable to the forces of nature but also escalated the cost of the project from ₹1,677 crore to ₹5,500 crore. The Commissioner of Railway Safety had in July 2015 observed that the track was unsafe for passengers after nine derailments and the sinking of the track in 14 sections four months after the route was opened for goods trains.

Is only the railway at fault?

There is a general consensus that other factors have contributed to the situation Dima Hasao is in today. Roads in the district, specifically the four-lane Saurashtra-Silchar (largest Barak Valley town) East-West Corridor, have been realigned or deviated from the old ones that were planned around rivers and largely weathered the conditions. Locals said the arterial roads build over the past 20 years often cave in and get washed away by floods or blocked by landslides. Shortened cycles of jhum or shifting cultivation on the hill slopes and unregulated mining have accentuated the “man-made disaster”, as former MLA from the district Samarjit Haflongbar wrote in a letter to Assam Chief Minister Himanta Biswa Sarma. “...massive extraction of river stone, illegal mining of coal and smuggling of forest timber... has led to the disaster. These activities have increased water current besides weakening either side of riverbanks such as Jatinga, Mahur, Langting and other rivers along with other streams and tributaries,” he wrote, holding the chief of the autonomous district council responsible.

How vital are the rail and highway through Dima Hasao?

Meghalaya aside, Dima Hasao is the geographical link to a vast region comprising southern Assam’s Barak Valley, parts of Manipur, Mizoram and Tripura. This region has an alternative, less disaster-prone highway through Meghalaya linking the country beyond and may not thus be impacted by any damage to the four-lane highway through Dima Hasao, once it is completed. But the Lumding-Badarpur railway line has been the lifeline for this region since goods trains started operating in March 2015.

Moreover, this track is vital for India’s Look East policy that envisages shipping goods to and from Bangladesh’s Chittagong port via Tripura’s border points at Akhaura and Sabroom, the last railway station near the Feni River that serves as the India-Bangladesh border. The Dima Hasao line also links the ambitious 111 km Jiribam-Imphal railway project in Manipur being built on similar, landslide-prone terrain. There are plans to extend the Jiribam-Imphal line, which will have India’s tallest railway bridge and the longest railway tunnel, to Myanmar and beyond. Such plans seem distant with Tripura and Mizoram indicating they cannot always rely on the rail connectivity through Dima Hasao. The two States have approached the Ministry of External Affairs for bringing fuels and essentials through Bangladesh, preferably on a long-term basis.

Source: The Hindu

Culture

1. Iron in Tamil Nadu 4,200 years ago: a new dating and its significance

Relevant for GS Prelims & Mains Paper I; Culture



Iron items recovered from the site at Mayiladumparai. (Photo: Tamil Nadu State Department of Archaeology)

Carbon dating of excavated finds in Tamil Nadu pushes evidence of iron being used in India back to 4,200 years ago, the Tamil Nadu government announced this week on the basis of an archaeological report. Before this, the earliest evidence of iron use was from 1900-2000 BCE for the country, and from 1500 BCE for Tamil Nadu. The latest evidence dates the findings from Tamil Nadu to 2172 BCE.

Chief Minister M K Stalin said in the Assembly that it has been established that Tamils who lived 4,200 years ago were aware of iron. "Dense forests were converted into fertile lands only after humankind began realising the use of iron. This finding has answered questions relating to the start of agricultural activity in Tamil Nadu," Stalin said.

The findings

The excavations are from Mayiladumparai near Krishnagiri in Tamil Nadu, about 100 km south of Bengaluru. Mayiladumparai is an important site with cultural material dating back between the Microlithic (30,000 BCE) and Early Historic (600 BCE) ages.

"The site is situated in the midst of several archaeological sites such as Togarapalli, Gangavaram, Sandur, Vedarthattakkal, Guttur, Gidlur, Sappamutlu and Kappalavadi... All these important archaeological sites lie within 10 km," said the report cited by Stalin, titled 'Mayiladumparai: Beginning of Agrarian Society 4200 years old Iron Age culture in Tamilnadu', and headed by archaeologist K Rajan.

Prof Rajan had discovered the site in the 1990s, and the first excavations from there were made in the 1990s. The results of dating, which used accelerator mass spectroscopy, came last week.

Timeline revisited

The dates when humans entered the Iron Age vary from one region of the world to another. In India, too, the date has been revised with successive findings over the decades.

In 1979, use of iron was traced to 1300 BCE at Ahar in Rajasthan. Later, samples at Bukkasagara in Karnataka, indicating iron production, were dated back to 1530 BCE. The date was subsequently pushed back to 1700-1800 BCE with excavations finding evidence of iron smelting at Raipura in the Mid-Ganga valley, and then to 1900-2000 BCE based on investigations in sites at Malhar near Varanasi and Brahmagiri in North Karnataka. A series of dating results on finds from various parts in India have shown evidence of iron-ore technology before 1800 BCE.

Before the latest discovery, the earliest evidence of iron use for Tamil Nadu was from Thelunganur and Mangadu near Mettur, dating back to 1500 BCE.

Historical significance

Iron is not known to have been used in the Indus Valley, from where the use of copper in India is said to have originated (1500 BCE). "But non-availability of copper for technological and mass exploitation forced other regions to remain in the Stone Age. When iron technology was invented, it led to the production of agricultural tools and weapons, leading to production required for a civilisation ahead of economic and cultural progress," said a leading scientist associated with the Mayiladumparai excavation.

While useful tools were made out of copper, these were brittle and not as strong as iron tools would be. It would have been difficult to use copper tools to clear dense forests and bring land under agriculture — which is why scientists infer that deforestation took place only after humans began using iron.

"With the latest evidence tracing our Iron Age to 2000 BCE from 1500 BC, we can assume that our cultural seeds were laid in 2000 BCE. And the benefit of socio-economic changes and massive production triggered by the iron technology gave its first fruit around 600 BCE — the Tamil Brahmi scripts," the scientist said.

Culture and politics

The Tamil Brahmi scripts were once believed to have originated around 300 BCE, until a landmark finding in 2019 pushed the date back to 600 BCE. This dating narrowed the gap between the Indus Valley civilisation and Tamilagam/South India's Sangam Age. This, and the latest findings, are politically significant.

The dating of the scripts, based on excavations from sites including Keeladi near Madurai, became controversial when the Archaeological Survey of India (ASI) did not go for advanced carbon dating tests, and an ASI researcher who had initiated the study was transferred out of the state. The 2019 findings came out of the state government's efforts.

In the Assembly, Stalin said the goal of the state government is to establish through scientific methods that the history of India should be rewritten from the Tamil land. He said the state archaeology department would begin work on a comparative study of graffiti found in Keeladi and the signs of the Indus Valley civilisation.

Source: The Indian Express

History

1. 100 years of DU, the story of a university's birth

Relevant for GS Prelims & Mains Paper I; History

Between its inception with three colleges and 750 students in 1922 to its 90 colleges and 86 departments today with over 6 lakh students from across India, the 100-year story of the University of Delhi is deeply intertwined with the history and evolution of the city itself.

On Sunday (May 1), Delhi University marked the beginning of its centennial celebrations.

The idea of a university

The idea for the university began taking shape in 1911 when it was decided to shift the capital of India to Delhi from Calcutta. The onset of World War I, differences over the nature of the would-be university, and lack of funds kept the idea from coming to fruition for another 11 years.

On January 16, 1922, the Delhi University Bill was introduced in the Imperial Legislative Assembly with the objective of establishing a unitary teaching and residential university in the capital of British India. At that time, Delhi had three arts colleges — St Stephen's College, which was founded in 1882 by the Cambridge Mission; Hindu College, which was founded in 1899; and Ramjas College which was founded in 1917 — and Lady Hardinge Medical College. These three colleges were to become the first constituent colleges of the university.

The Bill was passed by the Assembly on February 22, and by the Council of States on February 28. The Viceroy gave his assent on April 6, and the DU Act came into force on May 1, 1922, with Viceroy Lord Reading as the first Chancellor and Hari Singh Gour as the first Vice-Chancellor.

DU began with just two faculties — arts and science — and eight departments — English, history, economics, Sanskrit, Arabic, Persian, physics, and chemistry.

At the university's first convocation in 1923, Vice-Chancellor Gour said that at "the new Delhi now to be the Imperial capital of a reformed and regenerated India...a new university should be created which should serve as an inspiration to its new hopes and signpost to its new born aspirations".

Struggle in the early years

During the its first decade of its existence, significant additions were made to the university: the Faculty of Law was established in 1924; Delhi College — which traced its history to the 17th century — was revived as Anglo-Arabic College that same year and was affiliated with DU (today's Zakir Husain Delhi College); Commercial College, today's Shri Ram College of Commerce — began in 1926; and Lady Irwin College was inaugurated in 1932.

In this transitional phase, the university shuffled between rented buildings — it was housed in the Ritz Cinema building, in Curzon House on Alipur Road, and in a portion of the Old Secretariat building. It was finally allotted its current home in the Viceregal Lodge and Estate near the Ridge in 1923.

DU was beset with troubles in these early years. In her essay 'The Foundation and Early History of Delhi University' in the volume 'Delhi Through The Ages' (ed. R E Frykenberg), historian Aparna Basu wrote, "Delhi University had failed to receive any substantial measure of public confidence because of competition and rivalry between the colleges and because of internal strife and factionalism in university affairs.

"As a result the university played a very small part in the life of the capital and no part in the life of India as a whole. It did not attract undergraduate or postgraduate students from other parts of India, and had very little academic society of its own. It remained scarcely known outside Delhi, and even there, it inspired little confidence."

Maurice Gwyer and his vision

In 1938, Sir Maurice Gwyer, who was appointed Vice-Chancellor in 1938 and after whom the university's oldest men's residence, Gwyer Hall, is named, presented a memorandum to the Government of India, outlining a vision for an all-India character for the university. Basu wrote that he conceived of DU as a "miniature Oxbridge" with a "cluster of small residential colleges around the core of the university".

According to Gwyer, "Such a University might and should prove one of the greatest unifying influences in the New India. It would promote the wider outlook which contact with the life of a capital city can alone provide; it would become a clearing house of ideas and of intellectual progress; and it might profoundly influence those who may in future become responsible for the Government of India."

Among the measures Gwyer suggested were the establishment of a number of professorial chairs and readerships; scholarships to encourage "young men of real ability" to come to Delhi from different parts of India; the transfer of constituent colleges to the University area; and fixing three years as the length of the ordinary degree course. These had a lasting impact on the nature and character of the university.

St. Stephen's moved to the new site of its college in what would become North Campus in 1942, and was soon followed by Hindu, Ramjas and SRCC.

Post Partition, growth and spread

With Partition, the city's demography and character underwent major changes.

The need to accommodate displaced students from West Punjab led to the start of new colleges like Hansraj College (1948), SGTB Khalsa College (1951), Deshbandhu College (1952), and Kirori Mal College (1954). As colleges were added over the years, some of the most recently founded were intended to cater to students living far from the centre of the university's centres — Aditi Mahavidyalaya in Bawana, DeenDayal Upadhyaya College in Dwarka, Keshav Mahavidyalaya in Pitampura, Dr Bhim Rao Ambedkar College in Yamuna Vihar.

Source: The Indian Express

Miscellaneous

1. What Modi meant by 'FOMO' — and other Internet shorthand and how to pick them up

Relevant for GS Prelims; Miscellaneous

This week, the popular Internet slang 'FOMO', short for "fear of missing out", was employed by an unlikely speaker: India's Prime Minister.

Narendra Modi was giving a joint address with Denmark's Prime Minister Mette Frederiksen to the India-Denmark Business Forum on the sidelines of the second India-Nordic Summit in Copenhagen. The official handle of the Prime Minister's Office tweeted: "These days the term FOMO or 'fear of missing out' is gaining traction on social media. Looking at India's reforms and investment opportunities, I can say that those who don't invest in our nation will certainly miss out: PM @narendramodi in Copenhagen."

What is 'FOMO'?

The Oxford English Dictionary describes 'FOMO' as the "anxiety that an exciting or interesting event may currently be happening elsewhere, often aroused by posts seen on social media".

In their 2021 research paper 'Fear of missing out: A brief overview of origin, theoretical underpinnings and relationship with mental health', authors Mayank Gupta and Aditya Sharma wrote that "FoMO is characterized by the desire to stay continually connected with what others are doing."

Although the phenomenon of the 'fear of missing out' was identified some time in the late 1990s by a brand strategist named Dan Herman, the expression was popularised only in 2004 by Patrick J. McGinnis, an American venture capitalist.

In their 2016 article titled 'Fear of missing out, need for touch, anxiety and depression are related to problematic smartphone use',

Jon D Elhai, Jason C Levine, Robert D Dvorak, and Brian J Hall highlighted that "problematic smartphone use was most related to the fear of missing out, depression (inversely), and a need for touch".

Gupta and Sharma wrote that "The social aspect of FoMO could be postulated as relatedness which refers to the need to belong, and formation of strong and stable interpersonal relationships."

And what is meant by 'Internet slang'?

Since it first originated in the Internet's early days, Internet slang or Internet shorthand has been developing constantly and rapidly. With time, the occurrence of these words and expressions in the vocabulary, especially of users who spend significant time on social networking services and similar online platforms, has become more frequent. And as our digital lives and personalities have become increasingly more enmeshed with real ones, this language of the Internet has seeped into everyday speech.

A BBC report from 2015 traced the origins of one of the earliest Internet slangs to the mid-1980s when a developer in Canada claimed that he had used "LOL" in a chat room. "Laughing out loud" is one of the most commonly used and easily recognisable Internet slang words, and it was added to the Oxford English Dictionary in 2011.

So are "BTW" ('by the way'), "TFW" ('that feeling when'), and "CUL8R" ('see you later'), the last being more common during the early days of SMS.

Punctuation marks play an important role in the language of Internet slang: common punctuation marks used to express feelings or emotions include, for example, a string of full stops ('.....') and a series of exclamation marks ('!!!!!!!!'), as well as a combination of question marks and exclamation marks ('?!?!?!?!').

In 2014, following a Freedom of Information request, the US Federal Bureau of Investigation (FBI) published an 80-page list of Internet slang words that it had compiled to help the agency's agents navigate the fast-changing world of Internetspeak. But a Fast Company report published earlier this year indicated that the list had become largely irrelevant, an indication of how quickly the language develops.

It is often not so much the creation of new words as it is the appropriation of existing words and phrases, which are given new identities and meanings on the Internet. Researchers have submitted that the development of earlier technologies such as radio, television, and telephone too engendered their own set of slang. An example: the phrase "the pilot radioed the control room" produced the verb "radioed" that originated in the technology itself.

How can you pick up Internet slang?

You have to spend a lot of time on the Internet, of course, and you have to be, as active social media users say, "ITK", or 'in the know'. New words first become cool in certain spaces, and having a wide trawling sweep helps, as does a circle of users who are 'with it' on the Internet. New expressions and connotations keep emerging, with older ones becoming 'uncool'.

For those who are starting out, Kaspersky has a helpful beginners guide to Internet slang. Another resource that is being constantly updated is Urban Dictionary, a crowdsourced online dictionary specifically to help decode slang words and phrases.

Source: The Indian Express

2. Who was Anna Jarvis; why she created and then hated Mother's Day

Relevant for GS Prelims



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Anna Jarvis (May 1, 1864 – November 24, 1948) was an American activist who founded Mother's Day to honour her and "all mothers" in 1908.

By now, you have probably seen the Mother's Day Google doodle, received and sent WhatsApp messages, read the "best gift ideas for your mom" listicles, and may have even put up Instagram or Facebook posts to mark the day. Chances are, in all these interactions with Mother's Day, you have not once come across the name Anna Jarvis.

That is because Jarvis's relationship with the day she founded was complicated — while she had worked tirelessly to get "Mother's Day" officially recognised, she eventually came to hate the commercialisation of it, and spent the last of her energy and money in campaigning against it.

We take a look at who Anna Jarvis was, how she created "Mother's Day", and why she grew bitterly disappointed with the way it eventually came to be celebrated.

Who was Anna Jarvis?

Anna Jarvis (May 1, 1864 – November 24, 1948) was an American activist who founded Mother's Day to honour her and "all mothers" in 1908.

Anna grew up in West Virginia in turbulent years — the Civil War guns were booming when she was born, and she saw several siblings die of diseases like measles, typhoid, and diphtheria.

Her mother Ann Reeves Jarvis, driven by her own experiences, spent her life working for causes centred around motherhood, such as teaching mothers sanitation to prevent child mortality, and forming a community of mothers from both sides of the Civil War divide to bridge rankling differences.

A young Anna heard her mother say, “I hope and pray that someone, sometime, will find a memorial mothers’ day commemorating her for the matchless service she renders to humanity in every field of life. She is entitled to it.”

When Mrs Jarvis died in 1905, Anna got to work fulfilling this wish of her mother’s. She wrote letter upon letter to politicians, businessmen, and church leaders to enlist their support for her cause, proposing the second Sunday of May as a day dedicated to celebrating mothers, with a white carnation – her mother’s favourite flower – as the day’s emblem.

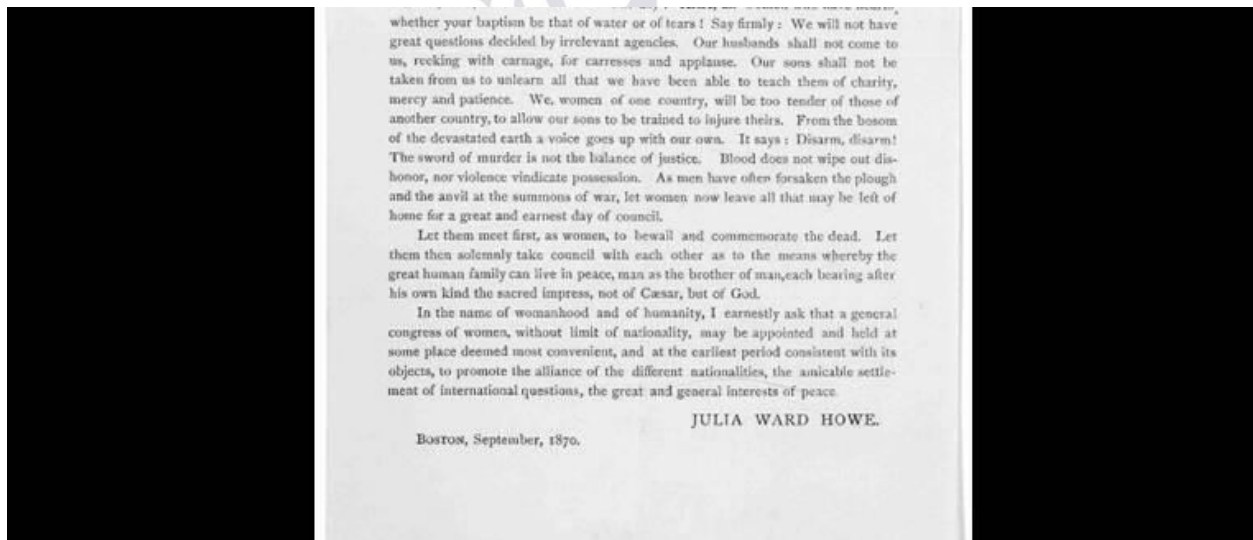
Sunday being a holiday was likely to make her job easier. It is for this that she chose the second Sunday of May so that the date would be close to May 9, when her mother had died.

By 1908, Jarvis’s efforts began to bear fruit, and two Mother’s Day events were held, in the Andrews Methodist Episcopal Church in her hometown of Grafton (the church is now called International Mother’s Day Shrine), and a larger one in Philadelphia. The day grew in popularity, and in 1914, James Heflin of Alabama introduced a formal legislation to recognise Mother’ Day in the House of Representatives. The bill reached the desk of then US President Woodrow Wilson on May 8, 1914, and was signed into law the same day.

‘Domestication’, then commercialisation

Before Jarvis’s successful campaign — she had managed to enlist the support of industrialists like John Wanamaker (who later became US Postmaster General) and HJ Heinz (whose ketchup you have probably eaten) — others had proposed days to celebrate mothers. Notable among these was Julia Ward Howe, author, abolitionist and suffragist, who had started a Mothers’ Day (apostrophe placement important) celebration in June 1873, which continued for some years.

Historians and feminists have pointed out that Jarvis, through her energetic efforts to get the day recognised, narrowed the definition of ‘mother’ to a caregiver who puts her children’s needs first. Instead of Howe’s Mothers’ Day, Jarvis chose the singular, ‘Mother’s Day’, “For the Best Mother who Ever Lived—Your Mother.” Thus, Jarvis the devoted daughter wanted people to honour their individual mother who cared for them at home.



A part of Julia Ward Howe’s original Mothers’ Day Proclamation. (Photo: Library of Congress)

Howe’s, and even the elder Mrs Jarvis’, ideas were more political. Mrs Jarvis had spoken of “civic leadership and service; mothers united in public works to empower themselves and help to empower others.” Howe, in

her original Mothers' Day Proclamation, wrote, "As men have often forsaken the plough and the anvil at the summons of war, Let women now leave all that may be left of home for a great and earnest day of counsel."

Anna Jarvis' family version of the holiday was eagerly taken up by the greeting card industry, the flower industry, candy makers, etc., and Mother's Day was soon heavily commercialised. A New York Times report of

1964, the 50th anniversary of Mother's Day, says, "According to the National Committee on the Observance of Mother's Day, Inc., the day has become a gift-giving occasion second only to Christmas."

Jarvis's reaction

Jarvis hated what the day she strove to establish was fast mutating into. She now threw her energies in arresting this commercialisation, through written campaigns, litigations, and later, direct action. She had copyrighted the phrase "Second Sunday in May, Mother's Day" early on, and sued people for using it for marketing campaigns.

The price of carnations would shoot up around Mother's Day, even though modifications were made to Jarvis' original idea, with the white flowers now used for deceased mothers and red or pink ones for those alive. A livid Jarvis brought out a press release, saying, according to the BBC, "WHAT WILL YOU DO to rout charlatans, bandits, pirates, racketeers, kidnappers and other termites that would undermine with their greed one of the finest, noblest and truest movements and celebrations?"

She then started exhorting people to do away with flowers entirely.

About greeting cards and candies, she said, "A printed card means nothing except that you are too lazy to write to the woman who has done more for you than anyone in the world. And candy! You take a box to Mother—and then eat most of it yourself. A pretty sentiment."

Jarvis' opposition to those using the day for anything other than what she had intended it to be – "a day of sentiment, not profit" — grew more strident over the years. According to the National Geographic, "She organized boycotts... and even attacked First Lady Eleanor Roosevelt for using Mother's Day to raise funds for charities." When a proposal was floated to rename Mother's Day as 'Parents' Day', she opposed it vociferously. In 1925, she was arrested for "disturbing peace" when she crashed a convention of American War Mothers, who sold carnations on Mother's Day and used it for fundraising. Two years before this, she crashed a retail confectioner convention.

When the flower industry offered to share profits with her, she promptly spurned them.

Jarvis died, almost penniless and alone, in a sanatorium in 1948. According to the BBC, one of her final public activities before being admitted to the sanatorium was "to go door-to-door in Philadelphia asking for signatures to back an appeal for Mother's Day to be rescinded."

Claims have been made that Jarvis' sanatorium bills were secretly footed, at least in part, by the florist and greeting card industries. However, these reports have not been confirmed.

Jarvis never had children of her own, but so vehement was her eventual opposition to Mother's Day that, according to BBC, even her extended family did not observe the day for a long time.

Source: The Indian Express

3. A history of the Pulitzer Prize; and the Indians who have won it

Relevant for GS Prelims

Website: www.prepmate.in

Telegram Channel: [@upscprepmate](https://t.me/@upscprepmate)

Prepmate Cengage Books Preview: <https://prepmate.in/books/> Youtube channel: [PrepMateEduTech](https://www.youtube.com/channel/UCPrepMate)



The most coveted award for journalists from across the world, the Pulitzer is announced by America's Columbia University. (Wikimedia Commons)

A team of four Indian photographers from Reuters news agency — slain photojournalist Danish Siddiqui, Adnan Abidi, Sanna Irshad Mattoo and Amit Dave — have won the 2022 Pulitzer Prize for feature photography for their coverage of the Covid-19 crisis in India.

Announcing the winners, the Pulitzer Prize website noted that they were receiving the award for “images of Covid’s toll in India that balanced intimacy and devastation, while offering viewers a heightened sense of place.”

Arguably the most coveted award for journalists from across the world, the Pulitzer is announced by America’s Columbia University and bestowed on the recommendation of the Pulitzer Prize Board.

Indians who have previously won the Pulitzer

A member of the Ghadar Party in America, Indian-American journalist Gobind Behari Lal, was the first from India to win the Pulitzer Prize for journalism in 1937. He won the award for reporting with four others, for their coverage of science at the tercentenary of Harvard University. A postgraduate from University of California, Berkeley, he also received the Padma Bhushan in 1969.

In 2003, Mumbai-born Geeta Anand was part of the team at Wall Street Journal that won a Pulitzer Prize for reporting on corporate corruption, and in 2016, Indian-American Sanghamitra Kalita, then managing editor of Los Angeles Times, won the Pulitzer in the Breaking News Reporting category with her team for their coverage of the San Bernardino shooting in California in 2015 and the terror investigation that followed.

In 2000, London-born Indian-American writer Jhumpa Lahiri won the Pulitzer Prize in Fiction for her debut short story collection *Interpreter of Maladies*. In 2011, Siddhartha Mukherjee (Indian-American physician, biologist and author) won the Pulitzer Prize for General Non-Fiction for his demystification of cancer in *The Emperor of All Maladies: A Biography of Cancer*.

In the Feature Photography Category, Siddiqui — who was killed on July 16, 2021, while covering a clash between Afghan security forces and Taliban forces in Spin Boldak district of Kandahar — was also awarded the Pulitzer in 2018 for his images of the Rohingya refugee crisis. He was part of the team from Reuters that bagged the award, which included another co-recipient from this year, Adnan Abidi.

The latter also won in the the 2020 Pulitzer in the Breaking News Photography category as part of the team from Reuters that covered the 2019-20 Hong Kong protests.

In 2020, Channi Anand, Mukhtar Khan and Dar Yasin of Associated Press won the Pulitzer in the Feature Photography category “for striking images captured during a communications blackout in Kashmir depicting life in the contested territory as India stripped it of its semi-autonomy,”

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Who was Joseph Pulitzer, after whom the awards are named?

Born to a wealthy family of Magyar-Jewish origin in Mako, Hungary, in 1847, Joseph Pulitzer had a stint in the military before he built a reputation of being a “tireless journalist”.

In the late 1860s he joined the German-language daily newspaper Westliche Post, and by 25 he had become a publisher. In 1878, he became the owner of St. Louis Post-Dispatch. Under him, the paper published several “investigative articles and editorials assailing government corruption, wealthy tax-dodgers, and gamblers”. In 1883, he also negotiated the purchase of The New York World, which was in financial straits, and elevated its circulation.

In 1884, he was elected to the US House of Representatives from New York’s ninth district as a Democrat and entered office on March 4, 1885. During his tenure, he led a movement to place the newly gifted Statue of Liberty in New York City.

When were the Pulitzer awards instituted?

The awards were instituted according to Pulitzer’s will, framed in 1904, where he made a provision for the establishment of the Pulitzer Prizes as an incentive to excellence. Pulitzer specified solely four awards in journalism, four in letters and drama, one for education, and five travelling scholarships.

In his will, Pulitzer bestowed an endowment on Columbia of \$2,000,000 for the establishment of a School of Journalism, one-fourth of which was to be “applied to prizes or scholarships for the encouragement of public service, public morals, American literature, and the advancement of education.”

According to the Pulitzer prize website, he stated: “I am deeply interested in the progress and elevation of journalism, having spent my life in that profession, regarding it as a noble profession and one of unequaled importance for its influence upon the minds and morals of the people. I desire to assist in attracting to this profession young men of character and ability, also to help those already engaged in the profession to acquire the highest moral and intellectual training.”

After his death in 1911, the first Pulitzer Prizes were awarded in June, 1917.

Changes that have been made to the awards

A forward-looking entrepreneur, who knew that alterations might be necessary with the changing times, Pulitzer established an overseer advisory board and willed it “power in its discretion to suspend or to change any subject or subjects, substituting, however, others in their places, if in the judgment of the board such suspension, changes, or substitutions shall be conducive to the public good or rendered advisable by public necessities, or by reason of change of time.”

In keeping with the provision, several changes have been made, including the addition of new categories and inclusion of recognition of online content. In 2008, it was announced that content published in online-only news sources would also be considered, and, since 2016, print and online magazines, too, have been eligible to apply in all journalism categories.

Source: The Indian Express

4. What is retinoblastoma, the common eye cancer in children?

Relevant for GS Prelims & Mains Paper III; Miscellaneous

Retinoblastoma is the most common eye cancer occurring in young children and the Department of Ophthalmology, at the Advanced Eye Centre, since 1996, has been running a Retinoblastoma Clinic here three days a week.

The department is the primary referral centre for entire North India and the first point of contact for a majority of patients and caters to Chandigarh, states of Punjab, Haryana, Himachal, Uttarakhand, parts of UP, Rajasthan and J&K. The department offers all state-of-the-art treatment to all patients, which includes laser photocoagulation, cryotherapy, intravitreal chemotherapy, transpupillary thermotherapy, and intravenous and intra-arterial chemotherapy.

As part of the World Retinoblastoma Awareness Week (May 15 to 21), the Retinoblastoma Clinic is conducting awareness lectures with the public, paramedical staff, and doctors to spread awareness about the disease condition. Prof Usha Singh, Department of Ophthalmology heads the Retinoblastoma Clinic and works in close collaboration with senior residents, paediatric and radiation oncologists, interventional neuro-radiologist, and a social worker. The team answers some questions about retinoblastoma.

What is retinoblastoma?

It is the most common cancer in the eye (malignant tumor) in small children. It can occur in one or both eyes and may be hereditary or sporadic. It can be life-threatening as well as take away vision if not treated timely and is detected by seeing White Reflex (WR).

Symptoms

White Reflex in the eye: Pupil that looks white or yellow instead of red when light hits it.

Squinting: A crossed eye, looking either toward the nose or towards the ear.

Poor vision with or without WR. The eye may be red or painful also.

Retinoblastoma disease burden

Nearly 1,500-2,000 children are diagnosed with retinoblastoma every year in India. The majority of these children belong to lower socio-economic strata of society and nearly 60 per cent of these patients have advanced disease at presentation. It is associated with low treatment and survival rates which are due to lack of awareness, social stigma, poor access to care, high cost of treatment, lack of infrastructure, health professionals, good treatment protocols, quality drugs, diagnostics, and supportive care. PGI provides state-of-the-art treatment and has been working tirelessly to mitigate the suffering and financial woes of these children. Financial help is forthcoming from various poor patient funds, government schemes, state cancer funds of Punjab and Haryana, and NGOs. Cankids is a registered NGO under the Indian Cancer Society and under the MoU between PGI and Cankids. The aim is to provide all children with the best treatment to fight this disease, irrespective of their financial status.

How is retinoblastoma detected?

Ocular ultra-sonography and fundus examination are the immediate OPD procedures. Its extent is determined by Magnetic Resonance Imaging (MRI) and systemic staging investigations (bone marrow biopsy, CSF, and whole-body PET scan).

How is retinoblastoma managed?

Retinoblastoma treatment requires a multi-disciplinary approach and this is managed by a team of experts, specialised in taking care of such children.

Treatment planning is done after a complete clinical examination and classification of the disease (grouping and staging). Treatment is individualised to each patient.

Chemotherapy can be delivered intravenously or intra-arterial and is given by the paediatric oncologist and is the most common modality of treatment. This has to be followed up with local therapy, which is managed by the ophthalmologist using various modalities.

Assessing the response and monitoring of the local tumor, the need for change in treatment modality is done on a weekly to monthly basis till the tumor is in control.

After completion of treatment, further monitoring and follow-up are done to keep a watch on the recurrence of disease and side effects of systemic treatment. These patients need lifelong follow-up and genetic counselling offered to parents.

Source: The Indian Express

5. Discovery of a primitive forest at the bottom of a giant sinkhole in China

Relevant for GS Prelims

A cave exploration team has discovered an ancient forest at the bottom of a giant karst sinkhole in Leye County in south China's Guangxi Zhuang Autonomous Region.

According to Xinhua News, the sinkhole measures 306 metres in length, is 150 metres in width and 192 metres in depth, with its volume exceeding 5 million cubic meters. Given these dimensions, the sinkhole can be categorised as a large sinkhole. In Mandarin, giant sinkholes are called Tiankeng or "heavenly pit".

Interestingly, the sinkhole has three big caves in the walls and its bottom has a well-preserved primitive forest with trees nearly 40 metres high.

Earlier in November 2019, Xinhua Net had reported the discovery of a giant cluster of sinkholes in the same region. Before this, in 2016, scientists had discovered the world's largest cluster of sinkholes in northwest China's Shaanxi province.

How are sinkholes formed?

Sinkholes are depressions formed in the ground when layers of the Earth's surface start collapsing into caverns. They can occur suddenly and without warning, because the land under the surface of the Earth can stay intact for a period of time until the spaces get too big.

Sinkholes can be formed due to natural processes or human activity. Typically, sinkholes form in areas of "karst" terrains, where the rock below the surface of the Earth can be easily dissolved by groundwater.

Essentially, this means that when rainwater seeps into the ground, the rock below the surface of the Earth starts dissolving, leading to the creation of spaces. This process is a slow and gradual one and can sometimes take hundreds or thousands of years.

As per NASA, karst geology covers about 13 per cent of eastern and southeastern Asia. According to the United States Geological Survey (USGS), karst terrain is created from the dissolution of soluble rocks, mostly limestone and dolomite and is characterised by distinctive landforms such as caves, sinkholes and springs.

Sinkholes can also be formed due to human activity. According to the British Geological Survey, this can happen due to broken land drains, water mains and sewerage pipes, increased rainfall, storm events, underlying limestone and diverted surface water, among other reasons.

Sinkholes in China and around the world

In China, the mining of coal, zinc, lead and iron ore deposits in karst areas have been associated with the formation of sinkholes due to human activity, according to a 1997 paper published in the journal Environmental Geology.

In January 2020, six people were killed after a bus and some pedestrians were swallowed by a sinkhole in China's Xining city, the capital of Qinghai province. Page | 264

Sinkholes are not uncommon in other parts of the world.

About 20 percent of the US is made up of karst landscapes. In Florida, in an area that is classified as a karst landscape, insurance agencies must provide homeowners coverage against damage that can accrue from ground cover collapse.

In May 2013, a 36-year-old man disappeared into an over 20 feet deep sinkhole that swallowed his house in Florida while he was sleeping.

Elsewhere in the US, sinkholes are also common in Texas, Alabama, Missouri, Pennsylvania, Kentucky and Tennessee.

The largest sinkhole in the US is called the "Golly Hole", which collapsed suddenly in 1972 and is over 325 ft long, 300 ft wide and 120 ft deep.

Other sinkhole-prone areas around the world include Mexico, parts of Italy and Russia.

In 2010, a three-story building was swallowed by a sinkhole in Guatemala City. This was attributed to leakages from sewer pipes and a volcanic eruption.

Source: The Indian Express

6. The Booker Prize, one of the most coveted literary awards in the world

Relevant for GS Prelims & Mains Paper III; Miscellaneous



Author Geetanjali Shree poses with the 2022 International Booker Prize award for her novel 'Tomb of Sand' in London, Thursday, May 26, 2022. (AP/PTI)

Author Geetanjali Shree's translated Hindi novel, *Tomb of Sand*, became the first Indian language book to win the International Booker Prize Friday.

The 2018 novel titled 'Ret Samadhi' was translated by Daisy Rockwell and published as 'Tomb of Sand' in 2021.

The prize is one of two literary awards given out annually by the Booker Prize Foundation, a charity whose stated aim is to "promote the art and value of literature for the public benefit".

On the foundation's website, it states that the awards together "honour fiction on a global basis...whether that work was originally written in English (the Booker Prize) or translated into English (the International Booker Prize)."

What is the Booker Prize?

The Booker Prize is one of the best-known literary awards for fiction writing in English, including both novels and collections of short stories. It was first awarded in 1969.

Every year a panel of judges decides the best work of the year, with the criteria being that it must be written in English and published in the UK and Ireland. This panel of judges is picked from among eminent cultural historians, writers, professors, and novelists, and others from related fields. The panel this year had five judges.

For the Booker Prize, the winner receives £50,000. The longlist, released prior, has about 12 selections on it. Also called The 'Booker Dozen', the longlist this year will be announced in July, and later the shortlist of six books will be declared in September. The winner will be announced in November 2022.

What about the International Booker Prize?

The International Booker Prize began in 2005. A biennial prize initially, it was then awarded for a body of work available in English, including translations, with Alice Munro, Lydia Davis and Philip Roth becoming some of the early winners. In 2015, the rules of the International prize changed to make it an annual affair. The new rules stipulated that it will be awarded annually for a single book, written in another language and translated into English. The £50,000 prize money is divided equally between the author and translator each year.

Why is it called the 'Booker'?

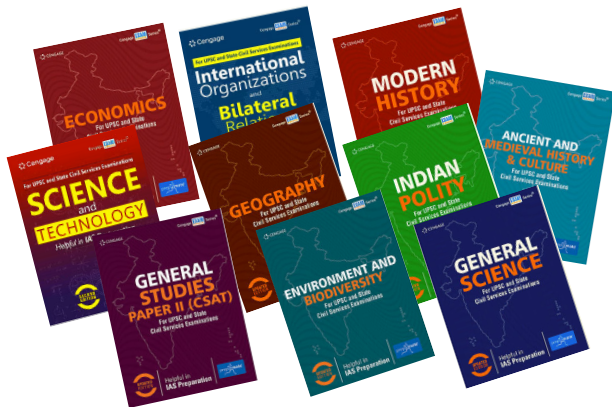
The Booker Prize, from 1969 to 2001, was named simply after the Booker Group Limited – a British food wholesale operator that was its initial sponsor. The Man Group, an investment management firm based in the UK, began to sponsor the prize in 2002 and it thus came to be known as The Man Booker Prize. The Man Group ended their sponsorship in 2019. Crankstart, an American charitable foundation, has been the sponsor after that. The prize name has changed back to the 'Booker' since then.

Who have been some prominent winners?

Prominent winners of the coveted prize include Margaret Atwood ('The Testaments'), Yann Martel ('Life of Pi'), and Julian Barnes ('The Sense of an Ending'). Many Indian-origin writers have won the Booker in the past, such as Arundhati Roy ('The God of Small Things'), Salman Rushdie ('Midnight's Children'), Kiran Desai ('The Inheritance of Loss'), and Aravind Adiga ('The White Tiger'). Shree is the first Indian to win the International prize.

Source: The Indian Express

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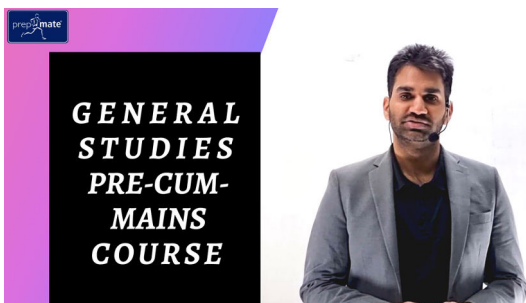
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