

News Juice Monthly

SEPTEMBER 2024 EDITION

Made from The Hindu,
Indian Express and PIB

Covers August 2024
Current Affairs

For Prelims and Mains

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1. Limiting Governors' Power to Refer Bills to the President

Issue at Hand

Some Governors have been using their powers to delay or block state legislation, which undermines the Constitution. Despite the Supreme Court's intervention in cases involving Punjab, Tamil Nadu, and Telangana, the problem persists. Governors, finding their ability to withhold assent curtailed, now send disapproved Bills to the President for consideration. As per Constitution, When the President, advised by the Union government, refuses assent, State legislatures have no recourse, raising concerns about misuse of this provision to subvert federalism.

Article 200:

- Article 200 of the Indian Constitution outlines the process for a Bill passed by the Legislative Assembly of a State to be presented to the Governor for assent, who may either **assent, withhold assent or reserve the Bill for consideration** by the President.
- The Governor may also return the Bill with a message **requesting reconsideration by the House** or Houses.

Article 201:

- It states that when a **Bill is reserved for the consideration** of the President, the President may assent to or withhold assent from the Bill.

Supreme Court's Role

Kerala has challenged this practice in a writ petition, questioning the Governor's action of sending Bills to the President and the subsequent refusal of assent. It is an appropriate time for the Court to adjudicate and place limitations on this practice.

Previous Court Rulings

- **Punjab Case:** The Court ruled that Governors do not have a veto over Bills. If they withhold assent, they must return the Bills to the Assembly. If the Assembly re-adopts the Bills, the Governor is bound to grant assent.

- **Telangana Case:** The Court emphasized that Governors should act on Bills "as soon as possible," highlighting the significant constitutional content of this phrase.

Ongoing Issues

Governors of West Bengal and Kerala continue to ignore these rulings. Seven Bills from Kerala, which may not normally require the President's assent, were sent to Rashtrapati Bhavan, with four refused without explanation. Delays range from 10 to 23 months. West Bengal also faces similar issues, challenging the inaction on some Bills referred to the President.

Core Concern

This issue goes beyond political motivations and addresses whether the Constitution allows such indirect central intervention in the legislative domain of the States.

Relevance: GS Prelims & Mains Paper II; Governance

Source: Indian Express

2. Sub-classification of SC, ST

Why in News?

In a landmark judgement, a seven-judge Bench of the Supreme Court reframed how the Scheduled Castes (SC) and Scheduled Tribes (ST) quota may operate — for the very first time since reservations were introduced in the Constitution in 1950.



In a 6:1 ruling, the Bench headed by Chief Justice of India D Y Chandrachud permitted states to create sub-classifications within the SC and ST categories for the purpose of according wider

protections — through fixed sub-quotas — to the most backward communities within these categories. This overturns the apex court's 2004 decision in *E V Chinnaiah v State of Andhra Pradesh*, in which it had held that the SC/ST list is a "homogenous group" that cannot be divided further.

The ruling had six separate opinions — five in favour of sub-classification, and a lone dissent by Justice Bela Trivedi.

Background

Article 341 of the Constitution allows the President, through a public notification, to list as SC "castes, races or tribes" that suffered from the historical injustice of untouchability. SC groups are jointly accorded 15% reservation in education and public employment.

Over the years, some groups within the SC list have been underrepresented compared to others. States have made attempts to extend more protection to these groups, but the issue has run into judicial scrutiny.

In 1975, Punjab issued a notification giving first preference in SC reservations to the Balmiki and Mazhabi Sikh communities, two of the most backward communities in the state. This was challenged in 2004 after the apex court struck down a similar law in Andhra Pradesh in *E V Chinnaiah*.

The court had held that any attempts to create a differentiation within the SC list would essentially amount to tinkering with it, for which the Constitution did not empower states. Article 341 only empowers the President to issue such a notification, and Parliament to make additions or deletions to the list. The court also said that sub-classifying SCs violates the right to equality under Article 14.

Based on this ruling, in 2006, the Punjab & Haryana High Court in *Dr. Kishan Pal v State of Punjab* struck down the aforementioned 1975 notification. However, the very same year, the Punjab government again passed the Punjab Scheduled Caste and Backward Classes (Reservation in Services) Act, 2006, reintroducing the first preference in reservations for the Balmiki and Mazhabi Sikh communities.

This Act was challenged by Davinder Singh, a member of a non-Balmiki, non-Mazhabi Sikh SC community. The HC, in 2010, struck down the Act, leading to an appeal at the Supreme Court. In 2014, the case was referred to a five-judge Constitution Bench to determine if the *E V Chinnaiah* decision had to be reconsidered.

In 2020, the Justice Arun Mishra-headed Constitution Bench in *Davinder Singh v State of Punjab* held that the court's 2004 decision required reconsideration. The ruling noted that the court and the state "cannot be a silent spectator and shut its eyes to stark realities". Crucially, it disagreed with the premise that SC are a homogeneous group, saying there are "unequals within the list of Scheduled Castes, Scheduled Tribes, and socially and educationally backward classes."

But since this Bench, like in *E V Chinnaiah*, comprised five judges, a seven-judge Bench heard the issue in February 2024. Here are the key issues which were before the Bench.

Issue 1: Are all castes in the SC list to be treated similarly?

Article 341(1) of the Constitution gives the President the power to “specify the castes, races or tribes” in a state, which shall “for the purposes of this Constitution be deemed to be Scheduled Castes in relation to that State or Union territory, as the case may be”. Following such a notification, Article 341(2) states that only Parliament can include or exclude “any caste, race or tribe” from the list of SCs.

The court in *E V Chinnaiah* held that SC must be treated identically since the Constitution envisaged the same benefits for them, without taking into account their individual relative backwardness. In recent judgement, CJI Chandrachud rejected this premise, stating that “The inclusion [in the Presidential list] does not automatically lead to the formation of a uniform and internally homogenous class which cannot be further classified”.

The CJI termed the Presidential list of SCs a “legal fiction” — something that does not exist in actuality but is “treated as real and existing for the purpose of law”. A Scheduled Caste is not something that existed before the Constitution came into force, and is recognised so that benefits can be provided to communities in the list. CJI Chandrachud said this legal fiction cannot be “stretched” to claim that there are no “internal differences” among SCs.

Issue 2: Can states ‘tinker’ with or sub-classify the Presidential list?

Articles 15(4) of the Constitution gives states the power to make “any special provision” for the advancement of SCs. Article 16(4) gives states the specific power to provide “reservations of appointments or posts in favour of any backward class of citizens which...is not adequately represented in the services of the State”.

The court, in *E V Chinnaiah*, had held that the power under these articles was limited to providing quotas in education and public employment to the state’s backward classes. It held that once reservations have been provided to SCs as a whole, “it is not open to the State to sub-classify a class already recognised by the Constitution and allot a portion of the already reserved quota amongst the State created sub-class” within the SC list.

In recent judgement, the majority opinion held that “the State in exercise of its power under Articles 15 and 16 is free to identify the different degrees of social backwardness and provide special provisions (such as reservation) to achieve the specific degree of harm identified”.

Justice Gavai said that equality of opportunity (Article 16) must account for the varying social positions of different communities. When the same opportunities are provided to SC communities that are on different footings it “can only mean aggravation of inequality”.

On the subject of SC communities that oppose sub-classification, he said that their “attitude” is akin to “that of a person in the general compartment of the train. Firstly, the persons outside

the compartment struggled to get into the general compartment. However, once they get inside it, they make every attempt possible to prevent the persons outside such a compartment from entering it”.

Issue 3: What is the yardstick for sub-classification?

The majority opinion drew stringent redlines for states on how to work out the sub-quotas. States will have to demonstrate a need for wider protections, bring empirical evidence, and have a “reasonable” rationale for classifying sub-groups. This reasoning can be further be tested in court.

The CJI underlined that any form of representation in public services must be in the form of “effective representation”, not merely “numerical representation”. As a result, even if an SC community is represented adequately just by the numbers, they may be barred from achieving “effective” representation by being promoted to higher posts. So the state must prove that the “group/caste carved out from the larger group of Scheduled Castes is more disadvantaged and inadequately represented, and this must be based on quantifiable data”.

Issue 4: Does the ‘creamy layer’ principle apply to Scheduled Castes?

Only the opinion of Justice Gavai bats for introducing the ‘creamy layer’ exception for SCs (and STs) that is already followed for Other Backward Classes (OBCs). This concept places an income ceiling on reservation eligibility, ensuring that the beneficiaries are those in a community that need quotas the most.

Four of the seven judges — Justices Vikram Nath, Pankaj Mithal and Satish Chandra Sharma — agreed with Justice Gavai’s opinion on the matter.

Relevance: GS Prelims & Mains Paper II; Governance

Source: Indian Express

3. State by state, prominent tribal & Dalit communities

MAHARASHTRA

More than three dozen SC communities; Mahar and Matang are most prominent. Mahar are socio-politically proactive, with comparatively high literacy. Large numbers followed Dr BR Ambedkar in embracing Buddhism in 1956. Matang are the second largest SC community; majority are Hindu.

Gond, who live in Vidarbha, especially in Gadchiroli and Chandrapur districts, and Bhil, who are concentrated in North Maharashtra districts of Nandurbar, Nashik, and Dhule, are two largest tribes.

RAJASTHAN

59 SCs in State List; Meghwal is largest SC community, spread across the state, but mainly in border districts of Bikaner, Jaisalmer, Barmer, Jodhpur. Bairwa and Jatav are dominant in eastern Rajasthan.

Meena are most dominant tribe; influence electoral outcome in dozens of Assembly seats. Community has significant presence in police and bureaucracy countrywide. Bhil, some of whom do not consider themselves Hindu, are dominant in Banswara and Dungarpur districts, and have of late rallied behind a new tribal party.

Scheduled Castes & Scheduled Tribes Population:		
Scheduled Castes & Scheduled Tribes Population		
Scheduled Castes :	166,635,700	16.2%
Scheduled Tribes :	84,326,240	8.2%
Scheduled Castes		
State with highest proportion of Scheduled Castes	Punjab (28.9 %)	
State with lowest proportion of Scheduled Castes	Mizoram (0.03 %)	
UT with highest proportion of Scheduled Castes	Chandigarh (17.5%)	
UT with lowest proportion of Scheduled Castes	D & N Haveli (1.9%)	
District with highest proportion of Scheduled Castes	Koch-Bihar (50.1%)	
District with lowest proportion of Scheduled Castes	Lawngtlai Mizoram (0.01%)	
Scheduled Tribes		
State with highest proportion of Scheduled Tribes	Mizoram (94.5 %)	
State with lowest proportion of Scheduled Tribes	Goa (0.04 %)	
UT with highest proportion of Scheduled Tribes	Lakshadweep (94.5 %)	
UT with lowest proportion of Scheduled Tribes	A & N Islands (8.3 %)	
District with highest proportion of Scheduled Tribes	Sarchhip, Mizoram (98.1%)	
District with lowest proportion of Scheduled Tribes	Hathras, Uttar Pradesh (0.01%)	

ODISHA

Tribals are 22.85% of state's population and 9.17% to India's tribal population (2011 Census). State has 62 tribes and 13 other primitive tribes. Khond are numerically largest; live mostly in southern Odisha districts of Rayagada, Kandhamal, Kalahandi, Koraput. Santal are second largest tribal group, followed by Gond.

93 SCs in state; 17.13% of total population (2011). Pan are dominant SC community, followed by Dom. Other SC communities include Dhoba, Ganda, Kandra, Bauri.

CHHATTISGARH

STs are more than 30% of state's 2.55 crore population (2011). Gond are most dominant of the 43 tribal communities; constitute almost 55% of tribal population. Kavar/ Kanwar (over 11%) and Oraon (almost 10%) people are next.

As per the 2011 Census, 44 SC groups make up 12.7% of state's population. Largest group among the SCs constitutes more than 70% of the Dalit population, and is known by 16 different names, such as Bairwa, Raidas, etc.

MADHYA PRADESH

SCs are about 15.6% of state's population. Members of the largest Dalit group, which makes up more than 47% of the SC community's numbers, were traditionally leather workers and live across the state. The Balai, who live in the Malwa region, constitute about 12% of the state's SC population (2011).

STs are 21% of the population. The Bhil are the largest community, making up more than 39% of the tribal population. The Gond are the other large community, approximately a third of the state's ST population.

WEST BENGAL

Rajbanshi are largest SC group, comprising more than 18% of state's 21.4 million SCs (2011); can influence electoral outcomes in 20 Assembly seats in North Bengal. Matua are now the second largest SC group; they are mostly concentrated in North and South 24-Parganas, and in border districts like Nadia, Howrah, Cooch Behar, North and South Dinajpur and Malda. The Matua religion was founded by Harichand Thakur in the 19th century, who worked among the "untouchables". The third largest SC community are the Bagdi, who live mainly in Bankura and Birbhum.

GUJARAT

27 Dalit castes; Vankar, whose traditional occupation is weaving, make up around 35-40% of SC population in state, and lead other Dalit communities in education and jobs. Rohit, who are around 25-30% of the SC population, are the next most dominant SC community.

Bhil constitute almost 43% of the tribal population, and live mainly in the districts of Dang, Panchmahal, Bharuch, Banaskantha and Sabarkantha. Halpati, who live mainly in the southern districts of Surat, Navsari, Bharuch, and Valsad, constitute more than 6% of state's tribals.

ASSAM

Tribal population is 12.4% of total population (2011 Census). Fifteen recognised tribes in autonomous districts of Karbi Anglong and North Cachar Hills; 14 in rest of the state. Bodo are the largest tribe (35.1% of the tribal population) and politically most powerful. Karbi are the largest hill tribe and third largest tribe in state.

TRIPURA

19 recognised tribal communities make up more than 30% of state's population. Ancient Tripuri clan includes the Debbarma community, the erstwhile ruling dynasty of Tripura. There are 34 SCs in state, who make up almost 18% of the population (2011). SCs include the Das, Badyakar, Shabdakar, Sarkar, etc communities.

UTTARAKHAND

Thakur and Brahmin are around 55% of the population; OBC are about 18%, and SCs and STs together are just about 22% (2011). Harijan and Balmiki, both of whom follow Hindu religious

practices, are the largest SC groups. The Jaunsari and Tharu are the two largest ST groups in the state.

Relevance: GS Prelims; Governance

Source: Indian Express

4. Why did courts revisit bar on sub-quotas?

A seven-judge Bench of the Supreme Court has ruled that States have the power to sub-divide Scheduled Castes (SC) into groups so that it can give sub-quotas within the quota for Dalits. In the process, the Bench overruled a 2004 judgment by a five-member Constitution Bench that said such sub-classification was impermissible as Parliament alone was empowered to modify the list of SCs notified by the President under Article 341 of the Constitution.

TO AND FRO	
1975: Punjab govt reserves 50% jobs within the Scheduled Caste (SC) quota for Balmikis and Mazhabi Sikhs	sub-classification not permissible
2000: Andhra Pradesh govt introduces sub-quotas within the SC quota	2006: Punjab and Haryana High Court strikes down Punjab govt circular against the backdrop of the 2004 judgment
2004: A 5-judge Bench of the Supreme Court in <i>EV Chinniah vs Andhra Pradesh</i> holds that SCs were a homogeneous group and	2006: Centre constitutes Justice Usha Mehra Commission to examine sub-categorisation of SCs in Andhra, recommends amending the Constitution
	2020: In <i>Davinder Singh and Ors</i> , a 5-judge
	Supreme Court Bench doubts the correctness of the decision in the <i>EV Chinniah</i> verdict, refers it to a 7-judge Bench
	2024: 7-judge Bench verdict allows for sub-classification in the SC quota



What was the 2004 judgment?

The Andhra Pradesh Scheduled Castes (Rationalisation of Reservation) Ordinance, 1999, and the Act that replaced it created four groups — A, B, C and D — of Scheduled Castes and earmarked varying percentages of reservation for each group. The rationale was that there were differences in the level of advancement among communities under the SC list and that such sub-classification will ensure representation for the weaker castes. The Andhra Pradesh High Court rejected the challenge against the Act.

However, in the Supreme Court, a Constitution Bench of five judges held the sub-classification was unconstitutional. The November 2004 judgment in *E.V. Chinniah vs State of Andhra Pradesh* noted that under Article 341 of the Constitution, the President notifies the list of Scheduled Castes. Once the list is notified, it shall not be modified through another notification, and the only way to include or exclude a community in that list was by an act of Parliament. The Bench then ruled that once enumerated under Article 341, SCs constitute a

single homogeneous class, and that State legislatures were not competent to tinker with the list by further classifying them into groups.

How did it come up before a larger Bench?

The Punjab Scheduled Castes and Backward Classes (Reservation in Services) Act, 2006, provided for 25% reservation for SCs and 12% for backward classes in direct recruitment to services. Half the jobs under the SC quota, the law said, would be given as first preference to Balmikis and Mazhabi Sikhs, if candidates were available. When this was challenged, the Punjab and Haryana High Court cited the judgment in E.V. Chinnaiah to hold that the relevant section on preference to two communities among SCs was unconstitutional. Similarly, in 2006, the High Court also struck down the Haryana government's notification dividing SC communities into two blocks and earmarking 50% of the SC quota to each block.

In 2009, the Tamil Nadu Assembly enacted a law to provide a sub-quota in services and educational institutions for Arunthathiyars, a group of sub-castes considered the weakest among the Scheduled Castes in the State. This was challenged directly in the Supreme Court. In 2020, a Constitution Bench doubted the correctness of the Chinnaiah judgment, noting that the nine-judge Bench in Indra Sawhney (1992) had permitted sub-classification of backward classes. However, in Chinnaiah, the Bench had declined to use that as a precedent for sub-division of SC communities as Indra Sawhney was only concerned with OBC reservation. Hence, a larger Bench was constituted to revisit the earlier verdict.

What is the reasoning behind it?

Six of the seven judges have now ruled that the 2004 judgment was wrong. In his judgment on behalf of himself and Justice Manoj Mishra, Chief Justice D.Y. Chandrachud has held that SC communities are not a homogeneous class as ruled in the earlier judgment. He disagreed with the view that the act of notifying a list of SCs creates a deemed fiction that all of them have a similar status. It is true that they get a common constitutional identity as Scheduled Castes based on their experience of untouchability and discrimination, but this does not mean that there is no heterogeneity among them.

He cited historical and empirical evidence to show that there were inter se differences among SC communities. There were even instances of some sections of SCs being discriminated against by other SC communities. Therefore, sub-classification was permissible, but it should be based on an "intelligible differentia" (a clear characteristic that will mark one group as different from another) and should have a rational nexus to the purpose of doing it. Further, such sub-classification is subject to judicial review, and the State should be able to justify it using empirical data.

The CJI also held that sub-classification will not in any way amount to tinkering with the Presidential list and that it will not violate Article 341, which confers the power to notify Scheduled Castes exclusively on the President. The function of Article 341 was to identify who came under the category of Scheduled Castes, but States are free to identify those with different degrees of backwardness and make special provisions or extend reservation benefits

to them. The new ruling is expected to encourage States to earmark sub-quotas for the most marginalised sections of Dalits who have not enjoyed the fruits of reservation so far.

In her dissent, Justice Bela Trivedi stands by the Chinnaiya doctrine that it is impermissible to sub-classify a homogeneous class and that it would amount to tinkering with the President's list under Article 341.

What about creamy layer exclusion?

The creamy layer concept is now applicable only to OBCs and so far has not been extended to Dalit communities. Justice B. R. Gavai, in a separate opinion in which he concurs with the Chief Justice, has written in detail about the need for identifying the more advanced among the Scheduled Castes and excluding them from the benefits of affirmative action.

Noting that equality would mean that unequals cannot be treated as equals, Justice Gavai has wondered whether the children of IAS or IPS officers could be treated the same way as children in remote villages even though they may belong to the same community. Underscoring the differences in access and resources to those in urban and rural areas, and those attending elite institutions and those in schools with limited facilities, he has said putting them in the same bracket would obliterate the equality principle. However, he also notes that the parameters for excluding the creamy layer for the SCs cannot be the same as those used to identify the well-off among the OBCs. Three other judges have agreed with his view. However, the opinions do not constitute a direction to the government to implement the creamy layer concept, as the issue did not directly arise in this case.

Relevance: GS Prelims & Mains Paper II; Governance

Source: The Indian Express

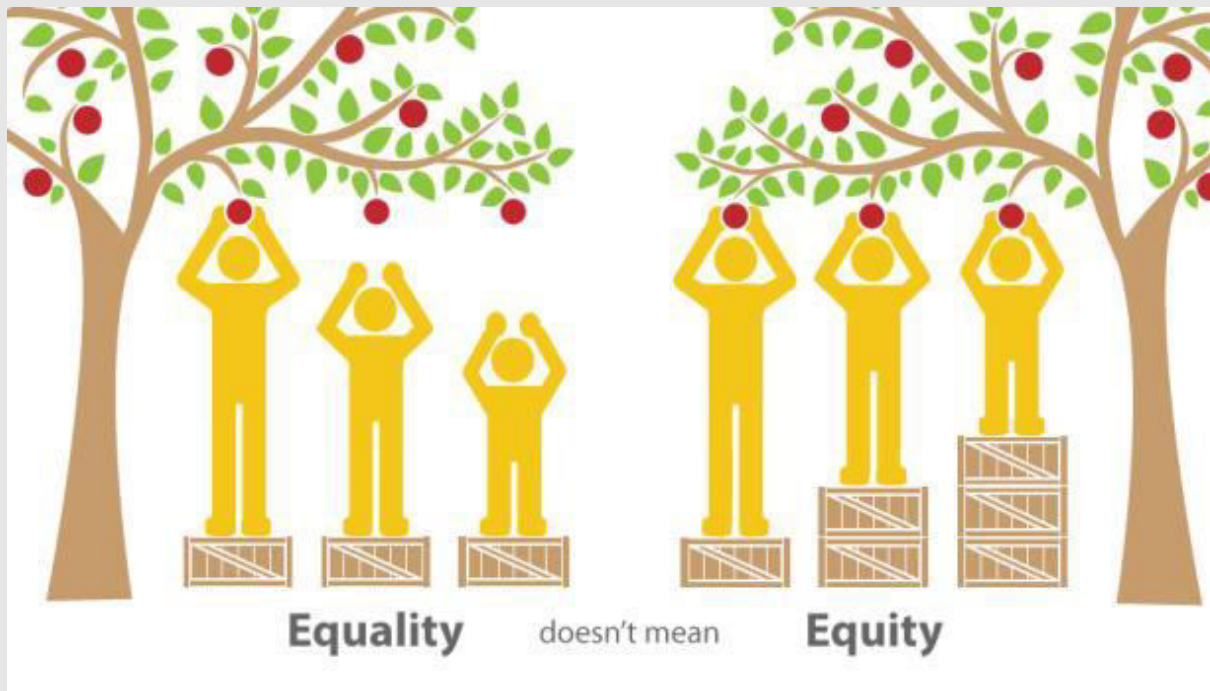
5. Supreme Court verdict on sub-classification: How CJI underlined Substantive equality

Why in News?

The Supreme Court's landmark verdict on sub-classification of the Scheduled Caste (SC) and Scheduled Tribe (ST) quota marked a milestone for equality jurisprudence. In this verdict, Chief Justice of India (CJI) D Y Chandrachud underlined the concept of "substantive equality" — the principle that the law must account for the different backgrounds and historical injustices faced by persons or groups.

"The Constitution...today advances a more substantive reading of the equality provision, expanding the sphere and the scope of the reservation to ensure that the benefits trickle down to those who need it the most," the CJI wrote (*The State of Punjab v. Davinder Singh*, 2024).

The concept of substantive equality is key to understanding how the court interpreted the law on reservations.



Over the years, the Supreme Court's view on reservation

In the sub-classification judgment delivered on August 1, the CJI traced the history of the ways in which the top court has interpreted affirmative action.

AS LIMITING EQUALITY: The SC initially took a formal and limiting approach, in which it viewed reservations as an exception to the principle of equal opportunity. Emblematic of this was the court's view in *The State of Madras v. Champakam Dorairajan* (1951) where it held that reservation of seats in educational institutions was unconstitutional — there was no express provision that allowed this, like Article 16(4) of the Constitution did for public employment.

In another ruling given in April 1951, *B Venkataramana v. The State of Madras*, the top court held that only Harijans and backward Hindus can be considered as “backward classes” for reservation in public jobs.

This led to Parliament enacting the first amendment to the Constitution in June that year, which inserted Article 15(4), which is essentially an exception to Article 29 that prohibits discrimination against any citizen on grounds of religion, race, caste, language, or any of them with respect to admission into educational institutions.

This formalistic reading was also in evidence in *Indra Sawhney v. Union of India* (1992) (Mandal judgment), in which the court observed that Articles 15(4) and 16(4) are special provisions — or, in other words, an exception to the principle of equality — while prescribing a cap of 50% on the total seats to be reserved.

AS A FACET OF EQUALITY: In 1958, the State of Mysore reserved 75% seats in educational institutions for all communities except the Brahmin community. This was challenged before

the SC in *M R Balaji v State of Mysore* (1962), in which the court for the first time prescribed a 50% ceiling for reservation. This limit is contested — but it has endured, with the exception of the 10% Economically Weaker Section (EWS) quota introduced in 2019.

In its decision in *State of Kerala v. N M Thomas* (1975), the SC made an “expansive and substantive reading of the equality code”, CJI Chandrachud said. The court upheld a Kerala law in which the qualifying criteria for government jobs was relaxed for SC and ST candidates. It held that the law was not an exception to the principle of equality of opportunity.

AS LIMITING EFFICIENCY: Article 335 of the Constitution, which provides for reservation for SCs and STs in services and posts, states that the reservation must be taken “consistently with the maintenance of efficiency of administration”. In the discourse on reservation in the SC that put emphasis on “maintaining efficiency of service”, reservation was effectively seen as being detrimental to “efficiency”, while “merit” (unreserved posts) was equated with efficiency.

This view was reflected in a string of rulings in which the SC shot down reservations in promotions. In the 1992 *Indra Sawhney* judgment, the SC held that reservations in promotions would dilute efficiency in administration.

In 1995, a constitutional amendment was introduced to allow reservations in promotions and to undo the “catch-up rule” that was upheld in a string of rulings. The court had held that the practice was a constitutionally valid practice to maintain “efficiency”.

Under the catch-up rule, if a reserved-category person was promoted earlier over his superior in the general category due to reservation, the general-category person was allowed to regain seniority over — or “catch up” with — the reserved-category person.

The Constitution (Seventy-seventh) Amendment Act, 1995 inserted Article 16(4A) to allow “consequential seniority”, which meant that the seniority attained by a reserved-category candidate over his peer in the general category by being promoted earlier would be retained for the next promotion. The law on consequential seniority was upheld in 2006 on the ground that the efficiency of administration was only relaxed, not “obliterated”, by the rule.

“The understanding of the Courts at the end of this phase was that the scope of reservation must be expanded to ensure substantive equality in spite of its dilution of efficiency,” the CJI said in his ruling.

Repudiation of the concept of a reservation-vs-merit binary

Drawing from observations and dissenting opinions in other rulings, CJI Chandrachud in his rulings has reframed the quota-versus-efficiency question. In essence, it sees reservation as reflecting the mandate of substantive equality enshrined in the Constitution, and not as a concessionary exception to the equality rule.

Addressing the criticism that the dilution of the evaluating standards or the qualifying marks for SCs/STs leads to “inefficiency,” the CJI has argued that “securing higher marks in an

examination does not contribute to higher efficiency and...securing a minimum mark (and not the highest) in the examination is sufficient to maintain efficiency of administration”.

The CJI's majority opinion states that the stereotype that reservation leads to inefficiency in fact makes promotions inaccessible to SC/ST candidates — the reason why the state introduced reservations in promotions. The constitutional amendments “are an emphatic repudiation of the binary of reservation and merit”, CJI Chandrachud has argued.

Relevance: GS Prelims & Mains Paper II; Governance

Source: Indian Express

6. SC rules Delhi L-G can directly nominate Municipal Corporation 'aldermen': What was the case?

Why in News?

Recently, the Supreme Court held that the Centre-appointed Delhi Lieutenant Governor (L-G) has the power to nominate 'aldermen' to the Municipal Corporation of Delhi (MCD) without the aid and advice of the Council of Ministers from the Delhi Government.



The bench of Justices P.S. Narasimha and P.V. Sanjay Kumar held that the Delhi Municipal Corporation Act, 1957 (DMC Act) gives the Delhi L-G the 'explicit' power to nominate aldermen without any requirement to consult the Council of Ministers, and held that the nomination of 10 aldermen in January 2023 was a valid exercise of power.

In January, the Delhi L-G nominated 10 aldermen by invoking his powers under Section 3 of the Delhi Municipal Corporation Act, 1957 (DMC Act). However, with the legality of the nomination in question, key functions of the MCD came to a halt.

Who are aldermen and why was their nomination by the Delhi L-G been challenged?

Why are aldermen integral to the functioning of the MCD?

Under the DMC Act, Delhi is divided into 12 zones. The Act also creates a 'Wards Committee' for each zone comprising elected representatives and the aldermen within that territory. The Delhi L-G under Section 3 the DMC Act is empowered to nominate 10 aldermen who must be above 25 years of age and "have special knowledge or experience in municipal administration". Though the aldermen do not have the right to vote in the MCD meetings, they play a crucial role in the functioning of the house through the Ward Committee.

Each of the 12 Wards Committees must elect a member to be a part of the MCD Standing Committee in their first meeting. Aldermen can vote in these elections and stand as candidates for being elected as a member of the Standing Committee. The remaining six Standing Committee members are chosen directly by the MCD house after the mayoral elections.

Though the Mayor is the nominal head of the MCD, the Standing Committee effectively manages the functions of the corporation, and it cannot be constituted without the alderman participating in the voting process. Without this committee, the MCD cannot perform crucial functions, including entering into contracts involving more than Rs. 5 crore expenditure, appointing MCD officers to key positions, recommending budget revisions, or approving any exercise of power involving expenditure beyond the current year.

Why is the nomination of aldermen in question?

Article 239AA of the Constitution of India contains special provisions for the National Capital Territory of Delhi. Crucially, it provides for the creation of the Delhi Legislative Assembly, the Council of Ministers which comprises members of this assembly, and the offices of the Chief Minister and the Delhi L-G.

The article states that the Council of Ministers and the Chief Minister will "aid and advise the Lieutenant Governor in the exercise of his functions in relation to matters with respect to which the Legislative Assembly has power to make laws, except in so far as he is, by or under any law, required to act in his discretion". The assembly has the power to make laws on all subjects in the State List except for laws that govern 'Public order' (entry 1), 'Police' (entry 2) and 'Land' (entry 18).

In December 2022, the Aam Aadmi Party won the Municipal Corporation Elections, winning 134 of the 250 seats in the MCD house. This ended the BJP's 15-year run as the majority party in the MCD. On January 3, 2023, the Delhi L-G issued a notification nominating 10 persons as aldermen under Section 3 of the DMC Act. The next day, the notification was modified and two of the members were replaced.

The Delhi government filed a plea for the quashing of both notifications at the Supreme Court in March 2023. They argued that the notifications were illegal as the Delhi L-G can only make nominations based on the 'aid and advice of the Council of Ministers' because of the special status given to the NCT of Delhi under Article 239AA of the Constitution of India.

It also relied on the apex court's 2018 decision in *State (NCT of Delhi) v. Union of India*, where the court held that the Delhi L-G was bound by the aid and advice of the Council of Ministers in all matters related to subjects under the State and Concurrent lists (besides the three excluded subjects). The Delhi government also pointed out that one of the subjects in the State List is 'Local Government' (Entry 5).

The Delhi L-G, on the other hand, argued that the DMC Act carved out a specifically defined role for the 'Administrator' (the Delhi L-G) giving him the power to nominate aldermen. He claimed that while exercising this power that was specifically provided under a statute, it is not necessary to seek out the aid and advice of the Council of Ministers.

What did the court rule?

The bench of Justices P.S. Narasimha and P.V. Sanjay Kumar referred to the five-judge bench decision in *Government of NCT of Delhi v. Union of India* (2023) to arrive at its decision. In 2023, the apex court held that Parliament would have the power to legislate over subjects in the State List as well, when it comes to the NCT of Delhi. In this case that would include passing laws over 'local government', which is subject under the State List and would cover the DMC Act.

As the DMC Act gives the Delhi L-G the 'explicit' power to nominate aldermen without any requirement to consult the Council of Ministers, the court held that the nomination of 10 aldermen in January 2023 was a valid exercise of power.

Relevance: GS Prelims

Source: Indian Express

7. On U.P.'s stringent anti-conversion law

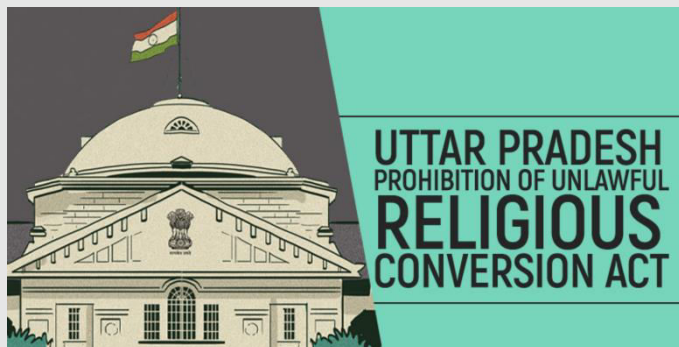
Why in News?

The Uttar Pradesh Legislative Assembly recently passed the Uttar Pradesh Prohibition of Unlawful Conversion of Religion (Amendment) Bill, 2024, altering the original 2021 anti-conversion law by making its provisions more draconian and susceptible to misuse.

Why was the amendment proposed?

According to the Bill's statement of reasons, the existing legislation needed to be made "as stringent as possible" owing to the alleged "organised and well-planned" involvement of "foreign and anti-national elements and organisations" in demographic change due to unlawful conversion. State government data reveals that between January 1, 2021, and April 30, 2023, 427 cases were registered under the Act.

Does it increase penalties?



Earlier, a person convicted of unlawful conversion faced a minimum prison term of one year and a maximum of five years, along with a fine of ₹15,000. Under the amended Bill, the minimum term has been raised to five years, and maximum to 10 years. The fine has also been increased to ₹50,000. For unlawful conversions involving a minor, a woman, or a person

belonging to a Scheduled Caste or Scheduled Tribe, the penalty has been increased from a prison term of 2-10 years to 5-14 years. The minimum fine has also been raised from ₹25,000 to ₹1 lakh.

The amendment also introduces two new categories of offences. First, the newly added sub-section to Section 5 mandates a prison term of 7 years, extendable to 14 years, for anyone who secures "foreign" funds or funds from "illegal institutions for the purpose of unlawful conversion". They will also be required to pay a fine of ₹10 lakh. Second, if the accused causes any person to "fear of his life or property, assaults or uses force, promises or instigates marriage, conspires or induced any minor, woman or person to traffics or otherwise sells them", they shall be punished with a minimum 20 years imprisonment which can be extended to life imprisonment.

Who can register a complaint?

Under Section 4 of the original Act, only "any aggrieved person" or "his/her parents, brother, sister, or any other person who is related to him/her by blood, marriage or adoption" was authorised to file a criminal complaint for unlawful conversion. Despite this restriction, police authorities were reportedly allowing FIRs to be lodged at the behest of right-wing activists and other unauthorised third parties. However, the amendment now grants legitimacy to such third-party complaints. The revised provision stipulates that "any person" can file an FIR related to any violation of the Act.

What about provisions for bail?

The amendment introduces stringent "twin conditions of bail" identical to those under statutes such as the Prevention of Money Laundering Act, 2002, and the Unlawful Activities (Prevention) Act, 1967. All offences related to unlawful conversion are now cognisable and non-bailable and can only be adjudicated upon by a sessions court or higher judicial forums.

Under the revised Section 7, an accused cannot be granted bail without first providing the public prosecutor an opportunity to contest the bail application. Further, if the public prosecutor opposes such a plea, the sessions court may grant bail only if "there are reasonable grounds for believing that [the accused] is not guilty of such offence" and that he or she is

unlikely to commit any crime if released on bail. The reverse burden of proof on the accused renders it virtually impossible for anyone to obtain bail until the completion of the trial.

What about other States?

In addition to Uttar Pradesh, States such as Odisha, Madhya Pradesh, and Arunachal Pradesh have had anti-conversion laws for decades, while Chhattisgarh, Gujarat, Himachal Pradesh, Jharkhand, and Uttarakhand have implemented such laws more recently.

Most of these laws require individuals intending to convert, or those facilitating conversions, to notify the government. In Madhya Pradesh, the law mandates a 60-day prior "declaration of the intention to convert" to the District Magistrate for the conversion to be valid. Himachal Pradesh and Uttarakhand require a 30-day prior notice. In contrast, Uttar Pradesh not only mandates a 60-day notice but also requires the Magistrate to conduct a police inquiry to ascertain the true intention behind the conversion. Another notable distinction is that other States confine the filing of FIRs to the aggrieved individual or their immediate family, thus excluding third parties with potential vested interests from initiating any legal action. The "twin conditions of bail" which impose a high threshold for securing interim release, are also absent in other State laws. With respect to punishment, none of the other States prescribe life imprisonment, instead, sentences vary between 2 to 10 years.

What happens next?

The constitutional validity of the amendment is likely to be challenged before the top court. A batch of petitions challenging the parent legislation and other anti-conversion laws are pending adjudication before a Bench. In May, in a separate case, a Bench had orally remarked that certain provisions of the 2021 Act appear to contravene Article 25 of the Constitution which guarantees the freedom of religion.

Relevance: GS Prelims & Mains Paper II; Governance

Source: The Hindu

8. Why has the draft Broadcast Services Bill 2024 raised concerns of freedom of speech?

Why in News?

In a draft law, shared with a handful of industry stakeholders in a watermarked format to prevent leaking of the copy to a wider audience, the Ministry of Information and Broadcasting has proposed introducing onerous regulations on independent creators of news events on platforms like YouTube, Instagram and X – sparking concerns over freedom of speech and expression and the government's powers to regulate it.

In the draft Broadcasting Services (Regulation) Bill, 2024, shared with stakeholders a few weeks ago, the ministry is understood to have expanded its remit from OTT content and digital news to include social media accounts and online video creators compared to a version of the draft law which was released publicly in November 2023. The new version also defines a "digital news broadcaster" in sweeping terms, and requires prior registration with the government to prescribing standards for content evaluation.

How does the draft bill seek to include YouTube creators under its remit? What are the requirements proposed on social media companies? How have other countries gone about their broadcasting laws?



How does the government want to regulate independent news creators online?

In the 2023 version of the draft, the Bill defined news and current affairs programmes as: "(i) newly-received or noteworthy audio, visual or audio-visual programmes or live programmes, including analysis, about recent events primarily of socio-political, economic or cultural

nature, or (ii) any programmes transmitted or retransmitted on broadcasting network, where the context, purpose, import and meaning of such programmes implies so."

However, in the 2024 draft has a new category called "digital news broadcaster" or "publisher of news and current affairs content" has been created, and defined as "any person who broadcasts news and current affairs programme through an online paper, news portal, website, social media intermediary, or other similar medium as part of a systematic business, professional, or commercial activity but excluding replica e-papers."

The term 'systematic activity' has also been defined to mean any structured or organised activity that involves an element of planning, method, continuity or persistence – broadly vague terms which could be made to mean anything and gives the executive a long leash over enforceability.

What legal obligations will independent creators have?

Now, if a creator is categorised as a digital news broadcaster, they must 'intimate' the Ministry of Information and broadcasting (MIB) about their work and existence. They will also have to form one or more content evaluation committees (CEC) at their own expense – and "strive to make" the committee diverse by including individuals with a knowledge of different social groups, women, child welfare, scheduled castes, scheduled tribes, minorities. The names of people in their CEC will also have to be shared with the government. All digital news broadcasters must intimate the MIB.

The penalty to not appoint such a committee is hefty under the current draft – news creators who do not intimate the Central Government names, credentials and other details of members of their CEC will be fined Rs 50 lakh in the first contravention, and Rs 2.5 crore for subsequent violations in the next three years. The draft Bill allows the government to "exempt a distinct class of players or a group for avoiding genuine hardship", which suggests that some stakeholders might be exempted from the purview of the Bill.

A senior government official explained that as the rules stand today, online content creators will have to issue an intimation to the government within a month about their operation and if they have appointed a content evaluation committee (CEC) – which they have to set up at their own cost. “As per our thought process right now, there will be a simple application which such broadcasters have to fill and send to the government,” a second government official said.

Why does the government want to regulate independent news creators?

It is understood that some of the big Indian creators of current affairs and news content on YouTube are on the government’s radar. To be sure, as per the current wording under the Bill, even foreign creators may fall under its ambit, although enforcing Indian content regulations on them could be challenging.

A senior government official said one key reason behind the significant expansion of scope in the current draft Bill compared to the version which was released for public consultation in November 2023 has been the “role a number of independent content creators played in the run-up to the 2024 Lok Sabha polls”.

“There were a number of instances where creators made videos on current affairs which made some sensational claims about the government and its senior leaders in the run up to the elections. That’s when it was decided that there has to be an accountability measure for these creators as well, to create a level-playing field between mainstream press and independent creators,” the official said.

This change in attitude is also evident from the swift moves the government has made in reshaping the draft version of the Bill. On June 4, the day the election results were announced, the Ministry sent a notice to stakeholders regarding a meeting on the draft Bill. Since then, industry executives said at least six meetings have taken place with the Ministry.

What will social media companies need to do under the Bill?

The draft says that online intermediaries like Facebook, YouTube, and X are exempted from liability for third-party content, if:

- the function of the intermediary is limited to providing access to a communication system over which information made available by third parties is transmitted or temporarily stored or hosted;
- the intermediary does not initiate the transmission;
- the intermediary does not select or modify the information, except in compliance with government orders;
- the intermediary observes due diligence while discharging his duties under this Act and observes other prescribed guidelines.

The Bill also has criminal liability provisions for social media companies if they do not provide information “pertaining to OTT Broadcasters and Digital News Broadcasters” on its platforms for compliance.

How does the proposed law compare to other countries?

In Singapore, both traditional broadcasters, and over the top (OTT) content providers fall under the country's broadcasting law. Under the country's copyright law, OTT platforms are regulated and they require a licence from a regulator, although licensees do not have the same level of obligations as other television services.

Relevance: GS Prelims & Mains Paper II; Governance

Source: Indian Express

9. The proposed changes to Waqf law

Why in News?

The government referred the Waqf (Amendment) Bill, 2024, to a Joint Committee of Parliament. The tabling of the Bill by Union Minister of Minority Affairs Kiren Rijju was met with strong criticism from the Opposition parties who said the proposed law was "unconstitutional", "anti-minority", and "divisive".



The Bill seeks to amend the 1995 Waqf Act, and proposes sweeping changes to how Waqfs are governed and regulated. What is the law on Waqf? What amendments has the Bill proposed, and why are these changes significant?

First, what is a Waqf property?

A Waqf is personal property given by Muslims for a specific purpose — religious, charitable, or for private

purposes. While the beneficiaries of the property can be different, the ownership of the property is implied to be with God.

A Waqf can be formed through a deed or instrument or orally, or a property can be deemed to be Waqf if it has been used for religious or charitable purposes for a long period of time. Once a property is declared as Waqf, its character changes forever, and cannot be reversed.

How is a Waqf governed?

Waqf properties in India are governed by the Waqf Act, 1995. However, India has had a legal regime for the governance of Waqfs since 1913, when the Muslim Waqf Validating Act came into force. The Mussalman Wakf Act, 1923 followed. After Independence, the Central Waqf Act, 1954, was enacted, which was ultimately replaced by the Waqf Act, 1995.

In 2013, the law was amended to prescribe imprisonment of up to two years for encroachment on Waqf property, and to explicitly prohibit the sale, gift, exchange, mortgage, or transfer of Waqf property.

The Waqf law provides for the appointment of a survey commissioner who maintains a list of all Waqf properties by making local investigations, summoning witnesses, and requisitioning public documents.

A Waqf property is managed by a mutawalli (caretaker), who acts as a supervisor. Waqf properties are managed in a way that is similar to how properties under Trusts are managed under the Indian Trusts Act, 1882.

The Waqf Act states that any dispute related to Waqf properties will be decided by a Waqf Tribunal. The Tribunal is constituted by the state government, and comprises three members — a chairperson who is a state judicial officer not below the rank of a District, Sessions or Civil Judge, Class I; an officer from the state civil services; and a person with knowledge of Muslim law and jurisprudence.

The law also has provisions for the constitution and appointment of Waqf Boards, Waqf Councils, Chief Executive Officers for Waqf Boards in the states. The CEOs and parliamentarians who are part of the Waqf Boards must be from the Muslim community.

What are the functions of the Waqf Boards?

A Waqf Board is a body under the state government, which works as a custodian for Waqf properties across the state. In most states, there are separate Waqf Boards for the Shia and Sunni communities. Almost all prominent mosques in the country are Waqf properties and are under the Waqf Board of the state.

A Waqf Board is headed by a chairperson, and has one or two nominees from the state government, Muslim legislators and parliamentarians, Muslim members of the state Bar Council, recognised scholars of Islamic theology, and mutawallis of Waqfs with an annual income of Rs 1 lakh and above.

A Waqf Board has powers under the law to administer the property and take measures for the recovery of lost properties of any Waqf, and to sanction any transfer of immovable property of a Waqf by way of sale, gift, mortgage, exchange, or lease. However, the sanction shall not be given unless at least two thirds of the members of the Waqf Board vote in favour of such a transaction.

What major changes have been proposed to the Waqf Act?

The Bill seeks to substantially alter the existing framework of Waqf law. The proposed amendment shifts the power of governing Waqfs from the Boards and Tribunals, which are largely run by the Muslim community, to the state governments.

Among the key changes in the Bill:

* The Bill seeks to change the name of the parent Act from the Waqf Act, 1995, to the Unified Waqf Management, Empowerment, Efficiency and Development Act, 1995.

* It seeks to introduce three new provisions in the Act:

First, Section 3A, which states that no person shall create a Waqf unless he is the lawful owner of the property and competent to transfer or dedicate such property. This provision appears to address the assumption that land that does not belong to an individual is not given as Waqf.

Second, Section 3C(1), which states that "government property identified or declared as Waqf property, before or after the commencement of this Act, shall not be deemed to be a Waqf property".

Third, Section 3C(2), which empowers the government to decide if a property given as Waqf is government land. "If any question arises as to whether any such property is a Government property, the same shall be referred to the Collector having jurisdiction who shall make such inquiry as he deems fit, and determine whether such property is a Government property or not and submit his report to the State Government," says the Bill.

This provision essentially means that the Collector — and not the Waqf Tribunal — will make this determination in case of a dispute.

The proposed clause also states that such property "shall not be treated as Waqf property till the Collector submits his report". This means that until the government decides the issue, Waqf cannot be in control of the disputed land.

The proposed Bill would also give the central government the power to "direct the audit of any Waqf at any time by an auditor appointed by the Comptroller and Auditor-General of India, or by any officer designated by the Central Government for that purpose".

These provisions, when read together, indicate that the Bill carries a presumption that government land is incorrectly deemed Waqf property in some cases, and that the issue needs intervention by the government.

* The Bill also redefines how a property is deemed to be in the possession of Waqf. as it seeks to remove the concept of "Waqf by use". Under the 1995 law, a property by continuous and uninterrupted use by Muslims for religious purposes is "deemed" to be a Waqf property. This means that a property can be deemed to be a Waqf through use even if the original declaration is suspect. Several mosques and graveyards could fall in this category.

The proposed Bill, by omitting the provisions relating to "Waqf by user," makes a Waqf property suspect in the absence of a valid Waqfnama.

* The Bill proposes to change the composition of Waqf Boards in states. It proposes to allow even a non-Muslim CEO, and gives the power to the state government to have at least two non-Muslim members to the state Waqf Boards.

Relevance: GS Prelims & Mains Paper II; Governance
Source: Indian Express

10. SC bail to Sisodia: Why Bench said trial delay, bail right must be read into PMLA Sec 45

Why in News?

Underlining that delay in trial and a long period of pre-trial incarceration is a ground to bypass the stringent bail conditions in money laundering cases, the Supreme Court granted bail to former Delhi Deputy Chief Minister Manish Sisodia.

Bail conditions under law

Section 45 of the Prevention of Money Laundering Act, 2005 prescribes a rather high bar for granting bail. The negative language in the provision itself shows that bail is not the rule but the exception under PMLA and both trial and constitutional courts are required to apply a 'triple test' to grant bail.

These three conditions are: (i) that there are "reasonable grounds for believing that (the accused) is not guilty of such offence"; (ii) that "he is not likely to commit any offence while on bail"; and (iii) that the accused is not a flight risk.



View of Government advocate

In Sisodia's case, Additional Solicitor General SV Raju had argued that the Supreme Court's rejection of bail in the earlier round of litigation in October 2023 meant that there was a judicial agreement on a "prima facie" case against Sisodia which disqualified him from being granted bail again.

View of Supreme Court

However, without dealing with that argument on merits, the bench comprising Justices B R Gavai and K V Viswanathan said that delay in trial must be read into Section 45 since it is "clear that there is not even the remotest possibility of the trial being concluded in the near future." The bench held that a constitutional mandate to ensure speedy trial is the higher law, compared to the statutory provisions that fetter the grant of bail.

Such a reminder from the top court, in ED cases where the PMLA turns the adage its head, will have ramifications in other cases. If not on merits of the case, the accused will seek bail on the grounds of delay in trial.

11. Withdrawal of the draft Broadcast Bill

Why in News?



After facing intense criticism from a wide range of stakeholders, the Ministry of Information and Broadcasting withdrew a fresh draft of the Broadcast Bill which it had privately circulated among a handful of industry stakeholders.

The draft had triggered controversy and criticism over fears that the government was

trying to exert greater control over online content, by trying to regulate independent creators on platforms like YouTube, Instagram and X.

The stakeholders received calls from the government asking them to return copies of the draft Broadcasting Services (Regulation) Bill, 2024, which was shared with them in July.

It is said that a major difference of opinion emerged within the bureaucracy of the ministry on whether the Bill should apply to non-news online content creators. As per the draft Bill, such creators would have fallen under the category of OTT broadcasters. This is one of the reasons why the government wants to rework the contours of the Bill.

Why the government wants to regulate independent news creators

It is understood that some of the big Indian creators of current affairs and news content on YouTube are on the government's radar. To be sure, as per the current wording under the Bill, even foreign creators may fall under its ambit, although enforcing Indian content regulations on them could be challenging.

A senior government official said one key reason behind the significant expansion of scope in the current draft Bill compared to the version which was released for public consultation in November 2023 has been the "role a number of independent content creators played in the run-up to the 2024 Lok Sabha polls".

The expanded remit of the now withdrawn broadcast Bill

The Bill, which sought to replace the 1995 Cable Television Networks (Regulation) Act, deals with television broadcasting. In November last year, the ministry had invited comments on a draft Bill that consolidated the legal framework for the broadcasting sector and extended it to OTT content and digital news and current affairs as well. However, the new draft Bill, shared privately with some stakeholders last month, significantly altered the focus of the 2023 draft Bill.

The new draft Bill came under intense criticism after it expanded its remit from OTT content and digital news to include social media accounts and online video creators, sought to define a “digital news broadcaster” in sweeping terms to include independent content creators, and proposed prior registration with the government.

There was pushback from independent content creators publicly, and big tech companies privately, over fears of government overreach.

The latest draft sought to define “digital news broadcasters” to include “publisher of news and current affairs content”, which means any person who broadcasts news and current affairs programmes through an online paper, news portal, website, social media intermediary, or other similar medium as part of a systematic business, professional or commercial activity but excluding replica e-papers.

This definition could include users on YouTube, Instagram, and even X, who generate advertising revenue through paid subscriptions or monetise their social media accounts through affiliate activities.

It allowed the government to specify a threshold for the number of subscribers or viewers for OTT broadcasters, who would then have to intimate it of their existence and operations and also adhere to a programme code and an advertisement code.

These online content creators would have to set up a content evaluation committee (CEC), and “strive to make” the committee diverse by including individuals with knowledge of different social groups, women, child welfare, Scheduled Castes, Scheduled Tribes and minorities. The names of people in their CEC would have to be shared with the government.

Creators would be allowed to only run programmes which are certified by the CEC. However, such certification would not be required for programmes that are already certified for public viewing in India by a statutory body, educational programmes, news and current affairs programmes, live events, animation for children, and other programmes that the government may designate.

Relevance: GS Prelims & Mains Paper II; Governance

Source: Indian Express

12. Do doctors need a Central protection Act?

Why in News?

Resident doctors across India are on strike demanding laws that ensure their safety while on duty. This follows the rape and murder of a young doctor at R.G. Kar Medical College and Hospital in Kolkata on August 9. The protests started after the discovery of the doctor’s body in the seminar room of the emergency building where she had been working. Doctors point out that while the hospital administration and State government attempted to underreport the incident, there is no Central law that protects healthcare workers.

What is the ground reality?

As per constitutional provisions, health and law and order are State subjects, and, therefore, it is the primary responsibility of the State government or Union Territory administration to take note of events and eventualities, and do what is necessary to prevent violence. The Union government has admitted that details of the number of fatalities of medical professionals due to attacks by families of patients are not maintained centrally.

Violence against healthcare workers at the workplace is not new in India. In 1973, Aruna Ramchandra Shanbaug working as a junior nurse at King Edward Memorial Hospital, Mumbai, was sexually assaulted by a hospital sweeper. She died in 2015 after spending over 41 years in a vegetative state following the attack. Years later, doctors and other healthcare workers continue to demand specific and basic safety measures at hospitals including improved lighting, increased security, and installation of properly monitored security cameras.

Those protesting in Delhi point out that medical colleges often have ill-lit corridors, poorly secured wards, and long distances between departments.

Demanding immediate systemic reforms to prevent such tragedies from happening again, Doctors added that a Central protection Act for doctors is crucial. There is a need to improve the working conditions of junior doctors nationwide. Violence against healthcare workers is a global issue, but several countries have implemented effective measures to protect their medical professionals, setting examples that India could follow.

The U.K.'s NHS enforces a zero-tolerance policy on violence, supported by a dedicated security team and a comprehensive reporting system. In the U.S., some States classify assaults on healthcare workers as felonies, acting as a strong deterrent. Australian hospitals have introduced safety measures like security personnel, panic buttons, and mandatory de-escalation training.

What are the doctors demanding?

The Indian Medical Association (IMA), a national level association of allopathic doctors, maintained that at a policy level, the reluctance to acknowledge the violence on doctors at healthcare centres has to change. In a list of demands submitted to the Union government, it has sought hospital security protocols that are no less than those at an airport and that healthcare centres should be declared safe zones with mandatory security entitlements including CCTVs and deployment of security personnel.

What are provisions brought in by Centre?

On August 16, the Ministry of Health and Family Welfare issued an order that "in the event of any violence against any health care worker while on duty, the head of the institution shall be responsible for filing an institutional FIR within a maximum of six hours of the incident."

The order was issued in view of the fact that violence has become common against doctors and other healthcare staff in government hospitals. "A number of health workers suffer

physical violence during the course of their duty... most of this violence is done by either [the] patient or patient's attendants," it said. Meanwhile, earlier this week, the National Medical Commission (NMC) directed all medical colleges to develop a policy for a safe work environment within the college and hospital campus for all staff members. It also said any incident of violence against medical students should be promptly investigated by the college management and an FIR should be lodged. "A detailed action taken report on any incident of violence should invariably be sent to the NMC within 48 hours of the incident," said the order.

Relevance: GS Prelims & Mains Paper II; Governance

Source: The Hindu

13. What is the process for designating senior advocates, how has it changed

Why in News?

The Supreme Court recently designated 39 lawyers, including 10 women, as senior advocates.

Among those who received the designation are Indra Sawhney, who filed the case which led to the landmark 1992 SC ruling which placed a 50% ceiling for reservations, the Additional Advocate General of Punjab Shadan Farasat, BJP MP Bansuri Swaraj, and the Vice-President of the Bar Association of India Anindita Pujari.

These designations were given based on new guidelines which were delivered on May 12, 2023, by a three-judge Bench led by Justice S K Kaul in a case seeking modifications to the 2018 guidelines on how the 'senior advocate' designation is granted.



What is a senior advocate?

Section 16 of the Advocates Act, 1961 prescribes two different classes of advocates, "senior advocates and other advocates". As Justice Kaul said in his May 2023 decision, the designation of senior advocate is "a mark of excellence to advocates who have distinguished themselves and have made a significant contribution to the development of the legal profession. It identifies advocates whose standing and achievements would justify an expectation...that they can provide outstanding services as advocates in the best interest of the administration of justice."

Section 16 also states that senior advocates may be subject to certain additional restrictions. For those designated by the SC, these restrictions can be found in the Supreme Court Rules,

2013. They are barred from filing a vakalatnama, appearing before a court without a junior or an advocate-on-record, doing drafting work, or directly accepting briefs for cases from clients.

What do the latest guidelines for the designation of senior advocates say?

The Chief Justice of India, along with any other Supreme Court judge, can recommend in writing the name of an advocate for the designation.

The new guidelines prescribe the minimum age as 45 years to apply for the 'senior advocate' designation. This age limit may, however, be relaxed by the Committee for Designation of Senior Advocates (more on that later), the CJI, or a Supreme Court judge, if they have recommended an advocate's name. No minimum age was prescribed under the 2018 guidelines.

Applicants for the designation are graded out of 100 marks, with new guidelines reserving only 5 marks in total for the "publication of academic articles, experience of teaching assignments in the field of law," and "guest lectures delivered in law schools and professional institutions connected with law". Previously, 15 marks were set aside for publications.

On the other hand, the weightage given to reported and unreported judgements (excluding orders that do not lay down any principle of law) has increased from 40 to 50 points in the new guidelines.

What did the 2018 guidelines say? Why did they come into effect?

In October 2018, the SC released a list of 'Guidelines to Regulate the Conferment of Designation of Senior Advocates'. The guidelines discouraged the system of 'voting by secret ballot', except in cases where it was "unavoidable". They also created a 'Committee for Designation of Senior Advocates' (henceforth, the Committee) which is chaired by the CJI and comprises the two senior-most SC judges, the Attorney General of India, and a "member of the Bar" nominated by the chair and other members.

The CJI or any other judge could recommend the name of an advocate for designation. Alternatively, advocates could submit their applications to the 'permanent secretariat' (henceforth, the Secretariat), which would evaluate them on various criteria including years of legal practice as an advocate, district judge, or a judicial member of an Indian tribunal.

These guidelines came into effect following an October 12, 2017 SC verdict by a three-judge Bench headed by Justice Ranjan Gogoi on a plea filed by Senior Advocate Indira Jaising for greater transparency in the designation process. Jaising, India's first woman senior advocate, had challenged the existing process as "opaque", "arbitrary," and "fraught with nepotism."

Prior to 2018, Section 16 of the Advocates Act, 1961, governed the appointment of senior advocates. It stated that "There shall be two classes of advocates, namely, senior advocates and other advocates", and allowed for a senior advocate designation "if the Supreme Court or a High Court" was of the opinion that by "virtue of his ability, standing at the Bar, or special

knowledge or experience in law, he is deserving of such distinction." The Chief Justice and other judges made this designation.

The 2017 judgment made provisions for the establishment of the Secretariat, which would handle applications, publish proposals on the official website of the concerned court and invite suggestions, and subsequently forward applications to the Committee. The Committee would then interview a candidate, and make an overall evaluation based on a point system. After approval, a candidate's name would be forwarded to the Full Court to decide on the basis of the majority. The Full Court could also recall the designation of a senior advocate.

Why were new guidelines issued in 2023?

On February 16, 2023, the Centre filed an application for the modification of the guidelines before the SC. In its application, the Centre challenged the "point-based system", which awarded 40 per cent weightage to publications, personality, and suitability gauged through the interview. It argued that this system is subjective, ineffective, and dilutes the "esteem and dignity of the honour being conferred traditionally", citing the rampant circulation of "bogus" and "sham" journals where people could publish their articles without any academic evaluation of the contents and quality of the articles, by "paying a nominal amount".

Further, the Centre argued that the current requirements for designation are "extraneous" and have resulted in "ousting otherwise eligible candidates" based on factors that are "not germane to the issue of being designated as a Senior Advocate.

Lastly, the application sought to reinstate the rule of a simple majority by a secret ballot, where the judges can express their views about the suitability of any candidate "without any embarrassment," reasoning that the secret ballot will minimise campaigning for votes by lawyers.

However, the May 2023 ruling upheld the 2018 guidelines but reduced the number of marks awarded for publications from 15 to 5. The court also clarified that voting by secret ballot was meant to be used in exceptional circumstances, adding that if it has to be resorted to, the reasons for the same should be recorded.

Relevance: GS Prelims & Mains Paper II; Governance

Source: The Hindu

14. UPSC Invites Applications for Lateral Entry Positions Across Central Ministries

Why in News?

The Union Public Service Commission (UPSC) has opened applications for lateral entry into 45 posts at the levels of Joint Secretary, Director, and Deputy Secretary across 24 Central ministries. This recruitment drive, targeting professionals from the private sector, state/UT governments, and Public Sector Undertakings (PSUs), will be conducted on a contract basis, with positions expected to be filled by September 17.

Available Positions and Areas of Focus

The vacancies include 10 posts for Joint Secretary, with key roles such as:

- **Joint Secretary, Digital Economy, FinTech, Cyber Security, and Investment** in the Finance Ministry.
- **Joint Secretary (Policy and Plan)** in the National Disaster Management Authority (NDMA) under the Ministry of Home Affairs.

Additional roles are available for Director and Deputy Secretary positions in various ministries, including:

- **Natural Farming, Organic Farming, and Water Management** in the Ministry of Agriculture.
- **Digital Media** in the Ministry of Information and Broadcasting.
- **Advanced Chemical Cell (ACC) Battery Manufacturing** for the automobile sector in the Ministry of Heavy Industries.

Terms of Appointment

The appointments are contract-based, initially for a period of three years, with a possibility of extension up to five years depending on performance. Notably, central government employees are ineligible for these positions.

Applicants must meet specific criteria:

- **Joint Secretary:** Minimum 15 years of experience; Age: 40-55 years. Gross salary: ₹2.32 lakh/month.
- **Director:** Minimum 10 years of experience; Age: 35-45 years.
- **Deputy Secretary:** Minimum 7 years of experience; Age: 32-40 years.

Political Reactions and Concerns

The lateral recruitment process has sparked criticism from opposition leaders. Congress President Mallikarjun Kharge, in a post on X, accused the ruling BJP of using these appointments to sideline candidates from Scheduled Castes (SC), Scheduled Tribes (ST), Other Backward Classes (OBC), and Economically Weaker Sections (EWS), thereby undermining the reservation system.

Kharge linked this process to broader concerns about reservation policies, citing a recent Allahabad High Court ruling. The court directed a revision of the selection list for 69,000 assistant teachers in Uttar Pradesh, uncovering irregularities in the application of quotas.

Background on Lateral Recruitment

Lateral recruitment, or the appointment of private sector specialists in government departments, was initiated in 2018 following recommendations from NITI Aayog and the Sectoral Group of Secretaries on Governance in 2017.

According to Jitendra Singh, Minister of State for Personnel, 63 such appointments have been made in the past five years, with 57 officers currently serving in various ministries and departments. This initiative is aimed at leveraging the specialized knowledge and expertise of professionals for specific government assignments.

Relevance: GS Prelims & Mains Paper III; Science & Technology
Source: Indian Express

15. Supreme Court Takes Suo Motu Cognizance of Doctor's Rape and Murder

Why in News?

The Supreme Court of India has taken suo motu cognizance of the brutal rape and murder of a postgraduate trainee doctor at R.G. Kar Medical College and Hospital in Kolkata on August 9. A three-judge Bench, led by Chief Justice of India D.Y. Chandrachud, is set to hear the case on Tuesday, with the matter listed at the top of the court's agenda.

SC TAKES SUO-MOTU OF KOLKATA DOCTOR CASE



Background and Legal Proceedings

The Supreme Court's intervention follows an August 13 order from the Calcutta High Court, which transferred the investigation from the Kolkata Police to the Central Bureau of Investigation (CBI). The Kolkata Police had already arrested a civil police volunteer in connection with the case. The doctor's body was discovered in the seminar room of the hospital, with post-mortem and inquest reports revealing extensive injuries.

Medical Community's Response

The Indian Medical Association (IMA) ended its 24-hour strike on Sunday in response to the incident, while also announcing the formation of a committee to draft a "safety document" for the Union Health Ministry. According to IMA President R.V. Asokan, this document will outline strategies to enhance safety measures for employees in healthcare institutions and is expected to be completed later this week.

The IMA has also expressed its support for the Resident Doctors' Association of Delhi, which may continue the agitation if necessary. "They are the soldiers on the ground, and we will support them if they want to continue the agitation," Asokan stated.

Government's Appeal and Support from Padma Awardees

The Union Health Ministry, on Saturday, urged the protesting doctors to resume their duties, citing the rising cases of dengue and malaria as a pressing public health concern. The Ministry assured the medical community that a committee would be established to explore all possible measures to ensure the safety of healthcare professionals.

In a show of solidarity, over 70 doctors who have been honored with Padma awards wrote a letter to Prime Minister Narendra Modi, calling for urgent action to protect healthcare workers. The group expressed their deep concern and anguish over the events at the Kolkata hospital and emphasized the need for stronger legal protections and enforcement.

"We stand in unwavering solidarity with the victim's family and extend our full support to the medical community, who are increasingly confronting such violence in the course of their work. The safety and dignity of healthcare professionals must be safeguarded with utmost priority," the letter stated.

The Padma awardees also highlighted the need for rigorous application of existing legal frameworks, the imposition of severe and swift penalties as a deterrent, enhanced safety measures in medical institutions, and the enactment and implementation of a special law for the protection of healthcare workers.

Relevance: GS Prelims & Mains Paper II; Governance

Source: The Hindu

16. What Justice Hema Committee report says, why its release was delayed

Introduction

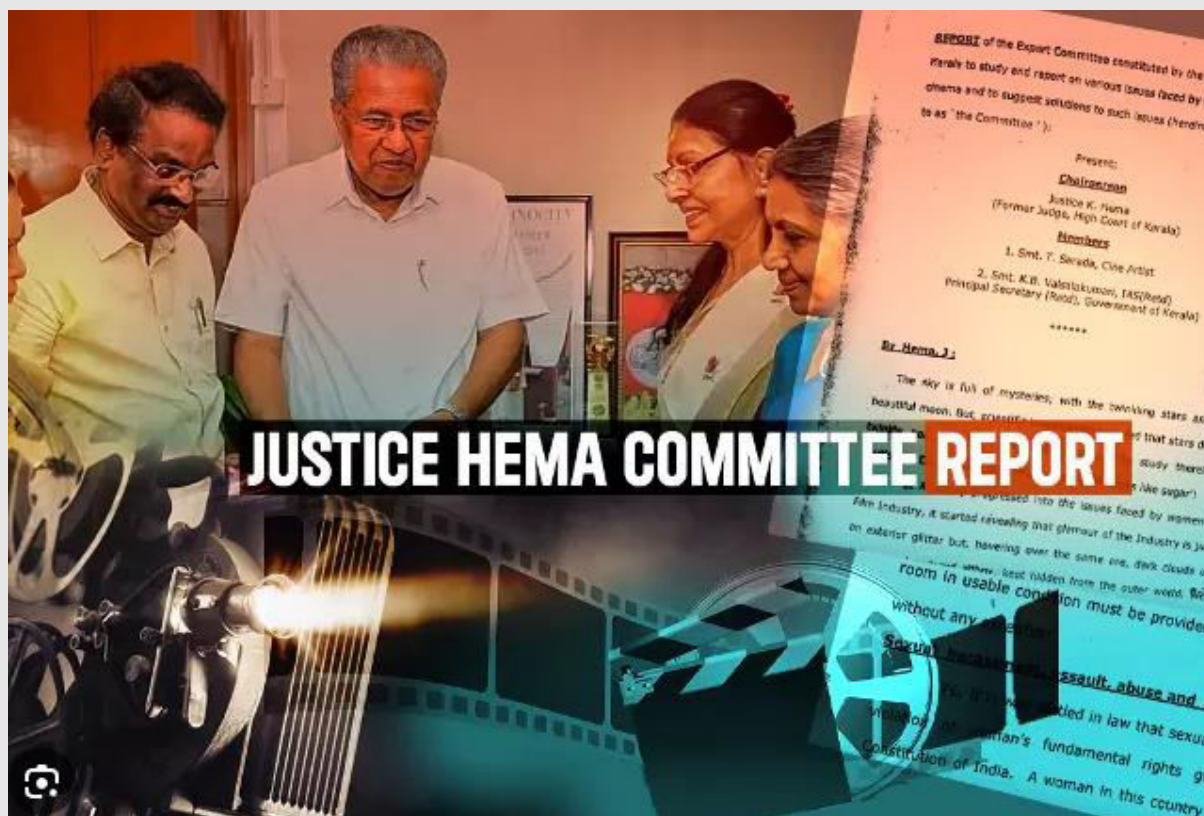
The Justice Hema Committee report was released by the Kerala government four-and-a-half years after it was submitted to the Chief Minister. The 233-page document provides a damning indictment of the discrimination and exploitation faced by women in the Malayalam film industry.

What led to the formation of the Justice Hema Committee?

On February 17, 2017, a leading Malayalam film actress was abducted and sexually assaulted in her car by a group of men. A prominent actor would later be implicated in the case which sparked outrage across Kerala, and brought under the scanner the discriminatory treatment faced by women in the Malayalam film industry.

The Women in Cinema Collective (WCC), comprising women actors, producers, directors and technicians, was formed in response to this incident. On May 18, 2017 the WCC submitted a petition to the Kerala Chief Minister demanding an inquiry into the incident, and larger gender issues plaguing the state's film industry.

In July, the state government formed a three-member committee headed by Justice K Hema, a retired Kerala High Court judge, to look into issues of sexual harassment and pervasive gender inequality in the Malayalam film industry. After speaking to multiple women in the industry on a variety of issues, the Committee submitted a 295-page report to Kerala Chief Minister Pinarayi Vijayan in December 2019.



What does the Hema Committee report say?

Some key takeaways from the report are:

- * A culture of sexual harassment pervades the Malayalam film industry. The Committee reported the existence of casting couch (wherein powerful men demand sexual favours from women in return for opportunities in films), frequent suggestive and vulgar comments made by men at the workplace, and drunk male co-actors forcing themselves into rooms of women, among other things.
- * A fear of retribution prevents sexual harassment from being reported. Justice Hema writes in the report: "Many who were examined before the committee were afraid to reveal things which they experienced... we realised that their fear is well-founded." Beyond direct retribution, the report also mentions the fear of cyber harassment, especially from toxic fan clubs, as a means by which women are forced into silence.
- * An all-male "mafia" of influential actors and producers calls the shots across the industry, and wields their power with impunity. "No man nor woman dare to utter any word which may

offend anyone belonging to the power group, because such a person will be wiped off the industry by the powerful lobby," the report says.

* A male-dominated industry has failed to offer even basic facilities to women, including the lack of toilets and changing rooms on sets. The report says that women staff on film sets continue to remain at the mercy of open spaces or shared bathrooms to relieve themselves, often risking UTIs and hospital admission.

Relevance: GS Prelims & Mains

Source: Indian Express

17. Government Cancels Lateral Recruitment Process

Background

The Union Public Service Commission (UPSC) recently invited applications for 45 specialist positions, including from the private sector, for middle and senior levels in the Union government. However, the process was cancelled following a request from the Central government.

Reason for Cancellation

The government cited the absence of reservation for Scheduled Castes (SC), Scheduled Tribes (ST), and Other Backward Classes (OBC) as the primary reason for cancelling the recruitment. Union Minister of State for Personnel, Jitendra Singh, wrote to UPSC Chairperson Priti Sudan, requesting the withdrawal of the recruitment process.



Response to Backlash

The decision to cancel the recruitment came after protests from various quarters, including the Opposition and the Lok Janshakti Party, a National Democratic Alliance (NDA) partner, who deemed recruitment without quotas for SC and ST communities as "unacceptable."

Government's Stance on Lateral Entry

In his letter, Mr. Singh emphasized that under Prime Minister Narendra Modi's government, the process of lateral entry, which had previously been ad-hoc, was being made transparent. He pointed out that the idea of recruiting talent from outside the government was recommended by the Second Administrative Reforms Commission (2005) and the Sixth Pay Commission (2013), both under a Congress-led government. However, he stressed that under the current government, lateral entry must align with the principles of equity and social justice, particularly regarding reservations.

Commitment to Social Justice

Mr. Singh reiterated that Prime Minister Modi firmly believes that lateral entry must uphold the principles of social justice enshrined in the Constitution, with reservation in employment being a key aspect of addressing historical injustices.

Relevance: GS Prelims & Mains Paper II; Governance

Source: The Hindu

18. Supreme Court Establishes Task Force for Doctors' Safety

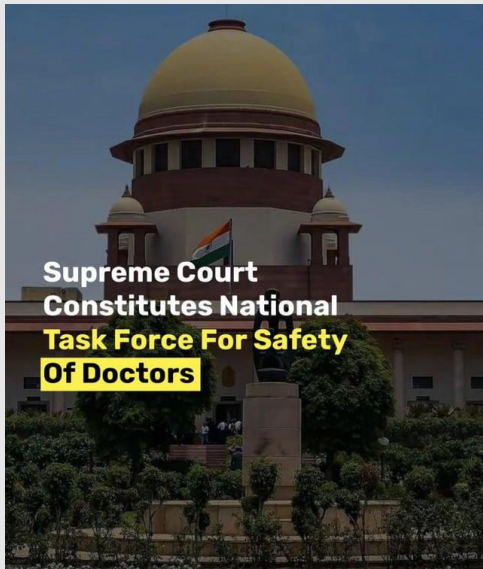
Formation of National Task Force (NTF)

The Supreme Court recently formed a National Task Force (NTF) to develop safety measures for medical professionals. The NTF will recommend improvements in hospital security, including:

- Security on hospital premises
- Infrastructure upgrades like separate restrooms
- Technological controls to limit access to critical areas
- Installation of CCTV cameras
- Provision of night transport
- Availability of counseling services and crisis workshops
- Quarterly safety audits
- Increased police presence in hospitals

Reason for Suo Motu Action

A three-judge Bench led by Chief Justice of India D.Y. Chandrachud explained that the court acted on its own initiative following the rape and murder of a junior doctor at R.G. Kar Medical College and Hospital in Kolkata. The incident highlighted systemic failures in ensuring the safety of medical professionals. The court emphasized that such tragedies should not be necessary to prompt action on safety laws.



Supreme Court Constitutes National Task Force For Safety Of Doctors

Directive to the Central Government

The Central Government has been given one month to gather data from all States and Union Territories on security and infrastructure facilities at government-run hospitals. This includes compliance with the Sexual Harassment of Women at Workplace (Prevention, Prohibition, and Redressal) Act, 2013.

Members of the National Task Force

The NTF includes prominent medical professionals and officials:

- Surgeon Vice-Admiral Arti Sarin, Director General Medical Services (Navy)
- D. Nageshwar Reddy, Chairperson and Managing Director, Asian Institute of Gastroenterology and AIG

Hospitals, Hyderabad

- M. Srinivas, Director, AIIMS Delhi
- Pratima Murthy, Director, NIMHANS Bengaluru
- Goverdhen Dutt Puri, Executive Director, AIIMS Jodhpur
- Saumitra Rawat, Chairperson, Institute of Surgical Gastroenterology, Sir Ganga Ram Hospital, Delhi
- Anita Saxena, Vice-Chancellor, Pandit B.D. Sharma Medical University, Rohtak
- Pallavi Saple, Dean, Grant Medical College, Mumbai, and Sir J.J. Group of Hospitals, Mumbai
- Padma Srivastav, Chairperson of Neurology, Paras Health

Ex-officio members include the Cabinet Secretary, the Union Home and Family Welfare Secretaries, the Chairperson of the National Medical Commission, and the President of the National Board of Examinations.

Chief Justice's Remarks on Safety Protocols

Chief Justice Chandrachud expressed concern over the lack of safety for doctors, particularly young women doctors who often work 36-hour shifts. He stressed the need for a national protocol to ensure safe working conditions for medical personnel, emphasizing that such protocols must be implemented, not just written.

Concerns About Gender Violence in the Medical Profession

The Chief Justice highlighted the vulnerability of women medical professionals to sexual assaults, noting that gender violence in the medical profession is a grave issue.

Appeal to Protesting Medical Staff

The Chief Justice urged protesting doctors and medical staff to return to work, assuring them that their concerns would be a top priority for the Supreme Court. The court also warned the West Bengal government against using force on protestors.

Relevance: GS Prelims & Mains Paper II; Governance

19. Centre announces Unified Pension Scheme: How will UPS differ from OPS, NPS?

Background



The Union Cabinet recently approved the Unified Pension Scheme (UPS) which will provide government employees with assured pension post retirement. The scheme will be effective from April 1, 2025, according to the government announcement.

This development comes amid significant backlash from government employees to the New Pension Scheme (NPS), which the Opposition has tapped into for political gains. Opposition-ruled states like Himachal Pradesh (in 2023), Rajasthan (in 2022), Chhattisgarh (in 2022), and Punjab (in 2022) have reverted to the Old Pensions Scheme (OPS).

Thus, ahead of the upcoming round of Assembly elections in Jammu & Kashmir, Haryana, Maharashtra, and Jharkhand (the schedules for the latter two have not yet been announced), the Centre's announcement of a novel pension scheme is a major political development.

What does the UPS entail?

Crucially, the UPS promises retirees a fixed pension amount unlike the NPS. This was one of the major criticisms of the NPS by government employees.

According to the Union Information and Broadcasting Minister Ashwini Vaishnaw, the UPS has five key features:

Assured pension: This would amount to 50 per cent of an employee's average basic pay, drawn over the last 12 months before superannuation for a minimum qualifying service of 25 years. The amount would proportionately go down for a lesser service period, upto a minimum of 10 years of service.

Assured minimum pension: In the case of superannuation after a minimum 10 years of service, the UPS has a provision of an assured minimum pension of Rs 10,000 per month.

Assured family pension: Upon a retiree's death, the employee's immediate family would be eligible for 60% of the pension last drawn by him/her.

Inflation indexation: There would be dearness relief to the above three mentioned pensions, which will be calculated based on the All India Consumer Price Index for Industrial Workers, as is the case with serving employees.

Lumpsum payment at superannuation: This would be in addition to gratuity, and be calculated as 1/10th of monthly emolument (pay+ dearness allowance) as on the date of superannuation for every six months of service completed.

Why was the NPS introduced in 2004?

The NPS replaced the OPS on January 1, 2004 as a part of the Centre's effort to reform India's pension policies. Those joining government service after the date were slotted under the NPS. Under the OPS, pension to government employees (both at the Centre and the states) was fixed at 50 per cent of the last drawn basic pay (like it is in the UPS). In addition, there would be a DA — calculated as a percentage of the basic salary — to adjust for the steady increase in the cost of living.

The NPS was introduced by the Atal Bihari Vajpayee government because of a fundamental problem with the OPS — that it was unfunded i.e. there was no corpus specifically for pension. In time, this led the government's pension liability to balloon to fiscally unhealthy, if not unsustainable levels. With better health facilities leading to longer average lifespans, the OPS was simply unsustainable in the long run.

Data show that over the last three decades, pension liabilities for the Centre and states have jumped manifold. In 1990-91, the Centre's pension bill was Rs 3,272 crore, and the outgo for all states put together was Rs 3,131 crore. By 2020-21, the Centre's bill had jumped 58 times to Rs 1,90,886 crore; for states, it had shot up 125 times to Rs 3,86,001 crore.

What was the NPS? What was the basis of the opposition to it?

The NPS was fundamentally different in two ways. First, it did away with an assured pension. Second, it would be funded by the employee himself/herself along with a matching contribution by the government. The defined contribution comprised 10 per cent (increased to 14 per cent in 2019 of the basic salary and dearness allowance by the employee and a matching contribution by the government. Individuals under NPS can choose from a range of schemes from low risk to high risk, and pension fund managers promoted by public sector banks and financial institutions, as well as private companies.

Schemes under the NPS are offered by nine pension fund managers — sponsored by SBI, LIC, UTI, HDFC, ICICI, Kotak Mahindra, Aditya Birla, Tata, and Max. The risk profiles of various schemes offered by these players vary from 'low' to 'very high'. The 10-year return for the NPS Scheme-Central Government floated by SBI, LIC, and UTI stood at 9.22 per cent; the 5-year return at 7.99 per cent, and the 1-year return at 2.34 per cent. Returns on high-risk schemes could be as high as 15 per cent.

For government employees, the NPS not only gave lower assured returns, it also implied employee-contributions which was not the case with the OPS. This was what drove the opposition to the NPS.

In the wake of these demands, Prime Minister Narendra Modi had constituted a committee under the chairmanship of Cabinet Secretary TV Somanathan (then Finance Secretary) in 2023.

This committee held more than 100 meetings with different organisations and states. The recommendations of this committee have now resulted in the announcement of the UPS.

Who can avail the UPS?

The UPS will come into effect from April 1, 2025 but will be applicable to all those who have retired under the NPS from 2004 onwards, Somanathan said. "In their case (NPS retirees), they will get arrears adjusted with whatever they have already drawn under the NPS," he said.

Somanathan added, "I think in over 99 per cent of cases it will be better to go into the UPS [rather than the NPS]... to the best of my knowledge, almost nobody will want to remain in the NPS, but if there is somebody we are leaving options with them". This means that although employees can opt to remain under the NPS, it is unlikely to be beneficial to them.

Currently, the scheme announced is for Centre government employees, but states can adopt it as well, Somanathan said.

What is the difference between UPS and OPS?

Somanathan said that the expenditure for the arrears will be Rs 800 crore and in the first year of its implementation, and in the first year of its implementation, it would cost the exchequer roughly Rs 6,250 crores.

That said, Somanathan said that the UPS is still more fiscally prudent. "One, it remains in the same architecture of a contributory funded scheme. That is the critical difference. The OPS is an unfunded non-contributory scheme. This (the UPS) is a funded contributory scheme," he said. In fact, employee contributions are set to be hiked to 18.5 per cent.

"The only difference in the changes that are made today is to give an assurance and not leave things to vagaries of market forces. The structure of UPS has the best elements of both [OPS and NPS]," Somanathan said.

Relevance: GS Prelims & Mains Paper II; Governance

Source: Indian Express

20. Union Cabinet Approves BioE3 Policy to Boost Biotech Manufacturing

Why in News?

The Union Cabinet has approved the BioE3 (Biotechnology for Economy, Environment, and Employment) Policy, aimed at advancing biotechnology-based manufacturing in India. This initiative, led by the Department of Biotechnology, seeks to drive a technology revolution similar to the IT boom of the 1990s.

Focus Areas of the BioE3 Policy

The BioE3 Policy will concentrate on several strategic sectors:

- High-value bio-based chemicals, biopolymers, and enzymes
- Smart proteins and functional foods

- Precision biotherapeutics
- Climate-resilient agriculture
- Carbon capture and its utilization
- Futuristic marine and space research



Six Vertical Sectors Under BioE3 Policy

The policy is structured around six thematic verticals:

1. Bio-based chemicals and enzymes
2. Functional foods and smart proteins
3. Precision biotherapeutics
4. Climate-resilient agriculture
5. Carbon capture and its utilization
6. Marine and space research

Merger of Science Ministry Schemes into Vigyan Dhara

In addition to the BioE3 Policy, the Cabinet has merged three Science Ministry schemes into a single program called Vigyan Dhara. This initiative will allocate ₹10,579 crore until 2025-26 for the development of science and technology, including institutional and human capacity building, research and development, and innovation.

Support for Education and Research

Vigyan Dhara will offer internships for students in the 11th and 12th grades and fellowships for graduate and post-graduate research. The scheme aims to promote research in areas such as basic science and sustainable energy.

Relevance: GS Prelims; Governance

Source: The Hindu

21. Why is sanction for prosecution needed? When is a Governor required to act on his own? What do judicial decisions say?

Introduction

The issue of granting sanction to prosecute a public servant has once again come to the fore, following Karnataka Governor Thawar Chand Gehlot's approval to open an investigation against Chief Minister Siddaramaiah and to prosecute him in connection with alleged irregularities in the allotment of compensatory plots to his wife whose land had been lost to the acquisition process by the Mysore Urban Development Authority. The issue has raised legal and constitutional questions, resulting in the Karnataka High Court asking a trial court to postpone its consideration of private complaints against him.



Karnataka Governor sanctions prosecution of CM Siddaramaiah in MUDA scam

Why is sanction required to prosecute a public servant?

Sanction for prosecuting a public servant has been a mandatory feature of anti-corruption law. This is intended to protect public servants from vexatious and malicious prosecution for actions and decisions made in the course of discharging their official duties. Section 197 of the Code of Criminal Procedure Code (CrPC) said no court could take cognisance of a case against a public servant unless an authority competent to remove that person grants sanction. Section 197 spoke of anyone who 'is or was' a public servant.

Section 6 of the Prevention of Corruption Act, 1947, has a similar provision. However, the sanction requirement was limited to the period when the public servant was in office, and, no sanction was necessary if the person no more held that office. Under both the CrPC and the Prevention of Corruption Act (PCA), the State and Central governments had the authority to sanction prosecution of their respective employees. The provision was preserved in Section 19 of the PCA, 1988.

What are the latest provisions on granting sanction?

Section 218 of the Bharatiya Nagarik Suraksha Sanhita (BNSS), the procedure code that has replaced the CrPC, retains the sanction provisions. When the PCA was amended in 2018, a new provision was introduced under which the government's approval is required, even to begin an investigation. While under Section 17A, the appropriate authority's approval is necessary to begin an investigation, the provision for sanction under Section 19 is a pre-requisite for any court to take cognisance of a charge sheet or complaint of corruption. Another feature of the 2018 amendment is that it applies to those who are and were public servants.

What is the Governor's role in a case against a CM?

Provisions relating to sanction in the CrPC generally spoke of the State government and the Central government as the authority to grant sanctions for those employed by their respective governments. However, both the 1947 and 1988 versions of the PCA have a clause stating that in the case of "any other person", the sanction would be granted by the authority competent to remove the public servant in office. As the power the Governor is vested with the power to dismiss a CM, the Governor is seen as the authority to consider granting sanction for prosecuting a CM. Questions have often arisen as to whether the Governor exercises his discretion while considering sanction, or he is bound to act on the aid and advice of the Council of Ministers.

In the case of A. R. Antulay, the Supreme Court held that the Governor should act in his discretion: "... We have no doubt in our mind that when there is to be a prosecution of the Chief Minister, the Governor would, while determining whether sanction for such prosecution should be granted or not under s. 6 of the Prevention of Corruption Act, as a matter of propriety, necessarily act in his discretion and not on the advice of the Council of Ministers."

What have courts said on the issue?

In a Madhya Pradesh case concerning corruption charges against two Ministers, the Council of Ministers held there was no material against them even though the Lok Ayukta's report confirmed the charges. The Governor went against the Ministry's decision and granted sanctions because there was sufficient material against them. In *Madhya Pradesh Special Police Establishment vs. State of MP and others* (2004), the Supreme Court found the Council's decision "irrational" and upheld the Governor's action. It said: "... on those rare occasions where on facts, the bias becomes apparent and/or the decision of Council of Ministers is shown to be irrational and based on non-consideration of relevant factors, the Governor would be right, ... to act in his own discretion and grant sanction".

Relevance: GS Prelims & Mains Paper II; Governance

Source: The Hindu

22. Why is lateral entry policy under scrutiny?

Background

On August 17, the Union Public Service Commission (UPSC) advertised lateral recruitment for 45 posts at the ranks of joint secretary, director, and deputy secretary in different ministries and departments. The move led to an outrage as quota benefits are not applied for such "single post" recruitments. The Leader of the Opposition in the Lok Sabha, Rahul Gandhi, termed the recruitment an "anti-national step" as it was "openly snatching away" the reservation for Scheduled Castes (SCs), Scheduled Tribes (STs) and Other Backward Classes (OBCs) in government jobs. Following the backlash, on August 20, Union Personnel Minister Jitendra Singh wrote to the UPSC Chairperson to cancel the advertisement. Hours later, the UPSC cancelled the advertisement.



What is the reason for lateral hires?

As per the Department of Personnel and Training (DoPT), lateral recruitment is a government initiative to achieve the twin objective of bringing in fresh talent as well as augmenting the availability of human resources at middle management levels for specific assignments keeping in view their specialised knowledge and expertise in their domain area.

Was this the first time such a recruitment was being done?

No. Since 2019, as many as 63 posts have been filled through the lateral route. At least seven officials quit their jobs midway. The positions are open to candidates from the private sector, State government and public sector undertakings, autonomous bodies, statutory organisations, universities, and recognised research institutes. The tenure can range from three years to five years.

In 2021, for three posts of joint secretaries, 27 posts of director, and 13 posts of deputy secretaries, the Commission received a total of 295 applications, 1,247 applications, and 489 applications respectively. The UPSC recommended candidates for 31 posts and the remaining 12 posts became infructuous, the 2021-22 annual report of UPSC noted.

What is the genesis of the policy?

In 2017, the NITI Aayog, in a report titled 'India-Three Year Action Agenda, 2017-18 to 2019-20,' regarding 'Civil Services Reform,' suggested lateral entry inductions.

"Today, rising complexity of the economy has meant that policymaking is a specialised activity. Therefore, it is essential that specialists be inducted into the system through lateral entry. Such entry will also have the beneficial side-effect of bringing competition to the established career bureaucracy," the report stated.

The advisory body said government officers may be encouraged to gain expertise in specific areas and the current system of rapid rotation of officers may be replaced by a system of longer postings according to specialisation.

It added, "Such a system will bring top talent and energy into the government and will lend new dynamism to the ministries." For tax reforms, NITI Ayog recommended that the tax boards be given considerable flexibility to bring outside technical staff laterally to utilise the available information to ensure tax compliance. On February 10, 2021, the PM criticised the work culture of IAS officers, questioning what objectives could be achieved by surrendering the country to "babus."

Under the Congress-led UPA government in 2005, the second Administrative Reforms Commission also recommended lateral entry into government service.

Is there a shortage of All India Services officers?

In December 2021, the DoPT moved a proposal to amend the Indian Administrative Service (Cadre) Rules 1954 to depute IAS, Indian Police Service, and Indian Forest Service (IFoS) officers to the Centre without necessarily taking the State government's nod. The proposal was mooted as the Centre was facing an acute shortage of AIS officers.

According to a 2023-24 parliamentary panel report on the DoPT, only 442 IAS officers were working with the Union government, against the required strength of 1,469.

According to existing norms, States have to depute AIS officers to Central government offices, but it cannot be more than 40% of the total cadre strength. In 2020, the DoPT sent a letter to the States, that it was unable to fill vacancies in various Central ministries. Around 40% or 390 Central Staffing Scheme posts are at the joint secretary level (more than 19 years experience) and 60% or 540 such posts are at the rank of deputy secretary (nine years) or director rank (14 years of service).

Were such appointments made during the term of the previous governments?

Former PM Manmohan Singh was inducted as Economic Adviser in the Ministry of Commerce and Industry in 1971; he served as the Chief Economic Adviser from 1972-1976; then he became the Governor of the Reserve Bank of India and later the Finance Minister.

Retired diplomat Nirupama Menon Rao said on X, "... When we set up the various civil services, post-independence, our first Prime Minister brought in a number of lateral entry officers into the Services. Strength lies in numbers and we had none. The system did work and helped tide over scarcity, and of course, simultaneously, our recruitment through the UPSC examination system began to add up and reinforce the numbers. Today, we need more specialists and 'experts' in the system."

Another retired IAS officer said, "Earlier also lateral entrants were recruited. But these were not many joint secretary/director posts per se which were being filled en masse. If they advertised 45 posts, they should have followed the roster system (of DoPT) to apply reservations."

Reservation in government jobs is implemented via DoPT's 13-point roster policy or quota by rotation. The roster system takes each department as a unit and not the ministries as a whole. For example, if a joint secretary rank post has been advertised in a particular Ministry, the reservation rules will not apply as against the cumulative vacancies in all ministries. Mr. Jitendra Singh said that eligible candidates from reserved categories are considered along with other eligible candidates for lateral entry, "however, reservation is not applicable to such single post appointment."

According to retired IPS officer Yashovardhan Azad: "Efforts to bring experts in the moribund bureaucracy started much earlier. Their contributions are stellar — the green, white, nuclear, space and economic revolutions were all brought in by the likes of M.S. Swaminathan, Verghese Kurien, Homi Bhabha, A.P.J. Abdul Kalam, Manmohan Singh and Montek Singh Ahluwalia. But the entrenched 'babu' mafia never allowed outsiders. In fact, the 'babus' went to the best universities and countries on taxpayers' expense, ostensibly to modernise the system but came back writing papers how to entrench it while tinkering with it here and there. In UPA I and II, lateral entry was tried but it failed."

Relevance: GS Prelims & Mains Paper II; Governance
Source: The Hindu

23. Classical Language Centres Seek Autonomy

Introduction

Special centres established to promote Telugu, Kannada, Malayalam, and Odia—after these languages were designated as classical—are demanding greater autonomy to function more effectively.

Current Structure of Classical Language Centres

India recognizes six classical languages: Tamil, Sanskrit, Telugu, Kannada, Malayalam, and Odia. While the Tamil centre operates autonomously, and Sanskrit is supported by dedicated universities receiving direct funds from the Union Education Ministry, the centres for Telugu, Kannada, Malayalam, and Odia function under the Central Institute of Indian Languages (CIIL), Mysuru.

Request for Autonomy

In a meeting on March 18, the project directors of these four centres requested autonomy. They subsequently submitted detailed project reports in June, but no further action has been taken by the Education Ministry.

Benefits of Classical Language Status

Languages designated as classical receive specific benefits from the Education Ministry, including two international awards for scholars and the establishment of Centres of Excellence. Additionally, the University Grants Commission is requested to create Chairs for these languages at Central Universities.

Six Indian languages namely Tamil, Sanskrit, Kannada, Telugu, Malayalam and Odia have been accorded the status of Classical Language. The year in which these languages conferred the status of classical language is as given below :

Classical Language	Date of Notification
Tamil	12.10.2004
Sanskrit	25.11.2005
Kannada	31.10.2008
Telugu	31.10.2008
Malayalam	08.08.2013
Odia	11.03.2014

Funding Disparities

In 2020, the Union government disclosed that ₹643.84 crore had been spent on promoting Sanskrit over the previous three years, compared to just ₹29 crore for the other five classical languages.

Challenges Faced by Language Centres

The main issue for these centres is the requirement to get financial sanctions from CIIL for any planned events, often leading to delayed reimbursements and making it difficult to organize programs. Additionally, there are significant staff vacancies due to irregular funding.

For instance, the Centre of Excellence for Classical Telugu in Nellore, Andhra Pradesh, has only 12 staff members out of the approved 36. Similarly, the Centre for Classical Odia in Bhubaneswar has only eight staff out of the approved 40. In 2023, despite being allocated ₹1.76 crore, the Odia centre could spend only ₹56 lakh due to these constraints.

Call for Autonomous Operations

Officials argue that autonomy would resolve many of these issues, such as the lack of financial resources and the inability to fill vacancies. A senior official at the Odia centre expressed that

the current setup forces the Project Director to personally fund activities and then seek reimbursement, a problem that autonomy could eliminate.

Similarly, the Project Director at the Centre for Classical Malayalam highlighted the severe staffing shortages and lack of financial resources, emphasizing the need for autonomy.

Relevance: GS Prelims & Mains Paper II; Governance

Source: The Hindu

24. On West Bengal's civic police volunteers

Why in News?

As protests rage across West Bengal and in different parts of the country over the rape and murder of a doctor at Kolkata's R.G. Kar Medical College and Hospital, questions are being raised as to how she was assaulted inside a State-run health facility. The accused, arrested hours after the crime, is a civic police volunteer, who not only had access to the hospital but also the emergency building where the victim was found dead on August 9.

Was he a civic police volunteer?

The accused, Sanjay Roy, had been working as a civic police volunteer with the Kolkata Police since 2019. Despite being engaged as a civic police volunteer, the accused enjoyed certain facilities accorded to police personnel; he drove a motorbike belonging to the police, and stayed in the barracks of the Kolkata Armed Police's fourth battalion. There are reports that the 35-year-old was also associated with the Kolkata Police Welfare Committee and helped in admission of relatives of police personnel to hospitals.



What are the terms of employment?

Civic volunteers, or village police volunteers as they are known in rural areas, are contractual workers engaged by the police for assistance, particularly in traffic management and other minor duties that do not require police personnel. The process of recruitment for civic police volunteers started in 2011 soon after the Mamata Banerjee government came to power. In a government order on September 26, 2011, the eligibility criteria for the recruitment of civic police volunteers were specified. It said the applicant should be a resident of the area under the police station where he will be deployed;

should be above 20 years of age; should have passed the Class X examination and should not have any criminal record. The educational qualification of the civic police was later changed to Class VIII pass.

Soon after the first set of recruitment in 2011, the police submitted a proposal to the government for engaging 1.3 lakh civic police volunteers. The honorarium of civic police volunteers is now ₹310.00 per day (about ₹9,300 per month). The ad-hoc bonus of such civic

volunteers has been increased from ₹5,300 to ₹6,000 for the year 2023-2024. At present there are 7,200 civic volunteers with the Kolkata Police, while the strength of the force stands at 37,400. In the State, the strength of the police is 79,024, but there are over 1.24 lakh civic police volunteers.

What has Calcutta High Court said?

Through several orders, the Calcutta High Court has raised questions about the recruitment and legal veracity of civic police volunteers. In an order dated May 20, 2016, Justice Sanjib Banerjee of the Calcutta High Court said the recruitment scheme of civic police volunteers was devised to prey on the unemployed with little respect for taxpayer's money.

In *Chandra Kanta Ganguli vs The State of West Bengal and Others*, Justice Banerjee noted that it was not humanly or physically possible for the five men on the interview board to reasonably vet 1,351 candidates in the course of a single day for the Sarenga police station or even 875 candidates for the Barikul police station. In another case in 2020, where civic police volunteers had approached the Calcutta High Court after their services were discontinued, a division Bench had pointed out that the conditions "which we have narrated (in the order) clearly demonstrate that the deployment of appellants/petitioners as civic police volunteers was temporary in nature and it cannot be considered as an engagement on probation." There have been several occasions where the High Court and the police administration had clearly stated that civic police volunteers will not be deployed in any law and order duty. Despite such orders, there are regular instances of civic volunteers being engaged in law and order duties.

What is the main criticism?

While engagement of local civic police volunteers has come in handy for the West Bengal government in managing conflict, there have been several cases of excesses conducted by civic police volunteers. The most talked about case was the unnatural death of student leader Anish Khan in February 2022, where a civic police volunteer and a home guard were arrested. More recently, after the R.G. Kar incident, a civic police volunteer was arrested from Bhatar State General Hospital after he threatened a lady doctor.

Both Opposition leaders and political observers say the civic police is an extension of the party. Biswanath Chakraborty, professor of political science at Rabindra Bharati University, says that the civic volunteers have provided a political footing to the Trinamool Congress. "There is no proper process for appointment of such personnel. This makes the local Trinamool Congress leadership appoint personnel who will be loyal to them," Prof. Chakraborty said. The crisis of unemployment in the State has led the Mamata Banerjee government to devise an ingenious way of contractual recruitment where thousands of youth are provided just about minimum wage and can work for the party without any accountability, he pointed out.

Often the criteria of appointment has been overlooked in engaging civic police volunteers. The mother-in-law of the accused in the R.G. Kar rape and murder said her family had approached the police after Sanjay Roy assaulted their daughter. Despite a police complaint, he continued to function as a civic police volunteer and had unrestrained access to the hospital.

Relevance: GS Prelims & Mains Paper II; Governance
Source: The Hindu

PrepMate

1. 8 key takeaways from Hamas chief's assassination

Overview



Ismail Haniyeh, the Qatar-based public face of Hamas, was assassinated in Iran in what might mark a defining moment in the ongoing war between Israel and the Palestinian militant group.

Haniyeh was killed in Tehran, where he had gone to attend the inauguration of the newly-elected Iranian President Masoud Pezeshkian. While New Delhi is yet to issue a response with regards to the assassination, Union Transport Minister Nitin Gadkari is also in Tehran at the moment for Pezeshkian's inauguration.

Here are 8 key takeaways from the Hamas leader's assassination.

1. For Israel, a success

On October 7, 2023, Hamas killed at least 1,200 Israeli civilians and military personnel, and took about 250 hostages. Since then, the Israeli military has pounded Gaza with air strikes and ground operations, with the stated aim of going after Hamas leaders. More than 40,000 people have been killed in the process.

From the Israeli point of view, this is a major victory in its mission to neutralise Hamas — a stated objective behind launching the Operation Swords of Iron. Haniyeh is the most highly placed Hamas figure to have been killed so far.

2. For Hamas, a provocation

From Hamas' perspective, however, this is a major provocation since Haniyeh was the head of its political bureau, based in Qatar. He was the public face of Hamas, and was negotiating the terms of the hostages deal and the ceasefire, while Yahya Sinwar is the military leader who was responsible for the October 7 attacks.

In a statement, Hamas mourned the death of Haniyeh, saying he was killed in "a treacherous Zionist raid on his residence in Tehran" after attending the swearing-in ceremony of the new Iranian president. Hamas official told that the assassination of Haniyeh in Iran is a grave escalation.

3. Message that Iran not safe

The fact that the targeted strike took place in Tehran will be seen as a major escalatory move, both by Hamas and Iran. For Israel, this is a signal that Hamas leaders are not safe in Iran and in Iran's protection.

In April this year, Iran and Israel had exchanged a round of missile and drone attacks at each other. Temperatures had cooled since then, but this assassination has the potential to trigger further hostilities.

4. Pressure on Pezeshkian

Within Iran and Hamas, there will now be calls for avenging Haniyeh's death, which are certain to put pressure on the newly-elected moderate President Pezeshkian. The president's election campaign focussed on beginning negotiations with the West, primarily for economic reasons given how damaging Western sanctions have been for Iran. He would have hoped to restart dialogue with Europe, to begin with.

But, with Haniyeh's assassination, Pezeshkian will be under pressure and the hardliners in the Iranian establishment will be emboldened.

Iran will "defend its territorial integrity, dignity, honor, and pride, and will make the terrorist occupiers regret their cowardly act" of assassinating Haniyeh in Tehran, President Pezeshkian said. The next few days and weeks will test his skills as a politician, particularly in negotiating with the Supreme Leader on how to respond to the crisis.

5. Lifeline for Netanyahu

This assassination gives a lifeline to Israel's Prime Minister Benjamin Netanyahu. Bibi has been facing questions about his leadership, and his political survival was at stake. There has been growing pressure on him to finally strike the hostage deal with Hamas, which was being brokered by the US, Egypt and Qatar, among others.

The assassination has the potential to upend all such efforts for the time being, and it is expected to prolong the war in Gaza. This will mean that Netanyahu will likely stay till the war is over.

6. Questions for Kamala

The campaign for the US elections in November is now at a pivotal stage with Vice President Kamala Harris now the prospective Democratic nominee. She has signalled that she will be tougher on Netanyahu, and his war in Gaza, as compared to her predecessor Joe Biden. This is especially crucial as Harris is focussed on getting the support of younger Democratic voters.

The assassination complicates things for her. She will now have to think and formulate a response, in case there is an escalation in the region.

7. West Asia a tinderbox

For the region as a whole, the assassination is not good news, especially if Iran and Hamas escalate. Such an escalation will impact all of West Asia.

Qatar, Turkey, and the Yemeni Houthis have already condemned the assassination, and the top regional players like Saudi Arabia, UAE are watching the events closely. After more than nine months of war in Gaza, this is a defining moment — after the development in April when there was a risk of escalation — when the region might get drawn into a broader conflict.

8. India to carefully frame its response

India is still processing the developments, with the South Block mindful of the sensitivities of a response. While New Delhi does not harbour any positive sentiments about the Hamas leaders, it will be careful in its framing — since the matter involves a targeted assassination in a foreign soil. The immediate Indian concern will be the peace and stability in the region which is home to about nine million Indian expats, apart from supplying almost two-third of India's crude.

Relevance: GS Prelims & Mains Paper II; International Relations

Source: Indian Express

2. What is 'AXIS of resistance'?

Why in News?

Hamas leader Ismail Haniyeh was assassinated in an air strike in Tehran. Although Israel has not claimed responsibility for Haniyeh's killing, Hamas and Iran have blamed Israel for the strike, and promised "major repercussions".

Experts believe that Iran could hike up attacks against Israel through its allies — a coalition of Iranian-backed groups known as the 'axis of resistance'. Hezbollah, Hamas, the Palestinian Islamic Jihad (PIJ), and the Houthis are some of the major groups in the alliance.

How was the coalition formed?

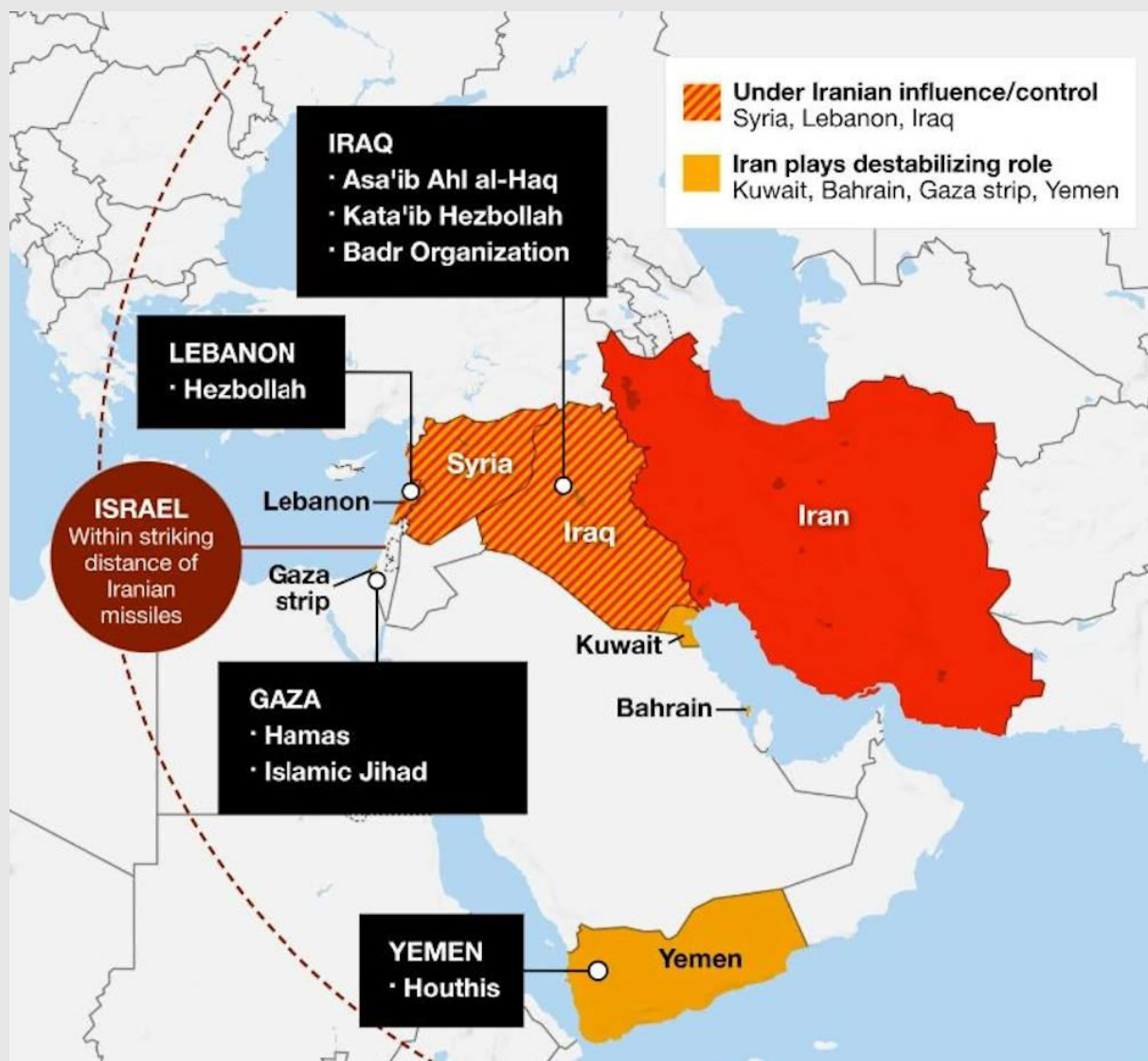
The roots of the 'axis of resistance' go back to the Iranian Revolution of 1979, which paved the way for radical Shia Muslim clerics to come to power. To expand its political and military influence in a region where most powers — such as US-ally Saudi Arabia — are Sunni-majority nations, Iran's new regime began to support non-state actors. Another reason for this was to deter threats from Israel and the US — Iran has seen Israel's creation in 1948 as a means for the US (and the West) to influence the region for its strategic interests.

The coalition's name is said to be inspired by former US President George W Bush's use of the term 'axis of evil' — referring to Iran, Iraq and North Korea — in his 2002 State of the Union address.

Which groups are part of the Iran-led 'axis of resistance'?

- Set up by Iran's Revolutionary Guards in the early 1980s, Hezbollah (meaning 'Party of God') is a Shiite militant organisation. It was formed to fight Israeli forces that had invaded Lebanon in 1982. Hezbollah is the biggest and most powerful member of the axis. It is believed to possess a significant arsenal, and has 30,000 to 45,000 members. Hezbollah and Israel have

clashed with each other on many occasions. They fought a war for the first time in 2006, and have since then often exchanged fire, especially after October 7.



- Hamas, a Palestinian Sunni militant group, has been running the region of Gaza since 2007. It emerged during the first Intifada, or Palestinian uprising, against Israeli rule in 1987. Hamas opposes Zionism, the 19th-century political project that advocates for an ethnic homeland for the Jewish people. Iran is known to supply funding, weapons, and expertise to the militant group.

- PIJ is a Sunni Islamist militant group, which aims to establish an Islamic state in Palestine. According to the US government, "It is the second-largest militant group in the Gaza Strip and the West Bank, founded in 1979 as an offshoot of the Muslim Brotherhood in Egypt".

- Houthis are a Zaydi Shia militant group which has been involved in the civil war in Yemen for over a decade. They seized Sana'a, Yemen's capital, in 2014, and today control northern Yemen.

They also have a presence in most regions of the country. In response to Israel's onslaught on Gaza after October 7, the group began to attack ships crossing the Red Sea, demanding an end to the invasion of the Palestinian enclave.

Relevance: GS Prelims & Mains Paper II; International Organisations

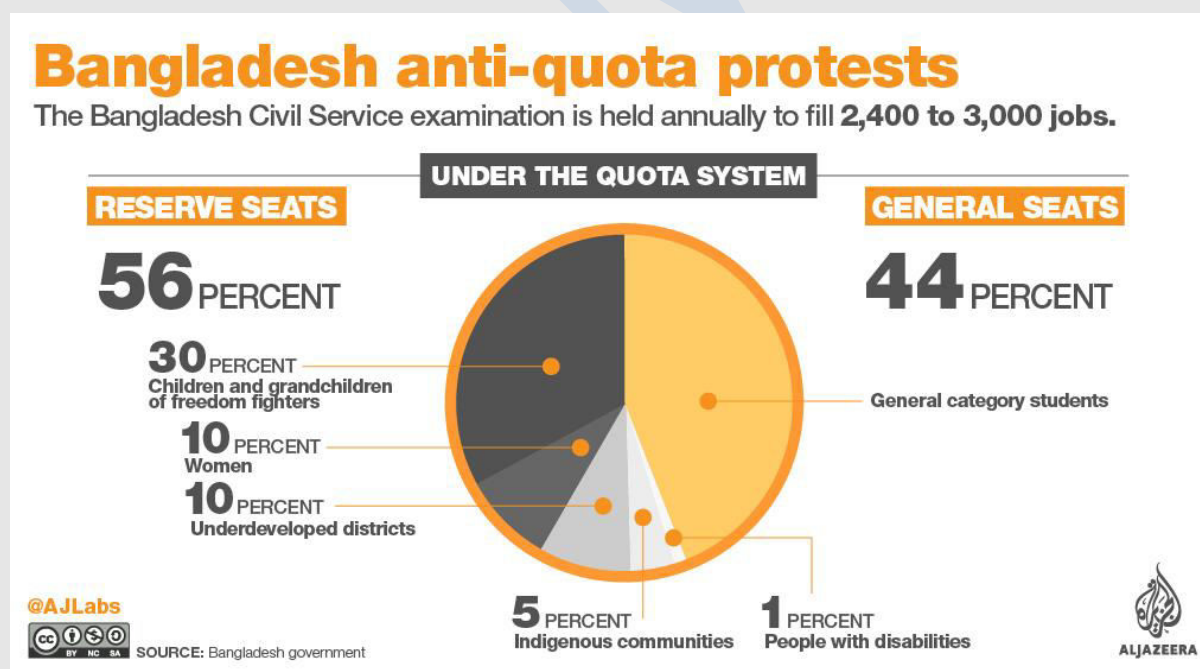
Source: Indian Express

3. Why are students protesting in Bangladesh?

Internet shutdowns prevailed across Bangladesh even as a sense of calm prevailed following the ruling by the Appellate Division of Bangladesh's Supreme Court to reduce the quotas in government jobs. The latest order dismisses a ruling by the lower court, and comes amidst nationwide protests that have left 114 people dead and thousands injured.

According to the Associated Press, the quota for descendants of the country's freedom fighters will now be reduced to 5%, with 93% of jobs to be allocated on merit. The remaining 2% will be set aside for members of ethnic minorities and transgender and disabled people.

However, protestors have vowed to continue their demonstrations, even setting a 48-hour deadline to ensure their key demands are met, including the release of those jailed, and the dismissal of officials responsible for the violence.



These developments follow a nationwide curfew with a "shoot-on-sight" order, first imposed by Prime Minister Sheikh Hasina's government, which was indefinitely extended. The shutdown was marked by military deployment to maintain order after weeks of violence. The government had also declared public holidays with only emergency services allowed to operate.

The protests are led by youths opposed to the return of a 30% quota in government employment at all levels for those who fought for the freedom of Bangladesh from Pakistan, as well as their children and grandchildren.

The situation was inflamed by a statement from Prime Minister Sheikh Hasina on July 14, appearing to equate the protesters with the descendants of razakars, mercenary collaborators of the Pakistan military who led a brutal campaign of murder and rape in which up to 3 million Bangladeshis are estimated to have been killed in the space of a few months in 1971.

A Reuters report cited some analysts as saying the violence was now being driven by wider economic discontent, including high inflation, growing unemployment, and shrinking foreign exchange reserves.

Sparked by a court order

On June 5, the High Court Division of the Supreme Court of Bangladesh (commonly known as "High Court"; the other division is the Appellate Division) ruled on a suit filed by the "children of nationally recognised freedom fighters", restoring the 30% reservation and striking down a circular issued by the government in October 2018, which had scrapped the freedom-fighter and other quotas.

The 2018 decision had been announced by Prime Minister Hasina ahead of the national elections that took place in December that year. Students and teachers had been protesting since April, demanding that quotas be capped at 10%. There had been violence, though at a smaller scale than this week, and protesters had clashed with police and members of Bangladesh Chhatra League, the students' wing of Hasina's ruling Awami League party.

This time too, the government has said it agrees with the students. It has appealed to the Supreme Court, which has suspended the High Court's order and will hear the matter on August 7. Hasina has asked the protesters to be patient until then.

Constitution and quotas

Article 29(1) of Bangladesh's 1972 Constitution says "there shall be equality of opportunity for all citizens in respect of employment or office in the service of the Republic". However, under Article 29(3)(a), the state can make "special provisions in favour of any backward section...for the purpose of securing their adequate representation in the service of the Republic".

The High Court's June 5 order provides a summary of how the country's reservation policy has worked. The system was notified on September 5, 1972, reserving 30% of government and semi-government posts for freedom fighters, and 10% for women. After the assassination of Bangabandhu Sheikh Mujibur Rahman, the founder of Bangladesh, in August 1975, however, the quotas were effectively frozen until 1996 — when Hasina became Prime Minister for the first time. Benefits of the freedom fighters' quota were subsequently extended to their sons and daughters.

After the Awami League lost power in 2001, the process of implementation of the quota slowed down again. But Hasina returned as Prime Minister in 2009 and, two years later, the quota benefits were also made available to the grandchildren of freedom fighters.

The withdrawal of the quota in 2018 was challenged in court. In its June 5 order, the High Court ruled the government's decision was arbitrary — and that the freedom fighters and their progeny remained one of the most backward sections of the country's citizens.

Economy and employment

More than two-thirds of Bangladesh's 170 million population is the working age group of 15-64, and more than 25% are between the ages of 15 and 29 according to data from the International Labour Organization (ILO).

Bangladesh Bureau of Statistics data quoted by the Bangladeshi daily Prothom Alo say 1.8 million to 1.9 million young people join the job market every year. (Bangladesh government websites were not accessible on Thursday evening.) Besides the 30% quota for freedom fighters, there are 10% quotas each for women and backward districts, 5% for members of tribal communities, and 1% for persons with disabilities, taking the total reservation to 56%.

Government jobs are highly coveted due to their promise of stability and a guaranteed income. Many of Bangladesh's export-oriented enterprises are yet to recover from the disruption caused by Covid-19 and the war in Ukraine.

However, only 3.5 lakh appointments were made to government posts in the 2019-23 period, Bangladesh Sangbad Sanstha quoted Public Administration Minister Farhad Hossain as telling Parliament in February. More than 5 lakh posts remain vacant, Hossain said.

A fraught national history

In an early reaction to the violence, Hasina asked rhetorically why the protesters resented the freedom fighters' quota, and whether they believed that the benefits should instead go to the "grandchildren of razakars", using a derogatory word that carries grim historical baggage.

The razakars, literally "volunteers", were a paramilitary force set up by Pakistan's General Tikka Khan in 1971 to facilitate Islamabad's control over East Pakistan, and to crush the liberation movement that the Bangabandhu was leading at the time. The collaborationist razakars, working alongside Pakistan's armed forces, were behind some of the worst atrocities perpetrated on the Bangladeshi people.

In the popular Bangladeshi memory, razakars are often remembered with greater resentment than even the Pakistani army and bureaucracy. Over the years, the Awami League has often referred to its critics and dissidents — constituted in large measure by Islamists and pro-Pakistan elements — as razakars.

In response to Hasina's jibe, student protesters called her an autocrat — raising slogans that translate as "Who am I? Who am I? Razakar, razakar. Who said that? Who said that? Autocrat,

autocrat.” Among those clashing with the protesters are members of the Awami League’s youth wing, media reports from Bangladesh have said. The government has said that the protests have been infiltrated by cadres of the opposition Bangladesh Nationalist Party (BNP) and its ally, the Islamist Jamaat-e-Islami.

Relevance: GS Prelims & Mains Paper II; International Relations
Source: Indian Express

4. Are deep-sea metals a vital resource or an environmental disaster in the making?

Why in News?

The ocean floor holds vast quantities of metals and rare earths. But mining these valuable resources could permanently damage fragile marine systems.

Representatives from all over the world have spent most of the last month in Jamaica negotiating the future of deep-sea mining.

Based in Kingston, the International Seabed Authority, or ISA, is working on a set of rules to regulate the extraction of raw materials from the ocean floor. But despite weeks discussing the matter, many questions remain.

What is the current state of deep-sea mining?

By 2025, the ISA wants to define a set of legally binding rules to manage deep-sea mining — without these rules, any planned mining operation will not be able to get started. Discussions have been ongoing for several years, but these latest talks have laid bare the extent to which the new rules remain divisive, especially when it comes to the issues of underwater monitoring and avoiding environmental damage.

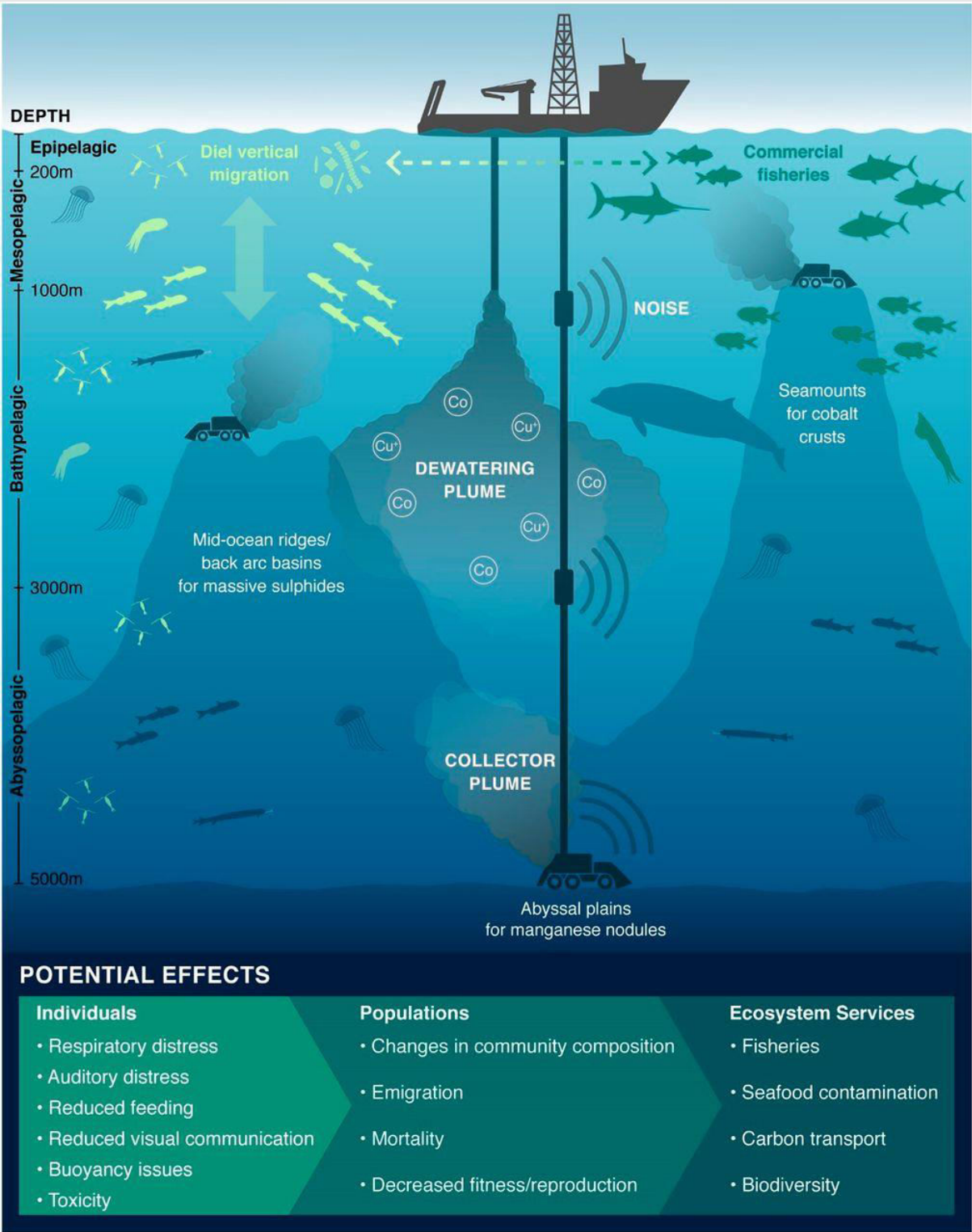
Several states, including Germany, Brazil and the Pacific island nation of Palau, have said they won’t agree on the new rules until their environmental impact has been fully investigated. China, together with Norway, Japan and the microstate Nauru in the Central Pacific have pushed for a quick agreement so that mining companies can start putting their plans into action.

But that’s looking increasingly unlikely. Of the 169 countries represented in the ISA, 32 are now in favor of suspending or even banning deep-sea mining outright, a stance supported by environmental organizations and many marine scientists.

Despite the concerns, however, the Canadian startup The Metals Company has already announced it plans to submit an application to the ISA for a commercial deep-sea mining operation in the coming months.

Who profits from deep-sea mining?

When it comes to deep-sea mining, the focus is primarily on manganese nodules and other minerals found on the ocean floor outside territorial waters. This is commonly called the high seas, and accounts for more than half of the world’s oceans.



These areas are classified as the “common heritage of mankind,” raw materials that belong to everyone, not one particular country. Managing and monitoring any potential mining activities in these regions would be the responsibility of the ISA, as outlined in the United Nations Convention on the Law of the Sea.

Many countries and corporations are interested in the commercial potential of deep-sea mining. The ISA has so far issued 31 exploration licenses for certain areas, five of which have gone to Chinese companies. But several other countries, including Germany, India and Russia, have also been exploring the seabed.

The UN’s sea convention stipulates that any activities in the high seas must be equitably shared among states, and that would include profits from deep-sea mining. Critics like the Deep-Sea Conservation Coalition, however, remain skeptical of whether this would even be possible.

What kinds of metals can found in the ocean floor?

Mining companies are particularly interested in polymetallic nodules, also known as manganese nodules. These potato-sized lumps, which form over millions of years from sediment deposits, are composed mainly of manganese, cobalt, copper and nickel — raw materials which are a key component in electric car batteries. As the world makes the transition to renewable energy, the International Energy Agency expects the demand for these metals to double by 2040.

The ocean floor in what’s known as the Clarion-Clipperton Zone between Hawaii and Mexico holds vast amounts of manganese nodules. Mining companies aim to harvest these prized metals from a depth of between 4,000 to 6,000 meters (13,100-19,700 feet) with automated vacuum robots, bringing them to the surface with hoses.

Other areas in the Pacific, the Indian and the Atlantic Ocean also hold significant deposits of these minerals. In addition to manganese nodules, mining companies are also targeting polymetallic sulfides, which contain large amounts of copper, zinc, lead, iron, silver and gold, and cobalt-rich ferromanganese crusts, which are especially hard to break up and recover from the ocean depths.

How could deep-sea mining harm marine ecosystems?

Manganese nodules and mineral crusts aren’t dead rocks — they’re an important habitat for many sea creatures. According to marine scientists, more than 5,000 different species, some of which have barely been researched, make these inhospitable areas their home. At this depth, conditions are extreme: food is scarce, sunlight is nonexistent, and the water pressure is 100 times higher than at sea level.

For that reason, the seabed ecosystem — and species that have adapted to living in these conditions — are extremely fragile. Mining robots, which vacuum up huge expanses in their search for manganese nodules, would destroy the ocean floor and suck up countless sea creatures. Even marine life found kilometers away from these mining areas would be disturbed

by light and noise pollution as well as the far-reaching, swirling clouds of sediment. Fishing activity above the mining areas could be permanently disrupted.

To date, researchers have explored only around 1% of the deep sea area and its potential. A study released in July, for example, showed that the minerals present in manganese nodules are able to produce oxygen through electrolysis, in the complete absence of sunlight. Until now, scientists assumed that this only happened in nature through photosynthesis. Research is ongoing.

Marine scientists have warned that beginning deep-sea mining without sufficient knowledge of the potential consequences could be catastrophic for biodiversity and the as-yet little-known sea ecosystems. The necessary research could still take another 10 to 15 years, in part because the area is so difficult to reach.

Is deep-sea mining even worth it?

Countries like China are hoping for huge profits and a secure, independent source of raw materials, and expect to be mining for important minerals for decades to come. Mining companies have said deep-sea mining is less destructive than mining on land, and would eliminate many concerns of human rights abuses.

But a study from the German nonprofit Öko-Institut, commissioned by Greenpeace, has revealed that the raw materials found in manganese nodules aren't actually needed to fuel the energy transition, highlighting instead the development of new battery technologies like lithium-iron-phosphate accumulators.

Critics have also pointed out that mining companies have underestimated the costs and technical risks of commercial deep-sea mining. The technology has not yet been fully developed, and the extreme water pressure at such depths will make it difficult to repair robots and other mining equipment.

A growing number of major companies, including SAP, BMW, Volkswagen, Google and Samsung SDI have already pledged not to use any raw materials recovered from the seafloor, and have said they would not support mining activities. Several insurance companies, among them Swiss RE, have also ruled out underwriting such risky projects, which could also dent their profitability.

When could deep-sea mining begin?

So far, any potential mining areas have only been explored, not exploited. The Metals Company, however, has said it wants to apply for its first commercial mining license from the ISA by the end of 2024. Along with its subsidiary in Nauru, it plans to start operations in the Clarion-Clipperton Zone in 2026. When, and if, the ISA will approve the license remains unclear. Norway aims to start its own mining operation as soon as possible, in the North Atlantic between Greenland and the Svalbard archipelago, after getting the go-ahead from parliament in January. The 281,000-square-kilometer (108,570-square-mile) area, slightly smaller than Italy, is at a depth of 1,500 meters on the continental shelf. The ocean floor in this region

belongs to Norway, meaning it's not controlled by the ISA. The country wants to start granting licenses for exploration next year, with mining operations planned for 2030.

However, environmental organization WWF has taken legal action against Norway's mining plans, with scientists warning of irreversible damage to the Arctic ecosystem and fisheries. Japan is also making plans to begin deep-sea mining operations in its underwater territory.

Relevance: GS Prelims & Mains Paper II; International Organisations

Source: Indian Express

5. How Sheikh Hasina's ouster may impact India-Bangladesh ties

Why in News?



Bangladesh has been a key ally to India since Sheikh Hasina came to power in 2009. From eradicating anti-India terrorist groups which operated out of safe havens in Bangladesh to facilitating greater economic, social, and cultural ties, Hasina's tenure has fostered a healthy relationship between New Delhi and Dhaka.

Her exit could jeopardise this — affecting growing trade ties, restricting the movement of people and goods, and stalling a potential free trade agreement (FTA) between the two countries.

Bi-lateral trade

In trade terms, Bangladesh is India's biggest partner in the subcontinent, and India is Bangladesh's second biggest partner in Asia after China. Their total bilateral trade amounted to \$13 billion in the financial year 2023-24, according to the Union Ministry of Commerce.

Bangladesh is the biggest export destination for India's cotton, accounting for 34.9% of India's total cotton exports (some \$2.4 billion in FY24). Other major Indian exports to Bangladesh are petroleum products and cereals. India's top import from Bangladesh are readymade garments, amounting to \$391 million in FY24. In recent years, Bangladesh has emerged as a major global hub for textiles.

In October 2023, India and Bangladesh began discussions on an FTA during a meeting of the Joint Working Group on Trade in Dhaka. An FTA would reduce or eliminate customs duties on goods traded between India and Bangladesh, and ease norms to help promote further trade and investments.

Infra & connectivity

Infrastructure and connectivity has been a growing part of India-Bangladesh ties, according to the Minister of External Affairs. India has extended three lines of credit to Bangladesh since

2016 amounting to \$8 billion for the development of road, rail, shipping and port infrastructure. In November 2023, two joint projects – the Akhaura-Agartala cross-border rail link and Khulna-Mongla Port rail line – were inaugurated.

The latest Akhaura-Agartala link, which provided an alternate route from mainland India to the Northeast, was the sixth cross-border rail line between the countries. This has cut down the travel time (by train) between Agartala and Kolkata from 31 hours to 10 hours and was expected to boost tourism, trade, and people-to-people exchanges between the two countries.

A disruption in Indo-Bangladesh ties could thus restrict India's access to the Northeast, which will be connected to mainland India only through the narrow "Chicken's Neck" — only 22 km at its narrowest — between West Bengal and Assam.

Besides rail, there are currently five operational bus routes between India and Bangladesh, including connections from Kolkata, Agartala and Guwahati to Dhaka. In 2023, the countries had agreed to operationalise the agreement for the usage of the Chittagong and Mongla ports to ease the movement of cargo between mainland India and the Northeast.

Relevance: GS Prelims & Mains Paper II; Bilateral Relations

Source: The Indian Express

6. As Sheikh Hasina flees, what does it mean for India? Six preliminary takeaways from Bangladesh's crisis

Why in News?

Bangladesh Prime Minister Sheikh Hasina has resigned and the Bangladesh Army will be forming the interim government with the help of political parties.

Hasina vacated her residence in Dhaka and left the country for an undisclosed location in India, as protesters came out on the streets of Dhaka defying curfew orders.

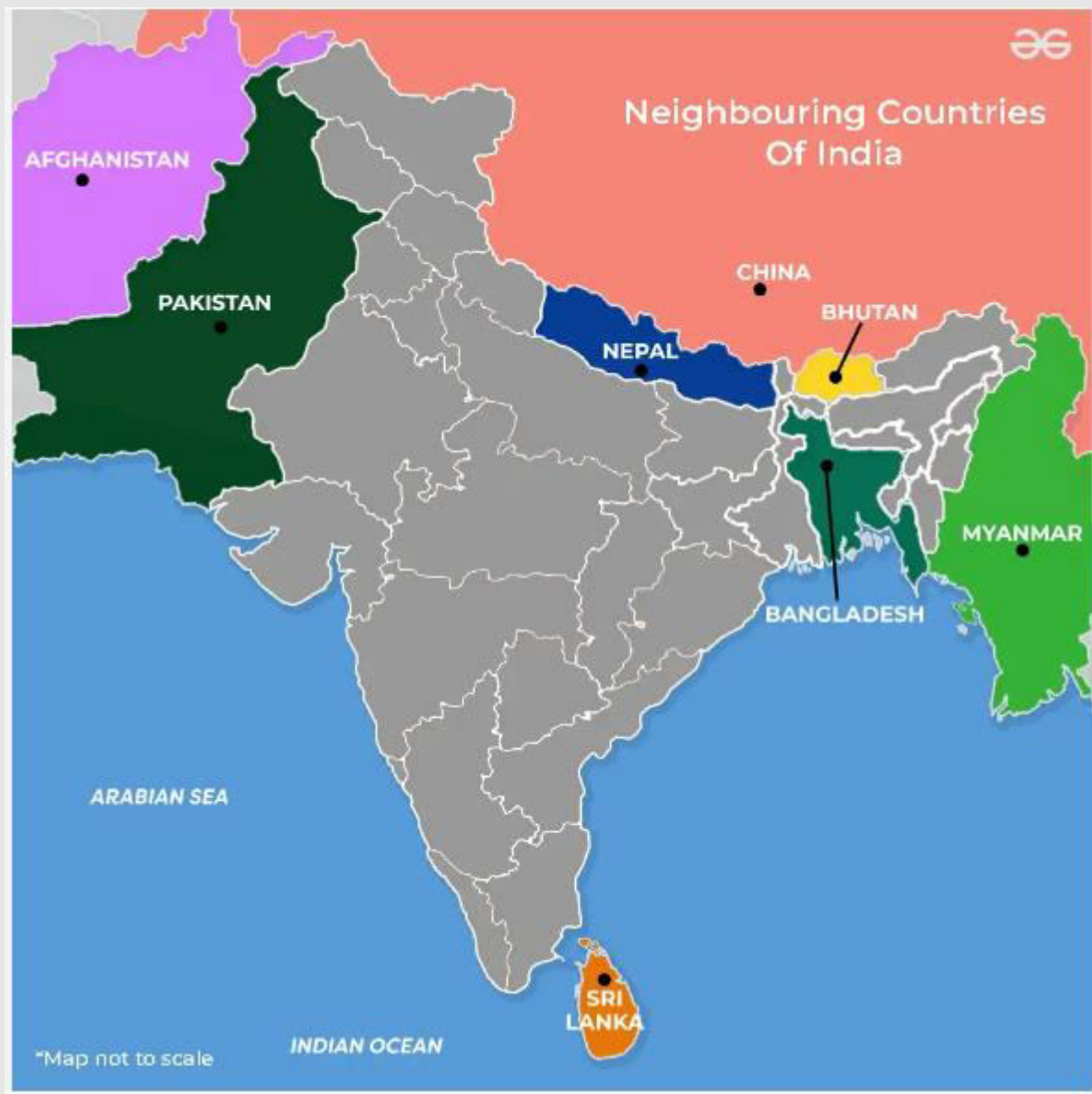
In a televised address, the Bangladesh Army chief General Waker-uz-Zaman said they will be forming the interim government with the help of political parties.

Within hours of people pouring out on the streets with sticks, protesters were seen entering the Prime Minister's official residence in Dhaka.

The scenes were similar to the ones seen in Afghanistan in 2021 and Sri Lanka in 2022 — in these countries too, the leader had left for safer locations. While the circumstances and motivations in Bangladesh are very different from those two countries, there will be an inevitable sense of déjà vu.

So, what does this mean for Bangladesh, India and the world?

The situation is extremely fluid, and these are a few preliminary takeaways.



FIRST, the situation in Bangladesh:

The country has been reeling under protests for the last month over the job quota system, and the protests had been the biggest since Hasina was re-elected for the fourth consecutive term since 2008.

She had led the country through economic growth but had also cracked down on the Opposition, media and the civil society.

This had made her unpopular, and the youth coming out on the streets was the tipping point. Her departure poses a challenge for Bangladesh's economy, which is yet to recover from the Covid pandemic and is slated to become a developing economy in the next couple of years.

SECOND, what does her exit mean for India?

Her departure after a 17-year tenure means that India has lost a trusted partner in the region. Hasina has been a friend to India, and New Delhi has worked closely with her on countering terrorist groups operating out of Bangladesh.

The partnership brought the two countries closer together, and New Delhi had given aid and assistance to Dhaka for a range of projects.

THIRD, New Delhi has been naturally supportive towards her.

By being careful with its comments and insisting that the weeks of turmoil in Bangladesh was its internal matter, New Delhi has given her tacit support — her openly undemocratic ways notwithstanding.

The West has been questioning Hasina's crackdown against civil society, the opposition, and the media, and has been calling for an end to her authoritarian style of functioning. India's backing of her, despite allegations of rigging in elections, has been a bone of contention between India and the West.

FOURTH, it follows that New Delhi will now be working to insulate itself from her unpopularity.

If she does land in India, it would mean New Delhi will have to work towards ensuring her safety, and would face some questions from the new regime in Dhaka about giving refuge to an unpopular leader.

There is a real risk of blowback from the Bangladeshi people as well — during the years of Awami League rule, the Bangladeshi opposition has viewed India as backing Hasina, and the West as being on their side.

FIFTH, New Delhi will be concerned about who will be in power in Dhaka now.

What attitude they will take towards India will be critical. In the past, when Opposition parties led by BNP-Jamaat or the Army have ruled the country, India has had an unpleasant experience — with anti-India terror outfits operating across the India-Bangladesh border.

This situation could well arise again, and New Delhi cannot afford to have another front open when the LoC and the border with Pakistan is hot again, and the Indian Army is in a long standoff with the PLA in eastern Ladakh. The Myanmar border is also extremely volatile, and the source of unrest and strife in India's Northeast.

SIXTH, the role of the Army Chief will be crucial.

Ahead of his address to the nation, General Waker held a meeting at the military headquarters, at which two important leaders of the main opposition Jatiya Party were invited, according to the Bangladeshi daily Prothom Alo.

The Jatiya Party was formed by a retired chief of the Bangladesh Army, General Hussain Mohammed Ershad, in 1986. As Army chief, Gen Ershad had seized power through a coup d'état in 1982, and ruled as chief martial law administrator until December 1983.

Relevance: GS Prelims & Mains Paper II; Bilateral Relations

Source: Indian Express

7. Nobel Laureate Muhammad Yunus, the chief adviser of Bangladesh's post-Hasina government

Why in News?

Muhammad Yunus, the winner of the 2006 Nobel Peace Prize, will become the chief adviser to the interim government in Bangladesh. Army Chief Waker-uz-Zaman announced the formation of an interim government after Prime Minister Sheikh Hasina resigned and fled the country in the face of ongoing protests that began over quotas for the kin of freedom fighters in government jobs.



Yunus, now 84 years old, is a globally recognised economist and has pioneered a system of microfinance that is believed to have helped a large number of Bangladeshis break out of extreme poverty. However, he has shared a frosty relationship with Hasina, who once accused him of “sucking blood” from the poor. Under Hasina’s rule, Yunus was booked in more than 200 cases —

including forgery, money laundering, and embezzlement.

Here’s a look at who Yunus is, what his system of microfinance is, why he shared a frosty relationship with Hasina, and what are the cases against him.

Who is Muhammad Yunus?

Born in 1940 in Chittagong, Yunus received his PhD in economics from Vanderbilt University in the United States in 1969, and began a teaching career. He returned after Bangladesh was liberated from Pakistan, and was appointed head of the economics department at Chittagong University.

As Bangladesh struggled to stabilise its economy and tackle poverty in the post-independence years, Yunus came up with a unique idea: microcredit, or small loans without collateral to entrepreneurs who wouldn’t normally qualify for bank loans, on terms that were suitable to them.

The success of a local experiment convinced Yunus that the model could be scaled up — and in 1983, his flagship initiative, Grameen Bank, was launched. The bank is widely considered to be a great success — it has disbursed collateral-free loans adding up to more than \$34 billion among close to 10 million people since its inception, with a recovery rate of more than 97%. Banks based on Grameen Bank's microcredit model now operate in more than 100 countries around the world. In 2006, Yunus and Grameen Bank were awarded the Peace Nobel "for their efforts to create economic and social development from below". Yunus came to be known as the "Banker to the Poor".

What was the reason for his friction with Hasina?

Soon after winning the Nobel, Yunus began to flirt with the idea of forming his own political party. This didn't sit well with Hasina, who was in jail at the time, facing charges of extortion. Yunus subsequently abandoned his plans, saying there wasn't enough support for his new political movement. Nonetheless, once Hasina returned to power in 2009, her government opened a host of investigations into Yunus' activities. The former Prime Minister accused him of using force and other means to recover loans from poor rural women as head of Grameen Bank.

What are the cases against Yunus?

Most recently, in January this year, Yunus and three other officials at his telecommunications company, Grameen Telecom, were sentenced to six months in prison for violating Bangladesh's labour laws. They were immediately granted bail.

In 2015, he was summoned by Bangladesh's revenue authorities over alleged non-payment of taxes amounting to \$1.51 million.

Two years before that, he was put on trial for allegedly receiving money without government permission, including his Nobel Prize award and royalties from a book.

In 2011, Yunus was removed as managing director of Grameen Bank for allegedly violating government retirement regulations.

The criminal cases against Yunus triggered concern globally. In August last year, 160 international figures, including former US President Barack Obama and former UN Secretary-General Ban Ki-moon, signed a letter denouncing the "continuous judicial harassment" of Yunus.

Relevance: GS Prelims & Mains Paper II; International Relations

Source: The Indian Express

8. Sheikh Hasina is currently staying in India. What is India's refugee policy?

Why in News?

Former Bangladesh Prime Minister Sheikh Hasina will likely remain in India for some time, as her plans to travel to the United Kingdom faced a "technical roadblock". Hasina came to India

on Monday (August 5) after violent protests against her government forced her to flee Bangladesh.



Along with her sister, the ex-PM had reportedly planned to seek asylum in the UK, where members of their family live. However, according to the country's immigration rules, asylum requests can only be processed once a person is in the UK and Hasina does not hold a visa for travelling there.

On the other hand, India has decided to let her stay in the country despite the lack of an official policy on refugees. The question of how refugees should be treated has come up again in the past, most recently and prominently with the entry of Rohingya refugees from Myanmar.

Who is a refugee?

Under the 1951 UN Convention on the Status of Refugees and the subsequent 1967 Protocol, the word refugee pertains to any person who is outside their country of origin and unable or unwilling to return owing to well-founded fear of persecution for reasons of race, religion, nationality, membership of a particular social group or political opinion.

Stateless persons may also be refugees in this sense, where the country of origin (citizenship) is understood as 'country of former habitual residence'.

The UN has said the flight of the Rohingya following the Myanmar military crackdown in Rakhine state in 2017 had created the world's biggest refugee crisis. Cox's Bazaar in Bangladesh is the biggest refugee camp in the world today. Myanmar maintains that the Rohingya, who are predominantly Muslim, are illegal immigrants from Bangladesh.

When it comes to dealing with some 40,000 Rohingya who fled to India, the government's response has been ambiguous. The government had allowed the UN High Commissioner for Refugees (UNHCR) to carry out verification and provide some of them with identity cards.

In the Supreme Court, however, Solicitor General Tushar Mehta referred to them as illegal immigrants. Combined with public and political rhetoric about terrorism and communal slurs, there is a demand that they be "deported" immediately.

India & UN convention

India has welcomed refugees in the past, with nearly 300,000 people categorised as refugees. This includes the Tibetans, Chakmas from Bangladesh, and refugees from Afghanistan, Sri Lanka, etc. But India is not a signatory to the 1951 UN Convention or the 1967 Protocol. Nor does India have a refugee policy or a refugee law.

This has allowed India to keep its options open on the question of refugees. The government can declare any set of refugees as illegal immigrants — as has happened with Rohingya despite the UNHCR verification — and decide to deal with them as trespassers under the Foreigners Act or the Indian Passport Act.

The closest India has come to a refugee policy in recent years is the Citizenship Amendment Act, 2019, which discriminates between refugees based on religion in offering them Indian citizenship.

Deportation

In 2021, the Supreme Court appeared to accept the Centre's contention that the Rohingya people in India were illegal immigrants when it refused to order the release of 300 members of the community, most of whom were in a detention camp in Jammu, and others in Delhi. It said they should be deported according to "all procedures" under the Foreigners Act, 1946.

However, this is a complex process. This is evident from a failed attempt by the Assam government in 2021 to send back a 14-year-old Rohingya girl, separated from her parents in a Bangladesh refugee camp. The girl was detained while entering Assam at Silchar in 2019. She had no family left in Myanmar, but Assam officials took her to the Moreh border at Manipur to be deported. Myanmar did not accept her.

The bottom line to legal deportation — as opposed to just pushing people back over the border — is that the other country must accept the deportee as its national. Over the years, all efforts by Bangladesh to persuade Myanmar to take back the Rohingya at Cox's Bazaar have been unsuccessful. India managed to send back a handful with much difficulty.

Non-refoulement

But in terming Rohingya in India as "illegal" (in contrast to calling them refugees in Bangladesh) and pledging to send them back to Myanmar, India is going against the principle of "non-refoulement", to which it is bound as a signatory to other international treaties such as the International Covenant on Civil and Political Rights.

Non-refoulement means no refugee shall be returned in any manner to any country where he or she would be at risk of persecution. India made the case at the UN in 2018 that this principle must be guarded against dilution, and also argued against raising the bar for granting refugee status, saying this leaves out a lot of people "pushing them into greater vulnerability".

How India deals with refugees from different countries differently is also evident in the case of Sri Lankan Tamil refugees, many of them in camps in Tamil Nadu. The state government provides them an allowance and allows them to seek jobs, and their children to attend school. After the end of the Sri Lanka civil war in 2009, India has encouraged return through the method of voluntary repatriation — they decide for themselves in consultation with an agency like the UNHCR, if the situation back home is safe. This method adheres to the principle of non-refoulement.

UNHCR says it is its priority “to create an enabling environment for voluntary repatriation... and to mobilize support for returnees.” Which means it requires the “full commitment of the country of origin to help reintegrate its own people”.

Relevance: GS Prelims & Mains Paper II; International Relations

Source: Indian Express

9. What is behind Ukraine’s Kursk operation in Russia?

Why in News?

As of August 9, Ukrainian troops had advanced as far as 35 kilometers (21 miles) into Russian territory in the Kursk region. However, they reportedly do not have full control of the area. Other military experts believe this assessment to be realistic. There have been reports of fierce fighting, deaths and casualties in the area.



Why did the Ukrainian army advance into Russian territory?

Military experts have said various political and military factors explain Ukraine's surprise offensive.

1. One argument is that Ukraine wants to conquer as much Russian territory as possible and thus exert pressure on Moscow. This would strengthen Ukraine's position in possible peace negotiations with Russia. Ukrainian land occupied by Russia could be exchanged for Russian land conquered by Ukraine.

2. From a strategic perspective, the advance onto Russian soil could also create a buffer zone for the population in the contested areas of Ukraine. In addition, the advance is intended to weaken the Russian army.

3. It could also force Russia to deploy more troops to the embattled border region, thus weakening the Russian army along the main front line in Ukraine. Russia lacks the manpower to compensate for losses on the front, despite its conscription measures.

How is the Kursk operation linked to recent gas price increases?

Russia's Kursk region plays an important role in the gas supply chain. The last transit station through which gas flows from Russia to Europe via Ukraine is located near the small town of Sudzha. So far, gas has continued to flow uninterrupted.

The importance of Russian gas exports to Europe has, however, decreased since Russia launched its full-scale invasion of Ukraine in February 2022.

Relevance: GS Prelims; International Issues

Source: Indian Express

10. Will Saudi's new law aid migrant workers?

Why in News?

The Kingdom of Saudi Arabia, one of the world's largest recipients of migrant domestic workers (MDWs), will roll out a new domestic workers law in September. The six GCC states (Saudi Arabia, the UAE, Qatar, Kuwait, Oman, and Bahrain) employ close to 5.5 million migrant domestic workers, and all of them exclude MDWs from labour laws, with only four having passed specific domestic worker laws.

How many migrants work in Saudi Arabia?

In Saudi, as of the first quarter of 2024, there were 39,13,925 migrant domestic workers with 27,32,344 males and 11,81,581 females, making up 25% of the total workforce. The exclusion of these workers from the labour law leaves huge gaps in protection, as monitoring mechanisms such as labour inspections, complaints mechanisms, and the Wages Protection System do not apply to the sector. These vulnerabilities are further exacerbated by the systemic marginalisation of migrant workers under the Kafala system. The employer-tied visa system

leaves lower-income migrant workers at the absolute mercy of their sponsors. In effect, the state has outsourced the immigration regime to individuals, the majority of whom are citizens. The current and upcoming MDW laws do not address these protection gaps sufficiently. It is common knowledge that female MDWs face extreme abuse at the hands of their employers within households and by officials when they seek remedy. Saudi Arabia's regulations have failed to address these issues, and the broader justice mechanism that fails migrant workers in general is especially indifferent to the plight of MDWs.

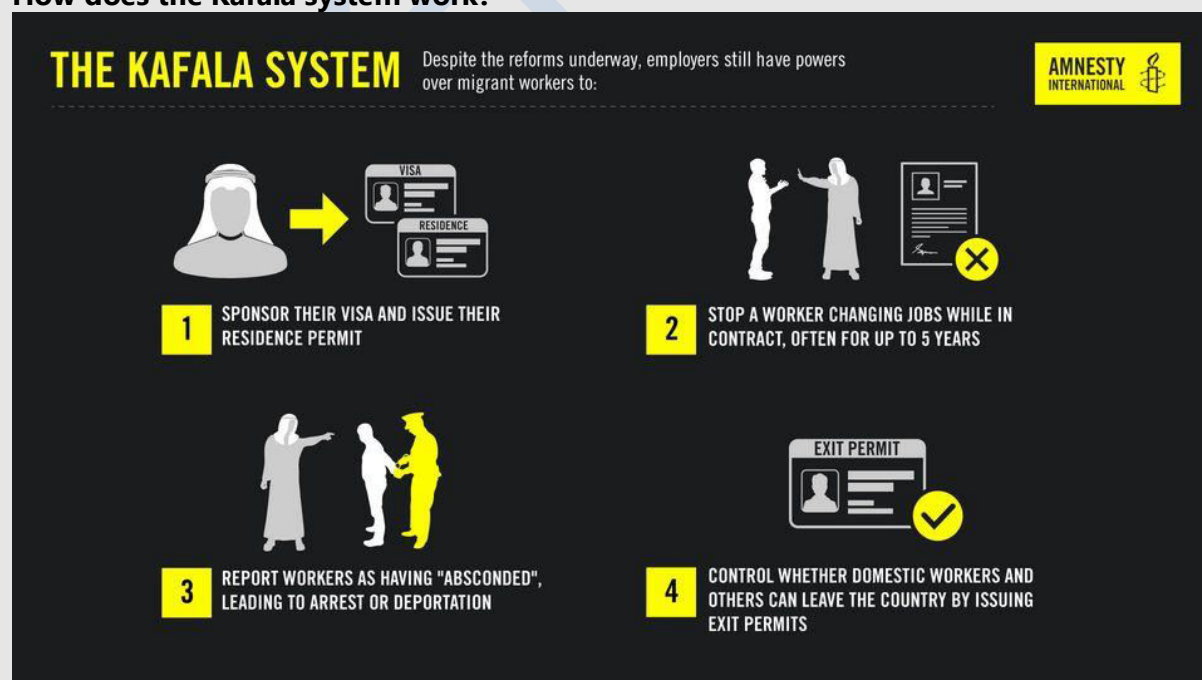
Saudi still does not have a minimum wage, and mandatory referral wages apply only when prescribed in bilateral agreements by origin countries. This means MDWs are not only paid poorly but there are no clear calculations for overtime, though almost all of them are overworked.

Who are migrant domestic workers?

They are employed by individuals to render services in their household. The combination of exclusion from labour laws and the stranglehold of the Kafala system results in employers having absolute control over domestic workers. Saudi has 14 categories of domestic work. Some categories are recent additions, and concerning, go beyond household work to roles requiring specialist skills.

As per the official data, there are over 20 lakh workers who fall under the category 'servants and house cleaners' — referring to domestic workers, nearly 60% of whom are female. The second most recruited category is drivers, at 18,17,120, almost all of whom are male. Saudi is the only GCC state where male domestic workers constitute the majority in the sector, at nearly 70%.

How does the Kafala system work?



GCC citizens are wealthy and can afford 'engines of liberation' — mechanised consumer goods that were meant to reduce the domestic labour of women. This has not played out as desired in most patriarchal cultures, even if women are active in the labour economy and the dependence on women's labour at home is still high. Large joint families living together demand a host of unpaid services that women in the household were once responsible for. With growing affluence and the assumption that domestic work is menial, these tasks are now delegated to paid MDWs, but the value placed on their work — and by extension them — remains low. Many of the mechanisms and institutions set up by Saudi to govern the sector tend to have an employer bias, including its Musaned system, the domestic worker recruitment platform, through which all aspects of the recruitment and employment of MDWs are regulated.

Consequently, the intersection of the Kafala system and labour law exclusion results in a type of bonded labour. The state makes it easy to recruit and employ migrant workers, resulting in extreme exploitation with impunity. The cost of recruitment excluding wages is steep — between U.S.\$2,000 and U.S.\$5,000 per worker — and employers feel they have 'bought' the worker, instead of seeing it as payment for services.

Is the new MDW law better?

Some notable features of the new law are a maximum of 10 working hours a day and entitlement to a weekly off day; prohibition of confiscation of identity documents; emphasis on workers' right to communication; workers have a right to terminate the contract without losing entitlements under certain conditions; compensation for unjust termination; one month paid leave yearly and employer must pay for the annual ticket home.

Saudi also introduced insurance on all new MDW contracts to protect workers and employers, the cost of which is built into the recruitment fees. More recently and quite significantly, the kingdom included all new MDWs in its WPS from July, and will gradually cover all existing MDWs by the end of 2025.

What are the persisting concerns?

Saudi has a poor record of implementation, especially when it comes to protecting the rights of migrant workers. Wage theft and labour exploitation are rampant, but employers are rarely held to account. When it comes to MDWs, especially women, they cannot leave the employer's household without permission and there's a risk of being reported as absconding (huroob).

Though the absconding regime has been reformed, making it more difficult to file false charges, and giving workers more time to challenge false accusations, the law still can be weaponised by abusive employers. The lack of labour inspections, limited access to communication, and language barriers make it difficult both for the state to assess the impact of reforms and for workers to report violations.

What is the status of Indian MDWs?

At 26.5 lakh, Indians constitute the single largest migrant population in the kingdom. Though Saudi does not furnish nationality-wise disaggregated data, by several estimations, the domestic work sector comprises a large percentage of Indians working as drivers, and also in other categories.

Recruitment of Indian MDWs must be through the eMigrate system. India's minimum referral wage for the sector is SAR1,500 (₹33,400). Special provisions for female MDWs — minimum age must be 30 — include a financial bank guarantee of U.S.\$2,500 in favour of the Embassy in Riyadh. The contract must be attested at one of the missions in Saudi.

However, according to many workers in distress, consular support is limited at best to repatriation and there is no effort to help with access to justice or ensure workers receive all their entitlements before deportation. Given the size of the kingdom and the diaspora, the Embassy in Riyadh and the consulate office in Jeddah are not equipped enough to deal with these needs.

Relevance: GS Prelims; International Issues

Source: The Hindu

11. What is Bangladesh's St Martin's Island, under spotlight after Sheikh Hasina's resignation?

Why in News?

Former Bangladesh Prime Minister Sheikh Hasina's son, Sajeeb Wazed, said that a recent "resignation" statement, allegedly published by a newspaper, attributed to her mother was "completely false and fabricated". According to the alleged statement, Hasina said she could have continued to remain in power if she had given Bangladesh's "St Martin's Island and Bay of Bengal to America".

The statement seems to be taken from a 2023 speech by Hasina in which she claimed that "there will be no problem to hold on to power if Saint Martin's Island is leased out, but she won't do that". She, however, did not take the name of any country.

In her speech, the former prime minister also accused the opposition party, the Bangladesh Nationalist Party (BNP), of wanting to sell the island. She said, "How did the BNP come to power in 2001? They came to power by pledging to sell gas. Now do they want to sell the country or come to power by pledging to sell St Martin's island?"

Here is a look at St Martin's Island and its history.

Where is St Martin's Island located?

The island is located in the northeastern region of the Bay of Bengal, close to the border between Bangladesh and Myanmar. It is nine kilometres away from the southern tip of Bangladesh's Cox's Bazar-Teknaf peninsula.



The 7.3 km long island is mostly flat and sits at an elevation of 3.6 metres above the mean sea level. It is Bangladesh's only coral island — there are reefs from 10-15 km to the west-northwest — and is also a breeding ground for sea turtles.

The island has a permanent population of about 10,000 people. As it is a prominent tourist attraction, an average of 10,000 tourists stay there every day.

What is the history of the island?

The island was once part of the Teknaf peninsula (around 5,000 years ago) but gradually got submerged into the sea. Around 450 years ago, the southern suburbs of present-day St Martin's Island resurfaced — the northern and rest of the parts of the island rose above sea level in the following 100 years.

The Arab merchants were among the first ones to settle on the island. They began to arrive there in the 18th Century. The merchants initially named the island "Jazira" (meaning "the island" or "the peninsula") and later changed it to "Narikel Jinjira" or "Coconut Island".

In 1900, British India annexed the island during a land survey. By then, some fishermen had settled on the island — they were either Bengali or from the Rakhine community (who were based in present-day Myanmar). During the British occupation, the island came to be known as St Martin's Island, named after then Deputy Commissioner of Chittagong Martin, according to some reports.

After the partition of British India in 1947, it became part of Pakistan and subsequently, a part of independent Bangladesh after the 1971 Liberation War.

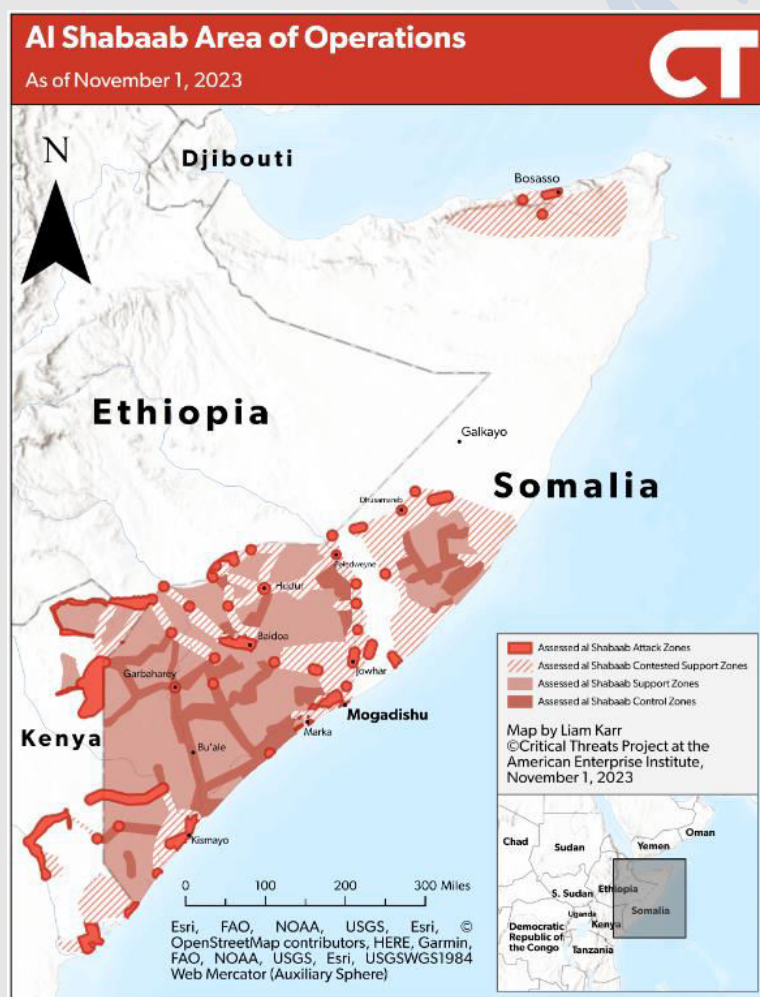
Relevance: GS Prelims

Source: Indian Express

12. Al-Shabaab: growing from Somalia's ruins

Why in News?

On August 2, a suicide bomber detonated an explosive device at the entrance to the Beach View Hotel on Lido Beach in Mogadishu, the capital of Somalia, which is often frequented by government officials, businesspersons and youth. Before the shock could abate, five attackers stormed the site and started shooting at civilians indiscriminately. By the time security officials had neutralised the attackers, at least 37 lives were lost and 210 were wounded. The strike was subsequently claimed by al-Shabaab, an affiliate of al-Qaeda, which has waged a war against the Somali government for the past 17 years.



Al-Shabaab has conducted similar strikes in the Horn of Africa. In March, the group had laid siege to another hotel in Mogadishu killing 27 people, including three members of parliament and three soldiers. The deadliest attack in the country's history was the double car bombing in October 2017 killing 358 people and injuring 228 in Mogadishu. The attacks have spilled over the border to Kenya too.

But as far as Somalia goes, al-Shabaab is merely a chapter in the nation's history that is fraught with authoritarianism, clan war, famine, piracy, corruption and resource crunch, all of which had prompted the U.S. based-The Fund for Peace to call the country in 2011, a failed state for a fourth year in a row. That is slowly changing

with the UN stating in 2021 that the former failed state is on a fragile path to progress.

On forming the state of Somalia

From the seventh to the 19th century, Somalia and neighbouring regions were ruled by a series of Sultanates, with Islam's Sunni subset being the primary religion. The 19th century witnessed the arrival of colonial powers, and the region was shared between British, Italian and French forces — the first two taking up the lion's share of the area.

Upon the withdrawal of British and Italian forces from the northern and southern regions in 1960, the two regions came together and formed modern-day Somalia. Democracy prevailed for a brief time until 1969 when Siad Barre came to power through a military coup.

Siad Barre propounded an administrative policy called 'scientific socialism' through which he nationalised banks and insurance companies, promoted literacy and strengthened ties with the Soviet Union. Despite Somalis being a largely homogenous group, different clans had ruled the roost. However, Barre saw to it that loyalty to major clans such as Isaaq, Darood, Dir and Hawiye remained outlawed.

The first signs of the authoritarian leader's downfall emerged with the Ogaden war that Somalia fought with its neighbouring Ethiopia in 1977.

The Ogaden war

Imperial European powers had gone into the Horn of Africa and drawn up arbitrary boundaries to carve out territories to suit their convenience. Much like what happened in other parts of the world, this process upended the lives of the natives, who were plucked from their societies and cultures and thrust into alien living conditions. Ogaden was no different. A portion of the region, which fell under the Christian-majority Ethiopia, was home to many Muslim Somalis.

Additionally, notwithstanding colonial legacy, a second factor contributed to the region's complicated history — the area was a breeding ground for Cold War politics. The conflict began in July of 1977 with Ethiopia acting as a U.S. ally and Somalia backed by the USSR.

But by the time the war ended in March 1978, Ethiopia and Somalia were receiving assistance from the USSR and the U.S. respectively.

Despite the initial gains, the war proved costly for Somalia as it had to retreat from the Ogaden region and grapple with the influx of Ogaden Somali refugees.

Depleted of finances and resources, Barre began to lose his grip on the country's administration. Certain policies did not sit well with some clans, who turned against each other. By 1991, Barre fled Somalia following an uprising by clans supported by Libya and Ethiopia. The northern part of the country proclaimed independence as Somaliland; and clan wars were rife, killing close to 3,00,000 Somalis in a year.

Whatever international food aid came Somalia's way was siphoned off by local gangsters and militia leaders.

The U.S., the UN and other international troops took turns coming into the country to fix the situation but to little effect. In October 1993, U.S. Marines tried to arrest the officers of one of the clan leaders, leading the militiamen to shoot down two U.S. Black Hawk Helicopters (depicted in the 2001 film *Black Hawk Down*). Trying to retrieve the helicopter crew cost 18 U.S. lives and led to 300 Somalian deaths.

Efforts to establish transitional governments also proved futile, so much so that by 2004, at least 14 attempts had been made to establish a central governing authority. Although a parliament came to power and elected Hassan Sheikh Mohamud as President in 2012, this did little to improve people's lives. Somalia follows a federal system of governance making the loyalty of clan leaders crucial. The hostility between the clans made it impossible to govern the country. The role of Ethiopia too has not gone unnoticed. It has been accused of meddling in Somalia's affairs trying to protect its interests.

The rise of al-Shabaab

As a famine started spreading in many parts of the country, al-Shabaab, a militant group preaching the Salafist version of Islam, had spread its roots in Somalia by seizing Mogadishu in 2006.

Its origins can be traced back to the al-Ittihad al-Islamiya (AIAI), a militant group that gained prominence in the 1990s after the fall of Barre's regime. Its chief members were trained in West Asia and funded by the al-Qaeda.

However, hardline younger members of the AIAI sought a stricter Sharia rule and swore allegiance to the Islamic Courts Union, ultimately becoming its armed wing, al-Shabaab.

To win back Mogadishu from al-Shabaab, Ethiopia's help was sought by Somalia's transition government in 2006. Though the city was eventually retrieved, al-Shabaab's numbers started to swell because the operation was perceived as an invasion by a foreign force — a narrative that would be peddled by al-Shabaab in the future to rally support. Despite carrying out suicide attacks and terror strikes inside Somalia as well as in Kenya, Ethiopia and Uganda, al-Shabaab draws legitimacy by positioning itself as an alternate form of governance for the people of its home country. The militant group has stepped in to fill the void left behind by a government machinery rife with corruption.

The Somali government, with the help of the African Union Mission in Somalia (AMISOM) and the Somali National Army (SMA), managed to drive away al-Shabaab from Mogadishu and other port cities such as Kismayo and Barawe.

With the southern city of Jilib as its defacto capital, al-Shabaab relocated to the south and has now focused its activities in rural areas of Somalia where it offers protection services and plays mediator to disputes.

The terror group also obtains revenue from illicit charcoal trade.

The curtailed nature of al-Shabaab's activities and its confinement to rural areas have been largely hailed as victories of the armed forces. Even then, the occasional attacks planned by them cost 4,000 lives between 2010 and 2020, making it surpass Boko Haram as Africa's biggest terror threat.

More importantly, these attacks land a psychological blow to a population that has not tasted peace in a long time.

Relevance: GS Prelims & Mains Paper II; International Organisations

Source: The Hindu

13. What is the contribution of Indian Americans to the US?

Introduction

Indiaspora, a US-based non-profit organisation which details the contributions of Indian Americans to the US and their impact on the country, has released a new report. Titled, 'Small Community, Big Contributions, Boundless Horizons: The Indian Diaspora in the United States', the report quotes data from the Migration Policy Institute and says,

5.1 million Indian Americans represent the Indian diaspora including those born in India and in the US. The Indian diaspora in the US makes up only 1.5% of the population.

45% of them migrated to the US after 2010, while around 30% moved before 2000. The population is concentrated in New York State and California.

72 unicorn startups out of 648 in the US are led by Indian migrants. The collective value of these startups exceeds \$195 billion. They employ approximately 55,000 people (13% of unicorn employees).

60% of all US hotels are owned by Indian Americans. These hotels generate approximately \$700 billion in revenue and create more than 4 million jobs, directly and indirectly, annually.

35%-50% of all convenience stores in the US are owned by Indian Americans. They generate \$350-\$490 billion in revenues each year.

\$300 billion is contributed in tax revenues by Indian Americans annually, on top of the \$370-\$460 billion in annual spending, which translates into a major economic wave in terms of sales tax, business growth, and support of employment.

13% of all 2023 journal publications were co-authored by scientists of Indian origin in the US, up from 11% in 2015.

35 out of top 50 colleges in the US have an Indian American in their leadership ranks, including roles like deans, chancellors, provosts, and directors of colleges.

28 out of the 34 Scripps Spelling Bee winners were of Indian origin since 2000.

\$3 billion has been donated by Indian Americans to US universities since 2008.

\$1.5–2 billion annually is contributed by Indian Americans to charity.

Relevance: GS Prelims & Mains Paper II; Indian Diaspora

Source: The Hindu

14. What the rise of 37-year-old Thailand PM Paetongtarn Shinawatra means for the country's politics

Introduction

Prime Minister Narendra Modi congratulated Thailand's new Prime Minister Paetongtarn Shinawatra, two days after the country's Parliament elected her as the new PM. Her election comes more than a year after her centre-right Pheu Thai party came second in the general election. Although the progressive Move Forward Party (MFP) had won the largest number of seats, a political arrangement brokered by Paetongtarn's father and former prime minister Thaksin Shinawatra (2001-06) resulted in a coalition led by Pheu Thai coming to power.



Pheu Thai leader Srettha Thavisin became prime minister in August 2023. However, less than a year later, he was ousted from the position by the order of a constitutional court on August 14. The court said Srettha had been dishonest and had "breached ethical standards" by appointing an individual with a criminal conviction to his cabinet.

Paetongtarn is the third member of the Shinawatra family to become prime minister after Thaksin and his sister Yingluck, who occupied the post from 2011-14. Both Thaksin and Yingluck were removed from power in military coups.

Many in Thailand had looked to the MFP with hope of political reform, given the decades-old dominance of the military and the Thai royalty over the country's politics.

Who is Paetongtarn Shinawatra?

Paetongtarn, the youngest-ever PM of the nation of 70 million, joined politics only three years ago. Having studied hotel management in the United Kingdom, she had been managing Thaksin's Rende hotel group.

Petongtarn "describes herself as a compassionate capitalist, a social liberal who fully supports Thailand's new equal marriage law". However, her personality is mainly seen as being indistinct from the legacy and reputation of the powerful Shinawatra clan.

Thaksin, who is now 75, was in the police before joining politics. He also owned several businesses in key sectors and expressed disdain for the country's entrenched elites, such as businessmen, bureaucrats, and other power players linked to the influential monarchy and the military. The two institutions are seen as helping sustain each other in Thailand's constitutional monarchy.

Thaksin's welfare policies cemented his popularity among poor and rural Thais. But in 2006, protests erupted following allegations that the Shinawatra family had failed to pay taxes on their businesses, leading to a military-orchestrated ouster.

Yingluck was accused by opposition leaders of running a proxy government for Thaksin. She too was ousted after a judicial order against her in 2014. Thaksin has since backed several parties, and has remained a powerful player in Thai politics.

What are the implications of the Shinawatras' return to power?

Thaksin is seen as a once-popular leader who has joined hands with the conservative forces he was earlier positioned against. This 'deal' reportedly allowed the former PM to return to Thailand in 2023, after having lived in exile for 15 years. During this period, he was sentenced to eight years in prison over an abuse-of-power case during his tenure, but the sentence was reduced to one year by King Maha Vajiralongkorn last September.

On August 17, Thaksin received a royal pardon reducing his parole to two weeks.

What happens next?

Analysts believe Petongtarn Shinawatra will likely be in her father's shadow, given her inexperience and the mammoth task of heading the government. Ensuring her political survival will be Thaksin's major challenge given Thailand's turbulent political history, which has seen 19 coups since the country became a constitutional monarchy in 1932.

Another concern will be the economy. According to a Nikkei Asia report, "The economy has grown 1% to 4% per year since the 2014 coup, compared with around 5% for Southeast Asia as a whole. Cheap labour and infrastructure investments once drove rapid growth, but the country has struggled to further develop its industrial base even as Vietnam and other neighbours catch up."

Relevance: GS Prelims; International Relations

Source: Indian Express

15. Can Sheikh Hasina be extradited to Bangladesh? What are India's options?

Why in News?

With former Bangladesh Prime Minister Sheikh Hasina facing multiple criminal cases back at home, it is likely that India's eastern neighbour may push for her extradition.

Bangladesh's de facto foreign minister Touhid Hossain said as much in an interview to Reuters on Thursday (August 15). He said that since Hasina's ouster, a number of cases had been filed against her, and that should the country's home and law ministries decide, Bangladesh may need her to "return to Bangladesh". He also said that such a situation could diplomatically embarrass India, and that he was sure India "would take care of it".

Do India and Bangladesh have an extradition treaty?

Yes. India and Bangladesh signed an extradition treaty in 2013, which was then amended in 2016 to ease and hasten the exchange of fugitives between the two countries.

The treaty came into being in the context of several Indian fugitives, particularly those belonging to insurgent groups in the North East, hiding in and operating out of Bangladesh. At the same time, Bangladesh had been facing trouble from outfits such as Jamaat-ul-Mujahideen Bangladesh (JMB), whose operatives were found to be hiding in states like West Bengal and Assam in India.

The treaty allowed India to successfully extradite Anup Chetia, a top United Liberation Front of Assam (ULFA) leader, from Bangladesh to India in 2015. Since then, one more fugitive has been handed over to India by Bangladesh through the extradition route. According to sources, India too has handed over a couple of Bangladesh fugitives to its neighbour through this treaty.

What does the treaty say?

According to the treaty, India and Bangladesh are supposed to extradite individuals "who have been proceeded against... or have been charged with or have been found guilty of, or are wanted for... committing an extraditable offence" by a court of the requesting country.

An extraditable offence, the treaty says, is one which carries a minimum punishment of one year imprisonment. This includes financial offences. Crucially, for an offence to be extraditable, the principle of dual criminality must apply, meaning that the offence must be punishable in both countries.

The treaty says that extradition shall also be granted if there is an "attempt to commit or aiding, abetting, inciting or participating as an accomplice in the commission of an extraditable offence".

Are there exceptions to these rules?

Yes. The treaty says that extradition may be refused if the offence is of "political nature". But this is limited by the nature of offence. And the list of offences which cannot be deemed as "political" is rather long. These include murder; manslaughter or culpable homicide; assault; causing of an explosion; the making or possession of an explosive substance or weapons by a person intending to endanger life; the use of a firearm with intent to resist or prevent arrest;

damaging property with intent to endanger life; kidnapping or taking of a hostage; incitement to murder; and any other offence related to terrorism.

So, can Hasina be extradited by Bangladesh?

Hasina is a political player, and she can claim to seek political asylum in India. However, some of the offences for which she has been booked are excluded from the definition of political crimes in the treaty. This includes cases of murder, enforced disappearance, and torture.

On August 13, Hasina was booked for the murder of a grocery store owner who had died in police firing last month. The very next day, a case of enforced disappearance was filed against her on the charge of kidnapping a lawyer in 2015. On August 15, Hasina was slapped with charges of murder, torture and genocide in a third case.

Things are further complicated by the fact that a 2016 amendment to Article 10 (3) of the treaty did away with the requirement for the requesting country to provide evidence of the offence committed. Now, merely an arrest warrant by a competent court of the requesting country is needed to process an extradition.

Given a request, will India have to send Hasina back?

Not necessarily. There are grounds spelt out for refusal of extradition requests in the treaty. Article 7 of the treaty says that "the request for extradition may be refused by the Requested State if the person whose extradition is sought may be tried for the extradition offence in the courts of that State." This is not applicable in Hasina's case.

That said, Article 8 lists out multiple grounds for refusal including cases in which an accusation has not been "made in good faith in the interests of justice" or in case of military offences which are not "an offence under the general criminal law".

India has the option of refusing Hasina's extradition on the ground that the accusations made against her are not "in good faith in the interests of justice". But this has the potential to adversely impact New Delhi's relations with Dhaka's new ruling dispensation.

Relevance: GS Prelims & Mains Paper II; Bilateral Relations

Source: Indian Express

16. Why Modi's visit to Ukraine marks three new roads: India in Europe, diplomatic space, and Delhi-Kyiv revival

Introduction

It took the tragic and a globally disruptive war to bring Prime Minister Narendra Modi to Kyiv, the first such visit since Ukraine re-established itself as an independent nation amid the breakup of the Soviet Union in 1991.

But by showing up in Ukraine and lending a shoulder to President Volodymyr Zelenskyy, who is leading a badly battered nation to defend its territorial integrity and sovereignty, Modi has

initiated three important processes: insert India into Europe's quest for peace; expand Delhi's room for manoeuvre in the global geopolitical churn triggered by the Russian invasion of Ukraine; and reclaim Delhi's lost bonds with Kyiv in the post-Soviet era.

1. India in Europe

First, on the question of ending the war in Ukraine, Modi had no spectacular peace plan to unveil. That Modi took a long train ride from Warsaw to Ukraine to engage Zelenskyy in a long and intense conversation on war and peace was an important moment in itself.

What Kyiv needed was not yet another peace plan but Modi's understanding of Ukraine's concerns about survival as a nation that did not get sufficient resonance in India and the so-called Global South.

Zelenskyy hopes that Modi's willingness to hear Ukraine's case and contribute to the peace efforts will help turn the political tide in the Global South that has stood apart from the war, despite its massive economic consequences.



2. Diplomatic space

Second, as the geopolitical consequences of the war in Ukraine unfold, Modi's visit to Kyiv is a signal that Delhi will no longer be a passive by-stander in a conflict that is reshaping the world. For five centuries, India was an adjunct to European wars. Modi's visit to Ukraine underlines India's determination to actively shape the major European and global war of the times.

India is not the only Asian power trying to alter the European balance of power. That the Chinese Prime Minister Li Qiang was winding up his visit in Moscow when Modi was travelling

from Warsaw to Kyiv is a reminder of China's growing role in shaping the contours of the war in Ukraine. Ukraine is not only about renewed contest between Russia and the West but also about the role of Delhi and Beijing in Europe.

As Modi arrived in Kyiv, Kamala Harris, in a thundering speech accepting the nomination of the Democratic Party to be the next President of the United States, declared her deep commitment to defend Ukraine and strengthen NATO.

The enthusiastic reception to Harris's candidacy and her strong stance on Ukraine will test the widespread assessment that the US is a "weary titan" waiting to retreat from Europe. The Republican idea of pivoting away from Europe is now being challenged by Democrats. The outcome of that debate will have major consequences for India's security policy.

If the presence of Defence Minister Rajnath Singh in Washington this week underlines India's expanding strategic ties with the US, Modi's engagement with President Vladimir Putin and Zelenskyy in quick succession underline India's determination to protect its interests amidst the tremors from the reordering of great power relations.

3. Delhi-Kyiv revival

Finally, Modi's visit is also about re-establishing the lost bonds between India and Ukraine. Although India had privileged access to Ukraine in the Soviet era, Kyiv did not inherit its share of India's political affections for the USSR.

The extraordinary goodwill for India in Ukraine was reflected in the warm welcome extended to Modi in Kyiv. The commitment by Modi and Zelensky to elevate their relationship into a "strategic partnership", reboot their economic and defence ties, and revitalise their cultural ties marks the end of the prolonged neglect of India's ties with Ukraine.

Above all, Modi's visit should help bring greater nuance and sophistication to India's debate on the war in Ukraine that has been subject too long to political prejudice and ignorance about Central European history.

Relevance: GS Prelims & Mains Paper II; Bilateral Relations

Source: Indian Express

17. What is 'Rail Force One', the train PM Modi took from Poland to Ukraine?

Why in News?

Prime Minister Narendra Modi arrived in Ukraine's capital Kyiv from neighbouring Poland by train, an unusual mode of transport for a head of government, but one that has been used earlier by other global leaders as well.

Foreign dignitaries visiting Kyiv have been taking the train ever since Ukraine's airspace was closed following the Russian invasion in February 2022. After Joe Biden rolled into Kyiv last

year instead of flying in on Air Force One, the US President's iconic Boeing 747 aircraft, the train was dubbed "Rail Force One".



Train Design

The train, which is run by the state-owned Ukrainian Railways or Ukrzaliznytsia, is painted blue and yellow, the colours of Ukraine's flag.

The first foreign dignitaries to travel to Kyiv by the train were the prime ministers of Poland, Slovenia, and the Czech Republic, who visited in 2022.

Thereafter, the train was used by the former British Prime Minister Boris Johnson, French President Emmanuel Macron, President of the European Commission Ursula von der Leyen, and Prime Minister Justin Trudeau of Canada, besides Biden and now Modi.

A symbol of 'Iron diplomacy'

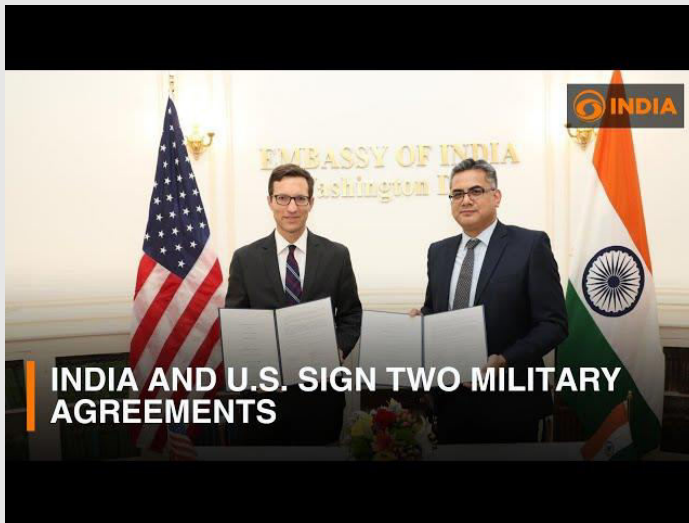
Alexander Kamyshin, Ukraine's Strategic Industries Minister who is in charge of Ukrzaliznytsia, has often used the hashtag #IronDiplomacy to refer to the world leaders' train trips.

Relevance: GS Prelims & Mains Paper II; International Relations

Source: Indian Express

18. Two new US-India agreements: a short history of growing defence ties

Why in News?



India and the US have signed a Security of Supply Arrangement (SOSA) and Memorandum of Agreement regarding the Assignment of Liaison Officers, the latest in a series of bilateral military agreements that have enhanced defence and security cooperation between the two countries over the past decade.

During Defence Minister Rajnath Singh's four-day official visit, the partner nations agreed to advance priority co-production projects

including jet engines, unmanned platforms, munitions, and ground mobility systems under the 2023 US-India Roadmap for Defence Industrial Cooperation.

Two new agreements

SOSA: Under SOSA, the US and India will provide reciprocal priority support to each other for goods and services that promote national defence. It will "enable both countries to acquire the industrial resources they need from one another to resolve unanticipated supply chain disruptions to meet national security needs", the US Department of Defense (DoD) said in a statement.

India is the 18th SOSA partner of the US. While SOSA, according to the DoD, are an important mechanism to strengthen interoperability with US defence trade partners, it is legally non-binding. The DoD has been working to conclude another agreement with India, the Reciprocal Defence Procurement (RDP) Agreement, which will be binding.

RDP Agreements are intended to promote rationalisation, standardisation, interchangeability, and interoperability of conventional defence equipment with US allies and other friendly governments. The US has signed RDP Agreements with 28 countries so far.

MOU ON LIAISON OFFICERS: The Memorandum of Agreement regarding the Assignment of Liaison Officers is a progression on a decision taken earlier to increase information-sharing between India and the US, and to post Indian armed forces officers in key strategic US Commands. India will deploy the first Liaison Officer to the US Special Operations Command headquarters in Florida.

Cooperation milestones

The vision for bilateral defence cooperation was encapsulated in the September 2013 Joint US-India Declaration on Defence Cooperation and the 2015 Framework for the US-India Defence Relationship, in which the two countries committed themselves to increasing cooperation in the sector.

2023 ROADMAP: The roadmap for defence industrial cooperation released last year envisioned the conclusion of SOSA and the RDP Agreement. The US endorsed the integration of the Indian defence industry into global supply chains, and extended support to India to develop naval and maritime infrastructure to create an Indo-Pacific regional hub for ship and aircraft repair and maintenance.

Priority areas of cooperation identified in the roadmap included Intelligence, Surveillance, and Reconnaissance (ISR), Undersea Domain Awareness, Air Combat and Support, including Aero engines, munitions systems, and mobility.

iCET: In January 2023, the US-India initiative on Critical and Emerging Technology (iCET) was discussed to expand the strategic technology partnership and defence industrial cooperation. National Security Advisors Ajit Doval and Jake Sullivan discussed opportunities for greater cooperation in critical and emerging technologies, including co-development and co-production, and ways to deepen connectivity across our innovation ecosystems.

INDUS-X: In June 2023, during Prime Minister Narendra Modi's official state visit to the US, the DoD and Ministry of Defence launched the India-US Defence Acceleration Ecosystem (INDUS-X), which took forward the commitment to build a defence innovation bridge under iCET.

FOUNDATIONAL AGREEMENTS: In 2002, India and the US had signed the General Security of Military Information Agreement (GSOMIA) to facilitate sharing of military information. Between 2016 and 2020, the two sides signed four more agreements.

The Logistics Exchange Memorandum of Agreement (LEMOA) of 2016 established the basic terms, conditions, and procedures for reciprocal provision of logistic support, supplies, and services between the two militaries.

In 2018, the Communications Compatibility and Security Agreement (COMCASA), an India-specific version of the Communications and Information Security Memorandum of Agreement (CISMOA), was signed to secure military communication between the countries, facilitate access to advanced defence systems, and enable India to optimally utilise its existing US-origin platforms.

The Basic Exchange and Cooperation Agreement (BECA) of 2020 aimed to facilitate the sharing of military information including maps, nautical charts, and other unclassified imagery and data.

Additionally, in 2019, the Industrial Security Annex (ISA) to the GSOMIA was signed to facilitate the exchange of classified information between the defence industries of the two countries. Other deals and sales

In 2016, the US designated India as a Major Defence Partner. Commensurate with this designation, in 2018, India was elevated to Strategic Trade Authorisation tier 1 status, which

gave it licence-free access to a range of military and dual-use technologies regulated by the US Department of Commerce.

Earlier in 2012, the Defence Trade and Technology Initiative (DTTI) agreement was signed to promote industrial cooperation and defence trade between the two countries.

There is also a Memorandum of Intent between the US Defence Innovation Unit (DIU) and the Indian Defence Innovation Organization-Innovation for Defence Excellence (DIO-iDEX).

Big-ticket Indian military procurements from the US include MH-60R Seahawk multirole helicopters, Sig Sauer Rifles, and M777 ultra light howitzers.

Negotiations are underway to manufacture GE F-414 jet engines in India for the LCA MK 2 fighters, and to procure 31 MQ-9B High-Altitude Long-Endurance (HALE) UAVs. Deliveries of the GE-F404 engines for the LCA Tejas Mark-1A are underway.

Relevance: GS Prelims & Mains Paper II; Bilateral Relations

Source: Indian Express

19. China-Philippines clash: What is the South China Sea dispute?

Why in News?

Recently, the Philippine government accused China of carrying out "repeated aggressive, unprofessional and illegal" actions in the South China Sea. The statement came after the two countries got involved in a series of clashes and incidents on air and at sea over the past week. The development once again brought the South China Sea dispute to the forefront.

What is the South China Sea dispute?

The South China Sea is situated just south of the Chinese mainland and is bordered by the countries of Brunei, China, Indonesia, Malaysia, Philippines, Taiwan, and Vietnam. The countries have bickered over territorial control in the sea for centuries, but in recent years tensions have soared to new heights. That is mainly due to China's rise as a global power. The South China Sea is one of the most strategically critical maritime areas and China eyes its control to assert more power over the region.

In 1947, the country, under the rule of the nationalist Kuomintang party, issued a map with the so-called "nine-dash line" (for a detailed explanation, scroll down). The line essentially encircles Beijing's claimed waters and islands of the South China Sea — as much as 90% of the sea has been claimed by China. The line continued to appear in the official maps even after the Chinese Communist Party (CCP) came to power.

In the past few years, the country has also tried to stop other nations from conducting any military or economic operation without its consent, saying the sea falls under its Exclusive Economic Zone (EEZ).

China's sweeping claims, however, have been widely contested by other countries. In response, China has physically increased the size of islands or created new islands altogether in the sea, according to the Council on Foreign Relations (CFR).

To challenge China's assertive territorial claims and protect its own political and economic interests, the US has intervened in the matters. It has not only increased its military activity and naval presence in South Asia but also provided weapons and aid to China's opponents.



What's the importance of the South China Sea?

There are 11 billion barrels of oil and 190 trillion cubic feet of natural gas in deposits under the South China Sea, according to the estimates of the United States Energy Information Agency.

Moreover, the sea is home to rich fishing grounds — a major source of income for millions of people across the region. The BBC reported that more than half of the world's fishing vessels operate in this area.

Most significantly, the sea is a crucial trade route. "The United Nations Conference on Trade and Development estimates that over 21% of global trade, amounting to \$3.37 trillion, transited through these waters in 2016," the news outlet added.

What is the 'nine-dash line'?

As mentioned before, the nine-dash line demarcates China's territorial claims in the sea on Chinese maps. It was initially the "eleven-dash line" but in 1953, the CCP-led government removed "the portion encompassing the Gulf of Tonkin, simplifying the border to nine dashes."

The line runs as far as 2,000 km from the Chinese mainland to within a few hundred kilometres of the Philippines, Malaysia and Vietnam.

But on what parameters the line has been drawn? China's claim on the waters and islands within the boundary is based on its "historical maritime rights". However, the country has never clearly stated the line coordinates and the line runs many miles beyond what is allowed under the United Nations treaty on maritime territorial issues, which China has signed.

Take the example of the Scarborough Shoal, also known as Huangyan Island. While it comes under the Philippines' EEZ, Beijing claims that the records show "China's sailors discovered Huangyan Island 2,000 years ago and cite extensive records of visits, mapping expeditions and habitation of the shoal from the Song Dynasty (960-1279 AD) right through to the modern period".

Similarly, China says it has centuries-old ties with the Paracel and Spratly island chains as they were once an integral part of the Chinese nation. But Vietnam disputes the claim, saying it has actively ruled over both the Paracels and the Spratlys since the 17th Century — and has the documents to prove it.

In 2016, after the Philippines took China to an international tribunal pertaining to the dispute over the Scarborough Shoal, the tribunal in its ruling largely rejected the nine-dash line and said, "China had broken international law by endangering Philippine ships and damaging the marine environment".

Although the tribunal's judgement was binding, there was no enforcement mechanism. China boycotted the proceedings, claiming the tribunal had no jurisdiction and that it would ignore any decision.

How can the dispute be resolved?

It's hard to say. A quick solution to the dispute seems quite impossible, especially after China refused to abide by the international tribunal's ruling.

Some believed that ASEAN (the Association of Southeast Asian Nations) — a 10-member regional grouping that comprises Thailand, Indonesia, Malaysia, the Philippines, Singapore, Brunei, Laos, Vietnam, Myanmar and Cambodia — might find a way to tackle the issue. Due to internal conflicts, the group has largely failed to do so.

Therefore, there is a palpable fear that the South China Sea dispute can soon become the next global conflict, with grave consequences.

Relevance: GS Prelims & Mains Paper II; International Relations

Source: Indian Express

20. Jay Shah to Become Youngest ICC Chairperson

Why in News?

Jay Shah, currently serving as the Secretary of the Board of Control for Cricket in India (BCCI), is set to become the youngest chairperson of the International Cricket Council (ICC). He will assume the position on December 1, succeeding New Zealand's Greg Barclay.



Unopposed Election

An ICC statement confirmed that Shah was the only candidate proposed by the deadline, which was set for Tuesday. With no other nominations, Shah will be elected unopposed and will take over when Barclay steps down in November.

Vision for Cricket's Future

In a media release, Shah emphasized the importance of balancing various formats of the game, promoting advanced technologies, and expanding cricket's reach to new global markets. "Our goal is to make cricket more inclusive and popular than ever before," he stated.

August club

Shah, 35, will thus join an august club of Jagmohan Dalmiya, Sharad Pawar, N. Srinivasan and Shashank Manohar in the list of Indians who have headed the game's governing body.

Shah's elevation from the post of the BCCI secretary and ICC Director to the ICC Chair was a mere formality once Barclay announced his decision last week to not seek an extension.

A Decade in Cricket Administration

Shah has been involved in cricket administration for a decade, starting as the joint-secretary of the Gujarat Cricket Association. He was elected unopposed as BCCI Secretary in October 2019 and has served as the Asian Cricket Council chairperson since 2021.

Next Steps and Succession

According to ICC rules, Shah will need to step down from his other positions to assume his new role. It remains to be seen who will succeed him as BCCI Secretary.

Relevance: GS Prelims; International Organisations

Source: The Hindu

1. The debate over GST on health insurance

Why in News?

Insurance companies have jacked up premiums on health and life insurance policies this year which, together with the 18% Goods and Services Tax (GST), has made insurance less affordable for many sections of the country's population.

What is the GST on health and life insurance premiums?



GST replaced all indirect taxes like service tax and cess from July 1, 2017. Currently, GST on health and life insurance policies is fixed at 18%. Since GST encapsulates service tax, which applies to the insurance industry, its introduction has resulted in an increase in premium amounts. Prior to GST, life insurance premiums were subject to 15% service taxes, comprising Basic Service Tax, Swachh Bharat

cess, and Krishi Kalyan cess. The increase from 15% to 18% impacted the end consumer — that is, policyholders — by raising their premiums amounts.

This, along with the runaway cost of treatment — medical inflation was estimated to be 14% towards the end of last year — has made buying medical insurance difficult for many people. Ditto is the case with term insurance policies.

The government acknowledged in Parliament on Monday that representations had been received asking for an exemption or reduction in the rate of GST on life and health insurance.

What is the rational justification for imposing the tax?

GST rates and exemptions on all services, including GST on health insurance premium, are prescribed on the recommendations of the GST Council, which is a constitutional body comprising the Union Finance Minister and ministers nominated by governments of states/ Union Territories.

GST is applicable to all insurance policies since insurance is a service, and policyholders pay tax on their insurance premium. It's a revenue earning segment for the government, which fetched Rs 21,256 crore in GST during the last three financial years, and another Rs 3,274 crore from the reissuance of health policies.

And what is the argument for withdrawing the GST on the premium?

The main issue is the large increases in premium on health insurance policies this year — a leading public sector insurer has hiked the premium by 50%. While health insurance is very significant for the benefit of the people, "sadly, the renewal rate of policies is alarmingly

declining due to frequent premium hikes and medical inflation”, the Confederation of General Insurance Agents’ Associations of India, an umbrella body of non-life insurance agents, has said.

The confederation has pointed out that the GST on insurance in India is the highest in the world — and that the situation needs to be addressed in order to attain insurance regulator IRDAI’s goal of “Insurance for All by 2047”.

This report had recommended rationalisation of the GST rate on insurance products, especially health and term insurance. The high rate of GST results in a high premium burden, which acts as a deterrent to getting insurance policies.

Relevance: GS Prelims & Mains Paper III; Economics

Source: Indian Express

2. What is the yen carry trade? Why is it unwinding right now?

Why in News?

Global stock and bond markets, in particular Japan’s, are being rocked by an unwinding of the hugely popular yen carry trade.

That trade, which involves borrowing yen at a low cost to invest in other currencies and assets offering higher yields, is being wrecked by Japan’s rate increases, a volatile yen and imminent rate cuts in the United States and other economies.

Here is a deeper look at the yen carry trade.

Currency Carry Trade

**Currency with lower
interest rates**



**Currency with higher
interest rates**



Borrow Yen



Exchange for dollars

JPY/USD



Deposit Funds

Earn ↑Yield



How does it work?

It involves borrowing the yen, or any other currency with similar super-low interest rates, then using it to buy currencies with better yields.

The yen has been the funding currency of choice for carry trades in U.S. dollars, Mexican pesos, New Zealand dollars and some others.

The trade involves buying the higher-yielding currency with the borrowed yen to invest in bonds or other money market instruments in that currency.

At the end of a usually short-term trade, the investor converts the dollars or pesos back into yen, and repays the loan.

Annualised returns typically can be around 5% to 6% on dollar-yen carry trades, which is the difference between U.S. and Japanese rates, with a scope for more gains were the yen to depreciate during that term.

How did it begin?

If defined broadly as using a low-yielding yen to buy higher-yielding foreign assets, then its origins can be traced back to 1999 when Japan struck policy rates down to zero after its asset price bubble burst.

The Japanese turned to international markets to get anything better than the zero yields at home, ploughing trillions of dollars into foreign markets and thus turning Japan into the world's biggest creditor nation.

The carry trade, as we know it today, which involves yen borrowing by largely international investors, kicked off in 2013 under Prime Minister Shinzo Abe's quantitative and qualitative easing that coincided with rising rates in the U.S. and a depreciating yen. Those trades reached new, gargantuan proportions over the course of 2022 and 2023 as the Federal Reserve raised rates rapidly to rein in inflation even as the Bank of Japan (BOJ) kept its short-term rates negative.

How large is it?

No one is quite sure. Using the narrowest definition of a pure currency carry trade, analysts point to the \$350 billion of short-term external loans by Japanese banks as one estimate of yen-funded trades in the world.

That number could be an exaggeration if some of those loans are commercial transactions between banks or loans to foreign businesses needing yen.

But it could be also understating the actual size of yen carry trades because there could be billions of yen the Japanese themselves have borrowed to invest in markets at home.

Actual positions could be amplified because of how hedge funds and computer-driven funds use leverage. Add to that the massive investments Japanese pension funds, insurers and other investors have made abroad.

Is it coming to an end?

To be sure, the BOJ has only started raising rates and its overnight rate is just at 0.25% while dollar rates are roughly 5.5%. But carry trades are more sensitive to currency moves and rate expectations than the actual level of rates.

The mere talk of further rate rises in Japan and Fed rate has driven the yen up 13% in a month and narrowed the yield gap, completely wiping out the slim gains in pure yen-dollar carry trades.

And, as leveraged investors cut their loss-making yen carry positions, they are being forced to de-leverage and shed other stock and bond holdings.

Relevance: GS Prelims; Economics

Source: The Hindu

3. Why an Indian start-up lobby has filed an antitrust complaint against Google

Why in News?

An Indian start-up lobby group has filed a complaint with the Competition Commission of India (CCI) against Google's alleged anti-competitive practices in the online advertising market, marking the tense relationship and increasing tussle between the country's new-age firms and tech giants.



The Alliance of Digital India Foundation (ADIF), in a statement, said that Google's dominance over major online platforms and its reliance on advertising for the majority of its revenue hinders competition and negatively impacts Indian businesses.

The development comes as India is currently discussing an exhaustive digital competition law, which could see increased preemptive compliance on the part of large tech companies. It also comes amid increasing antitrust scrutiny into Google by

the CCI, after having fined it in 2022 for "abusing its market dominant position" in multiple categories related to the Android mobile device ecosystem in the country.

What is the ADIF's antitrust challenge against Google?

1. 97% revenue through ads: "ADIF contends that Google's control over major online platforms, coupled with the fact that it derives 97 per cent of its revenue from advertising, has led to practices that stifle competition and adversely affect Indian businesses," the organisation's statement said.

2. Maximum bidder for advertisement: Google's ad-ranking system includes advertisers to set a bid for the amount of money they want to spend on a particular advertisement. This is the maximum amount an advertiser has to shell out to Google, when a person clicks on their advertisement.

3. Allows trademark usage in ads: Calling the system a "black-box," ADIF said, "Google's practices regarding trademark usage in keyword bidding create an artificial inflation of advertisement prices. Google allows competitors to bid on trademarked keywords, leading to a bidding war that ultimately benefits Google at the expense of advertisers and trademark owners".

4. Preference to own services: The organisation has also accused Google of self-preferencing its own services over other similar offerings, which restricts market access for competitors and negatively impacts start-ups that rely on these services.

5. Removal of third-party cookies: ADIF is particularly concerned over Google's Privacy Sandbox initiative, which aims to remove third-party cookies from websites accessed via the Google Chrome browser. This move could significantly hamper non-Google Demand Side Platforms' ability to serve advertisers effectively," it said.

Earlier this year, Google started phasing out third-party cookies on the Chrome browser, which had till then been a significant tool in the digital advertising industry for at least two decades. Cookies are used by websites and internet applications to remember information about a user.

What is India's draft digital competition law?

Taking a leaf out of the European regulatory handbook, India has proposed a new digital competition law that could stop tech giants like Google, Facebook, and Amazon from self-preferencing their own services, or using data gathered from one company to benefit another group company.

The draft law, called the Digital Competition Bill, 2024, also has provisions to set presumptive norms to curb anti-competitive practices before they actually take place. It further promises to impose heavy penalties — which could amount to billions of dollars — for violations. If this were to go in force, it could require big tech companies to make fundamental changes to their various platforms.

Understanding the role that data collected by one company of a major technology group can play in benefitting other group companies, the Bill proposes to designate Associate Digital Enterprises (ADEs).

If an entity of a group is determined to be an associate entity, they would have the same obligations as Systemically Significant Digital Enterprises (SSDEs). Essentially, SSDEs have a significant presence in any given core digital service and are identified on the basis of parameters like their turnover, market influence, etc.

The obligations on ADEs will depend on the level of their involvement with the core digital service offered by the main company. Illustratively, if one were to look at Google Search and how it steers direction data to Google Maps, the latter can theoretically be deemed an ADE. Same would apply to YouTube too, depending on the level of data sharing that happens between the core Google Search and how that plays out in the recommendations that YouTube makes to users.

Relevance: GS Prelims & mains Paper III; Economics

Source: Indian Express

4. What is the Google 'monopoly' antitrust case and how does it affect consumers?

Why in News?

On August 5, Google lost a major antitrust case brought against it by the U.S. Department of Justice (DOJ) that sought to establish that the tech giant had a monopoly in the web search and advertising sectors. The trial took place before the U.S. District Court for the District of Columbia. The lawsuit accused Google of using its dominant position in the search engine market to elbow out rivals and maintain monopoly. Its exclusive deals with handset makers were brought before the court as evidence. In the end, U.S. District Judge Amit Mehta ruled that Google was a monopolist.

Where does Google dominate?

Product Markets	Court Ruling
General search services	Google has monopoly power
General search text ads	Google has monopoly power
Search advertising	Google lacks monopoly power
General search advertising	No product market for this

Source: US. v. Google Judge Mehta ruling

What did the ruling state?

According to the ruling, Google's search dominance was majorly achieved through a strategy of exclusive distribution agreements, or default distribution. This refers to the way Google entered into lucrative contracts with "browser developers, mobile device manufacturers, and wireless carriers" so that it was the first or default search engine that users of such services or new phones were given. Google pays for this privilege and has shelled out more than \$26 billion for it in 2021, per the court.

However, some of the court's conclusions were in favour of the tech giant. It was determined that Google did not have monopoly power in the search advertising market. The court also noted there was no product market for general search advertising and that Google was not liable for actions involving its advertising platform.

Interestingly, the judge observed that Google had brought out the "industry's highest quality search engine, which has earned Google the trust of hundreds of millions of daily users."

How do monopolistic practices harm consumer experience?

Regulators around the world monitor how businesses use technology in their countries, to prevent the concentration of power in the hands of a few entities. This ensures healthy competition in the market segment, so that all participants are striving to do better for their customers. When a monopoly comes into existence, however, rivals may be forced out of the market while the company with the most power is able to abuse customers because they have very few other options. Such companies also lose the incentive to keep improving the quality of their product.

The court ruling in the Google case even pointed to this as a risk factor.

What happens next?

Google will be appealing the ruling. In the meantime, the court has asked both parties, Google and the Department of Justice, to find a remedy ahead of their meeting with Judge Mehta on September 9. The remedy, in this case, could range anywhere between breaking up Google to ordering the search giant to end its exclusive deals with mobile makers.

Relevance: GS Prelims; Economics

Source: The Hindu

5. How Centre's Clean Plant Programme plans to boost production of fruits

Why in News?

The Union Cabinet recently approved the Clean Plant Programme (CPP), aimed at increasing the yield and productivity of horticulture crops in India.

First announced in Union Finance Minister Nirmala Sitharaman's interim Budget speech in February 2023, the CPP is also targeted at enhancing the quality of fruit crops across the nation.

The Ministry of Agriculture has sought an allocation of Rs 1,765 crore for the programme. One half of this will be sourced from the budget of the Mission for Integrated Development of Horticulture (MIDH), while the other half will be in the form of a loan from the Asian Development Bank (ADB).



Cabinet Approves Ambitious 'Clean Plant Programme (CPP)' to Revolutionize Horticulture Sector in India

- ① Setting new standards for excellence & sustainability with a substantial investment of **₹1,765.67 Crores** towards this initiative
- ② **9 world class state-of-the-art Clean Plant Centres (CPCs)** to be established across India in the ICAR's Institutes
- ③ A Robust **Certification System** will be Implemented ensuring thorough accountability and traceability in planting material production and sale
- ④ Support will be provided to large-scale nurseries for the development of **Infrastructure**
- ⑤ Implemented by the **National Horticulture Board** in association with **Indian Council of Agricultural Research (ICAR)**



How will the CPP work?

The programme has three main components geared towards helping farmers obtain virus-free, high-quality planting material (plants used for vegetative propagation) in order to increase crop yields and improve income opportunities. These are:

- * Development of nine Clean Plant Centers (CPCs) which will provide disease diagnostics and therapeutics, create mother plants to be sent to nurseries, and quarantine all domestic and imported planting materials intended for commercial propagation and distribution;
- * Enhancement of infrastructure, including the development of large-scale nurseries to facilitate the efficient multiplication of clean planting material — the mother plants obtained from the CPCs will be multiplied in nurseries and distributed to farmers;

* Creation of regulatory and certification process to ensure thorough accountability and traceability in the production and sale of planting material.

What is the need for the CPP?

India is the second largest producer of fruits and vegetables in the world after China. From 2013-14 to 2023-24, the area under horticulture crops has risen from 24 million hectares to 28.63 million hectares, and production has increased from 277.4 million metric tonnes (mt) to 352 million mt.

India is also a major importer and exporter of fresh fruits. In the financial year 2023-24, India exported fresh fruits worth \$1.15 billion, while it imported fruits worth \$2.73 billion. With the rising consumption of fruits in the country, demand has specifically increased for planting materials of foreign apples, and "exotics" such as avocado and blueberry.

According to sources, between 2018-20, the EXIM committee for import of planting material of fruit plants permitted the import of 21.44 lakh apple plants in 2018, which increased to 49.57 lakh in 2020. In 2018, permission was given to import only 1,000 avocado plants which increased to 26,500 in 2020. Similarly, permissions for the import of blueberry plants went up from 1.55 lakh in 2018 to 4.35 lakh in 2020.

At present, the process of importing plants is very cumbersome, with imported plants having to be kept in quarantine for two years. The CPCs will cut this period down to six months, and thus make it easier for farmers to access disease free and genuine planting material for horticultural crops in India.

Relevance: GS Prelims; Economics

Source: Indian Express

6. All you need to know about the Hindenburg-Adani-Buch rigmarole

Why in News?

A year and a half after its January 2023 report on the Adani Group, US-based short seller Hindenburg Research has levelled allegations against the chairperson of India's capital markets regulator Securities and Exchange Board of India (Sebi).

Hindenburg alleged that Sebi chief Madhabi Puri Buch and her husband, Dhaval Buch, had stakes in offshore funds used in the alleged Adani money siphoning scandal.

The Buchs have denied the allegation and Sebi has said that it has adequate internal mechanisms for addressing issues relating to conflict of interest, including a disclosure framework and provisions for recusal.

How and when did this saga begin?

In a 106-page report released on January 25, 2023, Hindenburg accused Gautam Adani's Adani Group of "brazen stock manipulation and accounting fraud scheme over the course of decades".

The report was published ahead of the Rs 20,000-crore follow-on public offer (FPO) of Adani Enterprises Ltd. Shares of Adani companies tanked, and the group subsequently called off the FPO, which was fully subscribed.

Adani denied the allegations. Most Adani shares have now recovered.

What happened after that?

On March 2, 2023, the Supreme Court set up a six-member expert committee to investigate whether there was regulatory failure in dealing with the alleged contravention of laws by the Adani Group or other companies.

Separately, the court asked Sebi, which was already looking at allegations against Adani companies, to specifically investigate if there was a violation of the minimum public shareholding norms in public limited companies, a failure to disclose transactions with related parties, or any manipulation of stock prices.

In May 2023, the expert committee said that the markets regulator "had drawn a blank" in its investigation into alleged violations in money flows from offshore entities into Adani companies.

In November 2023, the court said it had no reason to discredit Sebi, and that it did not have to treat the contents of the Hindenburg report as the "true state of affairs".

On January 3, 2024, the court endorsed Sebi's investigation, and refused to transfer the case to a Special Investigation Team (SIT) or the CBI. It said Sebi had completed the probe in 20 out of 22 matters, and asked it to finish the job within three months. Sebi completed its probe into one more case in March, and has said the final investigation is close to completion.

What has Sebi been doing in this period?

On July 1, 2024, Hindenburg announced that it had received a show cause notice from Sebi for short selling of Adani Enterprises Ltd stock immediately before and after the release of its January 2023 report. The notice named Hindenburg Research, its founder Nathan Anderson, partner-investor Mark Kingdon, and three entities owned or controlled by Kingdon: Kingdon Capital Management LLC, M Kingdon Offshore Master Fund LP, and K India Opportunities Fund (KIOF) – Class F.

Hindenburg also said Sebi's notice had "conspicuously failed to name...Kotak Bank, one of India's largest banks and brokerage firms..., which created and oversaw the offshore fund structure used by our investor partner (Kingdon) to bet against Adani".

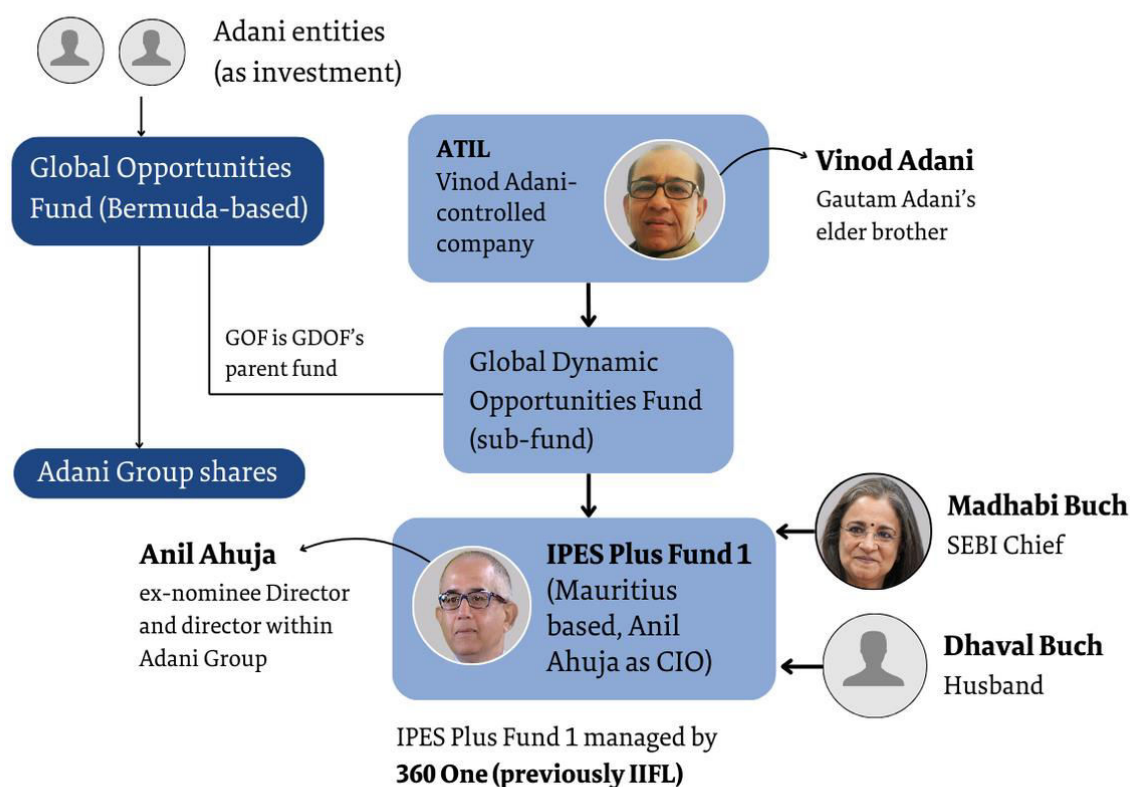
A day later, Kotak Mahindra International Limited (KMIL) and KIOF stated that Hindenburg was never their client, nor had it ever been an investor in the Fund. The Fund was not aware that Hindenburg was a partner of any of its investors, it said.

What is Hindenburg's new allegation?

Hindenburg has now alleged that "it suspects Sebi's unwillingness to take meaningful action against suspect offshore shareholders in the Adani Group may stem from Sebi Chairperson Madhabi Puri Buch's complicity in using the exact same funds used by Vinod Adani, brother of Gautam Adani".

Hindenburg's new findings linked SEBI chief Madhabi Puri Buch and her spouse to an offshore fund involved in the Adani "money siphoning scandal" in connection to Adani's elder brother - Vinod Adani. It said this was a "massive conflict of interest."

Here's how it says the money flowed.



THE HINDU

Quoting "whistleblower documents", Hindenburg alleged, "Sebi's Chairperson had stake in obscure offshore entities used in the Adani money siphoning scandal." It said Sebi was yet to take any action against other suspect Adani shareholders operated by wealth management firm India Infoline — EM Resurgent Fund and Emerging India Focus Funds.

Hindenburg alleged that Buch had ensured that accounts with ties to Adani “be registered solely in the name of Dhaval Buch”, her husband, two weeks before her appointment as Sebi Whole Time Member, and had subsequently redeemed the funds “through her husband’s name”.

“Despite disclaiming control, a private email she sent a year into her Sebi term (in 2018) shows she redeemed stakes in the funds through her husband’s name...,” Hindenburg has alleged.

How has the Sebi chairperson responded to the allegations?

Madhabi Puri Buch and Dhaval Buch have said their investment in the offshore funds mentioned by Hindenburg were made in 2015 when they were “private citizens” living in Singapore. The investment was made “almost 2 years before Madhabi joined Sebi...as a Whole Time Member”, they have said.

“The decision to invest in this fund was because the Chief Investment Officer, Anil Ahuja, is Dhaval’s childhood friend from school and IIT Delhi and, being an ex-employee of Citibank, JP Morgan and 3i Group plc, had many decades of a strong investing career. The fact that these were the drivers of the investment decision is borne out by the fact that when, in 2018, Ahuja left his position as CIO of the fund, we redeemed the investment in that fund,” the Buchs have said.

From 2011 to March 2017, Madhabi lived and worked from Singapore, initially as an employee of a private equity firm and subsequently as a consultant. The two consulting companies she set up, one each in India and Singapore, became dormant on her appointment at Sebi. These companies (and her shareholding in them) were explicitly part of her disclosures to Sebi, they have said.

What position has Sebi taken?

The regulator defended Buch. She has from time to time made relevant disclosures required in terms of holdings of securities and their transfers, Sebi said. “Chairperson has also recused herself in matters involving potential conflicts of interest,” it said.

Relevance: GS Prelims; Economics

Source: Indian Express and The Hindu

7. A change in India’s power export rules

Introduction

On August 14, Reuters reported an amendment to India’s power export rules. The change allows Indian power exporters to reroute their output to Indian grids if there is a delay in payments from partner countries, primarily as a safeguard against political risks in Bangladesh. Despite this amendment, Adani Power has assured that its existing contract with Bangladesh remains unaffected.

The Godda Project

Adani Power's subsidiary in Jharkhand supplies 1,496 megawatts of power to Bangladesh from the Godda ultra-supercritical thermal power plant. This is under a 25-year Power Purchase Agreement (PPA) with the Bangladesh Power Development Board (BPDB), signed in November 2017. The Godda plant is India's first transnational power project dedicated entirely to another nation, contributing about 6% of Bangladesh's total power capacity.



Criticisms of the Project

Criticism of the project centers on the use of imported coal from Australia, which raises costs. The Institute for Energy Economics and Financial Analysis (IEEFA) noted that the PPA allows Adani Power to pass the high costs of coal importation and electricity transmission onto Bangladesh. There have been calls from Bangladesh for a revision of the PPA, particularly concerning the high coal prices and charges, which are deemed excessive by local standards.

Bangladesh's Dependence on Power Imports

Despite significant progress in expanding electricity access, Bangladesh faces fuel and gas supply constraints that limit the full utilization of its power plants. The country also deals with overcapacity issues, having an installed generation capacity much higher than its peak usage. Consequently, Bangladesh continues to rely on power imports to meet its needs, especially during periods of energy crises.

Current Situation and Impact

The regulatory change in India's power export rules gives greater flexibility to exporters by allowing them to access the domestic market, reducing dependency on external markets. Delays in payments from Bangladesh have been common, and the recent amendment allows for adjustments in response to these delays. However, experts suggest that even if power supplies from India are halted temporarily, the impact on Bangladesh would be short-term, lasting only 2 to 3 days.

Relevance: GS Prelims; Economics

Source: The Hindu

8. RHFL fraud: Why has Sebi fined Anil Ambani and banned him from the market?

Why in News?

Securities markets regulator Securities and Exchange Board of India (Sebi) has banned ADAG chairman Anil Ambani and 24 other entities, including former key managerial personnel

(KMPs) of Reliance Home Finance Ltd (RHFL), from the securities market for five years for diversion of funds from the company.



Sebi has also slapped a Rs 25 crore fine on Ambani for orchestrating a fraudulent scheme that adversely affected RHFL's stakeholders, as well as confidence in the integrity of governance structures in regulated financial sector entities. The total penalty imposed on Ambani and the other 24 entities works out to more than Rs 625 crore.

The RHFL case

Sebi opened an investigation into RHFL, a non-banking finance company (NBFC) focused on housing loans, loans against property, and construction finance after receiving multiple complaints/ reports of alleged diversion or siphoning of funds within the company.

The major promoter of RHFL was Reliance Capital Ltd (RCL), with a shareholding of 47.91%. Ambani was the promoter and non-executive and non-independent director of RCL during FY2018-19.

Sebi found that loans extended by RHFL to corporates increased from Rs 3,742.60 crore in 2017-18 to Rs 8,670.80 crore in 2018-19. It found that through FY2018-19, RHFL disbursed a series of large general purpose working capital (GPC) loans to nondescript borrowers with extremely weak financials.

These borrowers had negative or negligible net worth, profits, assets, cash flows, and businesses. Inexplicably, no collateral or security or assurance was recorded while disbursing these loans, Sebi has said in its detailed, 222-page order.

The order has noted that as per information submitted by RHFL, the company had disbursed 97 GPC loans amounting to Rs 8,470.65 crore to 45 borrower entities during FY2018-19. An analysis of 70 loan applications for GPC loans worth Rs 6,187 crore showed that as many as 62 applications were approved on the same date and, in 27 cases, the loan too, was disbursed to the account of the borrower entity on the date of application.

Sebi's observations

Even though around half the assets of RHFL as of March 31, 2019 were in the form of GPC loans disbursed to dubious and credit-unworthy entities, RHFL's FY18-19 financials projected a very low Expected Credit Loss (ECL), the Sebi order says. ECL is a bank's internal estimate of anticipated future losses on a loan exposure due to default, which is expected to occur during the normal course of business.

In approving the GPC loans, in many cases, RHFL inexplicably, repeatedly, and widely deviated from standard credit due diligence and processes, Sebi has found.

The transfer of monies, structured as GPC loans, were directly or indirectly made to entities that were related to the Reliance ADA Group, the order says.

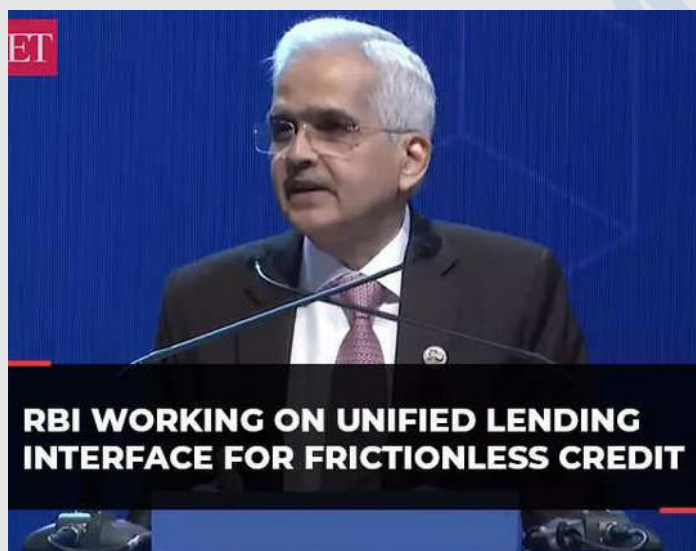
Relevance: GS Prelims & Mains Paper III; Economics

Source: Indian Express

9. RBI to launch Unified Lending Interface: What is it and how will it benefit borrowers

Why in News?

Reserve Bank of India (RBI) Governor Shaktikanta Das recently said that a nationwide launch of the Unified Lending Interface (ULI) will happen in due course. Similar to Unified Payment Interface (UPI), which has revolutionised the retail payment system in the country, ULI will transform the lending landscape.



What has RBI Governor announced?

In August last year, the RBI launched a pilot project for a public tech platform for frictionless credit. It is aimed to bring about efficiency in the lending process in terms of reduction of costs, quicker disbursement, and scalability.

The RBI Governor recently proposed to call the tech platform for frictionless credit as Unified Lending Interface (ULI). He said just like UPI transformed the payments

ecosystem, he expects that ULI will play a similar role in transforming the lending space in the country.

What is Unified Lending Interface?

With rapid progress in digitalisation, India has embraced the concept of digital public infrastructure which encourages banks, NBFCs, fintech companies and start-ups to create and provide innovative solutions in payments, credit, and other financial activities.

For digital credit delivery, the data required for credit appraisal are available with different entities like Central and State governments, account aggregators, banks, credit information companies and digital identity authorities. However, these data sets are in separate systems, creating hindrance in frictionless and timely delivery of rule-based lending.

The RBI Governor said that ULI platform will facilitate a seamless and consent-based flow of digital information, including land records of various states, from multiple data service providers to lenders. It will cut down the time taken for credit appraisal, especially for smaller and rural borrowers.

He said that the ULI architecture has common and standardised APIs (Application Programming Interface), designed for a 'plug and play' approach to ensure digital access to information from diverse sources.

The platform will reduce the complexity of multiple technical integrations, and will enable borrowers to get the benefit of seamless delivery of credit, and quicker turnaround time without requiring extensive documentation.

What is Unified Payment Interface?

Unified Payments Interface or UPI is a real-time payment system launched in India in April 2016 by the National Payments Corporation of India (NPCI). It is a system that powers multiple bank accounts into a single mobile application (of any participating bank), merging several banking features, seamless fund routing & merchant payments into one hood.

UPI also caters to the "Peer to Peer" collect request which can be scheduled and paid as per requirement and convenience. It helps in immediate money transfer through mobile device round the clock. It allows a single mobile application for accessing different bank accounts.

UPI has played a significant role in the growth of retail digital payments in the country. While initial participants on the UPI platform were banks, non-bank third-party app providers and use of QR (quick-response) codes have all combined in popularising UPI.

It has emerged as a robust, cost effective and portable retail payment system and is attracting active interest across the globe.

Relevance: GS Prelims & Mains Paper III; Economics

Source: Indian Express

10. Conflict of Interest in SEBI Chairperson's Role

Why in News?

A recent report by Hindenburg Research has brought to light serious conflicts of interest involving the chairperson of the Securities and Exchange Board of India (SEBI). This has raised concerns about the integrity of the regulatory body. Two responses were issued on August 11: an unsigned statement from SEBI and a joint statement by Madhabi and Dhaval Buch, confirming the accuracy of Hindenburg's claims. The Central government, responsible for appointing SEBI's members, must provide explanations to stakeholders.

Government Awareness and Disclosure

Hindenburg revealed that in 2015, Madhabi and Dhaval Buch invested over ₹5.6 crore in a Bermuda-based fund through IIFL Wealth & Asset Management Limited. The investment was managed by Anil Ahuja, a childhood friend of Dhaval Buch and a director of Adani Enterprises at the time. This raises questions about whether the Central government was informed of this investment before Madhabi Buch's appointment to SEBI and if the Board approved her holding in the fund after her appointment.

Impact on the Adani Group Investigation

These revelations are significant for SEBI's ongoing investigation into Adani group companies and the Supreme Court's January 2024 order. The Court ruled against transferring the investigation to a Special Investigation Team (SIT) or the CBI, citing insufficient grounds. However, the Expert Committee noted that regulatory changes in 2018 and 2019 hindered the identification of ultimate beneficial owners of offshore funds. SEBI's approval of the Adani group's acquisitions during Madhabi Buch's tenure as chairperson and her prior investment connections raise concerns about potential bias and the need for an independent probe.

Other Conflicts of Interest

Hindenburg also flagged concerns about Madhabi Buch's shareholding in two consulting firms, Agora Advisory and Agora Partners, which she claims became dormant after her SEBI appointment. However, records show that Agora Advisory Private Limited, where she owns 99% of shares, was still active as of March 2024 and generated significant revenue during her tenure at SEBI. This dual role violates SEBI's Code on Conflict of Interests, implicating not only the chairperson but also the Board and its appointing authority. Additionally, SEBI's promotion of Real Estate Investment Funds (REITs), benefiting her husband's employer, Blackstone, suggests further conflicts.

Call for Systemic Reforms

The conflicts of interest involving the SEBI chairperson are evident from her own statements and actions. SEBI's attempt to discredit Hindenburg's revelations by citing the latter's conflict of interest as a short-seller does not diminish the validity of the concerns raised. Addressing these issues is crucial for restoring the credibility of SEBI.

With a growing number of retail investors participating in India's securities market, a compromised regulator poses significant risks to financial security and stability.

Relevance: GS Prelims & Mains Paper III; Economics

Source: The Hindu

11. 10 years of Jan Dhan: How the scheme has had a transformative impact on financial, banking sector

Why in News?

As the Pradhan Mantri Jan Dhan Yojana (PMJDY) completed 10 years, Prime Minister Narendra Modi hailed the "momentous" achievement of the scheme that has been "paramount in

boosting financial inclusion and giving dignity to crores of people, especially women, youth, and the marginalised communities”.

The PMJDY was launched on August 28, 2014, as a national mission for financial inclusion. Over the last decade, 53.13 crore Jan Dhan accounts have been opened, with 29.56 crore women beneficiaries, more than the population of the European Union, and almost the same as the population of the United States respectively, the government said.

I-Day announcement

The PMJDY was one of the early initiatives of the Modi government. The Prime Minister announced the scheme in his first Independence Day address on August 15, 2014.

“I have come here with a pledge to launch a scheme on this festival of freedom. It will be called Pradhan Mantri Jan Dhan Yojana,” Modi said from the ramparts of the Red Fort.

“I wish to connect the poorest citizens of the country with the facility of bank accounts through this yojana... This yojana will open the window. ...An account holder under Pradhan Mantri Jan Dhan Yojana will be given a debit card. An insurance of one lakh rupees will be guaranteed with that debit card for each poor family...,” he said.

Features of the Jan Dhan Yojana

The scheme was launched on August 28. Banks organised 77,892 camps around the country, and opened about 1.8 crore accounts. Guinness World Records recognised the achievement: “The most bank accounts opened in 1 week as part of a financial inclusion campaign is 18,096,130 and was achieved by Department of Financial Services, Government of India from 23 to 29 August 2014.”

The launch of PMJDY provided an unprecedented boost to the government’s campaign for financial inclusion, at a scale never seen before. Earlier governments too, had taken initiatives for financial inclusion — for instance, the previous UPA government began a scheme of no-frills bank accounts for people who did not have an account — but they had failed to gain traction.

* The foremost objective of the PMJDY was to open a Basic Savings Bank Account for unbanked individuals. There was no requirement to maintain any minimum balance in PMJDY accounts, and these accounts earned interest on deposits like regular accounts.

* PMJDY account-holders were given RuPay debit cards.

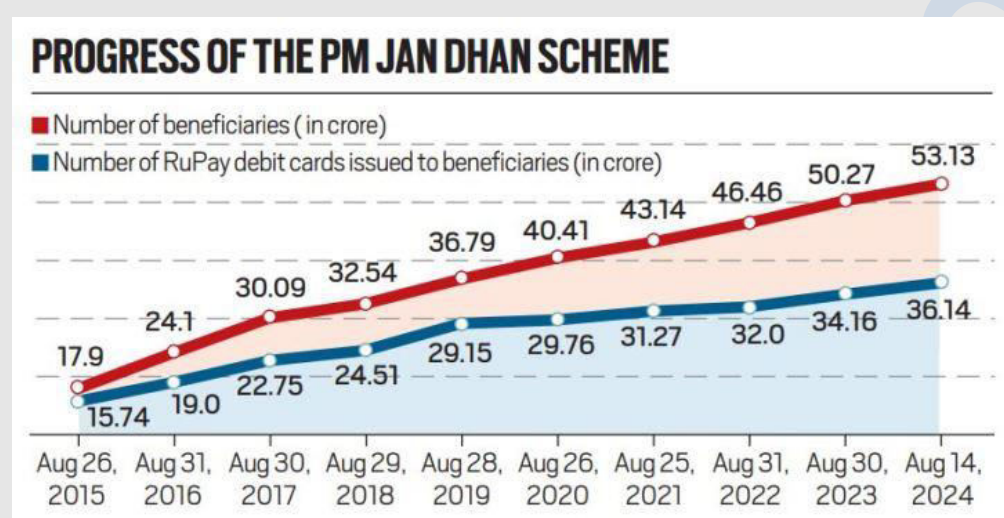
* An accident insurance cover of Rs 1 lakh was available with RuPay cards issued to PMJDY account holders. The cover was enhanced to Rs 2 lakh for new PMJDY accounts opened after August 28, 2018.

* Eligible PMJDY account holders can avail overdraft (OD) facility up to Rs 10,000.

* PMJDY accounts are also eligible for Direct Benefit Transfers (DBT), Pradhan Mantri Jeevan Jyoti Bima Yojana (PMJJBY), Pradhan Mantri Suraksha Bima Yojana (PMSBY), Atal Pension Yojana (APY), and the Micro Units Development & Refinance Agency Bank (MUDRA) scheme.

Progress of the scheme

As of August 14, 2024, the number of PMJDY accounts stands at 53.13 crore — including 35.37 crore accounts in rural and semi-urban areas, and 17.76 crore accounts in urban areas — and total deposits at Rs 2,31,235.97 crore. More than half the PMJDY accounts (29.56 crore) are in the names of women. A total 36.14 crore RuPay debit cards have been issued to PMJDY account holders.



The largest share of PMJDY accounts is with public sector banks (41.42 crore accounts until August 14), followed by Regional Rural Banks (9.89 crore accounts), private sector banks (1.64 crore), and Rural Cooperative Banks (0.19 crore).

A statewise analysis of PMJDY accounts shows the most accounts have been opened in Uttar Pradesh, the most populous state (9.45 crore), and the fewest in Lakshadweep (only 9,256 accounts). There are 15 states apart from UP with more than 1 crore PMJDY bank accounts: Bihar, West Bengal, Madhya Pradesh, Rajasthan, Maharashtra, Assam, Odisha, Karnataka, Jharkhand, Gujarat, Chhattisgarh, Tamil Nadu, Andhra Pradesh, Telangana, and Haryana.

Impact of Jan Dhan Yojana

The scheme, which is one of the components of the JAM trinity of PMJDY, Aadhaar, and mobile, has had a transformative impact on the financial and banking sectors of the economy.

* First, the opening of more than half a billion bank accounts has fuelled demand for banking services, encouraging commercial banks to expand their infrastructure in recent years.

The number of branches of scheduled commercial banks in the country has increased by 46 per cent to 1,54,983 in 2023 from 1,05,992 in 2013. Of the total 1.54 lakh branches, 35 per cent

are in rural areas, 28 per cent in semi-urban areas, 18 per cent in urban areas, and 19 per cent in metropolitan areas.

The number of ATMs has increased by 30 per cent from 1,66,894 at the end of June 2014 to 2,16,914 in 2024. The number of Points of Sale (POS) has increased from 10.88 lakh to 89.67 lakh during the last 10 years.

* Second, the rollout of payment solutions such as UPI — launched two years after the PMJDY — has eased and increased banking transactions.

The Reserve Bank of India, in its Report on Currency and Finance released on June 29, 2024, noted, "India's financial inclusion initiatives received a fillip when PMJDY was launched in 2014... The digital technological revolution widened the usability of bank accounts from a traditional deposit or credit account to a payment intermediary. As per the World Bank's Findex database, 78 per cent of Indian adults (population with 15 years or more of age) had a bank account in 2021 as compared to 53 per cent in 2014."

* Third, PMJDY accounts have become the bedrock of the government's DBT architecture. While this has ensured faster delivery of benefits to the poor, the JAM trinity has played a crucial role in improving efficiency by weeding out ineligible or fake beneficiaries.

In fact, DBT and other governance reforms resulted in a gain of Rs 3.48 lakh crore in the implementation of government schemes including MG-NREGS and PM-Kisan until March 2023, according to data from the RBI's Report on Currency and Finance.

Relevance: GS Prelims & Mains Paper III; Economics

Source: Indian Express

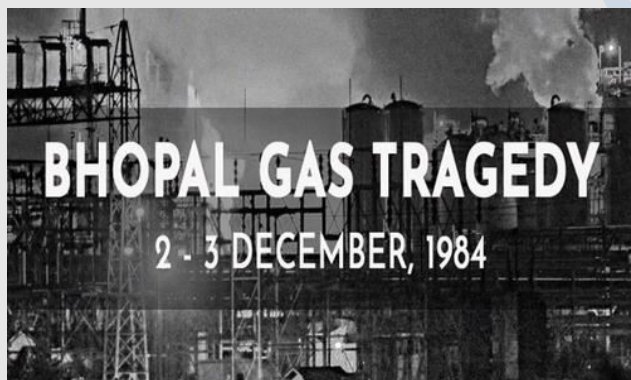
1. Why Madhya Pradesh will begin disposal of toxic waste nearly 40 years after the Bhopal Gas Tragedy

Why in News?

Nearly 40 years after Bhopal gas tragedy, the Madhya Pradesh state government will finally move ahead with its plan to incinerate 337 Metric Tons (MT) of toxic waste from the Union Carbide facility. On March 4, the central government earmarked Rs 126 crore for the purpose.

What was the Bhopal Gas Tragedy?

One of the biggest industrial disasters ever unfolded on the night of December 2, 1984, in Bhopal, Madhya Pradesh. Highly toxic Methyl Isocyanate (MIC) gas leaked from a pesticide plant owned by Union Carbide India Limited (UCIL) located on the outskirts of the city, killing around 5,000 people.



The survivors have been afflicted by ailments ranging from skin disease to detrimental reproductive health in women and congenital health issues in children born to those exposed to the gas.

The scale of the environmental pollution has been massive — water sources surrounding the factory were contaminated and many hand pumps

were sealed.

The company at the centre of it all, UCIL, a subsidiary of the US-based Union Carbide Corporation (UCC) and now a part of Dow Chemicals, has been held responsible by the survivors who have demanded just compensation for their suffering. The Supreme Court in 2023 dismissed a curative petition by the central government seeking additional compensation from UCC's successor firms.

Why has it taken four decades to begin waste disposal?

A PIL was filed by activist Alok Pratap Singh in the Madhya Pradesh High Court in 2004 to hold Dow Chemicals responsible for the pollution at the site and seek immediate action on the clean-up. The court instituted a task force chaired by the Secretary, Department of Chemicals and Petrochemicals, Government of India.

Central Pollution Control Board (CPCB) experts in 2005 identified a world-class incinerator owned by Bharuch Enviro-Infrastructure Limited (BEIL) in Ankleshwar, Gujarat, for safely disposing of the waste. Following protests in Gujarat in 2007 and the eventual intervention of the Supreme Court in 2009, this was dropped.

The task force identified other Treatment, Storage, and Disposal Facility (TSDF) sites including Dungigal in Hyderabad and Taloja in Mumbai. In 2010, the Supreme Court authorised the incineration of 346MT of waste at the TSDF in Pithampur, Madhya Pradesh after a successful trial run.

This decision was challenged two years later by the state, and it filed a Special Leave Petition in the Supreme Court in 2012 arguing that the "facility is not technically sound for incineration of the Bhopal gas toxic waste which is more hazardous in comparison to industrial waste."

Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH (GIZ), which had submitted a proposal costing Rs 24.56 crores to dispose of the waste in Germany, withdrew the same in 2012 following widespread opposition from their citizens.

In 2015, the centre conducted a trial run at the Pithampur TSDF but had to suspend further plans following opposition from residents. Without consensus between the centre and the state, no action was taken for seven years.

On March 4, 2024, the central government disbursed Rs 126 crore to dispose of the waste after much prodding from the courts.

What is the plan for disposing of the toxic waste?

According to the proposal, the Madhya Pradesh Department of Bhopal Gas Tragedy Relief and Rehabilitation (BGTRR) will oversee the disposal of the toxic waste from the Union Carbide facility at the incinerator of the Treatment Storage Disposal Facility in Pithampur, Indore, from July 2024.

The project is expected to be executed in 180 days. In the first 20 days, the waste will be transported from the contaminated site to the disposal site in packed drums. Later, this waste is shifted from storage to a blending shed where it is mixed with regents and then packed into small bags weighing 3-9 kg.

The actual incineration will happen only on the 76th day after all the reports related to the incineration is sent to multiple departments for their approval before the actual disposal begins to ensure the air quality doesn't deteriorate and the incineration takes place as per standard operating procedures.

The procedure will cost Rs. 126 crore, about five times the offer of Rs. 24.56 crore made by GIZ in 2012.

Relevance: GS Prelims & Mains Paper III; Environment

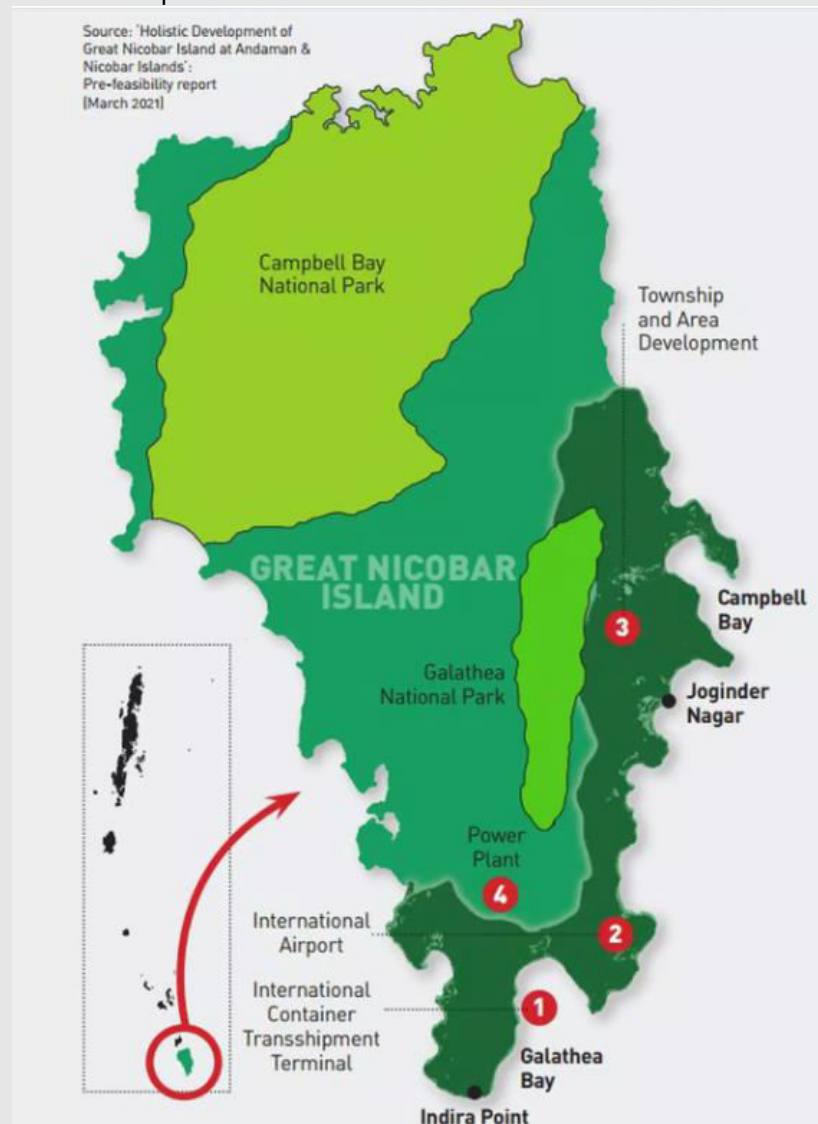
Source: Indian Express

2. Legal Challenges to the Great Nicobar Infrastructure Project

Overview of the Project

The Central government's Rs 72,000 crore Great Nicobar Island (GNI) infrastructure project includes the construction of:

- An airport for civilian and defense use
- An international container transshipment terminal
- A township



Legal Challenges Faced

National Green Tribunal (NGT)

The project has faced legal challenges in the National Green Tribunal (NGT) and the Calcutta High Court, which has jurisdiction over the Andaman and Nicobar Islands.

NGT Revisits Green Clearance

In 2023, the NGT formed a high-powered committee (HPC) to revisit the project's green clearance. The Andaman and Nicobar Islands Integrated Development Corporation Limited

(ANIIDCO), the project's implementing agency, submitted the HPC's conclusions, stating that the proposed transshipment port does not fall in the Island Coastal Regulation Zone-IA (ICRZ-IA), where ports are prohibited.

Reasons for Revisiting Green Clearance

In 2022, environmental activist Ashish Kothari and the non-profit Conservation Action Trust (CAT) challenged the environmental and Coastal Regulation Zone clearances granted to the GNI project. The challenges were based on:

- Irreversible damage to biodiversity
- Inadequate environmental impact studies
- Opacity in the clearance process
- Impact on Shompen and Nicobarese tribal communities: Shompens are hunter-gatherers, while the Nicobarese people's ancestral lands are likely to be affected by the project.
- Non-compliance with due process in granting statutory clearances
- Conflict of interest within ANIIDCO

NGT's Decision on the Appeals

A special six-member bench of the NGT, headed by then-chairperson Adarsh Kumar Goel, ruled not to interfere with the forest clearance, emphasizing the need for development and national security. However, the bench highlighted "unanswered deficiencies" related to coral conservation, the port's location in a prohibited area, and limited baseline data collection. An HPC was formed to address these issues and report within two months, with a directive that no irreversible work should proceed until the report's submission.

Pending Petitions Before the NGT

In May, Ashish Kothari filed two new petitions before the NGT's eastern bench:

1. Alleging violation of the 2019 ICRZ notification, seeking to exclude parts of the project from ecologically sensitive coastal areas.
2. Arguing that the MoEFCC was in contempt of the NGT's April 2023 order, citing a lack of communication about the HPC's proceedings and no orders passed after revisiting the clearance.

Legal Challenges at the Calcutta High Court

In 2023, CAT filed a writ petition before the Calcutta High Court against the NGT's April 2023 order, arguing:

- The NGT special bench lacked jurisdiction over the forest clearance challenge.
- The case should have been handled by the NGT's eastern zone.
- The NGT did not properly evaluate the project clearances and inappropriately delegated its decision to an HPC.
- The HPC's formation to revisit the project's environmental clearance was a delegation of NGT's judicial functions, which contravenes Supreme Court orders.

Relevance: GS Prelims & Mains Paper III; Environment

3. How a win-win tech promises to kill weeds in rice and wheat fields, remove need for stubble-burning

Addressing Agricultural Challenges

The goal of cultivating rice with less water and reducing the need for stubble-burning, along with growing wheat without ploughing or land preparation, has been pursued by agricultural scientists and policymakers to lower the ecological footprint of these major cereal crops.

Breakthrough with Herbicide-Tolerant Varieties

New Rice and Wheat Varieties

- **Rice Varieties:** Two basmati varieties (Pusa Basmati 1979 and Pusa Basmati 1985) and two non-basmati rice hybrids (Sava 134 and Sava 127) have been developed by the Indian Agricultural Research Institute (IARI) and Savannah Seeds Pvt Ltd.
- **Wheat Varieties:** Mahyco Pvt Ltd plans to launch wheat varieties called Goal and Mukut in the upcoming rabi season.

Technology Used

These new varieties contain a mutated acetolactate synthase (ALS) gene, enabling the use of the herbicide Imazethapyr to control various weeds and grasses.

Current Weed Control Methods

Rice Cultivation

- **Traditional Method:** Paddy seeds are raised in nurseries, transplanted into puddled fields, and irrigated frequently to prevent weed growth.
- **Water Usage:** This method requires up to 30 irrigations, consuming more than 200,000 litres of water per acre.

Wheat Cultivation

- **Traditional Method:** Involves burning paddy stubble, ploughing the field multiple times, and irrigating before sowing wheat seeds.

Herbicide-Tolerant Solutions

Direct Seeded Rice (DSR) and Zero-Tillage (ZT) Wheat

- **DSR:** Seeds are sown directly, eliminating the need for nurseries, puddling, transplanting, and field flooding. This method saves approximately 30% of water and reduces labor and fuel costs.

- **ZT Wheat:** Allows wheat sowing without burning stubble or preparing the land, using machinery like the Super Seeder or Happy Seeder. This saves costs and time.

Application of Imazethapyr

Imazethapyr is sprayed on the crops along with Metribuzin, a selective herbicide already used in wheat, when the crop is about 25 days old.

Genetic Modification Status

Non-GM Crops

These herbicide-tolerant varieties are not genetically modified (GM) crops. They contain a mutated ALS gene, altered using chemical mutagens or radiation, allowing them to tolerate Imazethapyr.

Current Adoption and Benefits

Current DSR Practices

DSR cultivation currently uses Pendimethalin and Bispyribac-sodium herbicides, which are not effective against all weeds. Imazethapyr, a broad-spectrum herbicide, offers wider weed control and is safer for humans and mammals.

Adoption and Coverage

- **IARI Distribution:** 200 quintals of seeds for Imazethapyr-tolerant basmati varieties, covering 2,500 acres.
- **Savannah Seeds:** Planted on 15,000 acres across several Indian states.

Benefits

The adoption of DSR and ZT technologies reduces water and fuel consumption, and prevents environmental pollution from crop residue burning. Additionally, the non-GM status of these crops may facilitate broader acceptance.

Relevance: GS Prelims & Mains Paper III; Environment

Source: Indian Express

4. Bill to amend Disaster Management Act

Why in News?

Last week, the government introduced a Bill in Parliament seeking to amend the Disaster Management Act, 2005. It proposes to make important changes in the Act, aimed mainly at improving the operational efficiencies in responding to a natural disaster.

The Bill seeks to significantly expand the role and responsibilities of the National Disaster Management Authority (NDMA), especially in guiding state governments and organs of the Centre in dealing with disasters.

However, it misses the opportunity to upgrade and strengthen the institutional status of NDMA. This would have empowered the body to coordinate better with state agencies, and provided it with more financial and human resources.



Significance of the DM Act

The DM Act was enacted in the aftermath of the devastating 2004 tsunami — the idea for such legislation was in the works at least since the 1998 Odisha super cyclone.

The Act led to the creation of the NDMA, SDMA at the state level, a National Disaster Response Force (NDRF), and a National Institute of Disaster Management (NIDM) — an institute meant for disaster-related research, training, awareness, and capacity building. The Act was followed by a National Disaster Management Policy in 2009 and a National Disaster Management Plan in 2016.

This institutional framework has served India well in dealing with natural disasters. Over the years, it has saved thousands of lives, and provided relief, rescue and rehabilitation services. Growing incidents of natural disasters, exacerbated by climate change, have made agencies such as NDMA more important than ever, requiring the assignment of greater responsibilities and resources.

The proposed amendments

The amendment Bill acknowledges this fact and proposes to make a few important changes to make the Act more effective.

Urban Disaster Management Authorities: The institutional structure for disaster management extends to the district level, and district disaster management authorities are already functional. However, the Bill recognises the special requirements of large metropolitan cities that often comprise multiple districts. In such cities — all state capitals and cities with a municipal corporation — would now also have an Urban Disaster Management Authority, headed by the municipal commissioner. This can help in having a unified and coordinated approach towards city-level disasters such as urban flooding.

SDRF: Although most states have raised their disaster relief forces on the lines of NDRF over the years, an SDRF is not mandated in the 2005 Act. The size and capacity of the SDRFs in the states vary significantly. The Bill proposes to make it mandatory for every state to raise and maintain an SDRF.

National Crisis Management Committee: NCMC, headed by the Cabinet Secretary, is already functional for handling all kinds of national emergencies, including disasters. The Bill gives legal status to the NCMC, making it the nodal body to deal with disasters with "serious or national ramifications".

Enhanced role of NDMA: The role and responsibilities of the NDMA are proposed to be significantly expanded. It has been asked to periodically take stock of the entire range of disaster risks to the country, including risks from emerging disasters.

Disaster Databases: The NDMA is also being asked to create and maintain a national disaster database with information on the assessment of the disaster, fund allocation, expenditure, and preparedness and mitigation plans. The SDMA's will also need to create state-level disaster databases.

Compensations: The Bill proposes that the NDMA should recommend guidelines for minimum standards of relief to be provided to people affected by disasters. This includes a recommendation on compensation amounts in case of loss of lives, damage to homes and property, and loss of livelihoods.

Man-made disasters: The Bill seeks to include an important clarification about the definition of disasters. The original Act defined disasters as any "catastrophe, mishap, calamity or grave occurrence in any area, arising from natural or man-made causes...". The Bill says the phrase "man-made causes" does not include any law-and-order-related situation. Loss of lives, suffering, or property damage in a riot, for example, would not invoke provisions of this law. **Absence of vice-chairperson:** The NDMA is headed by the Prime Minister as chairperson. A vice-chairperson, in the rank of a Cabinet Minister, is supposed to be responsible for day-to-day functioning. The post of vice-chairperson, however, has been vacant for about a decade. The amendment Bill legitimises this position by allowing for the day-to-day functioning to be carried out by any Member designated by the chairperson or the vice-chairperson.

Unaddressed issues in Bill

Considering its growing role and importance, it has been argued that NDMA be given more powers and elevated to the status of a government department, if not a full-fledged ministry in itself. The NDMA now remains active throughout the year, and has to regularly coordinate with state governments and their agencies. Currently, this is done through the Home Ministry, which is the nodal ministry for the NDMA.

Without a vice-chairperson, the NDMA has been deprived of not just leadership but also the political heft necessary to deal with states and other central government agencies.

The NDMA does not have any administrative financial powers. Routing every small decision through the Home Ministry is an inefficient and time-consuming process. The body is also severely short-staffed at the top, with just three members functioning. It used to once have six to seven members, each in charge of a specific type of disaster.

The amendment Bill ignores these deficiencies for the time being. Some of the other provisions are also likely to face opposition, particularly the ones that deal with changes at the state level.

Relevance: GS Prelims & Mains Paper III; Disaster Management

Source: The Indian Express

5. What's causing Antarctica's deep-winter heatwave, what could be its fallout?

Why in News?

For the second time in two years, a record-breaking heatwave is sweeping through Antarctica at the height of its winter season. Ground temperatures have been 10 degrees Celsius higher than normal on average since mid-July, and up to 28 degrees higher on certain days.

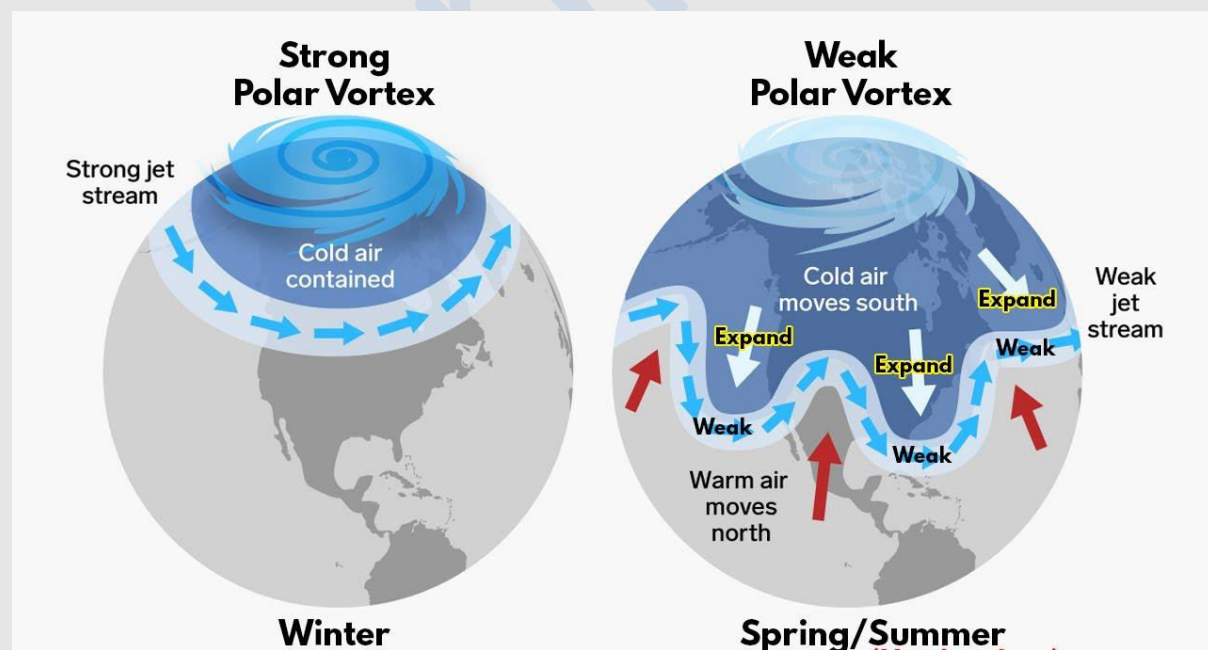
Reasons for heatwave

1. Weakening of Polar Vortex: Scientists believe that the higher temperatures are mainly a consequence of the weakening of the polar vortex, the band of cold air and low-pressure systems that spins around the poles of the Earth in the stratosphere.

The vortex usually remains strong and stable during winter in the southern hemisphere — keeping cold air trapped over Antarctica and not letting hot air come in — but it has been disturbed this year by large-scale atmospheric waves (periodic disturbances in the fields of atmospheric variables).

Due to this, the vortex released trapped cold air, and opened the door for warmer air to enter the region. As this warmer air travelled downwards from the upper atmosphere, it caused an increase in temperatures.

A weakened southern hemisphere vortex is a rare event that is only expected to occur once every two decades on average.



2. Reduction in Antarctic ice: Several other factors — including the reduction of the extent of the Antarctic sea ice — could also be at play. In June, the extent of Antarctic sea ice was the second-lowest ever for that time of year — a little more than the extent recorded in June 2023,

the lowest ever. Sea ice plays a crucial role in keeping temperatures down in the polar regions, as its bright, white surface reflects more sunlight (solar energy) back to space than liquid water. Sea ice also ensures that the air remains cool by acting as a barrier between the cold air and the relatively warmer water below.

The possible fallouts

1. Rise in level of oceans: Antarctica's hot winter will likely lead to further losses of the Antarctic Ice Sheet (the world's other major ice sheet is the Greenland Ice Sheet) that can potentially raise global sea levels by hundreds of feet.

The Antarctic Ice Sheet, a glacier covering 98% of the Antarctic continent, holds more than 60% of the world's total freshwater. If entirely melted, it can submerge coastal cities and reshape the world's map. A sea level rise of only a few feet will displace the roughly 230 million people who live within about 3 feet of the high tide line today, according to a report by the environmental organisation Antarctic and Southern Ocean Coalition.

2. Impact on global ocean circulation system: Rising temperatures will also impact the global ocean circulation system, which regulates climate by storing and transporting heat, carbon, nutrients, and freshwater around the world. A 2023 study published in the journal Nature showed that the melting ice in Antarctica is slowing down this circulation. The freshwater from melting ice reduces the salinity and density of the surface water and diminishes the downward flow to the ocean's bottom, the analysis said.

A slower global ocean circulation system will lead to oceans absorbing less heat and CO₂, intensify global warming, and increase the frequency and intensity of extreme weather events like floods and droughts.

Relevance: GS Prelims; Environment

Source: Indian Express

6. How Pyrocumulonimbus clouds are formed when wildfires spit storms, lightning

Why in News?

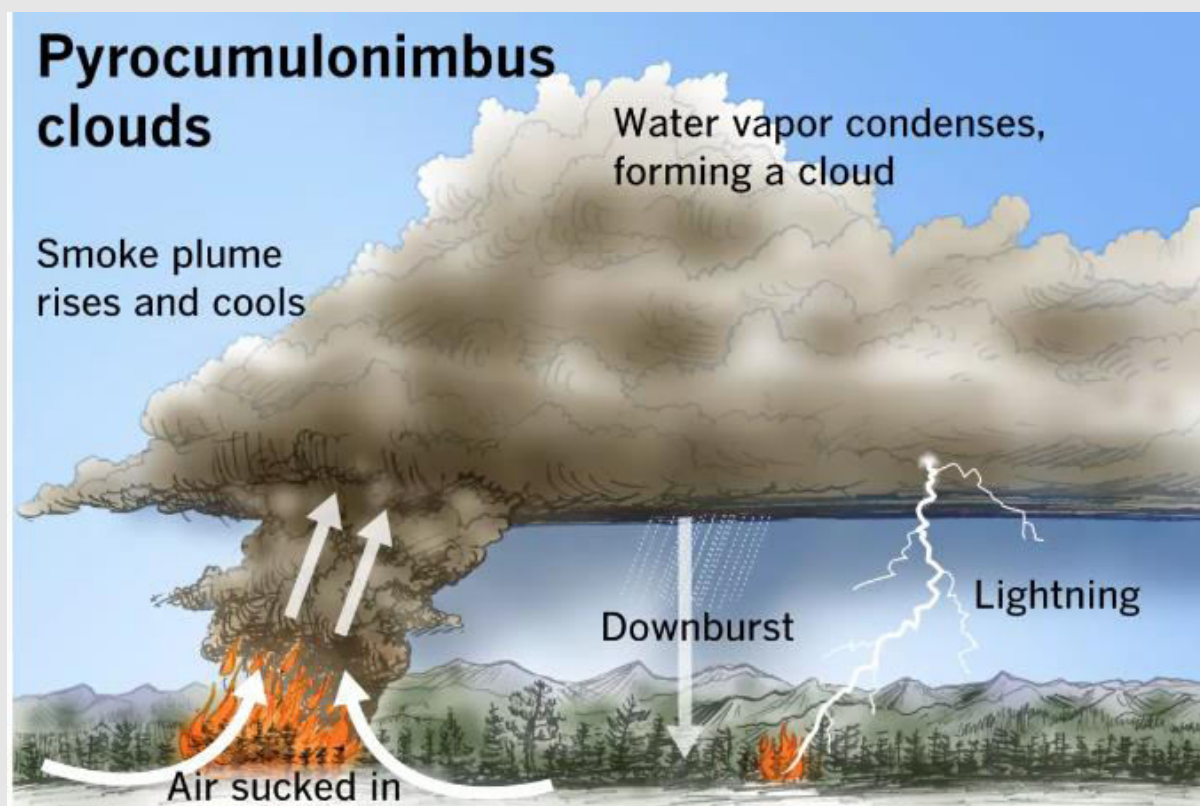
The wildfires currently raging in the United States and Canada are so intense that they have created 'pyrocumulonimbus' clouds, which have the potential to spit out thunder and spark more fires.

The development of these clouds has become more frequent in recent years. Before 2023, 102 pyrocumulonimbus were recorded globally in a single year on average — 50 of them were seen in Canada, according to a report published in the journal Nature. However, during last year's extreme wildfire season, 140 pyrocumulonimbus clouds were recorded in Canada alone.

How are Pyrocumulonimbus clouds formed?

Not every wildfire leads to the creation of pyrocumulonimbus clouds. They occur only when there is an extremely hot wildfire — volcanic eruptions can also lead to the formation of

pyrocumulonimbus clouds. For instance, these clouds were formed during the Australian bushfires of 2019-2020 when temperatures crossed 800 degrees Celsius.



The intense heat from the fire warms the surrounding air which moves upward into the atmosphere. As this hot and very buoyant air — carrying water vapour, smoke, and ash — rises, it expands and cools down. Once it is cool enough, water vapour condenses on ash, forming a grey or brown cloud. At this stage, the cloud is known as a pyrocumulus cloud, also known as 'fire cloud'. But if there is sufficient water vapour available and the upward movement of hot air intensifies, pyrocumulus clouds can evolve into a pyrocumulonimbus cloud. These clouds can reach heights of 50,000 feet and generate their own systems of thunderstorms.

Although pyrocumulonimbus clouds can produce lightning, they do not generate much rain. As a result, they can spark new wildfires many kilometres away from the main blaze. These clouds can also trigger strong winds that can make the spread of the wildfire faster and unpredictable.

Why are pyrocumulonimbus cloud events occurring more often?

The exact reason remains unclear as unlike in the case of other extreme weather events, the study of these clouds is relatively new. However, scientists believe that climate change could have a role to play in the increase of their frequency.

Studies have shown that with temperatures soaring across the world, wildfires are becoming more common and intense. This could be spiking the occurrence of pyrocumulonimbus clouds.

For the second time in two years, a record-breaking heatwave is sweeping through Antarctica at the height of its winter season. Ground temperatures have been 10 degrees Celsius higher than normal on average since mid-July, and up to 28 degrees higher on certain days.

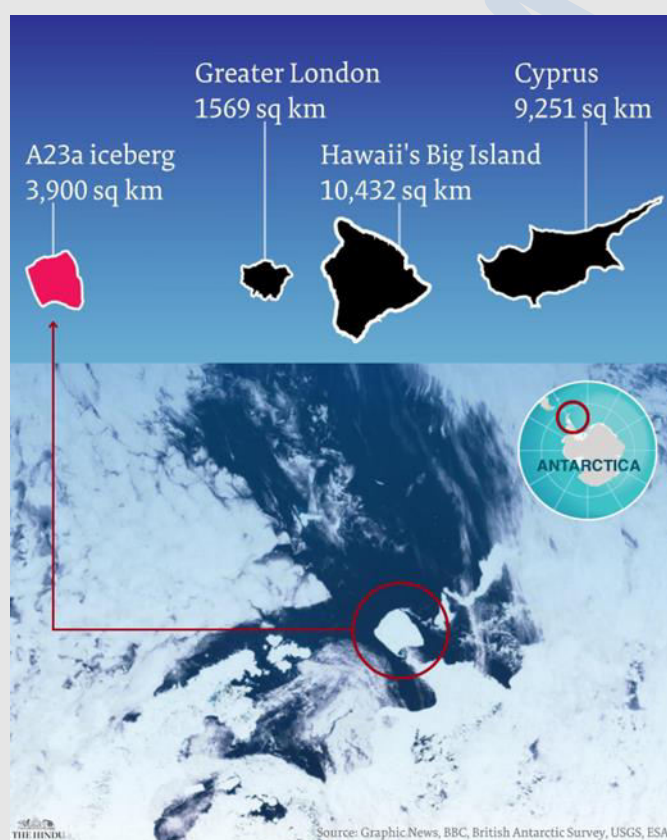
Relevance: GS Prelims; Environment
Source: Indian Express

7. After breaking free, why the world's largest iceberg is stuck spinning in circles

Why in News?

For more than 30 years, the world's largest iceberg was stuck in the Antarctic. Five times the size of New York City's land area and more than 1,000 feet deep, the mammoth piece of ice finally became loose in 2020 and began a slow drift toward the Southern Ocean.

Now, A23a, as it's known, is spinning in place. After leaving Antarctic waters, the iceberg got stuck in a vortex over a seamount, or an underwater mountain. Imagine a piece of ice about 1,500 square miles in area and as deep as the Empire State Building spinning slowly but steadily enough to fully rotate it on its head over the course of about 24 days.



Where is the A23 iceberg?

The iceberg is spinning near the South Orkney Islands, about 375 miles northeast of the Antarctic Peninsula, "maintaining a chill 15 degree rotation per day.

What exactly is the A23?

A23, which was even bigger than A23a, was one of three icebergs that broke off, or calved, from the Filchner Ice Shelf in 1986. At the time of the calving, A23 was home to a Soviet Union research center and researchers eventually had to abandon the base. A23a broke off later that year and hit bottom in the Weddell Sea, where it would remain for 34 more years.

In 2020, A23a finally freed itself, and in December, it began to move out of Antarctic waters on a long meander

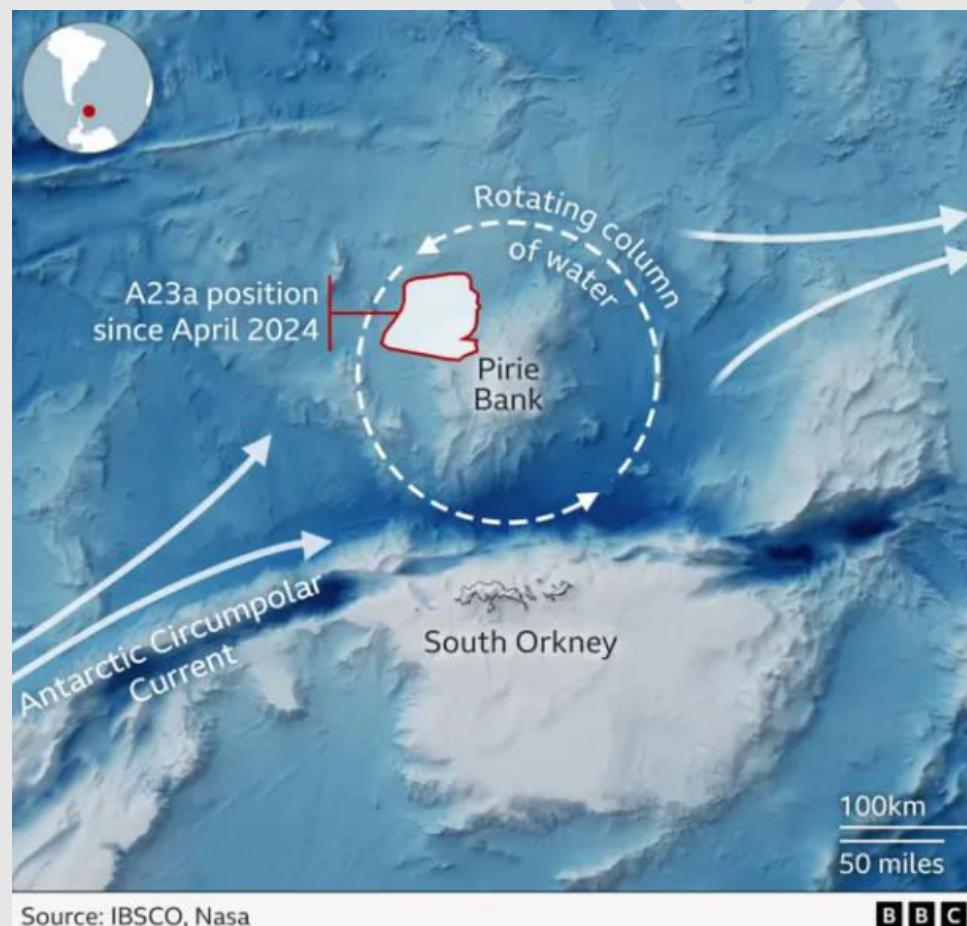
through the Southern Ocean.

Large Antarctic icebergs are designated by A, B, C and D depending on where in Antarctica they originate, and they receive a number only once they've reached a big enough size. Their sequential order shows how long A23a has topped the list of world's biggest icebergs: A76 calved in 2021, for instance, but melted two years later.

So why did the A23 begin 'spinning'?

The iceberg is in an area of the Southern Ocean known as Iceberg Alley, a popular spot for icebergs. Typically, large icebergs move through quickly and get sucked into the Antarctic Circumpolar Current, the largest ocean current in the world. The blocks of ice eventually get shot out eastward to warmer waters, where they begin to melt and disintegrate. Brearley described the transition as "a warm bath of water" only a couple of degrees above freezing.

Not A23a. Instead, the gigantic iceberg got caught in what's known as a Taylor column, a current that forms around seamounts. Standard flow diverges around the underwater mountain and creates a stagnant cylinder of fluids above the seamount, slowly rotating the water counterclockwise around the bump.



The bump A23a is swimming over is about 100 kilometers across (about 62 miles) and rises up from the deep sea floor to a height of about 1,000 meters (3,280 feet).

If A23a spends an extended time in the vortex, the iceberg could melt significantly and affect plankton and other organisms in the marine food chain in the area, Brearley said.

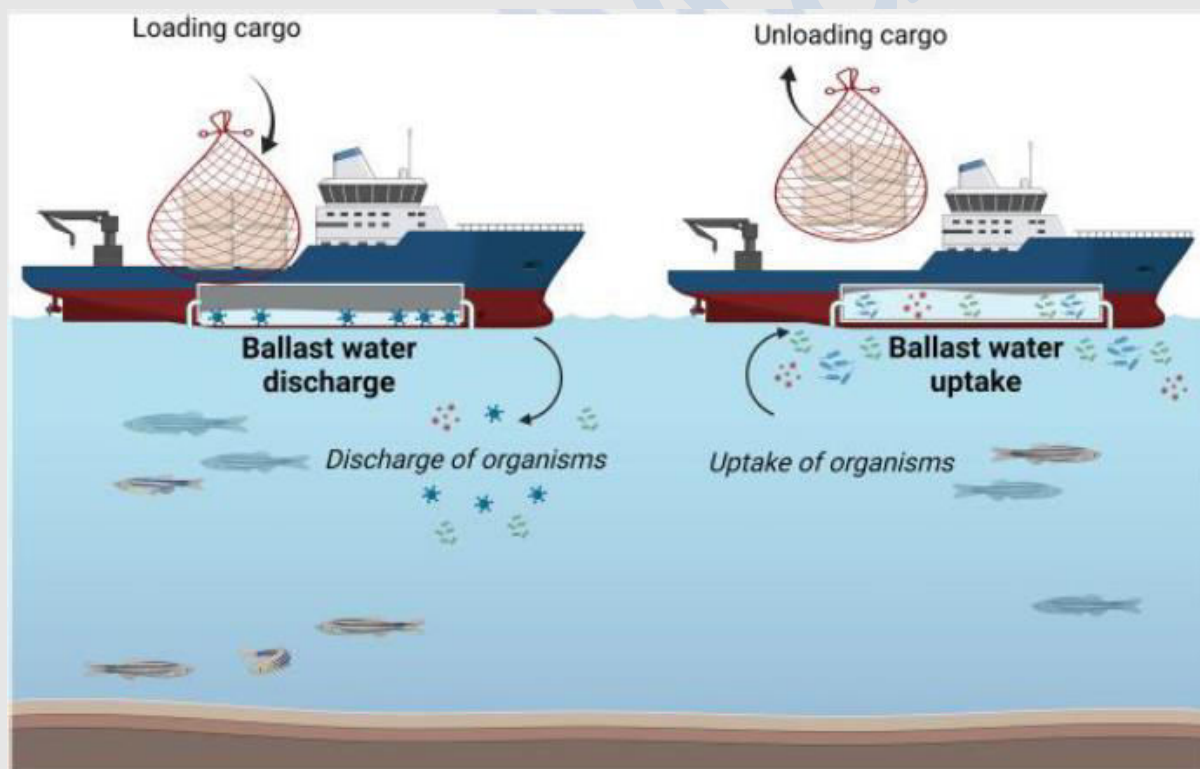
Relevance: GS Prelims; Environment

Source: Indian Express

8. How is ballast water facilitating the spread of invasive mussels on the coast near the Kamarajar Port?

Why in News?

The Tamil Nadu Water Resources Department (WRD) has informed the National Green Tribunal that it has sought ₹160 crore from the Kamarajar Port in Ennore, Tamil Nadu, to facilitate the removing of invasive mussels on the coast near the port in connection with an ongoing case on the proliferation of *Mytella strigata*, or charru mussel that harms marine ecosystems and hinders fisher boat movements, affecting their livelihood. The WRD has charged that Kamarajar Port is the main reason for the spread of the invasive species by not regulating the ballast water from ships.



What is ballast water?

Ships need to have a certain level of immersion into the sea to be stable. When a ship discharges cargo, it rises up in the water and therefore, to keep a minimum level of immersion, ship staff take in sea water called ballast water inside tanks in the ship. And when the ship loads cargo, leading to more immersion, the ballast water is pumped out of the ship. Until recently, there was no bar on taking in and pumping out of ballast water at ports, in the ocean,

along the coast and so on. Since ballast water carries invasive species into other countries that destroy ecosystems, global shipping has sought to regulate ballast water discharge.

How serious is the problem?

In India, scientists have recorded nearly 30 invasive species coming from ship ballast water. Among the most harmful in recent times is the charru mussel, *Mytella Rigata*, says Biju Kumar, professor and head of the department of aquatic biology and fisheries at the University of Kerala. In the Pulicat lake in Tamil Nadu, as in Ashtamudi lake in Kerala, this mussel has replaced almost all other species, he says. Its survival rate and egg production is very high. Though of marine origin, it can survive even in fresh water, he adds.

What are global regulations?

The Ballast Water Management (BWM) Convention of the International Maritime Organization (IMO) came into force in 2017 to help prevent the spread of potentially harmful aquatic organisms and pathogens in ships' ballast water. From September 8, 2017, ships must manage their ballast water so that aquatic organisms and pathogens are removed or rendered harmless before the ballast water is released in a new location.

Recently constructed ships with functioning ballast water management systems continuously take a small portion of the ballast water they had taken in after discharge of cargo and dose it with chemicals so that all the water is rendered free of any biological organism before the water is pumped out during the loading of cargo. Ships built before the BWM convention that don't have these systems are required to exchange the ballast water they took in a port with "neutral" water from the middle of the oceans enroute to the loading port.

Among the countries most serious about preventing ship ballast water damaging their marine ecosystems are Australia and New Zealand. Australia, as a major supplier of coal and iron and other raw materials, sees much ballast water pumping out in ports. Australia is home to ecologically sensitive areas such as the Great Barrier Reef where such water can cause immense harm. Ships calling on Australian ports are often subject to rigorous checks including of ballast water management systems.

What is India's position?

Documents of the IMO show that as of July 2, 97 countries have signed on to the BWM as contracting states. India is not on the list of countries. This means that there is no obligation on the part of ships calling on Indian ports to enforce the BWM convention. While other rules such as relating to discharge of oil apply in Indian ports, the discharge of ballast water brought in from other countries is not subject to checks or regulation.

"No restriction is seen regarding discharge of ballast water in Indian ports," says V. J. Mathew, senior advocate who specialises in maritime law. In any case, ports are only a facilitator of ship traffic and cannot be held liable in such cases. If there is any evidence that a vessel has pumped out the ballast water that led to the invasive species, then the vessel owner can be held liable if a law is in force, says Mr. Mathew, adding that it is time India signed on to the convention.

9. India adds 3 new Ramsar sites: What are wetlands, why do they matter for the environment?

Background

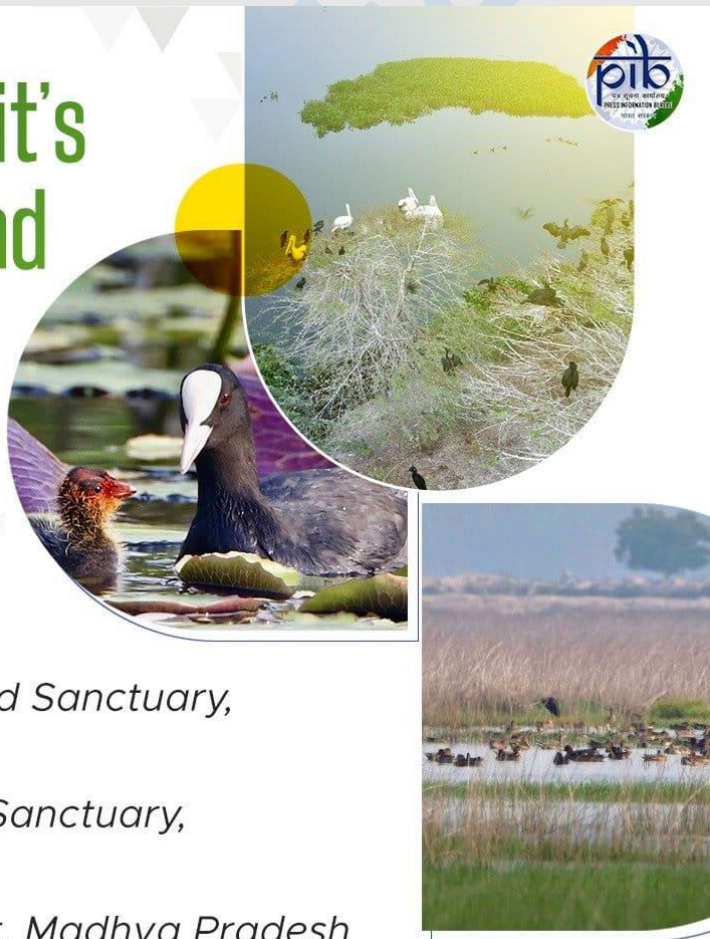
Union Environment Minister Bhupender Yadav announced three new Ramsar sites in Tamil Nadu and Madhya Pradesh earlier this month, taking the total of such sites in India to 85. The new additions are the Nanjarayan Bird Sanctuary and the Kazhuveli Bird Sanctuary in Tamil Nadu, and the Tawa Reservoir in Madhya Pradesh.

India Expands it's Ramsar Wetland Network

3 New wetlands added to the Ramsar Sites:

- *Nanjarayan Bird Sanctuary, Tamil Nadu*
- *Kazhuveli Bird Sanctuary, Tamil Nadu*
- *Tawa Reservoir, Madhya Pradesh*

India increases the tally of Ramsar sites to **85**



Ramsar sites are also known as wetlands of international importance. The Ramsar convention, which led to their establishment, has been a landmark in raising awareness around this key ecosystem.

What are wetlands, and why are they important?

According to the convention, wetlands are defined as “areas of marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed six metres”.

This definition includes all lakes, rivers, underground aquifers, swamps, marshes, and other major water bodies. Wetlands help regulate climate conditions through carbon sequestration, that is the storage of carbon from the atmosphere, and purifying water by removing pollutants from the shallow waters.

What are Ramsar sites?

The Ramsar Convention is an intergovernmental treaty signed in 1971 in Ramsar, Iran. It encourages the protection and conservation of wetlands worldwide by designating them as such.

The selection of Ramsar sites is based on various criteria defined under the convention. For example, “A wetland should be considered internationally important if it supports plant and/or animal species at a critical stage in their life cycles, or provides refuge during adverse conditions.” It also looks at the sites’ capacity to support fishes and waterbirds.

Organisations like the International Union for Conservation of Nature, the World Wide Fund for Nature, and other environmental agencies are associated with the treaty.

It also has 172 signatory countries. They are obligated to create wetland reserves and promote the wise use of wetland habitats. India joined it in 1982, initially designating the Chilika Lake in Orissa and Keoladeo National Park in Rajasthan. Today, the country has among the highest number of Ramsar sites in Asia.

The Sundarbans is one of the most renowned wetlands in India. Cold desert ecosystems also have wetlands, like the Tso Moriri and Pangong Tso in Ladakh, which include rare and endangered species such as the black-necked crane.

What are the new Ramsar sites?

The Nanjarayan Bird Sanctuary in Tamil Nadu is located on the banks of river Noyyal. Originally a water reservoir for irrigation use, it has since become a significant ecosystem, supporting a varied range of avifauna.

Home to species like the Eurasian coot, spot-billed duck and many types of herons, the wetland also serves various migratory birds flying along the Central Asian Highway,

establishing itself as a biodiversity hotspot. It also contributes to the locals' livelihood through fishing.

The Kazhuveli Sanctuary on the Coromandel Coast is one of the largest brackish water wetlands in south India. The ecosystem's mix of salt marshes, mudflats and shallow waters make it a home to many globally endangered species, like the black-headed ibis and greater flamingo. It is also a stopover for migratory birds along the East Asian-Australasian Flyway. In storing water, Kazhuveli also helps with flood control and groundwater recharge, helping maintain the region's water table.

The Tawa Reservoir in Madhya Pradesh is also integral in regional water management. Created by damming the Tawa River, the reservoir became a massive wintering ground for migratory birds. Tawa provides irrigation water to farmlands, drinking water to local communities, and sustains the nearby fisheries.

What are the threats to wetlands?

Wetlands protect the environment from floods and storms by absorbing the excess rainfall and serving as a buffer against the impact of extreme weather events. This is all the more important, as climate change has begun impacting the severity of such incidents.

With the world in critical need of reducing greenhouse gas emissions, wetlands play a role in carbon storage. The Indian government has launched a series of policies and initiatives to protect wetlands, like the National Wetland Conservation Programme of 1986 and the 2015 National Plan for Conservation of Aquatic Wetlands. The Ministry of Environment, Forest and Climate Change has also identified over 2,200 wetlands for conservation schemes.

However, wetlands continue to face major threats. According to the Ramsar Convention's Global Wetland Outlook (2018), 35% of global wetlands were lost between 1970 and 2015, with human activities contributing to their destruction.

Reports published by the MoEFCC show the degradation and shrinking of wetlands in India because of encroachment, pollution and rapid urbanisation. Agricultural and industrial run-off into water bodies significantly damages wetlands' health, worsening the water quality.

Relevance: GS Prelims & Mains Paper III; Environment

Source: Indian Express

10. Chile's Atacama salt flat sinking due to lithium mining: What a new study says

Introduction

According to a new study, Chile's Atacama salt flat is sinking at a rate of 1 to 2 centimetres per year due to lithium brine extraction — a process in which salt-rich water is pumped to the surface and into a series of evaporation ponds to eventually obtain lithium.

The study, which was published in the journal IEEE Transactions on Geoscience and Remote Sensing last week, was carried out by researchers at the University of Chile.

In an interview with Reuters, Francisco Delgado, the lead author of the analysis, said that the sinking area is in the southwest part of the salt flat where lithium miners operate.

Lithium, also known as “white gold”, is one of the most sought-after metals on Earth. It is used in rechargeable batteries, which power not only laptops and mobile phones but also electric vehicles — a crucial part of the world’s plan to tackle climate change. However, over the years, research has shown that lithium mining has had severe environmental fallouts, especially in countries such as Chile which are the leading producers of the metal.

What does the new study say?

For their study, the researchers at the University of Chile analysed the satellite data collected between 2020 and 2023 to see deformations in the Earth’s crust of Atacama salt flat — one of the largest sources of lithium in the world.

The researchers noted that the worst affected areas are those where mining companies are doing most of their pumping of lithium-rich brine.



That is happening because the pumping takes place at a faster rate than the recharge of aquifers, leading to subsidence, or the downward vertical movement of the Earth’s surface, Delgado told Reuters.

The affected area measures approximately 8 km north to south and 5 km east to west, according to the study.

What are the fallouts of lithium mining?

The brine evaporation method used to produce lithium requires massive quantities of fresh water, which is already scarce, especially in the Atacama Desert. In the Atacama, it takes 2,000 tons of water to produce one ton of lithium, according to a 2020 study by Ingrid Garcés, a scientist at Chile’s University of Antofagasta. This leaves indigenous communities and wildlife living in the region parched.

Chemicals such as sulfuric acid and sodium hydroxide that are used for lithium extraction contaminate soil and water, poisoning ecosystems and endangering species.

A 2022 study found that lithium mining has led to a decline in the number of flamingos in the area — due to a drop in water levels in the Atacama, fewer flamingos are reproducing.

Relevance: GS Prelims; Environment

Source: Indian Express

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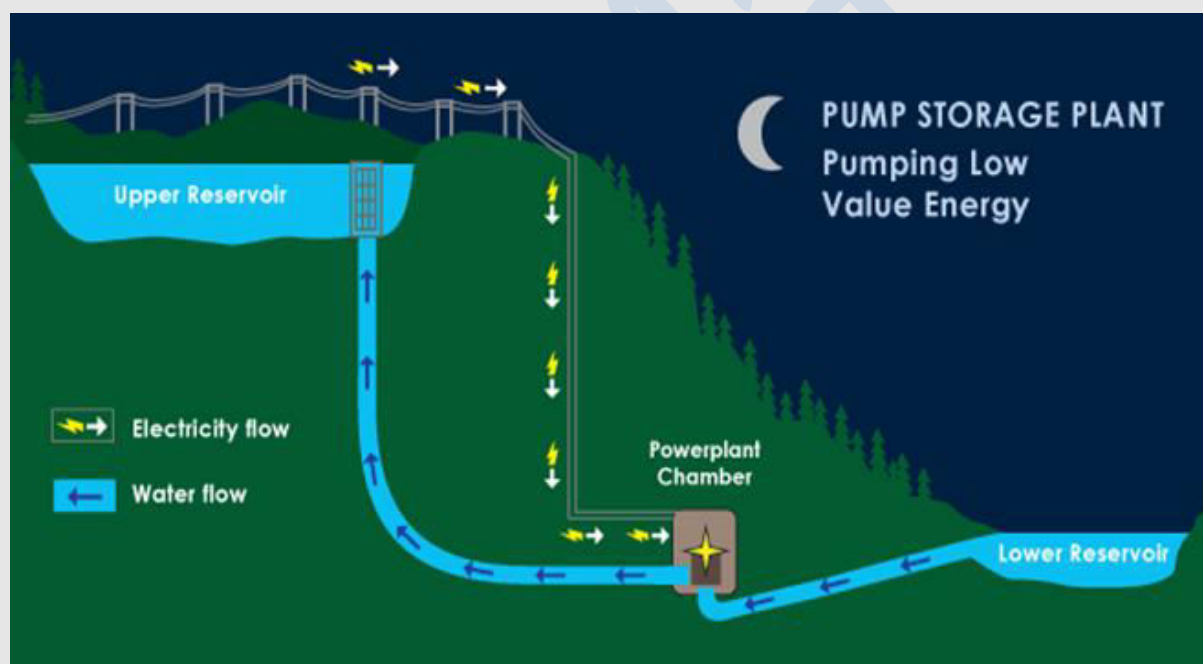
1. The relevance of pumped storage projects

Why in News?

The Union Budget for 2024-25 promised that “a policy for promoting pumped storage projects will be brought out for electricity storage and facilitating smooth integration of the growing share of renewable energy with its variable and intermittent nature.”

Variable nature of Renewable Power

India has planned to create an ambitious 500GW of non-fossil fuel energy by 2030. In around two years, from 2021 to 2023, it created some 23GW of non-fossil generation capacity. Out of the total 10GW added in eight months in 2023-24, 7.5GW were from wind and solar energy, pointing to how renewables will account for most of the new power generation that will be added in India. The share of actual renewable power generation will increase in times to come, but this power will necessarily vary and will be “infirm”.



Indian policies have laid down that all the power that renewable sources generate should be used and their curtailment should be last priority. State-of-the-art forecasting techniques have helped to predict more accurately how much renewable power generation might vary in the course of a day. This has helped grid operators plan in advance how to increase or decrease power generation from other sources to provide steady power to the consumer. For example, hydro power generation can be quickly ramped up or down in a matter of seconds. However, coal and nuclear energy need hours of notice.

Solutions

When the world's attention turned to renewables and the problem of variable power generation, many solutions were proposed for storing energy and releasing it when wind and solar power generation are down. Until then, no electricity generated was stored at a large scale. Some of the proposed energy storage methods include scaling up batteries and pumping in compressed air into large caverns and then drawing on them to generate power when required. However, much of the energy storage adopted across the world today is pumped storage that uses water. These are like super large batteries but natural and use water.

Does India have pumped storage?

India has 3.3GW of pumped storage. Main ones are in Nagarjunasagar, Kadana, Kadamparai, Panchet and Bhira. China leads the world with 50GW of pumped storage supporting 1,300GW of wind and solar energy. India would need to ramp up its pumped storage capacity by several times if it wants to meet its renewable power generation targets.

Pumped storage is of two types: on river and off river. On-river is like any hydroelectric project supplied by a river. Off-river projects are those that have two reservoirs at two different levels to which the water can be pumped up or let down under gravity in a closed loop. When there is surplus power, water is pumped up from the lower reservoir to the upper, and when power is needed the water can flow down to turn the turbines and generate power. One such project is at Kadamparai, Tamil Nadu.

Pumped storage at Kadamparai

In Tamil Nadu, at noon on a typical day in July, wind and solar can generate half of all power. This is among the highest in the country. On a summer day, solar plants in Tamil Nadu currently produce some 5,000MW at noon. But that power dwindles and drops to zero at sunset. Wind also has its own vagaries. Tamil Nadu has peaks of around 17,000MW to 20,000MW on a daily basis. Wind and solar energy have must-run-status in the State which means whatever energy they produce must be taken.

Relevance: GS Prelims & Mains Paper III; Science & Technology

Source: The Hindu

2. What is the new Alzheimer's blood test?

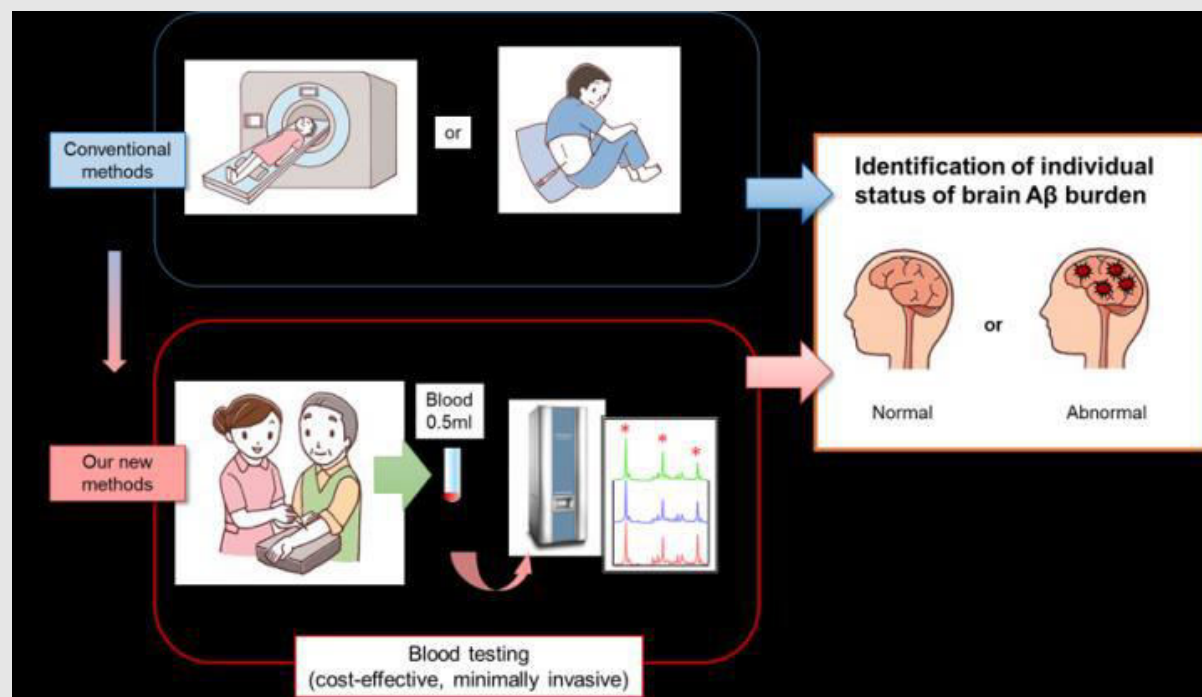
Why in News?

Researchers have developed a new blood test to detect Alzheimer's disease that helps diagnose the disease even at the early stage of mild cognitive impairment. Scientists at Lund University in Sweden have shown that PrecivityAD2, a new blood test, is about 90% accurate in identifying AD in people experiencing cognitive symptoms.

Why are practitioners excited about the test?

According to statistics, one in five women and one in 10 men develop dementia due to AD (Alzheimer's disease). Further symptomatic AD is misdiagnosed in 25% to 35% of patients.

For long, a blood test has been the Holy Grail for diagnosis of AD, since even current, modern methods of diagnosis involve very expensive and complex amyloid or Tau Positron Emission Tomography (PET) scans. The other alternative is to draw cerebrospinal fluid via a painful procedure, lumbar puncture.



This blood test comes as close to the target as possible, and in that sense will make the diagnosis of AD very simple. Blood tests will not only reduce the costs of diagnosis, but also simplify the diagnostic procedure — involving as it does, just drawing of blood.

What does the test do?

According to Medical News Today, the test works by measuring a combination of two ratios within a blood sample: plasma phosphorylated-tau217 (also called p-tau217) to not-phosphorylated-tau21 and two types of amyloid-beta: AB42 and AB40. Let it suffice for us to understand that both tau and amyloid-beta proteins are currently considered pathological hallmarks of AD.

The significance is that there are several drugs that work in the early stages of the disease, and an early, cost-effective, simple diagnosis will go a long way for patients, experts say.

How does this impact the future?

Future studies should evaluate how the use of blood tests for these biomarkers influences clinical care, researchers have said in their paper. No doubt the costs will come down, naturally impacting positively on affordability. Availability is the other issue. Dr. Krishnamoorthy says that in India, the diagnostic tools still remain an MRI and a regular PET scan. Amyloid or Tau PET scans are not commercially available yet. He adds that availability of the blood test will

happen, but one needs to wait and watch if the test will be accessible to all or if only a few will be able to afford the test, even at reduced rates.

Relevance: GS Prelims & Mains Paper III; Science & Technology

Source: Indian Express

3. Bio-bitumen for the roads of the future



Why in News?

Bitumen is a by-product of oil production and is used to bind the surfaces of paved roads. Some researchers, concerned about its environmental impacts and future supply if petroleum refining slows down, have started to develop alternatives: bio-bitumen.

Bitumen

Every year the EU produces around 15 million tonnes of bitumen. Most of this is mixed with aggregates such as crushed rock, sand and gravel to create asphalt –

the sticky bitumen binds it all together – to build roads. Around 90 per cent of all paved roads are surfaced with asphalt and in the EU more than 200 million tonnes of this composite material is produced annually. Bitumen is a very thick liquid form of crude oil. It does occur naturally, but the stuff used as a binder in asphalt is a by-product of oil refining.

Bio-bitumen

In the Netherlands there are now test bio-based roads and cycle paths, paved with a bitumen-like product made from the natural binder lignin. These include a section of road on an industrial site – used daily by cars and heavy trucks, some minor roads, and a cycle path at Wageningen University & Research, which is in three sections, each produced using a different lignin-based bio-bitumen.

How it is made?

Lignin is a structural polymer in plants and trees that is released as a waste product from a number of industrial processes. The Dutch demonstration projects use lignin from various sources, including different types of paper pulp production and a bio-refinery that produces cellulosic ethanol from straw. The bio-based asphalt binders were created by blending the different lignins from the various waste streams to achieve the required properties.

Bio-Bitumen Utilisation in Indian Road Infrastructure

Ministry has sanctioned two (02) research projects, one each to IIT Roorkee, and Central Road Research Institute (CRRI) New Delhi in collaboration with Indian Institute of Petroleum (IIP)

Dehradun to evaluate bio-bitumen in the laboratory and to assess the long-term performance of pavement constructed with bio-bitumen.

Relevance: GS Prelims & Mains Paper III; Science & Technology

Source: PIB

4. NASA's Sunita Williams and Barry Wilmore could be stuck in Space till 2025: What happens now?

Why in News?

A technical snag in the spacecraft that took them to the International Space Station (ISS) has forced astronauts Sunita Williams and Butch Wilmore to spend an extended period in space. Last week, NASA said they might have to wait till February 2025 to return to Earth.



Though in an unprecedented situation, Williams and Wilmore are not in danger. The ISS can comfortably house them for the next six months. Currently, there are seven other astronauts at the space station. The ISS, a permanent space laboratory orbiting Earth at a distance of about 400 km, is continuously manned and has never been without an astronaut since November 2000.

This is not the first time that astronauts have had to extend their stay at the ISS due to technical glitches. Williams and Wilmore, however, would have the longest unscheduled stay if they return in February.

Why are Williams and Wilmore stuck in space?

Williams and Wilmore travelled to the ISS on a Boeing spacecraft called Starliner in

June. This spacecraft has made two trips to the ISS earlier but this was the first time it was carrying astronauts. Before the launch, a helium leak in Starliner's propulsion system was detected but was not considered serious enough to abandon the journey. Although Starliner developed two more similar leaks on its way, it reached its destination without any trouble.

However, after it docked with the ISS and the two astronauts transferred inside, more problems emerged in Starlink, raising questions over the safety of the astronauts on their return journey — originally scheduled after just a week. So far, ground engineers have not been able to

resolve all issues to everyone's satisfaction, leaving Williams and Wilmore stranded as they do not have a vehicle to return home.

Possible impacts on Astronauts

According to reports, due to the longer exposure to microgravity on the ISS, astronauts might experience several health-related issues such as bone density reduction, vision-related issues, and are also at a higher risk of cancer due to DNA damage. This is why space exploration missions are kept short, not lasting more than a few weeks.

How will Astronauts return?

Both NASA and Boeing have said they hope to get Starlink in order soon. If that does not happen, the earliest that the astronauts can return to Earth would be in February 2025 on another vehicle that is set to travel to the ISS in September. This spacecraft, operated by SpaceX, is supposed to carry four astronauts to the ISS and bring them back in February. However, if Williams and Wilmore also have to be brought back, then the SpaceX spacecraft will carry only two astronauts in September.

Can the ISS accommodate them?

In recent years, the ISS, which has been operational for 25 years, has usually been hosting seven astronauts at any given time. These astronauts mostly belong to the five countries/regions whose space agencies manage this facility — the United States, Russia, Japan, Canada, and Europe. The astronauts carry out a variety of space-based experiments and are themselves subjects of some experiments, particularly those regarding the study of impacts of the outer space environment on human bodies.

Nonetheless, the ISS is large enough to accommodate more astronauts. The number increases when a new team comes to take over or when astronauts arrive for short visits like Williams and Wilmore did. The facility is bigger than a typical six-bedroom apartment in the US, according to NASA. It has six sleeping quarters, two bathrooms, and even a gym. When visiting spacecraft attach themselves, additional space is created.

Cargo spaceships routinely make trips to the ISS, carrying essential supplies and attending to maintenance requirements. On their return, these spacecraft take back waste generated at the ISS and dispose of it into space at the time of re-entering Earth's atmosphere where it gets burnt due to friction. In fact, one such cargo spacecraft, called Cygnus, operated by a private aerospace and defence firm Northrop Grumman, docked with the ISS last week. It carried more than 3,700 kg of cargo, which is currently being unpacked by the astronauts on board. It will remain docked with the space station till January after which it will return to Earth. As many as eight spacecraft can simultaneously dock themselves with the ISS.

The cargo spacecraft, however, cannot be used to bring back Williams and Wilmore as they are not equipped with the special capsules that can house humans in space.

Have astronauts stayed in space for a long duration?

Spending nine to 10 months in space is quite a long time but not unusual. Several astronauts have remained in space far longer than that.

The current record is held by Russian cosmonaut Valeri Polyakov, who spent 438 days at the Mir space station between January 1994 and March 1995. Russia's Mir predated the ISS and was operational between 1986 and 2001 before being brought down.

More recently, US astronaut Frank Rubio completed 371 days at the ISS between September 2022 and September 2023.

Several other astronauts, including women, have spent more than 300 days in space.

Williams and Wilmore are likely to spend more than 250 days by the time they return. Both these astronauts are on their third visit to the ISS. Williams spent 196 days on her first visit in 2006-2007 and then another 127 days in 2012. Wilmore, during his two previous visits in 2014 and 2015, has spent a total of 178 days at the ISS.

What happens to the human body in space?

NASA has increasingly been deploying its astronauts for extended stay missions to study the impacts on human bodies. US astronauts flying to the ISS can now volunteer to be part of such experiments. NASA is running a programme to study the impacts of short (up to 3.5 months), routine (up to eight months), and extended stays (more than eight months) of astronauts in space.

Past studies have shown that bone density and muscle quality deteriorate faster in space than on Earth. Low gravity impacts brain fluids and extended stays can potentially alter brain structure. Extended stays can also increase the risk of heart disease.

Several other impacts have also been noticed. The ongoing programme would help in better understanding of these changes.

Relevance: GS Prelims; Science & Technology

Source: Indian Express

5. Breakthrough in Hemostatic Dressing Technology

Why in News?

Researchers at Agharkar Research Institute (ARI) in Pune, India, have developed a highly porous xerogel dressing that can accelerate blood clotting and reduce blood loss in trauma cases. This innovation could be a game-changer in both civilian and military medical care.

Addressing the Hemorrhage Problem

Uncontrolled hemorrhage is a leading cause of death in traumatic injuries, accounting for more than 40% of trauma-related fatalities. Conventional methods, such as gauze and the body's

natural clotting mechanisms, are often insufficient to stop severe bleeding. This has created an urgent need for improved hemostatic materials.

How the Xerogel Dressing Works

The newly developed xerogel dressing is a spongy composite material that incorporates silica nanoparticles (SiNPs) and calcium. These substances enhance the clotting process by interacting with platelet activation and calcium release, two critical components of the body's blood clotting pathway.

Enhanced Blood Clotting

In studies, this xerogel dressing increased blood clotting capacity by 13-fold compared to commercial dressings. The porous structure, with pores of around 30 μm , allows for high blood absorbance, speeding up clot formation. The silica nanoparticles and calcium in the composite also help in platelet aggregation and activation, which are essential for effective clotting.

Molecular Mechanisms Behind Its Effectiveness

The dressing enhances platelet activation by stimulating the release of calcium and upregulating the protease-activated receptor 1 (PAR1) gene, which is crucial for platelet shape change and aggregation. These molecular interactions contribute to the dressing's ability to rapidly stop bleeding.

Potential Impact on Trauma Care

This innovative xerogel dressing has the potential to significantly reduce blood loss, disability, and mortality in trauma and surgical care. If widely adopted, it could revolutionize emergency medical treatments, military applications, and surgeries where hemorrhage control is critical.

Relevance: GS Prelims; Science & Technology

Source: Indian Express and The Hindu

6. The tech that helps vehicles from bumping into each other

What is a collision avoidance system?

In broad terms, a collision avoidance system (CAS) is a collection of technologies to help a vehicle steer clear of another vehicle or obstacle. For example, a CAS device fit on a train will be designed to help that train avoid colliding with another train. Most CAS devices require two pieces of information, preferably in real-time: the locations of all the other vehicles and the location of this vehicle relative to those vehicles. Over the years, scientists and engineers have developed instruments that collect this information and transmit it and other instruments that receive this information and aid in the navigation of the vehicle.

Such a vehicle can be driven by a human, in which case CAS's purpose would be to assist the driver, or be autonomous.

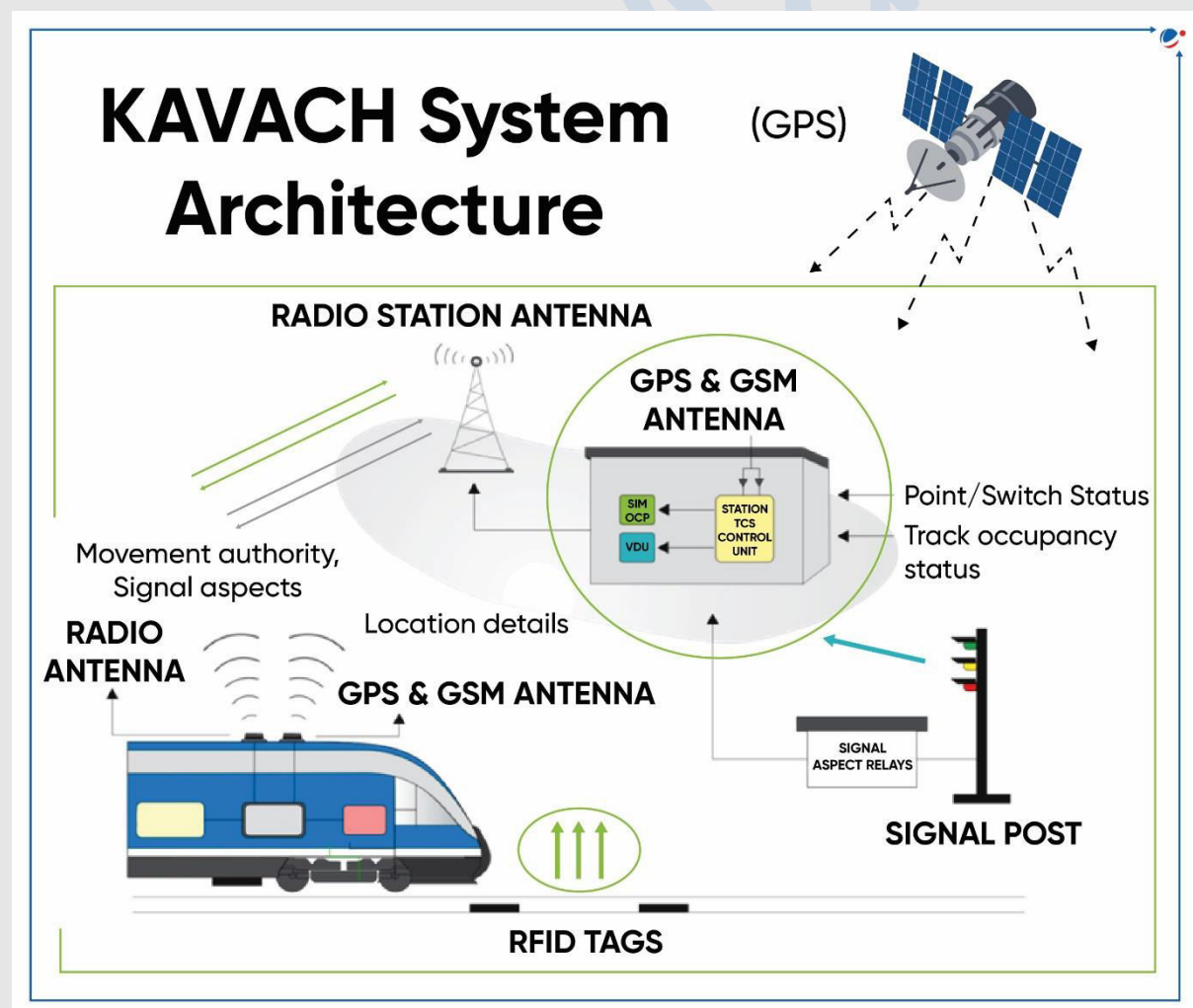
How does CAS help land-based vehicles?

Say two cars, called the Front Car and the Back Car, are moving in sequence and both are fit with CAS devices. Typically, the Back Car will be tracking the speed of the Front Car, the distance between the two cars, and the speed of the Back Car. If the separation between the two cars is expected to drop within a certain value in a stipulated time frame, the CAS may be empowered to deploy an automatic emergency brake — as required of cars in the European Union, for example — without the driver's intervention.

In order to achieve this, the CAS will have to be connected to the Back Car's braking system and be able to override the driver's instructions. It will also be connected to the Back Car's speed metre as well as equipped with a sensing technology to track the Front Car, like radar, lidar, and/or cameras with object recognition.

What is 'Kavach'?

A spate of train accidents in India recently put the spotlight on the sluggish implementation of 'Kavach', the homegrown CAS for the Indian Railways. In their fundamentals, Kavach's components perform the same functions that CAS does in cars, but the railway system is more complicated.



Kavach has three main components: onboard, trackside, and communications. For the purpose of explanation, let's regroup them as computers, communications, and control.

Computers — there is a computer onboard the train plus two other computers for station masters. Of the latter, one is the master computer: it collates and processes information from signals and interlocking points and sends its output to the locomotive computer (computer on board the trains). The other is the remote interface unit, which also collates and processes information from various points on the railway network, and eventually transmits its data to the master computer; it doesn't communicate directly with the locomotive computer.

The locomotive computer receives information from two other sources — (i) from the two Radio-Frequency Identification (RFID) readers mounted on its underside. The tracks will be fit with RFID cards at fixed intervals. When the locomotive passes over the cards, the readers will scan the cards and retrieve the train's location and a track ID number, and send them to the onboard computer; (ii) additionally, onboard computers can communicate with each other if their respective locomotives are nearby.

Taken together, the system facilitates communications between stations and locomotive pilots, facilitates pilots' decision-making (with or without having to visually spot another train), maintains speed, issues sounds and alarms when passing through areas with low visibility, and applies emergency brakes when a collision is expected.

Communication — the remote interface unit transmits data to the master computer via fibre-optic cables. The master computer communicates with the locomotive computer via ultra-high frequency radio. The onboard computer uses GSM-Railway to communicate with the overall network management system (the software system that animates the Kavach CAS), including to authenticate its communications with nearby master computers and locomotive computers. Control — as with cars, the onboard computer is connected to various other parts of the locomotive, including its braking system and an alarm to alert pilots. While operating the locomotive, pilots will use a bespoke interface — like a digital screen — that relays information from the computer and receives inputs from the pilots. The station master will have a similar interface, with the ability to send SOS messages as well.

How does CAS work in ships and aircraft?

The Traffic Collision Avoidance System for aircraft also has a computer-communication-control setup as for trains. An important component is the transponder — a device that, when it receives a radio-frequency ping, produces a response. Using the transponders of various other aircraft, the host aircraft can build up a 3D view of the air traffic around itself.

Another salient component of aircraft CAS is the alerts. If another aircraft is within 48 seconds away on a potential collision course, the computer sounds a traffic advisory that requires the pilots to visually identify the other aircraft. If the aircraft is less than 30 seconds away, the computer requires the pilots to make a resolution: report the alert as soon as possible to air traffic control and manoeuvre the aircraft to a safer course, if required contrary to air traffic control's instructions; and revert to the original course once the resolution is complete.

Finally, aircraft may also have radar altimeters to sense the distance to the ground and another system to alert pilots to 'tall' features like towers and ground antennae.

Ships — akin to cars and aircraft — use a combination of visual sighting and radar to steer clear of each other, while these operations are similarly assisted with the use of additional systems. Two important ones are AIS and LRIT. In the AIS, or Automatic Identification System, base stations on land track data received from transceivers onboard ships to infer their location, speed, and bearing, and transmit the details to each vessel.

LRIT is short for 'Long Range Identification and Tracking'. According to the International Maritime Organisation, a ship on an international voyage is required to report its location, local time, and onboard equipment once every six hours to the authorities in the country under whose flag the ship is sailing. This data is distributed to contracting governments and to operators of search-and-rescue missions via the International LRIT Data Exchange.

How have satellites changed CAS?

An important alternative to the transponder-based system for aircraft is the Automatic Dependent Surveillance-Broadcast (ADS-B) system, which collects and processes information shared actively by each aircraft via satellites to understand the relative location, bearing, and speed of a group of aircraft. Similarly, the AIS for ships can be facilitated by satellites as well: such S-AIS systems are useful to track ships that are too far from AIS stations on land.

The advent of the U.S. Global Positioning System (GPS) had a transformative effect on navigation and collision avoidance worldwide, and which some countries have augmented with systems of their own to cater to specific national needs. For example, India already envisages the use of its NavIC constellation of navigational satellites to assist road and railway traffic.

Recall also the Front Car + Back Car scenario: if the country these cars are moving through also has a GPS-tagged database of its various traffic elements (stop signs, turns, signals, intersections, etc.), the CAS onboard the cars can also be assisted by GPS data. The spatial frequency of GPS for civilian applications is restricted to 10 metres, which is not good enough for CAS. But systems can overcome this limitation using differential GPS capabilities, which can improve the resolution to less than a metre.

Relevance: GS Prelims & Mains Paper III; Science & Technology

Source: The Hindu

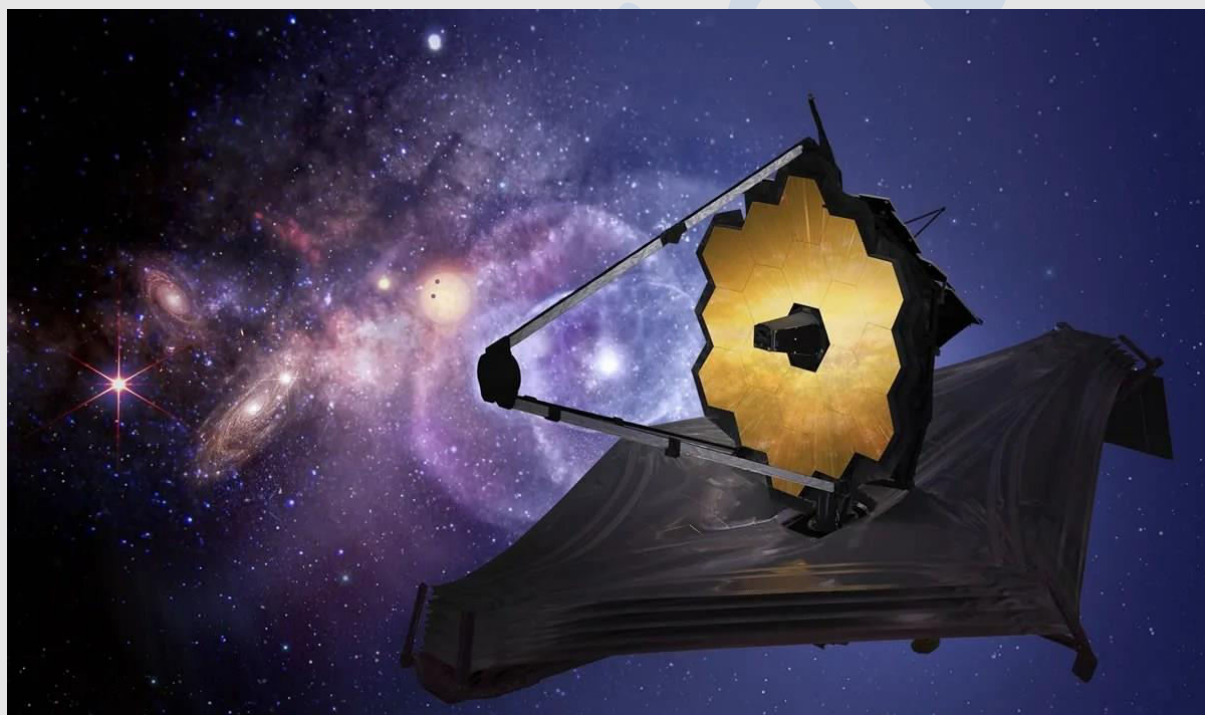
7. An Expert Explains: How James Webb Space Telescope has raised questions in cosmology

Why in News?

Images from the largest and most powerful telescope in space have dazzled everyone, but they have left astronomers rather nonplussed. The jigsaw puzzle of the history of the Universe is getting more difficult than ever to solve with the pieces that the James Webb Space Telescope (JWST) is gathering.

With its huge mirror — five times bigger than that of its predecessor, the Hubble Space Telescope — the JWST, which was launched on Christmas Day in 2021 and arrived at its destination, the Sun-Earth Lagrange point 2 in January 2022, has been peering at the early epochs in the history of the Universe, when the first galaxies had barely formed.

Its images were, however, very different from what astronomers had thought they would see. They had expected to find newborn galaxies — instead, the early phases of the Universe appear to be full of adult-sized galaxies. And if that is not enough of a puzzle, the rate at which the Universe is expanding, as measured by the space telescope, appears to be at odds with other pieces of data.



Ways to measure expansion

The rate of expansion of the Universe has been a subject of scientific debate for quite some time. Two different methods of determining the rate have yielded results that differ by as much as 10%.

One method is based on phenomena in the early Universe — which implies events at a great distance, because the light we see from distant objects started its journey a long time ago. The other method relies on local celestial objects — although 'local' means a region spanning billions of light years.

Some stars vary their brightness in a periodic manner, and the duration of this change tells us something about how bright they really are. From this, one can figure out their distance and, in turn, how the Universe has been expanding.

The new space telescope was expected to nail the reason for the mismatch between the results obtained by the two methods. But its measurements seem to have only increased the discrepancy. Its deeper inspection of the local method of measurement gives a rate of expansion that is somewhat faster than that based on early Universe measurements.

The question is, which method is more reliable?

The early Universe method relies on a relic radiation from the primeval epochs, when the Universe was hot. The radiation has now cooled down as the Universe has expanded, and has become a microwave 'hum' that pervades everything. If you make a fist, hundreds of photons from this relic radiation will pass through it every second!

A detailed analysis of this radiation can tell us how fast the Universe has been expanding. In other words, one method depends on how well we know our stars, and the other on how well we understand the history of the Universe.

'Adults in a kindergarten'

There have been problems with the early history of the Universe as well.

The space telescope was designed to peer at toddler galaxies. Galaxies such as our Milky Way contain roughly a hundred billion stars. But around 13 billion years ago, when the Universe was less than a tenth of its current age, small clumps of matter began to gather together and create suitable conditions for lighting up the first stars.

Those baby galaxies were supposed to be relatively small. But the data coming out of JWST seem to show full-bodied galaxies at the dawn of the Universe! Most of them seem to contain billions of stars. It has been as mind-boggling as, say, finding a bunch of adults playing in a kindergarten.

Some galaxies that JWST has imaged and analysed date back to when the Universe was barely a few hundred million years old. Yet, they seem to contain billions of majestically bright stars. They could have been exceptions, but then such objects should be rare — which they are not. Even if they are to be treated as exceptions, one would have to come up with an explanation for such exuberant formation of stars at the dawn of the Universe. Although astronomers still hope to find some explanation, even if one has to push the limits of astrophysical processes, some have begun to wonder if there was something wrong after all with our basic ideas of the Universe.

Crossroads of knowledge

There is only one Universe. And we are a part of it. We can't change it, tweak it, or experiment with it. Which makes it unlike any other topic of research in science. Yet, beginning with the last century, equipped with Einstein's theory of gravitation and large telescopes, physicists made ambitious attempts to study and explain the Universe.

Over the decades, a 'standard model' of the Universe has emerged, which is appealing in its simplicity, and also flexible enough to accommodate complexity. Based on it, a history of the Universe has been sketched out — barring the very first moment, which remains elusive.

However, the so-called 'standard model' has needed quick fixes in more than one aspect. Faced with a mismatch between the inventory of matter and the observed pull of gravity, scientists have invented "dark matter", although no one has any idea what it is made of. The Universe also appears to be in a hurry while expanding. In order to explain this, we have brought in "dark energy" — but we remain clueless about its nature.

Some astronomers have begun to think that the gaps in our understanding may not be just a matter of details — and may warrant a comprehensive revision of what we think of the Universe. There have been occasions in the history of science when scientists have held on to existing ideas by introducing patchwork to accommodate contradictions between theory and observations. The Greeks for example, kept introducing complexities to the orbits of planets around the Earth, disregarding suggestions that their basic geocentric model of the Universe was wrong.

Scientists sometimes behave as though their conventional model is the only possibility, and ignore the conflicting measurements, until a tectonic shift changes everything. It is not possible to predict how, if at all, a paradigm shift will take place. Only time will tell if the puzzling results from the space telescope will be explained away by another patchwork, by inventing another 'dark' something, or if they will lead to a rethink of cosmic history.

Relevance: GS Prelims; Science & Technology

Source: Indian Express

8. ISRO launches SSLV: What is the aim behind developing Small Satellite Launch Vehicles?

Why in News?

The Indian Space Research Organisation (ISRO) successfully launched the third developmental flight of the Small Satellite Launch Vehicle (SSLV) from the Satish Dhawan Space Centre in Sriharikota recently. The SSLV-D3 placed the Earth observation satellite EOS-08 precisely into orbit.

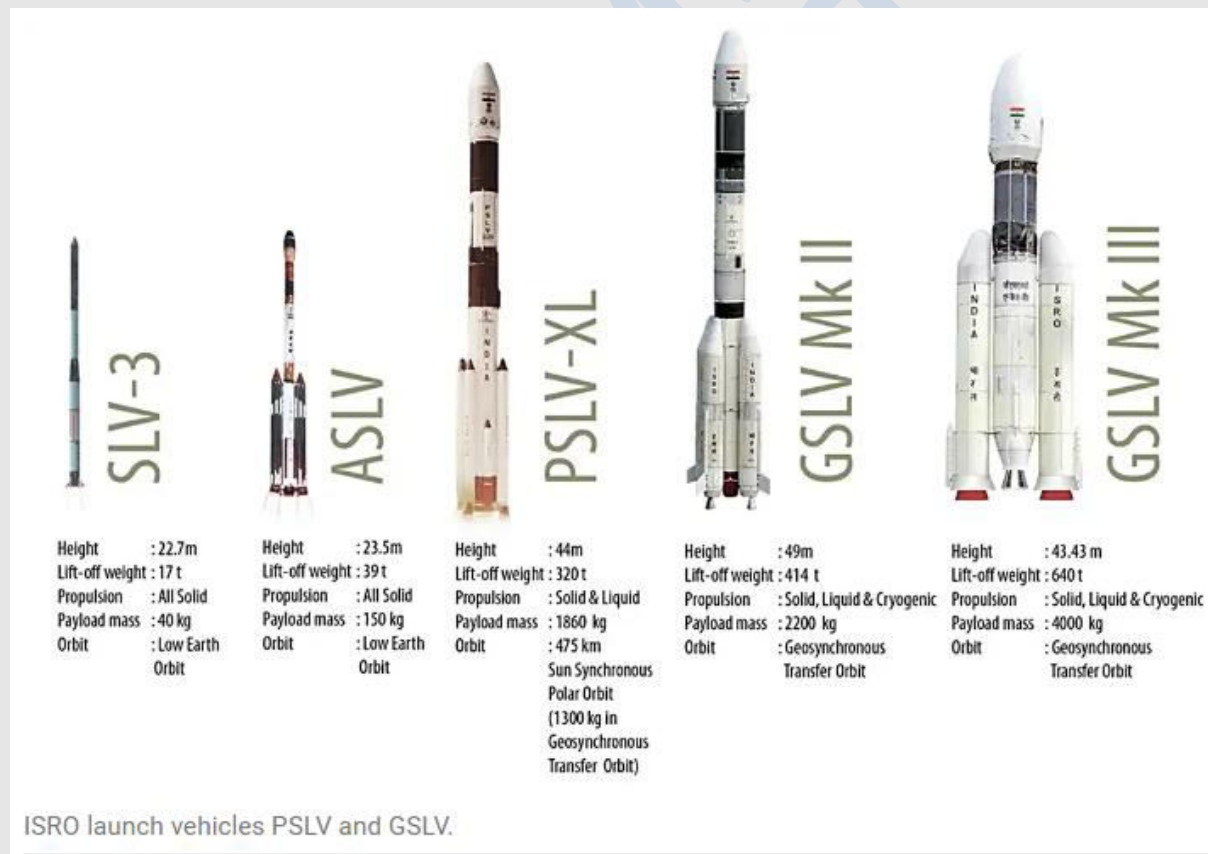
It also marks the completion of ISRO/Department of Space's SSLV Development Project. NewSpace India Limited (NSIL), ISRO's commercial arm, and India's private space industry can now produce SSLVs for commercial missions.

What is an SSLV?

ISRO's Small Satellite Launch Vehicle (SSLV) is a three-stage Launch Vehicle configured with three Solid Propulsion Stages. It also has a liquid propulsion-based Velocity Trimming Module (VTM) as a terminal stage, which can help adjust the velocity as it prepares to place the satellite. Essentially, the aim behind SSLVs is to produce low-cost launch vehicles with short turnaround times and minimal infrastructural requirements. The SSLV can launch satellites weighing up to 500kg and accommodate multiple satellites.

Before SSLVs, smaller payloads had to be sent into Space using other launch vehicles carrying multiple, bigger satellites. They depended upon the launch schedules of those satellites.

Former ISRO chairman K Sivan had stated in 2019 at the ISRO headquarters during an annual press conference that "The SSLV is the smallest vehicle at 110-ton mass at ISRO. It will take only 72 hours to integrate, unlike the 70 days taken now for a launch vehicle. Only six people will be required to do the job, instead of 60 people. The entire job will be done in a very short time and the cost will be only around Rs 30 crore. It will be an on-demand vehicle."



And what are PSLVs and GSLVs?

The Polar Satellite Launch Vehicle (PSLV) is the third generation of Indian satellite launch vehicles. first used in 1994. More than 50 successful PSLV launches have taken place to date. It has also been called "the workhorse of ISRO" for consistently delivering various satellites

into low earth orbits (less than 2,000 km in altitude) with a high success rate. The PSLV-XL can carry around 1,860 kg of payload.

On the other hand, Geosynchronous Satellite Launch Vehicles (GSLVs) have been instrumental in launching communication satellites in the geosynchronous transfer orbit. According to the European Space Agency (ESA), telecommunications satellites are usually placed in geostationary Earth orbit (GEO). It is a circular orbit 35,786 kilometres above Earth's equator.

GSLVs have a higher capacity because sending satellites deeper into space requires greater power. Therefore, cryogenic engines consisting of liquid hydrogen and liquid oxygen are used in GSLVs as they provide greater thrust than the engines used in the older launch vehicles. The GSLV Mk-II can carry satellites weighing up to 2,200 kg, while the Mk-III can carry up to 4,000 kg.

Relevance: GS Prelims & Mains Paper III; Science & Technology

Source: Indian Express

9. Mpox declared a global health emergency: will it trigger another pandemic?

Why in News?

The World Health Organization has declared the ongoing outbreaks of mpox in Congo and elsewhere in Africa to be a global emergency, requiring urgent action to curb the virus' transmission.

Sweden has since announced it had found the first case of a new form of mpox previously only seen in Africa in a traveler, while other European health authorities warned more imported cases were likely.



Is mpox going to trigger another pandemic?

That seems highly unlikely. Pandemics, including the most recent ones of swine flu and COVID-19, are typically sparked by airborne viruses that spread quickly, including by people who may not be showing symptoms.

Mpox, also known as monkeypox, is spread primarily through close skin-to-skin contact with infected people or their soiled clothes or bedsheets. It often

causes visible skin lesions that could make people less likely to be in close contact with others.

To stay safe, experts advise avoiding close physical contact with someone who has lesions resembling mpox, not sharing their utensils, clothing or bedsheets and maintaining good hygiene like regular hand-washing.

How different is mpox from COVID-19?

Mpox spreads very slowly unlike the coronavirus. Shortly after the coronavirus was identified in China, the number of cases jumped exponentially from several hundred to several thousand; in a single week in January, the case count increased more than tenfold.

By March 2020, when WHO described COVID-19 as a pandemic, there were more than 126,000 infections and 4,600 deaths — about three months after the coronavirus was first identified.

In contrast, it's taken since 2022 for mpox cases to hit nearly 100,000 infections globally, with about 200 deaths, according to WHO.

There are vaccines and treatments available for mpox unlike in the early days of the COVID-19 pandemic.

How quickly will these mpox outbreaks be stopped?

It's unclear. The 2022 mpox outbreak in more than 70 countries was slowed within months, thanks largely to vaccination programs and drugs being made available to at-risk populations in rich countries.

At the moment, the majority of mpox cases are in Africa — and 96% of those cases and deaths are in Congo, one of the world's poorest countries whose health system has mostly collapsed from the strain of malnutrition, cholera and measles. Although Congolese officials requested 4 million vaccines from donors, it has yet to receive any.

Despite WHO declaring mpox a global emergency in 2022, Africa got barely any vaccines or treatments.

Beyrer of Duke University said it was in the world's interest to invest now in squashing the outbreaks in Africa.

Relevance: GS Prelims; Science & Technology

Source: Indian Express

10. How a foreign covert group was using ChatGPT to influence U.S. elections

Introduction

Recently, OpenAI said it banned ChatGPT accounts linked to an Iranian influence operation that used the chatbot to generate content to influence the U.S. presidential election. The Microsoft-backed company said it identified and took down a "cluster of ChatGPT accounts" and that it was monitoring the situation.

What is Storm-2035?

OpenAI assigned the group the Storm-2035 moniker, and said the operation was made up of four websites that acted as news organisations. These news sites exploited issues like LGBTQ rights and the Israel-Hamas conflict, to target U.S. voters. The sites also used AI tools to plagiarise stories and capture web traffic, as per a Microsoft Threat Analysis Center (MTAC) report issued on August 9. Some named sites included Even Politics, Nio Thinker, Westland Sun, Teorator, and Savannah Time. The operation allegedly targeted both liberal and conservative voters in the U.S.

How did the group use ChatGPT?

According to OpenAI, the operatives used ChatGPT to create long-form articles and social media comments that were then posted by several X and Instagram accounts. AI chatbots such as ChatGPT can potentially assist foreign operatives fool gullible internet users by mimicking American users' language patterns, rehashing already existing comments or propaganda, and cutting down the time it takes to create and circulate plagiarised content meant to sway voters. Apart from the upcoming U.S. presidential election, the Storm-2035 operation covered world issues such as politics in Venezuela, Hispanic rights in the U.S., the destruction in Palestine, Scottish independence, and Israel taking part in the Olympic Games. The network also exploited popular topics like fashion and beauty. OpenAI shared screenshots of some of the news stories and social media posts it attributed to the operation; one article claimed that X was censoring former president Donald Trump's tweets, while separate social media posts asked users to "dump" Trump or Vice President Kamala Harris.



How severe is the impact of Storm-2035?

OpenAI has downplayed the severity of the incident, claiming that audiences did not engage much with the uploaded content on social media. Using Brookings' Breakout Scale, which measures the impact of covert operations on a scale from 1 (lowest) to 6 (highest), the report shared this operation was at the low end of Category 2, meaning it was posted on multiple platforms, but there was no evidence that real people picked up or widely shared their content. However, OpenAI stressed it had shared the threat information with "government, campaign, and industry stakeholders."

While OpenAI presented the discovery and disruption of the Iran-linked influence operation as a positive development, the use of generative AI tools by foreign operatives against U.S. voters is a gravely urgent issue that highlights multiple points of failure across OpenAI, X, Instagram, and the search engines ranking the sites.

Were there other similar issues OpenAI faced in the past?

In May, the AI firm posted a report revealing it had been working for over three months to dismantle covert influence operations that used its tools for generating comments on social media, articles in multiple languages, fake names and bios for social media accounts, and translating or proofreading text.

A Russian outfit that OpenAI called 'Bad Grammar', used Telegram to target Ukraine, Moldova, the Baltic States and the U.S. Separately, another Russia-based operation titled 'Doppelganger,' an Israeli operation that OpenAI nicknamed 'Zero Zeno,' a Chinese network called 'Spamouflage,' and an Iranian group called 'International Union of Virtual Media' or IUVM, used ChatGPT to write comments on social media platforms like X and 9GAG, and to post articles and news stories. The investigation found that the content covered issues like Russia's invasion of Ukraine, the Gaza conflict, Indian and European elections, and criticism of the Chinese government by dissidents or foreign governments.

Besides hunting down influence networks, OpenAI also found incidents of state-backed threat actors abusing AI to attack enemies. Other serious cases exposing OpenAI's vulnerabilities followed. In July, the Microsoft-backed firm revealed that early last year, a hacker gained access to OpenAI's internal messaging systems and stole information related to its AI technologies. While the hacker was found to be an individual, the incident raised alarms that Chinese adversaries could easily do the same.

What is OpenAI doing to safeguard its tech?

While studying these cases, OpenAI found that its AI tools refused to generate text or images for some prompts due to the safeguards already built into them. The firm also developed AI-powered security tools to detect threat actors within days instead of weeks.

While not explicitly discussed by OpenAI, the AI company has become enmeshed with prominent figures from U.S. federal agencies or government bodies. In June, OpenAI picked cybersecurity expert and retired U.S. Army General Paul M. Nakasone to be a part of its Board of Directors. Mr. Nakasone led the U.S. National Security Agency and has served in assignments with cyber units in the U.S., Korea, Iraq, and Afghanistan. A couple of weeks ago,

the firm also announced it will be teaming up with the U.S. AI Safety Institute, so that its next big foundational model GPT-5 can be previewed and tested by it.

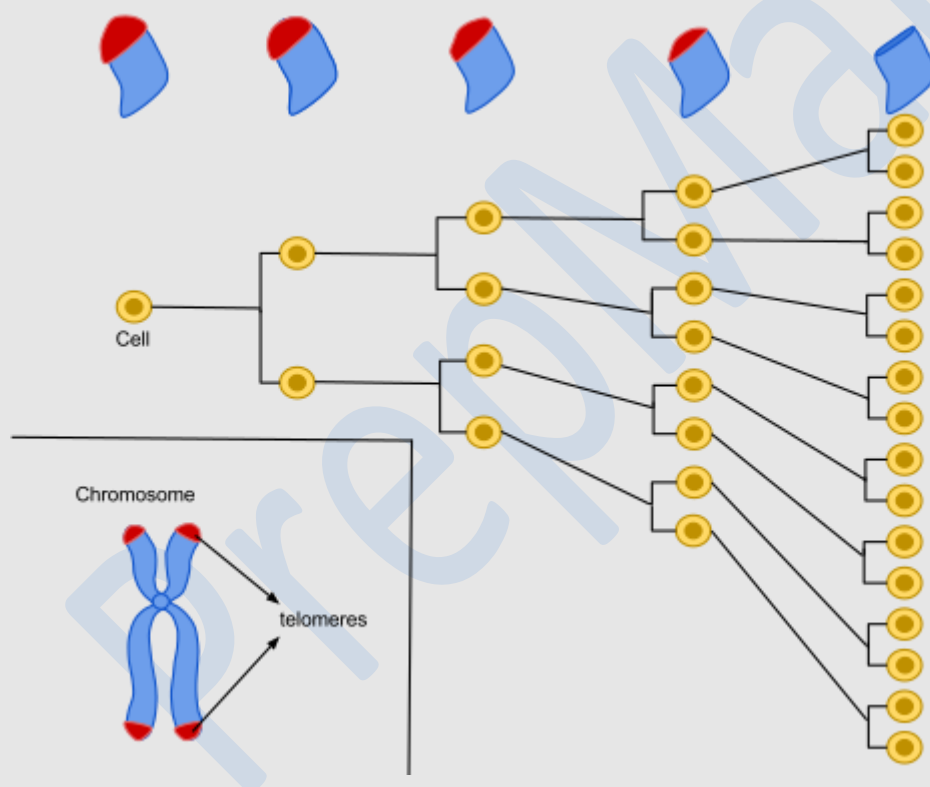
Relevance: GS Prelims & Mains Paper III; Science & Technology

Source: Indian Express

11. Hayflick limit: Why immortality remains out of humans' reach

Why in News?

Biomedical researcher Leonard Hayflick, who discovered that normal somatic cells can divide (and thus reproduce) only a certain number of times, died on August 1 at the age of 98. Hayflick's discovery fundamentally changed the understanding of aging — especially the thesis that cells are capable of being immortal, and aging is simply a factor of externalities such as disease, diet, and solar radiation.



Impossibility of immortality

In the early 1960s, Hayflick, at the time a researcher at the University of Pennsylvania, discovered that cell division in somatic (non-reproductive) cells stopped after roughly 40-60 times. This cessation in cell division is what Hayflick posited causes aging — as senescent cells (those that have stopped dividing) accumulate, one's body begins to age and decline.

This means that there is an in-built cellular clock in the human body (and that of other organisms) which determines how long one can live. This "ultimate Hayflick limit", as scientists

have termed it, is around 125 years for humans, beyond which no amount of diet, exercise, or even genetic tweaking against diseases can extend the human lifespan.

Since the discovery was made, Hayflick and other scientists have documented the Hayflick limits of cells from animals with varied life spans, from Galapagos turtles to laboratory mice. The cells of the former species, which can live for a couple of centuries, divide approximately 110 times before senescing, whereas cells of the latter become senescent within 15 divisions.

Correlation or causation?

Hayflick's discovery got further weight after researchers in the 1970s discovered telomeres. As cells divide, they create copies of DNA strands. Telomeres are repetitive DNA sequences at the very end of these strands, meant to protect the chromosome. Crucially, with each cell division, these telomeres get slightly shorter. Eventually, the telomere loss reaches a critical point at which cell division ends.

That said, while shortening telomeres is related to aging, the exact relationship between telomere length and lifespan remains unclear. Lab mice, for instance, have telomeres that are five times longer than humans, but their lives are 40 times shorter.

This is what has led to some researchers arguing that telomere loss and the Hayflick limit are not limits on aging, but rather symptoms of aging. Theoretically, it might be possible to thwart telomere loss or replace telomeres, as the differential rates of telomere loss among different species indicates.

The discovery in the 1980s of a protein called telomerase, capable of producing new telomeres, has strongly suggested this possibility. Telomerase is present in all cells, but it is seemingly "turned on" in only cancer cells. This is why, as Hayflick himself said, cancer cells are not subject to his limit.

Although scientists have been able to synthesise telomerase, and some in vitro studies have indicated that they may slow down telomere loss in normal human cells, any practical application for this seems some distance away.

Relevance: GS Prelims; Science & Technology

Source: Indian Express

12. Polaris Dawn: Another small step to Mars?

Background



If it succeeds, Polaris Dawn will be the first non-government mission to perform a spacewalk. But not only that — it'll do that about 700 kilometers (435 miles) above Earth. The highest ever.

To compare: the International Space Station (ISS) orbits Earth at about 400 kilometers, where the radiation is less intense.

It will also orbit Earth through regions of a highly-charged belt of radiation. There are two of these "Van Allen Belts", an inner and an outer one.

Astronauts tend to avoid the hazardous Van Allen Belts, but they will have to travel through them if humans want to fly to Mars and survive. This privately-funded mission could be a first step toward that goal.

The four astronauts on the Polaris Dawn mission will test new spacesuits, designed by Elon Musk's company, SpaceX, to see how well they protect them against the Van Allen Belt radiation.

SpaceX is also providing the spacecraft — a Falcon 9 rocket and Dragon capsule for the crew — to reach an altitude beyond the current record of 1,373 kilometers, set by NASA's Gemini 11 mission in 1966.

Who is the Polaris Dawn crew?

- Jared Isaacman, Mission Commander
- Scott Poteet, Mission Pilot
- Sarah Gillis, Mission Specialist
- Anna Menon, Mission Specialist and Medical Officer
- Polaris Dawn, the first of a three-part program, is Isaacman's idea.

Isaacman is a billionaire entrepreneur, who made his money in digital payments and military defense. He previously financed and flew on SpaceX's Inspiration4 mission, the first civilian mission to orbit Earth.

Why are the Van Allen Belts dangerous for humans?

The Van Allen Belts consist of charged particles locked in place by Earth's magnetosphere, which includes its magnetic field.

Earth's magnetosphere traps high-energy radiation particles and protects our planet from solar storms and other threats to daily life from space.

While the outer belt holds high-energy particles from the sun, the inner belt is formed by cosmic rays that interact with Earth's atmosphere.

They were discovered by American physicist James Van Allen in 1958.

The Van Allen Belts range from about 680 kilometers above Earth's surface to what some estimates suggest is about 40,000 kilometers from the surface of the planet. And there's a gap between the first and second belt.

The inner "proton" zone is centered at about 3,000 kilometers from Earth's surface and the outer "electron" zone is centered about 15-20,000 kilometers from Earth's surface.

The Polaris Dawn spacewalk will expose the crew to higher levels of radiation than on the ISS. They hope to collect data on the effects of that radiation as a key scientific experiment.

In 2025, NASA plans to send astronauts beyond the Van Allen Belts to land on the south pole of the moon, and eventually on to Mars. Any data provided by Polaris Dawn will feed into those future missions.

Planned health research on Polaris Dawn

Polaris intends to use data from the mission to create research Biobanks to study the effects of space travel on human biology.

It will investigate the effects of space travel on eyesight and brain structure — a major health risk in space, known as Spaceflight Associated Neuro-ocular Syndrome (SANS).

The team also hopes to contribute to studies into decompression sickness (DCS), another health risk during spaceflight. DCS occurs when nitrogen gas bubbles (or gas emboli) damage human tissue.

First test of laser communications in space

The crew will test laser communications provided by SpaceX's Starlink satellite network. Starlink is large satellite constellation, eventually consisting of about 12,000 satellites for communication on Earth and in space. It was used early in the Russia-Ukraine war.

Polaris hopes its communications tests will provide "valuable data for future space communications systems necessary for missions to the Moon, Mars and beyond."

What's planned for future Polaris missions?

Isaacman has committed to three missions in collaboration with SpaceX. This first mission is scheduled to last five days.

The second mission will, they say, "expand the boundaries of future human spaceflight missions, in-space communications, and scientific research."

And the third mission will be the first crewed test of SpaceX's reusable Starship spacecraft.

As with any space mission, the Polaris Dawn launch on August 26, 2024, may be delayed due to extreme weather conditions or technical issues.

Relevance: GS Prelims; Science & Technology
Source: Indian Express

13. What is vaccine-derived polio?

Introduction

A two-year-old child in Tikrikilla, Meghalaya, has been infected with vaccine-derived polio. This is not a case of wild poliovirus, but an infection that presents in some people with low immunity, the Union Health Ministry said.

TYPES OF POLIOVIRUS		
	WILD POLIOVIRUS (WPV)	CIRCULATING VACCINE DERIVED POLIOVIRUS (cVDPV)
Definition	Infectious virus that invades the nervous system. Can cause paralysis or death.	A very rare, circulating infectious virus mutated from the weakened strain of poliovirus in OPV. Under certain conditions, may cause paralysis or death.
Risk Factors	Low immunization rates, poor sanitation, high population densities.	Low immunization rates, poor sanitation, high population densities.
To Stop Transmission	Increase immunization rates with OPV.	Increase immunization rates with OPV.
Strains	Type 1: Caused 100% of 2014 cases Type 2: Eradicated in 1999 Type 3: Last seen in 2012	Type 1: Causes 8% of cVDPV Type 2: Causes 90% of cVDPV Type 3: Causes 2% of cVDPV
Cases in 2014	358	52

Vaccine-derived polio

Vaccine-derived polio is a rare condition that occurs when the weakened (also called attenuated) strain of poliovirus used in the oral polio vaccine (OPV) mutates and regains the ability to cause paralysis.

OPV contains a live, attenuated virus that is used for immunisation against the disease. This weakened virus triggers an immune response when administered, thus protecting people from the disease. The attenuated virus replicates in the intestines for a limited period and is excreted in the stool. In rare cases, the virus can mutate enough to cause the disease again and circulate in areas where either immunisation is low, where immunocompromised people reside, or where sanitation and hygiene are poor. This is how vaccine-derived poliovirus (VDPV) spreads. According to the World Health Organization (WHO), the virus is classified as "circulating" (cVDPV2) if it is detected in at least two different sources, at least two months apart, that are genetically linked, showing evidence of transmission in the community.

Types of poliovirus

Polioviruses are enteroviruses that are transmitted primarily by the faecal-oral route. Three types — wild poliovirus type 1 (WPV1), wild poliovirus type 2 (WPV2), and wild poliovirus type 3 (WPV3) — have been known to exist. Symptomatically, all these strains are identical.

More about vaccines

The first successful polio vaccine for poliovirus was made by Jonas Salk in the early 1950s. Salk inactivated the virus using formaldehyde and injected it into the muscles of test subjects. This inactivated polio vaccine (IPV) induced systemic immunity (relating to the blood, brain, and all other organ systems) in the subjects.

After Salk, Albert Sabin developed another vaccine that contained live polio strains weakened by growing them serially in macaque cells, making them unfit for human infection. Since this vaccine contained the live virus, it had to be administered through its natural mode of infection — in this case, oral. This is what we today know as the OPV.

OPV is usually preferred over IPV because of its ease of administration — it does not require syringes or medical training and is inexpensive. However, the weakened virus in OPV can occasionally revert, causing the disease it is meant to prevent. IPV, on the other hand, is a less potent vaccine, but contains inactivated virus particles and hence has no risk of causing vaccine-associated paralytic poliomyelitis (VAPP) — a rare, adverse reaction to OPV. IPV is comparatively tougher to manufacture, too, as it contains a chemically inactivated virus.

On World Polio Day, October 24, 2019, the WHO declared that WPV3 has been eradicated worldwide. The last case was detected in Nigeria in 2012, the WHO said. WPV2 was officially declared eradicated in 2015. However, more than 90% of vaccine-derived poliovirus outbreaks are due to the type 2 virus present in oral polio vaccines. VAPP constitutes 40% of cases caused by the type 2 oral polio vaccine. Many cases of VAPP from the type 3 virus also occur in countries using OPV.

The Indian government does not count VAPP as polio since these cases are sporadic and pose little or no threat to others, even though the number of VAPP-compatible cases showed a rising trend.

After the global switch from trivalent (containing all three variants) to bivalent (type 1 and type 3) oral polio vaccine in 2016 to prevent any more type 2 vaccine-derived poliovirus, the number of vaccine-derived type 2 poliovirus outbreaks has only increased sharply.

The WHO authorised a genetically modified type 2 novel oral polio vaccine under Emergency Use Listing in November 2020, it was first used in the field in March 2021, and received WHO prequalification in December 2023. The vaccine is less likely to revert to neurovirulence unlike the Sabin vaccine and therefore cause less type 2 VDPV.

Relevance: GS Prelims & Mains Paper III; Science & Technology

Source: The Hindu

14. Tanager-1: Why NASA has launched a satellite to track methane emissions

Why in News?

Last week, a satellite developed by a coalition of companies and organisations, including NASA's Jet Propulsion Laboratory, was launched aboard a SpaceX Falcon 9 rocket from Vandenberg Space Force Base in California. Known as Tanager-1, the satellite can detect major emitters of carbon dioxide and methane.



Notably, the launch has come just months after MethaneSAT — a satellite which tracks and measures methane emissions — was launched in March.

How will the Tanager-1 satellite track emissions?

The satellite will use imaging spectrometer technology developed at Jet Propulsion Laboratory to track methane and carbon dioxide emissions. It will do so by measuring hundreds of wavelengths of light that are reflected by Earth's surface.

Different compounds in the planet's atmosphere — including methane and carbon dioxide — absorb different wavelengths of light, leaving spectral "fingerprints" that the imaging spectrometer can identify. These infrared fingerprints can enable researchers to pinpoint and quantify strong greenhouse gas emissions, potentially accelerating mitigation efforts.

Tanager-1 will be able to measure point-source emission, down to the level of individual facilities and equipment, on a global scale, the report said. It will scan 130,000 square kilometres of Earth's surface per day. "[S]cientists will analyse data from Tanager-1 to identify gas plumes with the unique spectral signatures of methane and carbon dioxide — and pinpoint their sources. Plume data will be publicly available online," the NASA report added.

Why do researchers want to track methane emissions?

Methane is an invisible but strong greenhouse gas, and the second largest contributor to global warming after carbon dioxide, responsible for 30 per cent of global heating since the Industrial Revolution. According to the United Nations Environment Programme, over a period of 20 years, methane is 80 times more potent at warming than carbon dioxide.

The gas also contributes to the formation of ground-level ozone — a colourless and highly irritating gas that forms just above the Earth's surface. According to a 2022 report, exposure to ground-level ozone could be contributing to one million premature deaths every year.

Therefore, it is crucial to cut methane emissions. The main culprit is fossil fuel operations, which account for about 40 per cent of all human-caused methane emissions.

Relevance: GS Prelims; Science & Technology

Source: Indian Express

15. What are combination drugs; why have 156 of them been banned?

Introduction

The government has banned 156 fixed-dose combination (FDC) drugs, including popular medicines such as Cheston Cold and Foracet, used for cold and fever and pain respectively.

The ban is the most sweeping crackdown on FDCs — which are combinations of two or more known drugs in single-dosage form — since 2018, when 328 such drugs were banned. A total 499 FDCs have been banned since 2014, officials said.



In its notification issued last week, the central government termed these FDCs irrational, and said they do not have any therapeutic benefit.

What are FDCs; whom do they help?

FDCs are medicines that have more than one active ingredient — chemical compounds in medicines that have an effect on the body — in a single pill, capsule, or shot. FDCs are meant for patients with conditions such as tuberculosis and diabetes for which they need to take

multiple medicines regularly. FDCs reduce the number of pills the patient needs to take each day, and help improve adherence to the treatment.

Sometimes, however, an FDC could mean that a patient ends up taking a drug that they may not need. Cheston Cold, for instance, contains paracetamol for fever, cetirizine for allergy relief, and phenylephrine for nasal decongestion. So while this drug will help people who have these symptoms because of allergies, it is not really required for a bacterial infection.

Which FDCs have been banned?

Among the banned drugs are:

- Several combinations of enzymes used for treatment of gastrointestinal problems;
- Combinations of anti-allergic medicines such as levocetirizine with nasal decongestant, syrups that break down mucus, and paracetamol;
- Combinations used for the treatment of skin conditions, including menthol with aloe vera; aloe vera with vitamin E in the form of medicated soap; silver sulfadiazine (used for burns) with an antiseptic agent, aloe extract and vitamin; calamine lotion with aloe and a natural substance (for skin irritation);
- Combination of a migraine medicine with one to prevent nausea;
- Combination of the drug mefenamic acid — usually used for menstrual cramps — with anti-fibrotic medicine tranexamic acid;
- Combination of sildenafil, the active ingredient in the erectile dysfunction drug Viagra, with a drug that relaxes blood vessels and muscles.

Are these drugs still available?

Manufacturers have been told to immediately stop producing, stocking, and selling these drugs, says the government notification. However, they are likely to remain available in the market for some time.

So what can happen if you consume one of these banned FDCs?

These medicines may have been in the market for years, and thousands of people may have consumed them already. Having one now is unlikely to cause any harm.

What was the need to ban them, then?

These “irrational” combinations have been banned because they contain ingredients that either do not work well together or have ingredients that are not needed by patients to be taken together.

A major reason is to take combinations of antibiotics out of circulation, because the unnecessary consumption of antibiotics can lead to increase in antibiotic resistance — which

means increasingly higher doses or stronger antibiotics are needed for the treatment of even simple infections.

Despite the earlier bans, a 2023 study found that FDCs as a proportion of total antibiotics sold in India had actually increased from 32.9% in 2008 to 37.3% in 2020.

The study noted that India has among the highest number of FDCs in the market anywhere in the world, many of which were potentially inappropriate. "In India, of the 4.5 billion standard units of antibiotic FDCs sold in 2020, 41.5% were attributed to combinations listed as 'not recommended' by WHO," the study said.

Another reason for the ban is the pricing control on essential medicines. The government decides ceiling prices for these medicines based on average market prices. Companies are known to create FDCs to escape the pricing control mechanism.

Why has the government acted now?

The action is in line with the government's effort to weed out irrational medicine combinations that have entered the market over the years. These banned drugs were initially approved by various state licensing authorities without any trials for combinations because the ingredients were individually approved, the senior ministry official said.

"The new drugs and clinical trial rules of 2019 make it clear that fixed dose combinations are to be considered as new drugs, and as such have to be approved by the central drug regulator. This has helped in bringing down the number of these irrational combinations available in the market," the official said.

In 2012, a parliamentary panel first highlighted the problem of irrational drug combinations receiving such approvals. The government set up a committee in 2014 to examine 3,450 FDCs approved for manufacture and sale in the country after 1988. The committee found 963 drugs to be irrational, and suggested an immediate ban. It also identified a set of FDCs which needed to be studied further. Of these, 499 have been banned so far.

Relevance: GS Prelims & Mains Paper III; Science & Technology

Source: Indian Express

16. Why FSSAI withdrew its advisory on removing A1, A2 claims on milk and milk products

Introduction

The Food Safety and Standards Authority of India (FSSAI) on August 21 directed Food Business Operators (FBOs) to not market their milk and milk products "in the name of A1 and A2". Subsequently, it withdrew this advisory.

"This is to inform that the advisory dated August 21 (clarification regarding selling/ marketing of milk and milk products such as ghee, milk etc in the name of A1 and A2) stands withdrawn for further consultation and engagement with stakeholders," the FSSAI statement said.



Why was the advisory withdrawn?

First, what is the difference between A1 and A2 milk?

The FSSAI states that the A1 and A2 classification of milk is "essentially linked to difference in structure of protein (beta casein)."

More than 80 per cent of all proteins in cow's milk belong to a class called caseins. Among these, beta-caseins are the second largest component. A1 and A2 are basically two genetic variants of beta-caseins, differing from each other in their amino acid sequence.

A1 contains histidine, one of the nine essential amino acids which the body uses to produce histamine, the chemical that enables the body to regulate its reaction to inflammation and allergies. A2 contains proline, a non-essential amino acid which is an essential component of collagen and important for proper functioning of joints and tendons.

Milk from different cow breeds have differing quantities of A1 and A2 beta-caseins. Most milk contains both these beta-caseins, but A2 milk contains only the second one. Generally, milk and milk products which are branded as A2 tend to be charged at a premium, and considered healthier.

Is A2 milk better than regular milk?

While some studies have suggested that A2 milk is healthier, there is no consensus regarding the matter as yet.

A 2012 paper titled suggests a link between the consumption of A1 beta-caseins and various health problems such as type-1 diabetes, coronary heart disease, and autism. It says that those who consumed primarily A2 milk seemed to be less susceptible to these conditions. (Monika Sodhi et al, "Milk proteins and human health: A1/A2 milk hypothesis", Indian Journal Endocrinology and Metabolism).

However, currently, most findings are "based primarily on in vitro and animal studies, and limited clinical trials with poor designs". (Jhony Alberto Gonzales-Malca et al, "Worldwide research on the health effects of bovine milk containing A1 and A2 β -casein", Food Science).

"More solid scientific evidence is needed to reach a consensus on the role of A1 or A2 bovine milk on health," Gonzales-Malca and others write.

What was the basis for FSSAI's August 21 advisory?

FSSAI's advisory was not to do with the paucity of scientific evidence regarding the A1, A2 classification. It was to do with current FSSAI standards not recognising the A1, A2 differentiation.

"Standards of milk as specified in Food Safety and Standards (Food Product Standards and Food Additives) Regulations, 2011 do not mention/recognize any differentiation of milk on the basis of A1 and A2 types," FSSAI's advisory said.

All food business operators, including e-commerce sites, were thus directed to remove all claims related to A1 and A2 proteins from their product labels.

Its withdrawal came in the context of growing criticism of FSSAI's decision, even in government circles. In a letter to the Prime Minister, Indian Council of Agricultural Research (ICAR) governing council member Venugopal Badaravada requested that the advisory be withdrawn and a high-level committee instead be constituted to further discussion on the matter.

"The decision... goes against the global trend seen in countries like the USA, Australia, New Zealand, and Brazil, where A1 and A2 milk are marketed separately due to potential differences in digestion between the two types of beta-casein," he wrote. This letter is said to have influenced FSSAI's eventual u-turn.

Relevance: GS Prelims; Science & Technology

Source: Indian Express

1. Why do landslides occur, and what triggered the tragedy in Wayanad?

Why in News?

The death toll from the series of landslides in Meppadi in Wayanad district had reached 276, with at least 240 people still missing. Some 200 people are injured.

Landslides are not considered to be as devastating as droughts, storms, or floods. They are also less studied because they are localised events. But their frequency is increasing as the effects of climate change intensify, and they are causing significant losses of lives and livelihoods.

How prone is India to landslides?

India accounts for about 8% of global fatalities due to landslides, and during the period 2001-21, landslides caused 847 deaths and displaced thousands.

Despite the significant number of fatalities however, landslides were not given enough importance in India until the 2013 Kedarnath landslide and floods.

The IIT-M team has developed a high-resolution India Landslide Susceptibility Map (ILSM) using machine learning models.



According to a paper published in IIT-M's Shastra magazine, the ILSM shows that 13.17% of the country is susceptible to landslides, which is more than what was believed previously. And 4.75% area is considered "very highly susceptible".

Sikkim has the largest land area (57.6%) that is landslide-prone, while outside of the Himalayas, Kerala is the most vulnerable state with over 14% of its land mass in the “very high susceptibility” category.

In 2023, the Indian Space Research Organisation (ISRO) released a “Landslide Atlas of India”, identifying the landslide hotspots around the country. Among the highly vulnerable areas in the atlas were the Himalayas and the Western Ghats.

What factors cause landslides?

Landslides are natural phenomena that usually occur in mountainous regions with steep slopes. During a landslide, large amounts of rock, boulders, loose mud, soil, and debris roll down slopes and hillsides, gathering great momentum and often taking vegetation or buildings along.

Landslides are seen as being caused by (i) conditioning factors and (ii) triggering factors.

CONDITIONING FACTORS are related to the soil topography, rocks, geomorphology, and slope angles, among other factors. These factors make some parts of the country more vulnerable to landslides than other parts.

TRIGGERING FACTORS are intense rainfall, and anthropological activities such as thoughtless changes of land use, road and bridge building, haphazard and unscientific construction, and large-scale destruction of forests.

How did these broad factors apply in the case of Kerala?

The cutting of trees to create plantations is contributing to landslides in Kerala.

Most of the landslides that are taking place in Kerala are around plantation areas, indicating another major triggering factor — agricultural activities such as monocropping, in which large, native trees, which hold the top soil to the bedrock, are cut down. These trees are being replaced by big plantation crops, such as tea and coffee, which have shallow roots.

Moreover, certain atmospheric conditions made the area vulnerable to very heavy rainfall in a small window, which increased the likelihood of landslides.

Indeed, two weeks of continuous rainfall, 50-70% above normal for this time, set the conditions for the disaster in Wayanad. This rain saturated the topsoil, and when a day of extremely heavy rain akin to a mini cloudburst followed, the landslide event was triggered.

Relevance: GS Prelims & Mains Paper III; Disaster Management

Source: Indian Express

2. What is a Bailey bridge, constructed in Wayanad after landslides?

Why in News?

The deadly landslides that hit Kerala's Wayanad district on July 30 have led to the deaths of more than 219 people, with 206 still missing. Rescue and relief operations began soon after the disaster struck, with teams of the army, the National Disaster Relief Fund (NDRF), the Coast Guard, the Navy, and others deployed in the affected areas.

A major challenge in the rescue efforts was the continued rains in the region, making the movement of men and materials difficult. To solve this problem, the Indian Army's Madras Engineer Group built a "Bailey bridge", which was assembled at Chooralmala, to reach Mundakkai village — one of the sites worst hit by the landslides.

The 190-foot Bailey bridge has been crucial in facilitating the movement of heavy machinery and ambulances. It has a weight-carrying capacity of 24 tonnes and will remain in use until a permanent bridge is built. What exactly are these bridges and how are they assembled at such short notice? What makes them durable?

What is a Bailey bridge?

Simply, it is a type of modular bridge, one whose parts are pre-built so that they need minimal construction work and can be assembled quickly when needed. It was developed in 1940–1941 by the British for military use during the Second World War and saw extensive use by British, Canadian and American military engineering units.



How the Bailey bridge works

The pre-fabricated parts in a Bailey bridge include light steel panels linked through pins, which are big, screw-like objects. These help establish the guardrails of the bridge. Through the guardrails on either side, workers place beams to form the deck or path of the bridge. All beams were constructed such that they would lock in on the guardrails to ensure stability.

After that, the bridge can be extended, and the lightness of the parts allows it to be mobile. No heavy installation equipment is needed. In disaster relief situations, this is ideal because parts can be transported in small trucks — something also of use during wartime.

India and the Bailey bridge

Such bridges were used in the 1971 war with Pakistan for the liberation of Bangladesh. Bailey bridges have also been constructed in a strategically important village along the India-China border in Arunachal Pradesh, and in Uttarakhand in 2021 after flash floods hit the state.

Relevance: GS Prelims & Mains Paper III; Disaster Management

Source: The Indian Express

1. The gender issue in the Imane Khelif vs Angela Carini boxing match controversy

Why in News?

Italy's Angela Carini withdrew from her Round of 16 boxing bout against Algeria's Imane Khelif after only 46 seconds and a couple of punches to her face, triggering the Olympics' biggest controversy yet.

Since her victory, Khelif has been the target of a wave of abuse, with many calling her a "biological man" who had an "unfair advantage" over Carini. Some people also wrongly identified Khelif as a transgender woman.

The participation of trans women, and women having certain "masculine" biological characteristics like higher testosterone levels, in women's sports has long been a subject of polarising debate.

Why did Khelif's win spark a controversy?

In 2023, Khelif and Chinese Taipei boxer Lin Yu-ting were banned from competing in the International Boxing Association's (IBA's) World Championship in New Delhi after failing a "gender eligibility" test, the details of which remain confidential. The IBA, in a statement, said that the two boxers did not "meet eligibility criteria to compete within the female category".

However, both are now competing at the Paris Olympics. This is because the IBA was derecognised by the International Olympic Committee (IOC) last June over governance and financial issues. In Paris, the IOC-appointed unit which is governing the competition has set very different rules. The only determinant for eligibility is the gender stated in an athlete's passport — Khelif's passport says she is female.

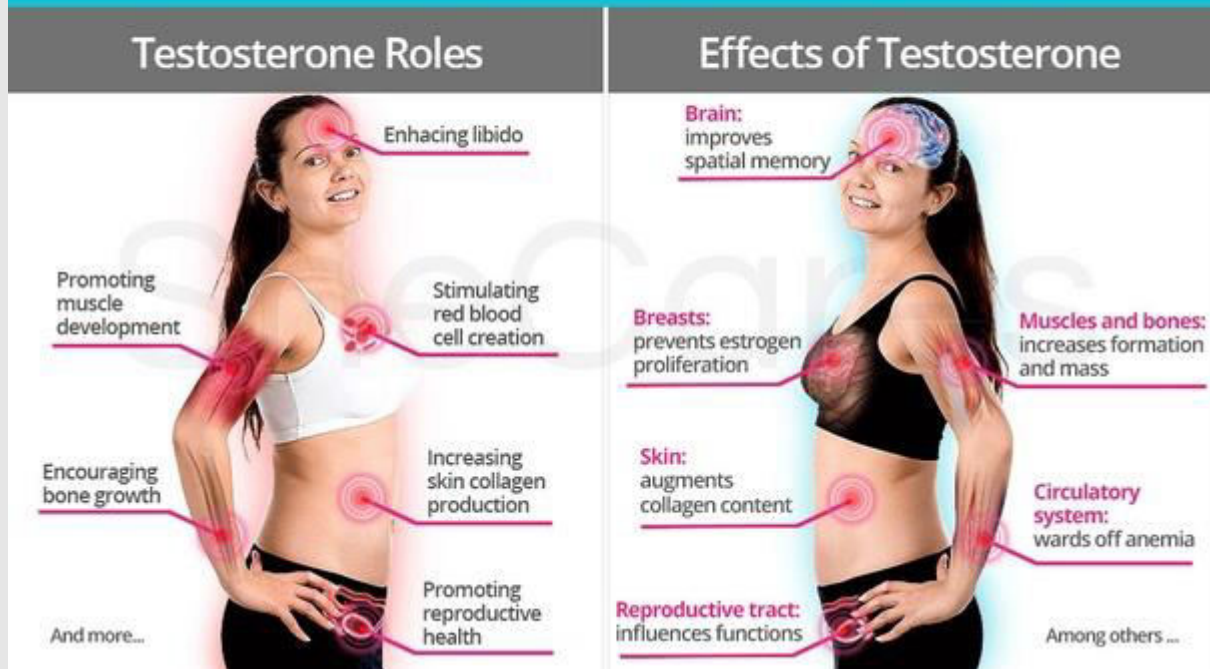
Following Khelif's win, and the subsequent abuse, the IOC said in a statement that all boxers in the Olympics had complied with "the competition's eligibility and entry regulations", and that both Khelif and Lin have participated in women's competitions for many years, including in the Tokyo 2020 Games. It also said that IBA's "arbitrary decision" to ban the two women had been taken without following proper procedure.

Why is gender eligibility a contentious issue in women's sports?

Modern sports is organised on the basis of sex, with men and women competing in different categories. This is because men, on average, have certain physiological advantages over women.

Sex is determined based on chromosomes, which carry genes. Humans have 23 pairs of chromosomes — 22 are identical in men and women; one, the sex chromosome, is different. The XX sex chromosomes result in the development of female sex organs, and XY in male sex organs.

Testosterone Function



The SRY gene, found on the Y chromosome, is responsible for the production of testosterone. Multiple studies have attempted to decode the impact that this hormone has on physical characteristics. A 2017 paper ('Circulating Testosterone as the Hormonal Basis of Sex Differences in Athletic Performance') published in the journal *Endocrine Reviews* supported the link between testosterone and athletic performance.

Crucially, some people born with female reproductive organs may also carry the XY chromosome, in what is known as Swyer syndrome, one of many "Disorders of Sex Development", or DSDs.

This is at the heart of the debate surrounding gender eligibility in women's sports. Many argue that in order to prevent some athletes from having an unfair advantage in women's sports, women with DSDs which facilitate greater testosterone production, and other consequent athletic advantages, must not be allowed to compete with other women.

How do sports federations deal with this matter?

In 2021 the IOC decided to leave it to international sports federations to develop their own set of eligibility rules, based on an "evidence-based approach" keeping in mind principles of "fairness", "inclusion", "non-discrimination", "no presumption of advantage", and "prevention of harm". Previously, it used to take into account testosterone levels — below 10 nanomoles per litre (nmol/L) for women athletes who had transitioned from male to female.

The eligibility regulations of World Athletics still uses testosterone levels as an eligibility determinant. DSD athletes need to keep their testosterone level to below 2.5 nmol/L for at least 24 months before they become eligible to participate in any event. This is stricter than what it was before 2023, when there was a 5 nmols/L restriction for events ranging from 400 metres to a mile, and no restrictions on other events.

FINA, the world swimming body, the International Cycling Union, and the International Rugby Union have all instituted varying degrees of bans on trans women athletes.

At the end of the day, there is still lots that is not known about the impact of testosterone on sporting performance. Many question if the case of women who are born with higher levels of testosterone is any different from that of people with other genetic advantages — like LeBron James' height or Michael Phelps' massive fin-like hands.

Relevance: GS Prelims & Mains Paper III; Miscellaneous

Source: Indian Express

2. Why the Odisha government will plant palm trees to combat lightning strikes

Why in News?

In July, the Odisha government approved a proposal to plant 19 lakh palm trees to ward against the problem of deaths due to lightning strikes, which were designated as a state-specific disaster in 2015.

PALM TREE & ITS ADVANTAGES	
<ul style="list-style-type: none">➤ Experts say that lightning usually hits the tallest object first. Palm trees being the tallest, they work as a lightning conductor	
<ul style="list-style-type: none">➤ While working as a lightning conductor, the palm tree reducing the chances of people getting struck by lightning strikes	
<ul style="list-style-type: none">➤ These trees also protect coastal areas from storms and cyclones	
<ul style="list-style-type: none">➤ The practice of planting palm trees in villages has been discontinued due to urbanization and infrastructural development	
<ul style="list-style-type: none">➤ In 2018, the forest department had suggested that the villagers be advised to use seeds of the palm fruit and bury them along cultivable fields	

How many people have lost their lives to lightning in Odisha?

A total of 3,790 people have lost their lives to lightning strikes in the last 11 years, with 791 alone in the previous three fiscal years due to the increased frequency of lightning strikes. The state most notably recorded 61,000 lightning strikes in a two-hour interval on September 2, 2023, which killed at least 12 people.

Why are lightning strikes of particular concern in Odisha?

Scientifically, lightning is a rapid and massive discharge of electricity in the atmosphere some of which is directed towards earth. Odisha is an eastern coastal state situated in the tropical zone, with its hot, dry climate presenting the perfect blend of conditions for lightning strikes. The highest number of cloud-to-lightning (CG) strikes occur in eastern and central India.

Which populations are at risk?

With 96% of lightning strikes in rural areas, farmers and daily wage earners like agricultural labourers bear the brunt of lightning. Over 80% of the Odisha population depend on agriculture and other allied activities, and work long hours in open fields, making them vulnerable to lightning strikes.

Although most lightning strikes occurred between April and October, most deaths were reported during the peak agriculture season between June and October.

How can Odisha defend itself against lightning strikes?

Palm trees are uniquely suited to be lightning conductors because of their height among other trees. They contain high moisture and sap, can absorb lightning and reduce its direct impact on the ground.

Relevance: GS Prelims

Source: The Indian Express

3. How Noah Lyles won the greatest ever Olympic 100m race

Why in News?

The Olympics had never seen such a rush at the finish line of a 100 m final. In the end, US track and field star Noah Lyles leaned forward at the perfect time to be just 0.005 seconds faster than Jamaica's Kishane Thompson to win a gold in a photo finish. All eight sprinters, bunched together for most of the race, finished with sub-10 second timings. People have run faster races in the past, but no race has been as close as this one.



A close bunch

For collective brilliance, Sunday's race was absolutely the greatest 100 m final of all time, as for the very first time in history, all eight men clocked sub-10 second timings under legal wind conditions. According to World Athletics, "a 100 m sprint time will only be considered 'wind legal' if the wind speed is 2m/s or less".

Jamaica's Oblique Seville finished last, but his 9.91 seconds timing would have been good enough for a

third place finish at the Tokyo Olympics, three years ago. Defending champion Marcela Jacobs of Italy finished fifth with a timing of 9.85 seconds, good enough for a second place in the Beijing Olympics when Usain Bolt set the then Olympic record 9.69 second timing.

All in all, sprinters from the fourth to eighth place recorded best-ever times in a 100 m race.

Photo finish for gold

In real time, the race was too close to call. Both Lyles and Thompson were credited with a time of 9.78 seconds, which flashed on TV screens across the world. On air, commentators felt that Thompson had won the race by a whisker, but broadcast cameras are simply incapable of giving an accurate picture for such close finishes.

This is where the fully automated timing and photo finish system, which records the timings of all athletes, comes in. This comprises three things:

- * The starter's pistol, resembling a modern-day gas lighter, triggers a flash of green light and a sound mimicking the crack of a gun from small speakers behind athletes' starter blocks. It also kickstarts the timing device.

- * Sensors are embedded on the starting block to catch false starts. They measure the pressure of an athlete's foot on the block, 4,000 times a second. World Athletics rules deem a reaction time of less than a tenth of a second as a false start because the human mind cannot react to the starter's pistol faster than this.

- * At least two cameras on either side of the finish line provide a composite image of the sprinters. World Athletics requires these cameras to be able to take a minimum of 1,000 images per second. Omega, the official time-keeper of the Olympics, has been using cameras that take 40,000 images per second at the finish line in Paris, up from the 10,000 images per second taken during the Tokyo Games.

The photo finish cameras at the finish line found Lyles to have just edged out Thompson, despite overhead cameras showing that Thompson's foot crossed the line ahead of Lyles. This is because the athlete's torso has to cross the finish line to be counted, not his head, arms, neck, or feet.

Relevance: GS Prelims

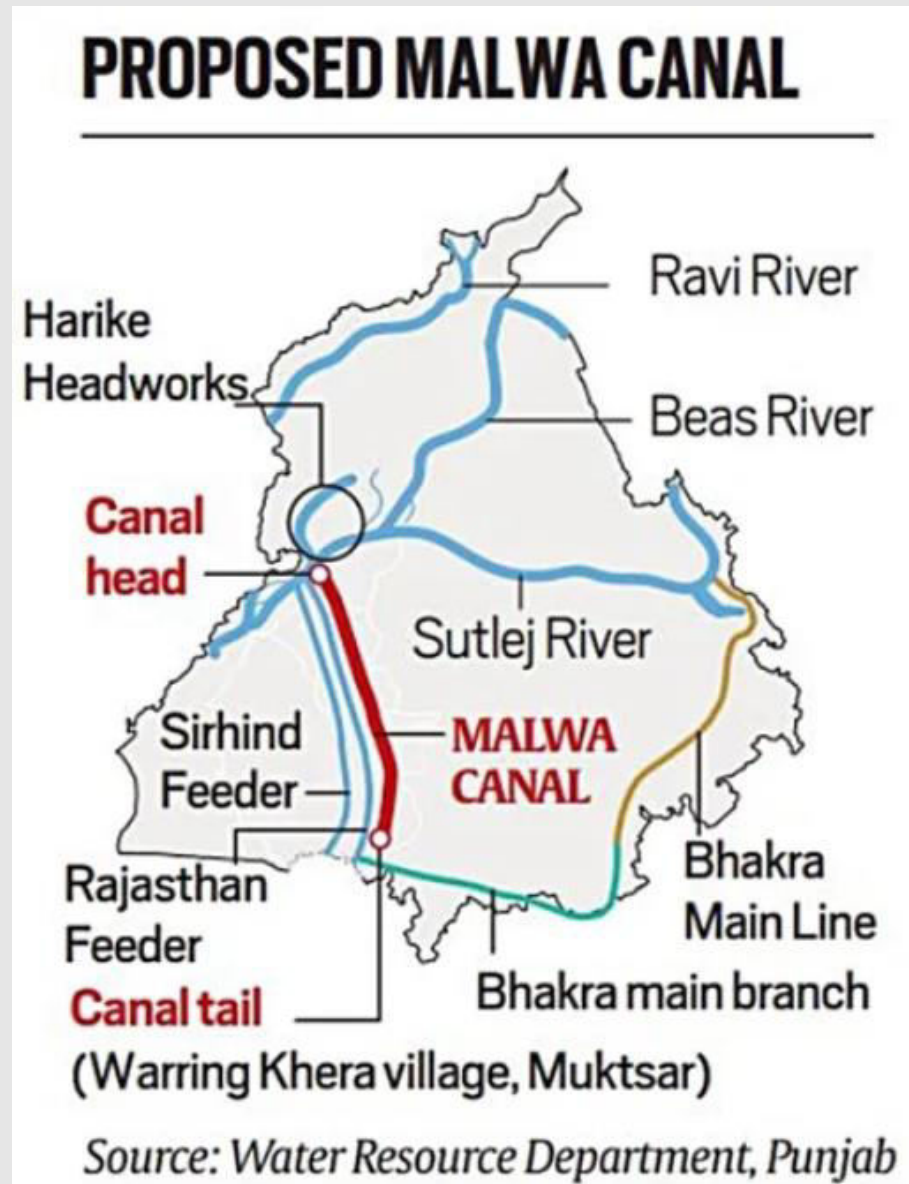
Source: Indian Express

4. In water-starved Punjab, plans for a new irrigation canal

Why in News?

Almost seven decades after the construction of the Bhakra Main Line (BML), Sirhind Feeder, and the Bist Doab canals in the mid-1950s, Punjab wants to spend Rs 2,300 crore on a new irrigation channel, running roughly 150 km in a north-south direction in the state's south-western corner.

The Punjab government faces a serious funds crunch, and some experts have raised questions over the technical viability of the proposed project. What is this canal that Punjab wants to build, and why?



Proposed Malwa canal

The proposed 149.53-km canal is named after Malwa, the biggest and politically most important of the three geographical and cultural regions of Punjab, which sprawls across the entire southern part of the state. The proposed 50-foot wide and 12-foot deep canal will originate at the Harike Headworks on the Sutlej river in Ferozepur district, and will carry 2,000 cusecs of water. (A cusec is flow equivalent to 1 cubic foot per second.)

The proposed canal, which will tail off at Warring Khera village in Muktsar district close to the border with Haryana, will flow parallel to the Sirhind Feeder and Rajasthan Feeder canals, to the latter's east. The canal, which is expected to take five years to build, is projected to irrigate 2 lakh acres of land in seven districts.

Challenges before govt

Funds for the Rs-2,300 crore project is the primary hurdle before the state already reeling under a debt burden of Rs 3.5 lakh crore. Given the hostility between the BJP-led central government and the AAP government in Punjab, the Centre is not expected to be helpful. The state is looking at securing funding from the National Bank for Agriculture and Rural Development (NABARD).

The regular process of carrying out a socio-economic survey to figure out the need for land acquisition, and to assess the extent of human displacement and rehabilitation and compensation, will have to be gone through. Environmental clearance, permission to fell trees, and clearance from the Central Water Commission will be needed. The Detailed Project Report (DPR) is in the process of being submitted, a government official said.

Relevance: GS Prelims

Source: The Indian Express

5. Vinesh Olympics disqualification: What is weight cutting, and why is it controversial?

Why in News?

Wrestler Vinesh Phogat was disqualified after the official weigh-in the morning, ahead of her scheduled gold medal bout in the evening.



While she had cleared the weigh-in on previous day, Vinesh was found to be "a few grams over 50 kg". It was reportedly 2 kilos overweight on previous night — weight she tried her best to shed overnight but couldn't.

Vinesh's tragic situation highlights a larger issue afflicting combat sports — the practice of weight cutting. In recent years, many have even called for a ban on athletes drastically cutting (and then gaining) weight ahead of their fights. Here is why.

First, why does one's weight matter in wrestling (and other combat sports)?

Combat sports — wrestling, boxing, judo, mixed martial arts (MMA), etc. — are organised according to weight classes. This is to facilitate fair and competitive matches. Fighters of similar weight (and thus, size) are more likely to have similar physical attributes, making for a more

even playing field. Without weight classes, larger and bulkier athletes would have a natural advantage over smaller ones, even if they are not as technically gifted.

What are weigh-ins?

Athletes in a particular weight class (say 50 kg) have to weigh equal to, or less than, the stipulated weight. However, one's weight is never static. It constantly fluctuates within a certain range depending on a number of factors, from how much you eat and drink, to how much you sweat, and other bodily functions. Moreover, it is impractical to constantly monitor an athlete's weight throughout a competition.

Thus, combat sports use a system of weigh-ins. There are designated times before (and in some competitions, after) when an athlete has to be weighed, and meet the requirements of their weight class.

According to United World Wrestling's (UWW) Olympics weigh-in rules, wrestlers are weighed on the morning of their competition, while wearing their singlet. Since the Olympics competition goes on for two days, there are two weigh-ins — there is a 30 minute period on Day 1, and a 15 minute period on Day 2.

Other sports or competitions may have different rules regarding weigh-ins. In fact, weigh-ins are a key part of the spectacle ahead of a fight in professional combat sports such as pro boxing or MMA.

What is weight cutting? Why do combat athletes cut weight?

In simple words, weight cutting involves athletes drastically reducing their weight in a short period of time. This is done by athletes to make the stipulated weight in time for weigh-ins.

Many, if not most, combat sports athletes believe that cutting weight before a bout can provide them with an edge over their opponent in the ring, mainly by quickly rebounding in weight and thus weighing more than what their weight class stipulates. This is because weight cuts primarily involve ridding the body of any accumulated water — this is the "easiest" weight to shed. Athletes do not drink water, carry out intense exercise, use saunas, wear heavy clothing, etc. to lose this water weight through sweat. They also do not eat anything ahead of weigh-ins.

But this weight can then be quickly gained after the weigh-in through the intake of lots of fluids and carb heavy meals. This, athletes feel, can give them a weight advantage in the actual bout which generally takes place hours (sometimes even a day) after a weigh-in. Notably, the scientific evidence supporting this theory thus far has been inconclusive.

What are some potential harms of weight cutting?

There are limits to how much weight can be cut in a certain period of time without endangering the athlete's physical (and mental) well being. In the highest levels of sport, where a lot (including handsome monetary rewards) rides on an athlete's performance, there is an

incentive to push the limits of what is safe — sometimes with dangerous, even deadly, consequences.

In 2018, UFC fighter Uriah Hall suffered “mini-seizure” and a “slight heart attack” during weight cutting, according to an official press release by UFC. And this was a lucky escape. In 2015, Chinese MMA fighter Yang Jian Bing, who competed in the ONE Championship, died due to dehydration while cutting weight.

To put it simply, weight cutting can be extremely risky, but as combat sports currently stands, athletes feel they have to do it to gain a competitive edge by allowing them to then rapidly gain weight between the weigh-in and their fight/match.

So, should weight cutting be banned?

This is why some experts have called for a ban on weight cutting. However, not everyone agrees, especially athletes. Many believe that it is possible to cut weight safely by following a strict, longer-term regime to do so.

Relevance: GS Prelims

Source: Indian Express

6. Japan issues its first-ever ‘megaquake advisory’: What does it mean?

Why in News?



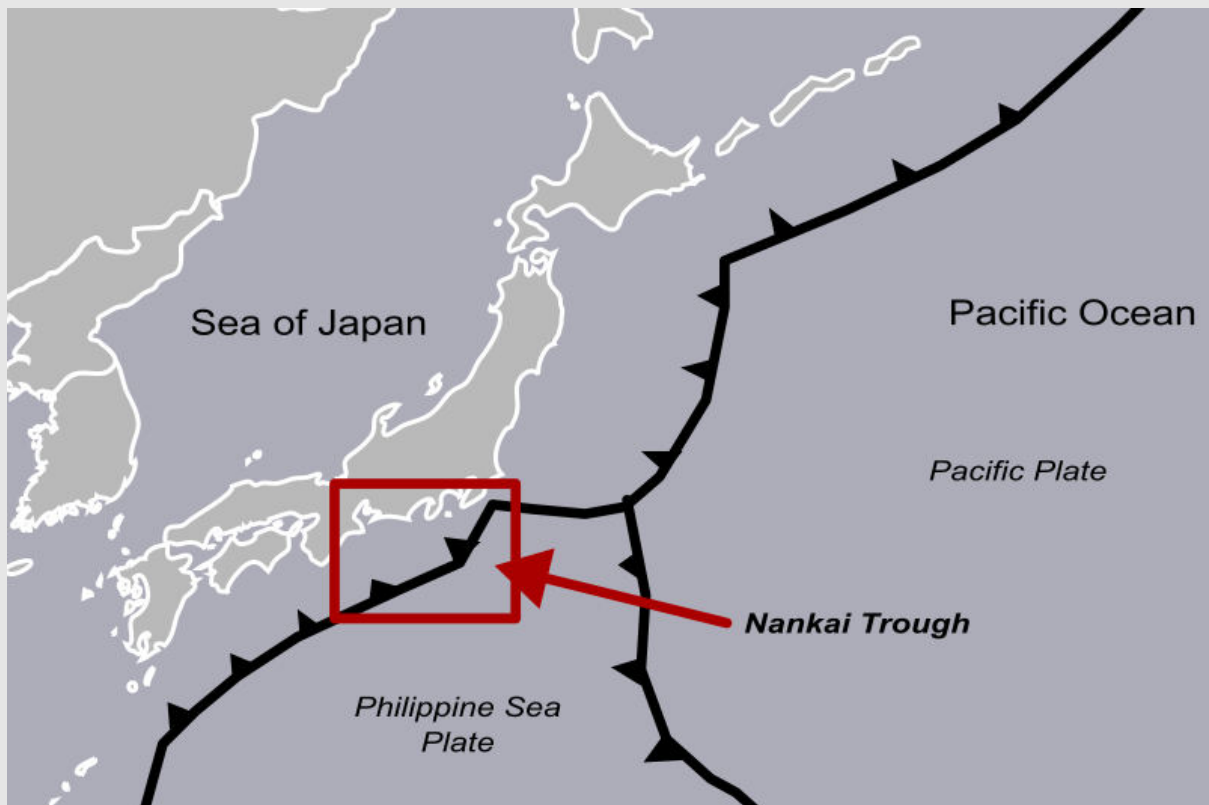
After a 7.1-magnitude earthquake shook southern Japan, the country's meteorological agency issued its first-ever “megaquake advisory”.

The warning said the likelihood of strong shaking and large tsunamis is higher than normal on the Nankai Trough, a subduction zone (a region where tectonic plates collide with each other, and the heavier one slides under another) along Japan's southwest Pacific coast.

However, this does not mean that a major earthquake would definitely happen during a specific period, the advisory said.

What is the Nankai Trough?

The Nankai Trough is an underwater subduction zone (nearly 900 km long) where the Eurasian Plate collides with the Philippine Sea Plate, pushing the latter under the former and into the Earth's mantle. This accumulates tectonic stress which can cause a megaquake — an earthquake with a magnitude larger than 8 (on Richter scale).



Rationale behind prediction

The trough has produced large earthquakes roughly every 100 to 150 years. These tremors usually come in pairs, with the second often rupturing in the subsequent two years — the most recent “twin” earthquakes took place in 1944 and 1946.

Notably, recent magnitude-7.1 earthquake occurred on or near the Nankai Trough. As a result, experts worry that the next tremor along the trough could be devastating.

When can the next megaquake along the Nankai Trough occur?

In January 2022, Japan’s Earthquake Research Committee said the next magnitude 8-9 megaquake along the trough has a roughly 70% probability of striking within the next 30 years. Tsunami waves of up to 98 feet may reach Japan’s Pacific coasts within minutes after the quake.

A 2013 government report found that a major Nankai Trough earthquake could impact an area that covers about a third of Japan and where about half the country’s population of more than 120 million people lives.

The economic damage due to the disaster could go up to \$1.50 trillion, or more than a third of Japan’s annual gross domestic product.

But can earthquakes be predicted?

No. An accurate prediction of an earthquake needs a precursory signal from within the earth, indicating a big quake is on the way. The signal must also occur only before large earthquakes so that it does not indicate every small movement within the earth's surface. Currently, there is no equipment to find such precursors.

Relevance: GS Prelims
Source: Indian Express

7. How China increased its medal haul at the Olympics and why the Games matter to it

Why in News?



#	COUNTRY				
1	UNITED STATES	40	44	42	126
2	CHINA	40	27	24	91
3	JAPAN	20	12	13	45
4	AUSTRALIA	18	19	16	53
5	FRANCE	16	26	22	64
6	NETHERLANDS	15	7	12	34
7	GREAT BRITAIN	14	22	29	65
8	SOUTH KOREA	13	9	10	32
9	ITALY	12	13	15	40
10	GERMANY	12	13	8	33

The Closing Ceremony of the 2024 Paris Olympics took place on 12th August. The United States led the table with 125 medals while China equaled the US in gold medals, with each country winning 40.

olympics medal tally

53	Dominica	1	0	0	1
53	Pakistan	1	0	0	1
53	Slovenia	1	0	0	1
59	North Korea	0	2	4	6
60	Türkiye	0	2	3	5
61	Mexico	0	2	2	4
62	Armenia	0	2	1	3
63	Ethiopia	0	2	0	2
64	India	0	1	4	5

For a long time, the People's Republic of China (PRC) did not compete in the Olympics as it opposed the International Olympic Committee's (IOC) recognition of the Republic of China

(Taiwan). Most Western, non-communist countries recognised Taiwan as the official representative of China in international arenas then, including the United Nations.

China's entry to Olympics

In 1979, the same year China established diplomatic ties with the US and ended its recognition of Taiwan, a pact was signed so that both China and Taiwan could compete at the Games. The PRC's first Summer Olympics was the 1984 Los Angeles Olympics, where it won 32 medals and 15 of them were gold.

Since then, China has been among the top-performing countries at the Olympics. Its success has been the result of deliberate policies. For the ruling Communist Party too, the event has been seen as key to its global perceptions.

Systemic focus on sports, with pitfalls

China began competing in the Olympics at a time when its economy was undergoing a monumental shift. In 1978, under President Deng Xiaoping, its economy was opened to the world. Before this, large sections of the population struggled with poverty, particularly in non-coastal and rural areas.

At an early age, children were encouraged to enroll in sports like gymnastics and table tennis at specialised training institutions. For parents from poorer and rural backgrounds, these centres were attractive options as they provided food and other necessities.

While the rigorous training produced results and medals, the pressure on athletes to win "for the country" took its toll on many. There were also cases of state-sanctioned doping. The small odds of success as a professional athlete meant that children, who spent their youth engaged in sports rather than school, often struggled to find alternative career opportunities later in life.

In 2010, a new policy was introduced to relax some rigid systems, such as the requirement to stay on campus for training.

Why Olympics matters for "national rejuvenation"

President Hu Jintao, who assumed office in 2003, also believed that an impressive medal haul in the 2004 Athens Olympics could "serve as a useful means to encourage the public, under government orders, to work toward rapid economic growth, transform their motherland into a prosperous society, and pursue national rejuvenation."

"National rejuvenation" is a key concept in China, framed against its colonial subjugation at the hands of Japan and Western powers in the 19th and 20th centuries. It speaks of rising as an economic superpower, being prominent on the world stage, and invoking the "five-thousand-year" history of the ancient civilization to emerge from the "humiliation" of colonization.

From the perspective of President Xi Jinping too, making Beijing the first city in the world to host both the Summer and Winter Olympics was part of this idea, prompting the successful bid for the 2022 Winter Olympic Games.

Relevance: GS Prelims

Source: Indian Express

8. Who is Telegram co-founder Pavel Durov, and why did French authorities arrest him?

Introduction



French authorities arrested Pavel Durov, co-founder and CEO of the secure messaging app Telegram, at an airport outside Paris.

Durov was arrested as part of a preliminary police investigation into “allegedly allowing a wide range of crimes due to a lack of moderators on Telegram and a lack of cooperation with police”. In a post on X, Telegram’s official account said that it was “absurd” to claim that a platform or its owner was responsible for the

abuse of that platform.

France and Telegram are the latest in cases of governments and tech companies clashing over the regulation of content posted on social media apps and websites.

Who is Pavel Durov?

Durov, 39, was born in the former Soviet Union and went on to study at the St Petersburg University in Russia. He then co-founded a social media app called VKontakte, which became popular in the country.

According to a Time Magazine profile, Durov left Russia after authorities told him to provide users’ encrypted data. Encryption is a method for safeguarding information and making it accessible only to users exchanging said information, not telecom providers or app owners.

On August 14, 2013, Pavel and his brother founded Telegram, an app billed as centring users’ privacy. Nikolai designed its encryption. The app also allowed the formation of large groups, allowing one group to have up to 2,00,000 members at present. Telegram also syncs with multiple devices for users. These features gave it an edge over apps like WhatsApp.

Telegram has since become one of the most used social media apps globally, with over 900 million users as of early 2024. Thanks to its success, Durov is now a billionaire. He also holds citizenships of France and the UAE and it is unclear whether he still has Russian citizenship.

What is France’s case against Telegram and Durov?

Durov's arrest at the Le Bourget airport was linked to "proceedings accusing Telegram of complicity in numerous cases linked to drug trafficking, support for terrorism and cyberstalking." Telegram's high degree of user privacy has helped some users sell drugs, dupe people through online scams, and engage in other illegal activities through the app across the world.

Telegram's FAQ section lays down its policy on taking down content. It says, "We have to process legitimate requests to take down illegal public content (e.g., sticker sets, bots, and channels) within the app."

However, there are exceptions. "Please note that this does not apply to local restrictions on freedom of speech. For example, if criticizing the government is illegal in some country, Telegram won't be a part of such politically motivated censorship. This goes against our founders' principles. While we do block terrorist (e.g. ISIS-related) bots and channels, we will not block anybody who peacefully expresses alternative opinions."

Durov also allegedly did not cooperate in the investigation, leading to an arrest warrant against him. Le Monde reported, "The OFMIN, an office responsible for combating violence against minors, had discreetly launched an investigation into the dissemination of child pornography on Telegram". Other offences were gradually added to the investigation.

What has been the response to these events?

The issues arise out of balancing the need to protect speech, and to regulate hate speech and illegal activities. Durov's arrest has led to some criticism of the French government for an "overreach".

Former US National Security Agency contractor-turned-whistleblower Edward Snowden said in a post on X, "The arrest of @Durov is an assault on the basic human rights of speech and association."

Earlier in April, Durov said some governments had sought to pressure him, but said the app should remain a neutral platform and not a "player in geopolitics".

Telegram's case has similarities with government actions against Meta (which owns Facebook, WhatsApp and Instagram), X and other tech giants. Earlier this year, a judge of the Brazilian Supreme Court ordered X to comply with its orders against accounts spreading false information deliberately. X owner Elon Musk criticised the order for not being transparent and cited his commitment to free speech for not following the order. Finally, X shut down its operations in Brazil.

Relevance: GS Prelims

Source: Indian Express

Practice Questions

1. Axis of Resistance is led by
 - (a) Israel
 - (b) North Korea
 - (c) Iran
 - (d) Russia

2. Rajbanshi is the largest SC Community in which of the following States?
 - (a) West Bengal
 - (b) Maharashtra
 - (c) Uttar Pradesh
 - (d) Punjab

3. The toxic waste from Bhopal Gas Tragedy is planned to be incinerated at
 - (a) Pithampur
 - (b) Dindigul
 - (c) Germany
 - (d) Bharuch

4. Shompen tribals reside in
 - (a) Great Nicobar
 - (b) Manipur
 - (c) Odisha
 - (d) Himachal Pradesh

5. According to 7 judge bench of Supreme Court, Sub-division of Scheduled caste quota is
 - (a) Not permissible
 - (b) Permissible
 - (c) Permissible in few States
 - (d) Permissible only in UTs

6. Which of the following best describes the view of Supreme Court on Reservation in 'The State of Punjab v. Davinder Singh, 2024'?
 - (a) Reservation is exception to the concept of Equality
 - (b) Reservation Limits efficiency in administration
 - (c) Reservation is necessary Limitation to equality
 - (d) Reservation is means to attain Substantive Equality

7. Which of the following statements is incorrect about Sheikh Hasina, recently ousted Prime Minister of Bangladesh?

- (a) She is daughter of father of Bangladesh
- (b) She shared friendly relations with India
- (c) She helped India in controlling extremism in North-East
- (d) She is leader of Bangladesh Nationalist Party

8. The Health Insurance is subject to

- (a) 18% GST
- (b) 12% GST
- (c) 5% GST
- (d) 0% GST

9. What is Yen Carry Trade

- (a) Import of goods from Japan
- (b) International trade in Yen
- (c) Borrow in Yen and invest in high-interest rate currency
- (d) Depreciation in Yen vis a vis dollar

10. As per India's digital competition bill, which of the following best conveys the meaning of 'Associate Digital Enterprises'?

- (a) Company which uses Services of another company
- (b) Company which uses another company as platform for its advertisements
- (c) Company which sells its products on another company's platform
- (d) Company of a group which uses data collected by another group company

11. Which of the following is correct about Bio-Bitumen?

- (a) It is a bitumen which is mixed with biological resources
- (b) It is a form of Bitumen which does not bind with sand and crushed rock
- (c) It is a Bitumen which is produced by using Lignin
- (d) It is widely used at present in road construction activities

12. Which one of the following best conveys the meaning of Wakf?

- (a) Land over which mosques have been established
- (b) Lands without any true owner
- (c) Land of Muslims without any natural heir
- (d) Personal property given by Muslims for a specific purpose

13. A Megaquake has reading of

- (a) 7 and above on Richter scale
- (b) 8 and above on Richter scale

- (c) VII and above on Mercalli scale
- (d) VIII and above on Mercalli scale

14. A place called 'Kursk' has been in news. It is located in

- (a) North America
- (b) North Africa
- (c) Central Asia
- (d) Eastern Europe

15. Which of the following statements is incorrect about recent stay of Astronauts Sunita Williams and Butch Wilmore in International Space Station?

- (a) They travelled to the ISS on a Boeing spacecraft called Starliner.
- (b) Both these astronauts are on their third visit to the ISS.
- (c) If they remain stuck till February next year, they will have the longest stay in space than any astronaut or cosmonaut.
- (d) Both of them are from USA.

16. Nano silicate particles have not been used for which of the following purposes

- (a) Make gel to fasten blood clotting
- (b) Treat burn wounds
- (c) Make Sunscreen
- (d) Produce artificial joints

17. Recently in news, St Martin's Island belongs to which of the following countries

- (a) Bangladesh
- (b) Pakistan
- (c) Myanmar
- (d) Sri Lanka

18. Consider the following statements regarding Ballast water:

1. Ballast water assists in loading and unloading of cargo.
2. Ballast water has been sometimes responsible for introduction of invasive species in coastal environment.

How many of the above statements is/are correct?

- (a) 1 Only
- (b) 2 Only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

19. Al-Shabaab is a well-known terrorist organization, which is based in

- (a) Eastern Africa

- (b) Western Africa
- (c) West Asia
- (d) Central America

20. Which of the following statements is correct about Small Satellite Launch Vehicle (SSLV)?

- (a) It is also called Polar Satellite Launch Vehicle (PSLV).
- (b) It can launch satellites weighing upto 2 tonnes.
- (c) It is a four stage Launch vehicle.
- (d) It takes only around 72 hours to integrate SSLV.

21. Which of the following statements is correct regarding India and Bangladesh extradition treaty?

- (a) Bangladesh was the first country to sign extradition treaty with India.
- (b) So far, none of the extraditions have been carried out under the treaty.
- (c) As per the treaty, an extraditable offence is one which carries a minimum punishment of Seven year imprisonment.
- (d) Extradition is possible in case of financial crimes as well.

22. Hayflick Limit is a conclusive proof that

- (a) Human beings are mortal.
- (b) Humanity will end one day.
- (c) Biodiversity is reducing with passage of time.
- (d) Technology will not be able to surpass human intelligence.

23. Justice Hema Committee was formed to assess

- (a) Sub-categorisation of Scheduled Castes.
- (b) Condition of women in the Malayalam film industry.
- (c) Presence of women in State Police of West Bengal.
- (d) Glass ceiling against women in Public Sector.

24. Polaris Dawn Mission involves

- (a) Launch of Space telescope
- (b) Launch of Mars Orbiter
- (c) Space walk in Van Allen Belt
- (d) Gather space dust for analysis

25. Which of the following wetlands was not added under Ramsar list in year 2024?

- (a) Nanjarayan Bird Sanctuary, Tamil Nadu
- (b) Kazhuveli Bird Sanctuary, Tamil Nadu
- (c) Tawa Reservoir, Madhya Pradesh

(d) Yashwant Sagar, Madhya Pradesh

26. NASA has launched Tanager-1 satellite primarily to

- (a) Detect incoming Solar radiation
- (b) Detect increasing global temperature
- (c) Detect increasing Methane and Carbon Dioxide emissions
- (d) Detect major emitters of carbon dioxide and methane

27. BioE3 policy seeks to

- (a) Boost Immunity of people by enhancing nutrition
- (b) Add more vaccines under National Minimum Immunisation programme
- (c) Detect presence of viruses in environment through biosensors
- (d) Boost Biotech Manufacturing

28. Which of the following language enjoys a Classical Language Status in India?

- (a) Marathi
- (b) Sanskrit
- (c) Urdu
- (d) Farsi

29. Recently in 2024, India and US have signed which of the following agreements?

- (a) Security of Supply Arrangement (SOSA)
- (b) General Security of Military Information Agreement (GSOMIA)
- (c) Logistics Exchange Memorandum of Agreement (LEMOA)
- (d) Communications Compatibility and Security Agreement (COMCASA)

30. Unified Lending Interface (ULI) is being launched in the country by

- (a) National Payments Corporation of India (NPCI)
- (b) Reserve Bank of India (RBI)
- (c) Indian Banks' Association
- (d) Indian Fintech Consortium

31. Which of the following is the correct difference between A1 and A2 milk?

- (a) A1 is produced by indigenous cow breeds, while A2 is produced by foreign cow breeds.
- (b) A2 is more easily digestible than A1.
- (c) A2 contains Histidine amino acid, while A1 does not.
- (d) A2 is not available in India, while A1 is.

Answer Key

1.(c)	2.(a)	3.(a)	4.(a)	5.(b)	6.(d)
7.(d)	8. (a)	9. (c)	10.(d)	11.(c)	12.(d)
13.(b)	14.(d)	15.(c)	16.(d)	17.(a)	18.(c)
19.(a)	20.(d)	21.(d)	22.(a)	23.(b)	24.(c)
25.(d)	26.(d)	27.(d)	28.(b)	29.(a)	30.(b)
31.(b)					