



INSIGHTSIAS

SIMPLIFYING IAS EXAM PREPARATION

CHANDRAYAAN-3

The Chandrayaan-3 mission's successful soft landing on the Moon marks India's significant achievement, becoming the fourth nation in history to reach the lunar surface.

21 AUG - 26 AUG 2023

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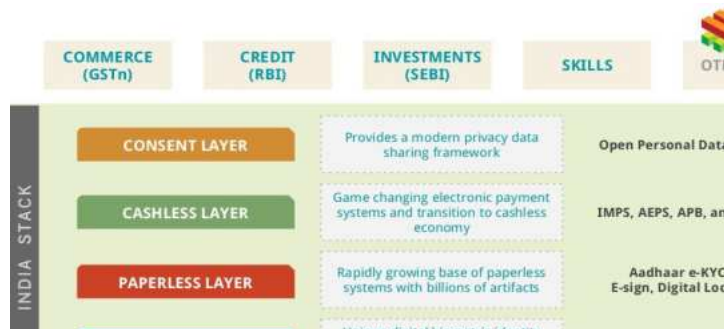


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GENERAL STUDIES – 1

Topics: Post-independence consolidation and reorganization within the country.

1. KASHMIR ISSUE: HISTORICAL ASPECTS

Context:

The article delves into the historical complexities of the [Kashmir issue](#), particularly focusing on the events surrounding Hari Singh's accession to India and the subsequent developments.

Background of Kashmir's accession to India:

The princely state of Jammu and Kashmir, ruled by **Maharaja Hari Singh**, was faced with a crucial decision as British colonial rule ended in India in 1947. As part of the partition process, **princely states were given the choice to join India, Pakistan, or remain independent.**

Maharaja Hari Singh's preference for independence was rooted in his aspiration to maintain a **neutral status for Kashmir**. However, this choice was challenged by various factors, including the **state's geographical location**, its **religious and ethnic diversity**, and the political pressures of the time.

The role played by Gurdaspur Division:

The division of Gurdaspur, a district that held **strategic significance due to its land connectivity to Kashmir**, played a pivotal role. The **Radcliffe Boundary Commission's** decision to include Gurdaspur in India ensured that there was a **viable land route between India and Kashmir**, which influenced Hari Singh's ultimate decision to accede to India.

Tribal incursion:

In 1947, as tensions between India and Pakistan escalated, **tribal militias backed by Pakistan invaded Kashmir**. Facing a dire security situation, Hari Singh sought India's military assistance. In return, he agreed to **accede to India**, formalizing the accession with the signing of the [Instrument of Accession](#).

Why did India approach the [United Nations for intervention in Kashmir](#)?

This accession was followed by **military intervention by Indian forces** to counter the tribal invasion and secure Kashmir. However, the **situation continued to be complex.**

In January 1948, **India brought the Kashmir issue before the United Nations Security Council**. India's contention was that Pakistani infiltrators had occupied parts of Jammu and

Kashmir, which had legally acceded to India through the Instrument of Accession signed by Maharaja Hari Singh. India argued that these **infiltrators should be asked to leave the region to restore the status quo.**

What is UNSC decide?

The UN proposed a **ceasefire, demilitarization, and a plebiscite** to determine the future of the region. However, the UN's intervention **did not lead to a resolution of the Kashmir issue**. The ceasefire was implemented, but the **plebiscite never took place** due to disagreements between India and Pakistan over the preconditions, including the withdrawal of forces from the region.

Article 370:

A significant development was the inclusion of [Article 370 in the Indian Constitution](#) on October 17, 1949, which granted Jammu and Kashmir a **"special status"** within the Union of India. This special status provided the region with **certain autonomy in areas like governance, laws, and citizenship, reflecting a unique arrangement** that aimed to accommodate the region's distinct circumstances.

After 1954, as Pakistan strengthened its ties with the United States and both countries signed a military pact, Jawaharlal Nehru, became **more resolute against the idea of a plebiscite** in Kashmir. Meanwhile, the region of Jammu and Kashmir **continued its integration into India's democratic processes**, participating in the drafting of the Indian Constitution and beyond.

Insta Links:

- [Constitutional Challenge to the 2019 Abrogation of Article 370](#)
- [We need civil society engagement in Kashmir](#)
- [Instrument of Accession](#)

Mains Links:

Q. Throw light on the Instrument of Accession through which Jammu and Kashmir became a part of India. What were the resultant issues that were the outcome of Kashmir's accession to India? (250 Words)

Topics: Salient features of Indian Society, Diversity of India.

2. CASTEISM IN INDIAN SOCIETY

Context:

The article discusses the need to acknowledge the existence of caste in Indian society is crucial for achieving true equality and inclusion.

What is casteism?

Casteism is a social system **characterized by the hierarchical division of society** based on caste, resulting in discrimination, inequality, and unequal access to opportunities for individuals belonging to different castes.

Efforts to eliminate caste-based discrimination in India:

- **Constitutional Provisions:** [Articles 15 and 17](#) specifically address the prohibition of discrimination based on caste.
- **Reservation Policies:** have been implemented to provide historically disadvantaged castes with better access to education, jobs, and political representation. E.g. **Article 330 and Article 332**
- **Legal Framework:** Laws like the [Scheduled Castes and the Scheduled Tribes \(Prevention of Atrocities\) Act, 1989](#), provide protection against violence and discrimination faced by marginalized communities.
- **Awareness Campaigns:** Public awareness campaigns, workshops, and seminars are conducted to sensitize society.
- **Social Movements:** Various social reform movements, led by activists, organizations, and leaders, have aimed to challenge and change traditional caste-based norms and practices.

Despite the above efforts, **caste-based discrimination continues to persist in Indian society due to the following reasons:**

- **Historical Legacy:** Historical injustices and inequalities continue to influence perceptions and behaviours, leading to the perpetuation of discriminatory practices.
- **Cultural Norms and Traditions:** Social practices, rituals, and inter-caste marriage restrictions reinforce caste-based distinctions, making it difficult to break free from these entrenched norms.
- **Power dynamics:** Caste-based discrimination is often tied to power dynamics, with dominant castes seeking to maintain their privileged positions. Lower castes face discrimination and exclusion as a means of **preserving existing hierarchies**.
- **Economic Disparities:** Lower-caste individuals often face limited access to education, employment opportunities, and resources, leading to a cycle of poverty and marginalization that reinforces discriminatory practices.
- **Lack of Effective Implementation:** While laws and policies have been enacted to address caste-based discrimination, their effective implementation remains a challenge.
 - Weak enforcement, lack of awareness, and corruption hinder the eradication of discriminatory practices.
- **Political Considerations:** Political parties exploit

caste divisions for electoral gains, perpetuating caste-based discrimination for their own interests.

What is Decasting in India?

“Decasting” in India refers to the **process of dismantling and eliminating** the entrenched caste-based **discrimination, inequalities, and social hierarchies** present in society. It involves **challenging and overcoming the practices, biases, and prejudices** associated with the caste system.

Steps for Achieving De-casteing in India	
Acceptance:	Acknowledge the presence and impact of casteism in society, instead of denying or overlooking it.
Education:	Educate younger generations about the importance of seeing beyond caste and the value of inclusivity.
Representation beyond reservations:	Push for Dalit representation in cultural institutions, intellectual spaces, and media, beyond just reserved seats in politics
Celebrate Dalit History:	Embrace and highlight the contributions of Dalits in the Indian independence movement and other spheres.
Promote Allies:	Encourage individuals from privileged castes to become allies, supporting marginalized communities in various spaces.
Build Trust:	Address and work on the distrust Dalits might feel towards the upper segments of society, fostering unity.
Policies Emphasizing Inclusion:	Formulate policies that emphasize diversity, inclusion, and equity, ensuring nobody is left behind.

Conclusion

Addressing caste-based discrimination requires a multi-faceted approach that tackles both structural and attitudinal issues. It involves raising awareness, promoting education and economic opportunities, enforcing anti-discrimination laws, and fostering social and cultural change.

Insta Links:
[Caste System](#)

Mains Link:

Q. Discuss in detail features of the Caste System in India, also, identify various reasons for strengthening caste-based identity in today's times. (15M)

Topics: Important Geophysical phenomena such as earthquakes, Tsunami, Volcanic activity, cyclone etc., geographical features and their location- changes in critical geographical features (including water-bodies and ice-caps) and in flora and fauna and the effects of such changes.

3. INDIA AND THE NORTHERN SEA ROUTE

Context:

The [Arctic region](#) holds **significance for India** due to potential impacts on economic security, water security, and sustainability arising from climate change.

What is the [Northern Sea Route \(NSR\)](#)?

It is the **shortest shipping route** connecting Europe and the Asia-Pacific region. Spanning 5,600 km, it passes through **four seas of the Arctic Ocean**. The route starts at the boundary between the **Barents and Kara seas (Kara Strait)** and **concludes at the Bering Strait (Provideniya Bay)**. The NSR offers potential distance **savings of up to 50% compared to existing shipping lanes via Suez or Panama**.

The inaugural nuclear icebreaker, “**Lenin**,” operated from **December 1959 for thirty years**. Today, the fleet of nuclear-powered icebreakers, overseen by Rosatom’s subsidiary FSUE Atomflot, ensures secure navigation on the Northern Sea Route (NSR).

India’s participation in NSR development is driven by:

- **Growing Cargo Traffic:** NSR cargo traffic increased by about **73% during 2018-2022**.
- **Strategic Transit Route:** India’s geographical location and reliance on sea transportation make the NSR a crucial transit route.
- **Chennai-Vladivostok Maritime Corridor (CVMC):** This project, stemming from a 2019 memorandum of intent, **shortens transport time to 12 days** (almost reduced by a third). It allows efficient trade through the **Sea of Japan, the South China Sea, and Malacca Strait**.
- **Cargo Potential:** A study by **Chennai Port Trust** shows **CVMC** can import items like coking coal, crude oil, LNG, and fertilizers from Russia to India efficiently
- **Geopolitics:** India would like to complement China and Russia’s potential collective influence over NSR.

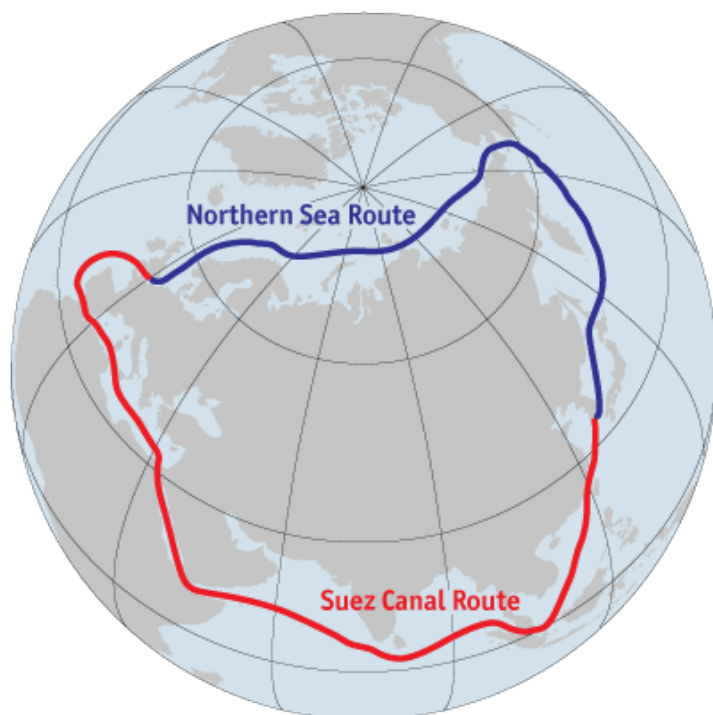
[India’s engagement in the Arctic:](#)

- **India’s engagement with the Arctic began when it signed the Svalbard Treaty** in February 1920 in Paris between Norway, the US, Denmark, France, Italy, Japan, the Netherlands, Great Britain, and Ireland, and the British overseas Dominions and Sweden concerning Spitsbergen. Ever since then, India has been closely monitoring all the developments in the Arctic region.
- **India initiated its Arctic research program in 2007** with a focus on climate change in the region.
 - The objectives included studying teleconnections between the **Arctic climate and the Indian monsoon**, to characterize sea ice in the Arctic using satellite data, and to estimate the effect on global warming.
- India has set up a research station **Himadri at Ny-Ålesund, Svalbard, in 2008**
- **In May 2013**, India became an **observer state of the Arctic Council** along with five others including China.
- **India launched its inaugural multi-sensor** moored observatory and northernmost atmospheric laboratory in **2014 and 2016 respectively**
- Till last year, **thirteen expeditions to the Arctic** were successfully conducted.

Significance of the [Arctic region](#) significant to India

Key Reasons	Significance of the Arctic Region for India
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Northern Sea and Suez Canal routes



How is Russia making the NSR navigable?

Russia ensures the navigability of the [Northern Sea Route \(NSR\)](#) by using **icebreaking assistance**, as the Arctic Ocean remains icebound for most of the year. Russia maintains the world’s only **nuclear-powered icebreaker fleet**.

Climate Impact	The vulnerability of the Arctic to climate change could affect India's economic and water security.
Natural Resources	The region holds vast unexplored hydrocarbon reserves and valuable minerals, contributing to India's resource needs.
Economic Development	India's economic development in the Arctic aligns with UN Sustainable Development Goals.
Historical Engagement	India's connection dates back to the Svalbard Treaty in 1920, with ongoing scientific studies and Arctic Council participation.
Trade and Transit	The Arctic's Northern Sea Route (NSR) offers a potentially shorter trade route, particularly for India's sea-dependent trade.
Global Influence	By engaging in Arctic affairs, India can assert its global presence and contribute to discussions on climate change and resource management.

Last Year, India released its [Arctic Policy](#), with the aim of enhancing the country's cooperation with the resource-rich and rapidly transforming region.

Insta links
[India and the Arctic](#)

Mains Links:

Q. Why is India taking a keen interest in the resources of the Arctic region? (UPSC 2018)

Q. The frigid Arctic, which keeps losing ice due to global warming, is one of the batteries feeding the variations in Indian monsoons. Discuss. (250 Words)

GENERAL STUDIES – 2

Topics: Indian Constitution- historical underpinnings, evolution, features, amendments, significant provisions and basic structure;

1. RENOUNCING INDIAN CITIZENSHIP

Context:

A growing number of Indians are **relinquishing their citizenship**, primarily seeking better economic opportunities and social security abroad.

What does Data show?

- **Over 15 lakh Indians** have given up their citizenship

in the past decade, with many heading to the United States.

- **High-net-worth individuals** are also leaving India (through investment migration), with around **6,500 expected** to move out this year, making it the second-highest net outflow globally after China.
- **The USA** remains the most preferred destination, followed by Canada, Australia, and the UK.
- The MEA estimated the number of Indian nationals living abroad to be around **1.2 crore in 2021**

Reasons for Renouncing Citizenship:

Reasons	Explanation
Better Economic Opportunities	Seeking improved job prospects and higher income abroad.
Improved Social Security	Looking for better healthcare, education, and social welfare benefits in the new country.
Lifestyle Considerations	Pursuing a better quality of life, safety, and overall living standards.
Friendly Tax Legislation	Opting for countries with favourable tax laws and reduced financial burdens.
Education Opportunities	Accessing higher education and specialized programs is not available in the home country.
Ease of Mobility	Obtaining a passport that allows visa-free travel to more destinations globally.
Political Stability	Escaping political instability, conflict, or governance issues in the home country.
Environmental Factors	Moving to places with better environmental conditions and climate.
Family Reasons	Reuniting with family members already settled in another country.
Investment and Business Opportunities	Exploring entrepreneurial ventures or investment opportunities abroad.

What is Citizenship?

Citizenship is the **legal and social relationship** between an individual and a state, signifying full membership and allegiance to that state.

- In India, there are **citizens and aliens**, with citizens being integral members of the nation and enjoying all civil and political rights.
- This concept of citizenship creates an **exclusionary distinction from non-citizens**.
- **The Citizenship Act of 1955** prescribes **five ways of acquiring citizenship**, viz, birth, descent, registration, naturalisation and incorporation of territory.

Principle of Citizenship:

Two widely recognized principles determine the granting of citizenship: “**jus soli**,” which grants citizenship based on place of birth, and “**jus sanguinis**,” which considers blood ties.

- India has leaned towards the **concept of jus soli** since the days of the Motilal Nehru Committee in 1928, rejecting the **racial notion of jus sanguinis** as it contradicted Indian values and ethos.

Ways to Renounce Citizenship in India:

Ways	Details
Voluntary Re-nunciation	An Indian citizen of full age and capacity can relinquish citizenship through their will.
	When an individual gives up citizenship, minor children also lose Indian citizenship but can regain it at 18.
By Termination	India follows single citizenship, meaning one can be a citizen of only one country at a time.
	If a person becomes a citizen of another country, Indian citizenship automatically ends, except during war.
Deprivation by Government	Government can terminate citizenship if a citizen:
	<ul style="list-style-type: none"> Disrespects the Constitution
	<ul style="list-style-type: none"> Acquired citizenship through fraud
	<ul style="list-style-type: none"> Illegally traded or communicated with the enemy during war
	<ul style="list-style-type: none"> Is sentenced to over 2 years in prison within 5 years of registration or naturalization
	<ul style="list-style-type: none"> Lives outside India for 7 consecutive years

Conclusion:

A **successful, prosperous, and influential diaspora** is an advantage for India, and our approach is to tap diaspora networks and utilise its reputation for national gain. The Government’s efforts are particularly aimed at encouraging the exchange of knowledge and expertise in a manner that would contribute to India’s national development

Insta Links:

[Renunciation of Indian citizenship is now simpler](#)

Topics: Separation of powers between various organs dispute redressal mechanisms and institutions.

2. PROS AND CONS OF MEDIATION BILL 2021

Context:

The recently passed **Mediation Bill, 2021** in India aims to **govern mediation processes**. We had already discussed [this bill before](#). Here we will analyse the positive and negative features of the bill.

What is Mediation?

Mediation is an alternative dispute resolution (ADR) method in which a neutral third party, known as a **mediator**, helps parties in a dispute reach a mutually agreeable resolution.

Mediation is considered a **more cost-effective, efficient, and less adversarial** method compared to traditional court litigation.



The Mediation Bill, 2021 brings several positive aspects to India’s legal landscape:

- Voluntary Pre-Litigation Mediation:** The Bill recommends making pre-litigation mediation voluntary instead of mandatory, aligning with the core principle of **voluntariness in mediation**.
- Recognition of Settlement Agreements:** The Bill includes provisions for the recognition and enforcement of settlement agreements arising from mediation.
 - This aligns with international norms, as **India is a signatory to the United Nations Convention on International Settlement Agreements Resulting from Mediation (Singapore Convention)**.
- Efficient Timeframes:** On the recommendation of

the parliamentary panel, the bill reduces the time for concluding a mediation process from 180 to 90 days.

- This streamlined approach **enhances the efficiency of the mediation process**, allowing parties to reach resolutions more promptly.
- **Online and Community Mediation:** The introduction of concepts like “online” and “community” mediation reflects modern approaches to dispute resolution.
- **Flexibility in Interim Relief:** The Bill provides for interim relief in exceptional circumstances during mediation.
- **Inclusion of Mediation Culture:** By providing a legal framework for mediation, the Bill promotes a culture of mediation in India.
- **Global Recognition:** The adoption of dedicated mediation legislation puts India on par with global practices in alternative dispute resolution.
 - This enhances India’s reputation as a **destination for business and investment**.

Issues with the Mediation Bill, 2021:

Issues	Description
Limited Grounds for Challenge	This could hinder parties’ recourse in case of new evidence or unforeseen circumstances.
Challenge Period Inadequate	The 90-day period provided to raise challenges against settlement agreements might not be sufficient for parties to discover certain defects or fraud at a later stage.
Undefined Term “Exceptional Circumstances”	The term “exceptional circumstances” in Clause 8 under which party can move court (before or during the mediation process) is undefined in the Bill.
Access to Online Mediation	Online mediation requires widespread internet access , which is not uniformly available across India.
Mandatory Panel of Three Mediators for Community	Requiring a panel of three mediators for community mediation limits the flexibility that mediation usually offers.
Restrictions on Government Participation	The Bill restricts the government’s participation in mediation proceedings only to “commercial disputes,” limiting its potential impact on resolving broader public issues, as the government is the biggest litigant in India.

Conclusion:

The bill provides a legal framework for mediation and reflects the **government’s whole-of-government approach** to promoting alternative dispute resolution. However, the Bill’s impact on **promoting mediation as a preferred mode of justice remains debated**.

Insta Links:

[The Mediation Bill, 2021](#)

Topics: Salient features of the Representation of People’s Act.

3. LILY THOMAS CASE AND SECTION 8(4) OF RPA

Context:

The article discusses the **implications of [the Lily Thomas case’s judgment](#)** that invalidated Section 8(4) of the Representation of People Act.

What is Lily Thomas case’s about and its judgement?

The **Lily Thomas case** pertains to the Supreme Court of India’s judgment that **invalidated [Section 8\(4\) of the Representation of People Act](#)**. This provision allowed a **three-month period for convicted legislators** to appeal before disqualification.

- The court’s ruling led to **instant disqualification** upon conviction, impacting the careers of sitting legislators.
- The judgment was based on the premise that **Article 102(1) doesn’t distinguish between sitting members and candidates** for disqualification.

[Disqualification of MPs and MLAs under RPA, 1951:](#)

- **Section 8(3) disqualifies MPs and MLAs convicted and jailed for 2+ years**, leading to **6-year disqualification** after release.
 - Convicted individuals on bail with pending appeals are **ineligible for contesting elections**.
- **Section 8(4)** previously allowed convicted legislators to continue if they appealed **within 3 months**.
 - In Lily Thomas’s case, Supreme Court, July 2013, declared 8(4) unconstitutional, disqualifying on the date of conviction.

Issues with the Judgment in Lily Thomas Case:

Issues	Description
1. Instant Disqualification	E.g., Recently Rahul Gandhi was disqualified immediately after his conviction in a defamation case.

2. Adverse impact on Legislators	Legislators lose their seats due to quick disqualification without proper recourse.
3. Insufficient time for the appeal process	Limited time for legislators to appeal and present their case for reversal.
4. Slow court procedures	Courts take extended periods for handling appeals, creating undue delays.
5. Differential Treatment	Article 103 allows differentiation between sitting members and candidates for disqualification.
6. Role of President	The suggested authority for declaring disqualification lies with the President under Article 103
7. Uncertainty about staying sentence/conviction	Whether staying only sentence or both sentence and conviction can lift disqualification.
8. Limited impact on behaviour	No significant change was observed in politicians' criminal records and behaviour due to the judgment.

Measures needed to address the issues arising from the judgment in the Lily Thomas case:

- **Review and Amendment:** Consider amending section 8(4) of RPA, allowing a reasonable period for appeal before disqualification takes effect.
- **Clear Guidelines:** Establish clear guidelines for the application of disqualification, including the role of the President in declaring disqualification.
- **Timely Appeals:** Implement measures to expedite the appeals process to ensure that legislators have a fair and timely opportunity to present their cases.
- **Constitutional Safeguards:** Consider introducing a constitutional amendment in Article 102 that provides **protection against abrupt disqualifications**.

Insta Links:

[Salient features of the Representation of People's Act, 1951](#)

Mains Links:

Q. What is the significance of Section 8(3) of the Representation of the People (RP) Act, 1951? Examine the issues that have made it a topic of debate and discussion among constitutional experts. (15M)

Topics: Issues relating to development and management of Social Sector/Services relating to Health, Education, Human Resources.

4. THE KEY TO INDIA'S HUNGER CHALLENGE

Context:

The author Ashok Gulati discusses that the key to addressing India's hunger challenge lies in focusing on [gender-sensitive growth](#).

Status of India on Hunger:

- The [Global Hunger Index 2022](#) ranks **India 107 (out of 121 countries)**, and the level of hunger and undernutrition in the country is now at "serious" levels.
 - India's rank on this index has been worsening since 2020 – 94 in 2020 and 101 in 2021.
- With over 19%, India has the **highest rate of [child wasting](#)** (among under 5 children) in the world.
- Over **16% of Indians are undernourished**, and about one in every three children is stunted.
- **According to the NFHS-5, 18% of mothers reported** that their child (between ages 6-23 months) did not eat any **food/"zero-food"** in the 24 hours preceding the survey.
- **Close to 40% did not eat any grains** (roti, rice, etc) for an entire day, and six out of 10 children do not consume milk ("zero-milk").

What is gender-sensitive growth?

Gender-sensitive growth refers to **economic development and policies** that take into account the specific needs, roles, and contributions of both men and women. This approach acknowledges and addresses gender-based discrimination and seeks to empower women while promoting overall economic progress and social well-being.

How gender-sensitive growth is key to India's hunger challenges?

Aspects	Role in India's Hunger Challenges
Inclusive Economic Growth	Gender-sensitive growth promotes inclusive economic development , ensuring that both men and women have access to income-generating opportunities . This can reduce poverty and increase household resources for better nutrition.
Women's Participation in Labor Force	By improving women's participation in the labour force, gender-sensitive growth can enhance household income , leading to better affordability of food and improved nutrition.

Education and Skill Development	Investing in women's education and skill development increases their ability to earn and contribute to family income, reducing vulnerability to hunger and malnutrition.
Women's Empowerment	Empowered women have more decision-making power within households, including control over food choices and resources . This can lead to improved nutritional outcomes for children and families.
Agriculture and Food Systems	Gender-sensitive growth recognizes the significant role of women in agriculture and food production . Providing women with access to resources, technology, and training can enhance agricultural productivity and food security.
Nutritional Awareness and Health-care	Gender-sensitive approaches can ensure that women and children receive adequate care and nutrition.
Climate Resilience	Empowering women in climate-resilient practices and sustainable agriculture can help mitigate the impact of climate change on food production and availability.

For the way forward: Click on the FAO report: [Hunger Hotspots – FAO-WFP Early Warnings on acute food insecurity](#)

Insta Links:
[Food security in India](#)

Topics: Bilateral, regional and global groupings and agreements involving India and/or affecting India's interests.

5. ADMITTING NEW MEMBERS TO BRICS

Context:

India is questioning the criteria for Brics membership and seeks clear guidelines for new entrants

About BRICS:



BRICS

Context: 19 nations including Saudi Arabia, UAE, Algeria, Egypt, Bahrain, and Iran have expressed interest in joining the emerging-markets bloc of BRICS (Brazil, Russia, India, China, and South Africa).

About BRICS

Topic	Information
BRICS (founded: 2009; HQ: Shanghai)	is an acronym for the grouping of the world's leading emerging economies, namely Brazil, Russia, India, China, and South Africa (included in 2010)
Origin	The term "BRIC" was coined by the British Economist Jim O'Neill in 2001 to describe the four emerging economies of Brazil, Russia, India, and China.
Share of BRICS	BRICS brings together five of the largest developing countries, representing 41% of the global population, 24% of the global GDP, and 16% of the global trade (By 2028, BRICS is expected to make up 35 per cent of the global economy)
Chairmanship	The chairmanship of the forum is rotated annually among the members, in accordance with the acronym B-R-I-C-S. South Africa is the chair for 2023.
Initiatives of BRICS	1. New Development Bank (NDB) 2. Contingent Reserve Arrangement (CRA) 3. BRICS Payment System 4. Customs Agreements 5. Remote Sensing Satellite
New Initiative	BRICS is planning to launch its own "new currency" system, a major step towards de-dollarization (reducing dependence on the US dollar for trade)

To Read about the Importance of BRICS for India: [Click Here](#)

To Read about the Challenges for BRICS: [Click Here](#)

To Read about the Way forward for BRICS: [Click Here](#)

The criteria for eligibility in BRICS:

There is **no formal application process** as such to join BRICS, however, certain eligibility features are considered for new members

- **Economic Size:** E.g., India had suggested a minimum of \$400bn GDP for new members
- **Trade Volume:** E.g., India had suggested minimum BRICS trade of \$50 billion with the new member
- **Emerging Economy Status:** The country should **demonstrate characteristics of an emerging economy**, including growth potential, industrialization, and development trajectory.
- **Political Stability:** Membership often requires the candidate country to have a stable political environment, good diplomatic relations with existing members, and a commitment to democracy.
- **Mutual Consensus:** Existing BRICS members **usually need to reach a consensus** on admitting new members, which is crucial for expansion.

India's Stance on the Expansion of BRICS:

India has **not been very enthusiastic** about the expansion of **BRICS membership so far**, as it is basically an exercise **initiated by China** to increase its clout in the grouping. "Since almost all other members are now **open to the expansion process**, including Brazil, which wants **Argentina** as a member to increase the weight of Latin America, India has accepted to go on the BRICS expansion plan even with some relaxation in GDP and Trade criteria.

How is China influencing BRICS?

- **Expansion Push:** China advocates for the enlargement of BRICS by encouraging more countries to join, thereby extending the group's global presence.
- **Diplomatic Strategy:** Due to limited regional allies, China views BRICS as a means to secure broader diplomatic backing, fostering relationships with countries like North Korea, Cambodia, and Myanmar.
- **Countering Western Dominance:** China aims to challenge and diminish Western influence in global affairs through BRICS, using the platform to **counter-balance Western-dominated structures**.
- **Engagement with Other Groups:** China leverages BRICS to engage with other influential groups like the **Shanghai Cooperation Organisation**, which it largely dominates, further enhancing its sway within BRICS.
- **Data Control Concerns:** China's involvement in the proposed BRICS data cable raises apprehensions regarding its potential control over communication and information flow, leveraging its technological expertise.

Why is the upcoming BRICS summit important for India?

Aspect	Importance for India
Geopolitical Significance	BRICS discussions are perceived to carry a "counter-western" slant , which aligns with India's strategic interests.
Post-Pandemic Recovery	It provides a platform for BRICS nations to discuss collaborative efforts for global economic recovery and stability .
Military Standoff with China	The summit offers opportunities for bilateral talks on the LAC issue.
Preparation for G20 Summit	With India hosting the G20 summit shortly after BRICS, the summit provides an occasion for India to secure full attendance from leaders , including those from BRICS member states.
Cooperation from China and Russia	India seeks increased cooperation from China and Russia on various issues like the Leader's declaration content, especially paragraphs on Ukraine, climate change, debt financing, etc.
Expansion of BRICS	India aims to ensure consensus on inducting new members , possibly including countries like Argentina, Saudi Arabia, UAE, and Iran.

Conclusion:

BRICS holds **economic importance** as China and India rank within the top five global economies. It also serves as a potential alternative to Western-dominated global systems, of-

fering a distinct voice in international affairs. The inclusion of new members will give more voice to the BRICS.

Mains Links

Q. Discuss the importance of BRICS for India. (250 Words)

6. INDIA-UK RELATIONSHIP

Context:

The article discusses the U.K.-India relationship and the opportunities it presents across various aspects.

Various aspects of the India-UK relationship:

Aspect	Key Points
Political Relationship	India's political system influenced by UK. - Shared democratic values. - Collaboration on global issues. - Support for UN Security Council seat and NSG membership. - Joint declaration for annual Summits and meetings.
Bilateral Institutions	Regular Foreign Office Consultations. - Disarmament and Non-Proliferation Dialogue. - Counter Terrorism Joint Working Group. - UN Dialogue, Policy Planning Dialogue, Cyber Dialogue, etc. - Institutionalized economic mechanisms.
Defence Collaboration	Strategic partnership since 2004. - Joint military exercises. - Cooperation in cyber security and maritime security. - "Make in India" campaign involvement. - Carrier Strike Group deployment in Indian Ocean.
Nuclear Cooperation	Civil Nuclear Cooperation Declaration (2010). - Nuclear Collaboration Agreement (2015). - Collaboration on energy and climate change.
Terrorism and Extremism	Cooperation against terrorism and extremism. - Push for UN Comprehensive Convention on International Terrorism.
Economic Relations	The Joint Economic and Trade Committee (JETCO) was established in 2005. - India-UK Free Trade Agreement talks. - Bilateral trade and investment growth.
Trade and Investment	Bilateral trade worth £36 billion in 2022 . India is the U.K.'s second-largest source of investment projects, and the U.K. has invested \$34 billion in India as foreign direct investment. Rupee-denominated bonds . The U.K. is launching the 'Alive with Opportunity' marketing campaign to celebrate and strengthen the bond between the two countries and attract Indian investments in the UK

Education and Research	Science and Technology Agreement (1996). - Science & Innovation Council. - India Education and Research Initiative (UKIERI)
Climate and Environment	Cooperation on climate-related issues. - Green Growth Equity Fund for renewable energy and environment.
Health Collaboration	Health sector collaboration, pandemic preparedness, research, Ayurveda, and Yoga.
Cultural Engagement	Memorandum of Understanding on Cultural Cooperation (2010). - Nehru Centre for Cultural Outreach. - The concept of a 'living bridge' is emphasized, highlighting the dynamic exchange between the two countries.
People-to-People Contact	Indian diaspora's influence in the UK. - Indian student community in the UK. - Shared interests in cricket, cuisine, yoga, and festivals.
UK's Significance for India	Support for UNSC seat, NSG membership, and development objectives. - Economic and technological partnership. - Defense and security cooperation.
India's Significance for UK	Role in "Global Britain" ambitions. - Seizing opportunities in the Indo-Pacific. - Economic ties, investments, and rejuvenation of the Commonwealth.

The current major bilateral issues between India and the UK include:

- **Extradition of Indian Economic Offenders:** The issue pertains to the extradition of Indian economic offenders who have sought refuge in Britain and are utilizing the legal system to their advantage.
 - **E.g., Vijay Mallya and Nirav Modi**
- **Umbilical Link with Pakistani Deep State:** This link sometimes leads to British involvement in matters related to Jammu and Kashmir, utilizing Pakistan's support.
- **Issues with differing expectations on FTA talks**
- **Taxation:** Britain has raised the matter of existing tax disputes of Vodafone Group Pic. and Cairn India Ltd with the Indian government.
- **Non-Acceptance of India's Rise:** Some segments of white Britain, including the media, might not fully acknowledge India's emergence as a global power.

Conclusion:

With a historic foundation of culture, history, and language, there is a unique opportunity to further deepen the India-UK relationship, leveraging their strengths for mutual prosperity.

Mains Links:

Q. The judicial systems in India and the UK seem to be converging as well as diverging in recent times. Highlight the key points of convergence and divergence between the two nations in terms of their judicial practices. (UPSC 2020)

Topics: Effect of policies and politics of developed and developing countries on India's interests, Indian diaspora.

7. PAKISTAN ARMY ACT

Context:

The Pakistan Senate passed a Bill on July 27, 2023, to amend the **Pakistan Army Act, 1952**.

What is the ongoing issue with Pakistan?

The ongoing political crisis in Pakistan has **escalated with the arrest of former Prime Minister Imran Khan**. The conflict centres around **Khan's confrontation with the military establishment**, marking a power struggle between the **popular politician and the powerful institution**. Khan's arrest led to **widespread protests and violence**, causing damage to military installations. The military responded **forcefully, indicating a strong stance against dissent**. The arrest was deemed **unlawful by Pakistan's Supreme Court**, further highlighting the power struggle.

Khan's popularity had previously acted as a **buffer against the military's assertiveness**, but the recent events have **intensified the conflict**. The Present coalition government has also **confronted the judiciary**, adding to the chaos. Meanwhile, **Pakistan's economy is in dire straits**, with looming **default and high inflation**. General elections are due, but the Military appears to **want Khan sidelined**.

Against this backdrop, Pakistan's army has endorsed the amendment to The Army Act.

Key Features of Amendments:

Controversies and Concerns
Expands Act to include civilians in army-affiliated entities .
It criminalizes unauthorized disclosure , raising concerns about freedom of information. It bars political activity for two years after retirement .
It restricts engagement with conflicting entities , raising concerns about post-retirement opportunities. It outlines punishments for undermining the Armed Forces , which could curb freedom of expression.
Rushed Passage of the Bill: Passed quickly without proper notice, raising questions about transparency and the legislative process.
Intimidation of Veterans: Seen as targeting retired personnel supporting Imran Khan, which could stifle dissent.

Concerns:

The amendments to the **Pakistan Army Act** signal a **power struggle** between Imran Khan and the military establishment, impacting **Pakistan's domestic stability**. This situation has implications for **India's neighbour**, with potential repercussions on regional dynamics and security.

Topics: Important International institutions, agencies and fora, their structure, mandate.

8. MULTILATERAL DEVELOPMENT BANKS AND ISSUES WITH GLOBAL FINANCIAL SAFETY INSTITUTIONS

Context:

The article discusses that in the absence of significant governance reform, global financial safety institutions such as [World Bank and IMF](#) are losing effectiveness.



Global Financial Safety Institutions

Global financial safety institutions are international organizations, such as the **International Monetary Fund (IMF)** and **World Bank** and regional financial arrangements, that provide financial assistance and stability measures to countries facing economic crises or financial instability.



Period	Evolution of global financial safety institutions
Pre-World War I	The gold standard, stable exchange rates, and cooperation among major global economic powers.
Post-World War II	Bretton Woods conference establishes IMF, World Bank, GATT, and later, WTO
1970s	Collapse of Bretton Woods system , shift to floating exchange rates and open capital accounts.
1980s-1990s	Frequent balance of payments crises, macro-economic instability in emerging markets, IMF attempts to manage global financial safety net.
The late 1990s	Asian financial crisis, Chiang Mai Initiative (CMI) and Chiang Mai Initiative Multilateralisation (CMIM) established, regional financial arrangements emerge.
2008-09	North Atlantic Financial Crisis (NAFC) , US Federal Reserve sets up bilateral swap lines, European Financial Stability Facility (EFSF) and European Stability Mechanism (ESM) created in Europe.
Present	Global financial safety net includes IMF, Bilateral Swap Lines , and regional financial arrangements . IMF's relative importance questioned, diverse governance structure emerging.

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What are [Multilateral development banks \(MDB\)](#)?

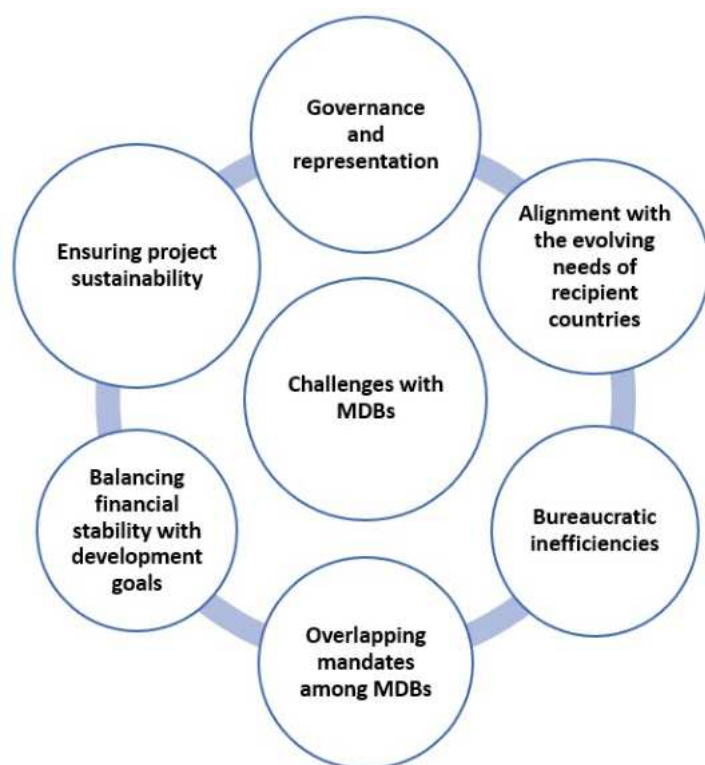
They are **international financial institutions** for the purpose of encouraging economic development in poorer nations. MDBs provide loans and grants to member nations to fund projects that support social and economic development.

Role of Multilateral development banks in global stability and development

Role	Examples
Funding Development Projects	ADB's support for Delhi-Mumbai Industrial Corridor; World Bank's assistance in National Waterway 1 on the Ganges River

Crisis Management	IMF provides financial assistance during economic crises; World Bank's support to India during the COVID-19 pandemic
Supporting SDG Implementation	World Bank grants for education and healthcare programs; Alignment of national policies with SDGs
Policy Advice and Capacity Building	IMF's macroeconomic policy advice; Technical assistance for governance improvement

Despite playing a crucial role in promoting development and global stability, multilateral development banks (MDBs) face several challenges that need to be addressed.



What are India's Options?

India's options within the evolving global financial safety net involve:

- Relying on [bilateral swap lines](#) with Japan and the IMF during macroeconomic and external crises.
- Enhancing its financial safety
- India should consider joining the "[Chiang Mai Initiative Multilateralisation](#)."
- India should persist in **building substantial foreign exchange reserves** for self-insurance. **Caution** is advised in **opening the capital account**, particularly to volatile debt inflows into its bond market.

Conclusion:

The future global financial system is uncertain. The ongoing [16th quota review of IMF](#) might not lead to increased quotas for emerging economies, as major member countries might not agree. With limited IMF governance reform prospects,

its significance and effectiveness could decline.

To know about IMF Quota System and SDRs: [Click Here](#)

Mains Links:

Q. Critically evaluate the working of Multilateral Development banks such as the World Bank and IMF in their efforts to promote global stability and development. Also, suggest measures to improve their effectiveness. (15M)

9. EXPANSION OF BRICS

Context:

The alliance of Brazil, Russia, India, China, and South Africa invited **six more countries (Iran, UAE, Saudi Arabia, Argentina, Egypt, and Ethiopia)** to join, starting in January 2024.

- This article is in continuation of the article [“Admitting new members to BRICS”](#) posted four days ago in Daily CA.

India’s stance on expansion:

- India welcomed the **consensus-based expansion** of the BRICS grouping during the **15th BRICS summit** in Johannesburg.
- The move strengthens **BRICS** as a **representative of developing countries**
- India has proposed creating a **BRICS space consortium**, investing in skill mapping, technology, and education, and emphasising cooperation for conservation efforts.
- The expansion is aimed at making **BRICS future-ready** by enhancing cooperation, digital solutions, and development initiatives.



BRICS Expansion



Context: The alliance of Brazil, Russia, India, China, and South Africa invited six more countries (Iran, UAE, Saudi Arabia, Argentina, Egypt, and Ethiopia) to join, starting in January 2024.

Significance of Adding New Members in BRICS:

Aspect	Significance
Strengthened Representation	The addition of new members boosts BRICS' influence as a representative of the Global South. It symbolizes BRICS as a "voice of the Global South."
Population and GDP	BRICS already represents 40% of the world's population and over a quarter of global GDP. With new members, it represents almost half the world's population and more diverse economies.
Anti-US Sentiment	The expansion is driven partly by anti-US sentiment globally , allowing nations to rally against perceived Western dominance.
Multipolarity Platform	BRICS provides a platform for countries of the Global South to express solidarity and advocate for multipolarity in global affairs.
Economic and Geopolitical Role	It challenges Western geopolitical views and has the potential to emerge as a counterweight to Western-led forums like G7 and the World Bank.
China's Influence	China's influence in driving the expansion underscores its aspirations to establish BRICS as a core agenda and non-western grouping.
Diverse Geopolitical Ties	The new members have diverse geopolitical interests, ranging from oil production (Saudi Arabia) to diplomatic alliances (Iran and Russia).
China-Russia Imprint	China's involvement in inviting Iran and Saudi Arabia underscores its role in expanding BRICS and shaping global alliances.
Signal to the West	Iran and Russia's inclusion is a signal to the West that they have global allies despite strained relations.
India's Positioning	India values its presence in BRICS as a "non-western" grouping , allowing it to maintain diverse partnerships.

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Significance for India:

The addition of new members to BRICS holds significance for India in terms of **expanding partnerships and geopolitical influence, while also raising concerns about potential pro-China dominance** within the alliance.

Concerns: Concerns exist that the expansion could lead to increased pro-China influence within BRICS, possibly side-lining other member voices.

Conclusion:

While it strengthens BRICS’ position as a platform for developing countries, there’s a need for India to ensure its voice and interests aren’t overshadowed by the growing influence of China and other new members.

GENERAL STUDIES – 3

Topics: Indian Economy and issues relating to planning, mobilization of resources, growth, development and employment.

1. RBI’S STATE OF THE ECONOMY REPORT

Context:

The State Of The Economy report suggests that despite a global slowdown, the Indian economy has likely maintained healthy growth in the first quarter of the current financial year.

Key findings of the Report:

RBI’s State of the Economy Report Outcomes	
GDP Growth	The RBI predicts 8% economic growth for April-June.
Global Recovery Status	The global economic recovery is slowing down .
Export Situation:	Exports decreased by around 16% in July .
	Merchandise exports hit a nine-month low of \$32.25 billion.
Positive Economic Indicators:	Private consumption and investment activity may counterbalance export decline.
	E-way bill volumes showed robust growth.
	FMCG sales experienced an increase.
	Cargo at major ports and railway freight traffic rose in July.
	Steel and cement consumption witnessed growth.

Areas of Economic Concern:	Automobile sales, except three-wheelers, are low.
	More households/individuals are seeking MGNREGA work compared to last year.
	Non-oil imports decreased , indicating weak domestic demand.
	Uncertainty surrounds the extent of investment increase.
Investment Intention Study:	In 2022-23, plans were made for 982 projects worth over Rs 3 lakh crore .
	60% of projects funded by banks and institutions are in infrastructure .
	Major areas: power, roads, bridges, SEZs, biotech, and IT parks.
	Uttar Pradesh, Gujarat, Odisha, Maharashtra, and Karnataka account for over half the project cost.
Future Investment Cycle:	Strong bank and corporate balance sheets suggest a positive future for investment.

Inflation:

Retail inflation in India **surged to a 15-month high of 7.44% in July**, driven primarily by increased prices of vegetables, cereals, pulses, spices, and milk products. The rise in food prices, especially for **vegetables, cereals, and dairy products**, has contributed to the overall inflationary trend.

What is inflation?

Inflation is the rate at which prices rise. A 2% inflation implies the general price level in April this year was 2% more than what it was in April last year.

Why is inflation bad?

- It makes commodities costly.
- It essentially erodes the basis on which one makes economic decisions— meaning it reduces the value of money.

About the report:

A State of the Economy report by the Reserve Bank of India (RBI) provides a snapshot of the **country's economic status**. It covers topics such as inflation, economic growth, employment, and the bank's monetary strategies. The report **guides RBI's decisions** on interest rates and economic policies while aiding economists, investors, and the public in understanding the economy and making informed decisions.

Insta Links

- Basics: [Managing Inflation](#)
- [Inflation's Long Shadow](#)

2. INDIA IS BECOMING A YOUNG COUNTRY BUT WITH AN AGEING WORKFORCE

Context:

An analysis of [employment](#) data from the [Centre for Monitoring the Indian Economy \(CMIE\)](#) reveals that **India's workforce** has undergone a significant ageing trend over the past seven years.

Meaning of 'India's Workforce is Ageing':

An ageing workforce basically means that if one looks at all the employed people in India, the share of young people is going down while the share of those **closer to 60 years of age is going up**.

Key findings:

Major Findings	Details
Workforce Aging Trend	India's workforce has rapidly aged over the past seven years
Youth Proportion Decline	The share of youth (ages 15 to 29) in the workforce has decreased from 25% (2016) to 17% (2022)
Older Age Group Proportion Increase	The share of those aged 45 and above has grown from 37% to 49% .
Overall	The overall count of employed individuals has decreased from about 41 crore to about 40 crore .
Employment Rate Decline	The Employment Rate (ER) for youth dropped from 29% to 19% , indicating a decline in job opportunities for this age group.
Educational Attainment Impact:	Youth unemployment tends to rise with higher educational attainment , contributing to the overall trend.
Contradiction with Demographic Advantage	India's ageing workforce contradicts the perception of having a youthful population.
Reason for this trend:	
Reasons	This phenomenon is partially attributed to rising youth unemployment and a low labor force participation rate, particularly among women . India's female labor force participation rate (32.8%) is notably low globally.
Skills Deficit	The ageing workforce suggests a skills deficit , highlighting the need to enhance youth employability for a more productive workforce.

Implications of these data:

Youth Population Growth ≠ Job Increase

India's expanding youth population does **not automatically translate into more job opportunities for them**. Despite the demographic advantage, youth struggle to secure employment and face tough competition from older counterparts.

Youth Unemployment Peaks

Unemployment is most pronounced among the youth, even considering the potential influence of higher education pursuits. This trend warrants attention from policymakers. Even non-CMIE surveys indicate that youth unemployment remains a prominent concern in India.

Recommendations for Policymaker Considerations	
Demography ≠ Determinism	India's demographic advantage requires aligned policies and programs for tangible benefits; demographics alone aren't sufficient.
Skill Development & Socio-Economic Support	To avert the negative impact of unskilled youth, prioritize the provision of education, skills, training, and necessary facilities.
Leverage Employability & Well-being	Unlock demographic dividend by improving the workforce's employability, health, and education; policies should span land, labour, governance, and vocational training.

Conclusion:

Addressing youth employability is vital alongside the broader goal of creating more job opportunities.

Definition of Youth: CMIE's data defines youth as **individuals aged above 15 and below 25**. However, for the purpose of comparison, the workforce is divided into three groups: 15 to 30 years, 30 to 45 years, and 45 years and older.

Data on Female Labour Force Participation Rate (LFPR):

As per the latest available Annual PLFS Reports, the estimated Labour Force Participation Rate (LFPR) on usual status for women of age 15 years and above in the country was 30%, **32.5% and 32.8%** during 2019-20, 2020-21 and 2021-22, respectively, which shows an increasing trend.

Insta Links:

[Unemployment has decreased, says Labour Survey](#)

Mains Links:

How globalization has led to the reduction of employment in the formal sector of the Indian economy? Is increased informalization detrimental to the development of the country? (UPSC 2016)

3. HIGH YOUTH UNEMPLOYMENT IN INDIA

Context:

Despite being the fastest-growing large economy, India faces the challenge of high **youth unemployment alongside economic growth**.

What is unemployment?

Unemployment is a situation when a person actively searches for a job and is unable to find work. Unemployment indicates the health of the economy.

According to the latest annual [Periodic Labour Force Survey \(PLFS\)](#), released by the National Statistical Office (NSO), India's unemployment rate in July 2021-22 to **4.1%**

Reason for High Unemployment in India Despite High Economic Growth:

- **Lop-Sided Development Policies:** India's growth and unemployment coexist due to imbalanced policies that create fewer jobs for new labour force entrants.
- **Demographic Composition:** Over 50% of India's population is below 25, and over 65% is below 35. Despite high growth, job creation hasn't kept pace with this demographic.
- **Less Focus on Human Infrastructure:** India's progress in physical infrastructure hasn't been matched in education and skills. The absence of strong human infrastructure limits job growth.
- **Shift to Rural Manufacturing:** Urban-centric physical infrastructure investments conflict with manufacturing's move to rural areas for cost competitiveness.
- **Constrained Growth in Rural Areas:** Poor physical and human infrastructure in rural areas hinders growth drivers and limits the size of the manufacturing sector.

What is Human Infrastructure?

Human infrastructure refers to the **development and investment in the education, skills, and capabilities of a population**. It encompasses efforts to improve literacy, vocational training, healthcare, and other factors that enhance the human capital and productivity of a society.

Importance of Investing in Human Infrastructure:

- **High Returns:** Education investment yields higher returns than physical investment. Social returns for primary education are around **20%, and returns for higher education are increasing**.
- **Job Creation Acceleration:** Education investments accelerate job creation. New enterprises, both domestic and foreign, seek skilled workers and strong physical infrastructure.
- **Youth Advantage:** India's sizable youth population

can significantly benefit from education, aligning with the needs of new enterprises.

Recommendations:

- **Address Lop-Sided Development Policies**
- **Improve Rural Human Infrastructure**
- **Scale Up Tertiary Education**
- **Promote Tier II Cities:** The focus of economic growth should shift to Tier II cities, where new job opportunities and GDP growth can be generated.
- **Address Urbanization and De-Industrialization Divergence:** Policymakers need to consider rural structural transformation that includes not only agricultural productivity but also the manufacturing sector.
- **Integrate Human and Physical Infrastructure:** To overcome the limitations of poor physical and human infrastructure in rural areas, a comprehensive approach that aligns both aspects is necessary for sustainable job growth.

Conclusion:

The challenges posed by the coexistence of **high economic growth and high unemployment can be overcome** by scaling up investments in both physical and human infrastructure, bridging the gap between urban and rural areas in India.

Insta Links:

[Unemployment has decreased, says Labour Survey](#)

Mains Links:

Q. How globalization has led to the reduction of employment in the formal sector of the Indian economy? Is increased informalization detrimental to the development of the country? (UPSC 2016)

enhance their career prospects.

- **2 out of 3 Indians plan to learn at least one digital skill in 2023**, with AI and Machine Learning being among the top skills of interest.

Positives and negatives of the impact of AI at the workplace:

Positives of AI at the Workplace	Negatives of AI at the Workplace
Efficiency and Productivity	Fear of Job Displacement
Data Analysis and Insights: AI can analyze large datasets quickly and extract valuable insights for better decision-making.	Privacy Concerns: The use of AI may involve the collection and analysis of personal data, raising concerns about privacy and data security
Improved Customer Experience: AI-powered chatbots and virtual assistants enhance customer support by providing instant and accurate responses.	Bias and Fairness Issues: AI algorithms can inherit biases present in the data they are trained on, leading to discriminatory outcomes
Innovation and New Opportunities: AI drives innovation by enabling the development of new products, services, and business models.	Skill Gap and Training: There may be a gap in required skills as jobs evolve, necessitating continuous training and upskilling
Cost Savings and ROI: Implementing AI technologies can lead to cost savings and higher return on investment in the long run.	Ethical Dilemmas: AI applications raise ethical concerns regarding transparency, accountability, and the potential misuse of technology.

To know about [Generative AI](#)

Insta Links

- [AI and Robotics](#)

Mains Links

Ethics Case Study:

We'll probably look back on 2022 as the year generative Artificial Intelligence (AI) exploded into public attention, as image-generating systems from OpenAI and Stability AI were released, prompting a flood of fantastical images on social media. Last week, researchers at Meta announced an AI system that can negotiate with humans and generate dialogue in a strategy game called Diplomacy. Venture capital investment in the field grew to \$1.3 billion this year, according to Pitchbook, even as it contracted for other areas in tech.

The digital artist Beeple was shocked in August when several Twitter users generated their own versions of one of his paintings with AI-powered tools. Similar software can create

4. 'FUTURE OF WORK: STATE OF WORK @ AI' REPORT

Context:

As per LinkedIn's first ever global 'Future of Work: State of Work @ AI' report, Indian professionals are rapidly acquiring AI skills in response to the growing prominence of **Artificial Intelligence in the workplace**, with the number of [AI-skilled individuals increasing 14 times since 2016](#)

Key Findings:

- **India is among the top five countries** in terms of AI talent growth, along with Singapore, Finland, Ireland, and Canada.
- **AI Skills Index value highlights** the significant increase in members with at least 2 AI skills on their profiles compared to January 2016.
- **Recognition among 60% of workers and 71% of Gen Z professionals** in India that acquiring AI skills could

music and videos. The broad term for all this is ‘generative AI’ and as we lurch to the digital future, familiar tech industry challenges like copyright and social harm are re-emerging.

Earlier this month, Meta unveiled Galactica, a language system specializing in science that could write research papers and Wikipedia articles. Within three days, Meta shut it down. Early testers found it was generating nonsense that sounded dangerously realistic, including instructions on how to make napalm in a bathtub and Wikipedia entries on the benefits of being Caucasian or how bears live in space. The eerie effect was facts mixed in so finely with hogwash that it was hard to tell the difference between the two. Political and health-related misinformation is hard enough to track when it’s written by humans.

1. What are the ethical issues in the above case?
2. Can we have ‘ethical AI’?
3. Suggest measures that must be taken to prevent moral damage that can from AI.

Topics: *Effects of liberalization on the economy, changes in industrial policy and their effects on industrial growth.*

5. INDIA’S PROTECTIONIST INDUSTRIAL POLICY

Context:

The author discusses India’s protectionist policies in manufacturing and electronics, contrasting them with targeted approaches in the US and EU.

What meaning of [Protectionist measures](#)?

It refers to **economic policies and actions** taken by a country to **protect its domestic industries, businesses, and workers** from foreign competition.

- These measures can include **tariffs, quotas, subsidies, and other barriers** that make imported goods more expensive or difficult to access, thereby promoting domestic production and consumption.
- The goal is to **shield domestic industries** from foreign competition and support local economic growth.

Issues [with India’s Protectionist Measures](#):

Issues	Description
High Tariffs	Import restrictions and high tariffs on electronic goods like laptops and tablets, make tariffs the highest among competing economies.
Broad Protectionism	Protective measures spanning 14 sectors , some lacking a clear strategic basis (e.g., textiles, food processing).

Challenges in the Electronics Sector	Rapid technological changes in the electronics sector make domestic manufacturing keeping pace with global advancements a challenge.
Lack of Targeted Strategies	India’s industrial policy lacks targeted sector-specific strategies, unlike the US and EU’s approaches.
Missed Opportunity	Failure to fully integrate with global value chains can hinder competitiveness and growth in certain sectors.
Trade Barriers for Innovation	Excessive protectionism can hinder exposure to global competition and restrict innovation and efficiency.
Limited Focus on Technological Advancement	India’s policy may not prioritize technological advancement, putting it at a disadvantage in rapidly evolving industries.

How other countries are applying protectionist measures?

- **US:** The US has introduced the [CHIPS and Science Act](#) to boost domestic research and manufacturing in semiconductors and electric vehicles. This initiative aims to **reduce reliance on countries like China and Russia** and enhance “**strategic autonomy**.” The **US-Mexico-Canada Agreement (USMCA)** also promotes regional economic integration.
- **EU:** The EU’s [Green Deal Industrial Plan](#) aims for **carbon neutrality by 2050**. The Carbon Border Adjustment Mechanism (CBAM) taxes imports from **high carbon-output sectors**, affecting major exporters like China and Russia. The EU’s approach focuses on **environmental sustainability**.

Both the US and EU use selective protectionist measures. The US emphasizes **technological advancement** and reducing **geopolitical risks**, while the EU targets **environmental sustainability**. Their strategies have specific goals, unlike India’s broader approach.

What should India do?

- **Embrace Open Trade in Electronics:** Rapid technological changes in the electronics sector make **import substitution difficult**. Given global value chains and the success of top exporters as importers, **India should adopt open trade policies for smoother cross-border transactions**.
- **Learn from Asian Economies:** China and Vietnam’s success in the electronics sector stems from **open trade policies**. China’s dual trade regime, allowing **duty-free entry for components**, boosted exports. India could **benefit by adopting similar strategies**.
- **Combine Incentives with Trade Liberalization:** Following countries like South Korea, India should **merge financial incentives with trade liberalization**. Shifting from **import substitution to export expansion**.

sion can enhance competition, efficiency, and innovation.

The [Department for Promotion of Industry and Internal Trade \(DPIIT\), Ministry of Commerce & Industry](#), is working on a new industrial policy. This will be the **third industrial policy (after 1956 and 1991)**, which is likely to replace the 1991 policy, which was prepared against the backdrop of the balance of payment crisis.

For Broad Objectives of New Industrial Policy: [Click Here](#)

Insta Links:

[Why an industrial policy is crucial](#)

Mains Links:

Q. "Industrial growth rate has lagged behind in the overall growth of Gross-Domestic-Product (GDP) in the post-reform period" Give reasons. How far are the recent changes in Industrial Policy capable of increasing the industrial growth rate? (UPSC 2017)

Topics: Infrastructure: Energy, Ports, Roads, Airports, Railways etc.

6. COMMITTEE RECOMMENDATION ON STALLED HOUSING PROJECTS

Context:

A committee (chaired by former [NITI Aayog CEO Amitabh Kant](#)) formed by the Union Housing and Urban Affairs Ministry has suggested reviving stalled real estate projects by requiring all stakeholders, including developers, financiers, and land authorities, to accept "**haircuts**" (reduced amounts) to make the projects financially viable.

Status of Housing projects:

- The Indian Banks' Association (IBA) has estimated that over **4 lakh stressed** dwelling units involving over Rs 4 lakh crore are impacted in these stalled real estate projects
- The committee reported that **44% of stalled projects** are in the National Capital Region and **21% in the Mumbai Metropolitan Region**.

What are Haircuts?

A haircut refers to the **lower-than-market value** placed on an asset being used as collateral for a loan. In the context of the article, it refers to the **acceptance of reduced amounts or losses by stakeholders**, such as developers and financiers, to make financially troubled projects viable.

Other Recommendations of the Committee:

Recommendation	Description
Rehabilitation Package	State governments should create rehabilitation packages , and developers should commit to a three-year completion timeline .
"Zero Period"	A "Zero Period" from April 1, 2020, to March 31, 2022, should be established where interest and penalties would be suspended due to Covid-19 and court orders.
Co-Developers	"Co-developers" should be allowed to assist developers in completing projects.
Partial Surrender Policy	Developers should be allowed to surrender unused land against their outstanding dues.
Extension of Plan Approvals	Plan approvals should be extended by three years without payment to the Authority.
No Penalty or Extra Interest	Homebuyers of projects under the state government's package should not be charged penalties or extra interest.
Use of Insolvency and Bankruptcy Code	The use of the Insolvency and Bankruptcy Code should be a last resort.
Enforcement of RERA	The Real Estate (Regulation and Development) Act, 2016 , provisions for registering projects with RERA must be enforced .
Resolution for Incomplete Projects	RERAs should identify mostly complete projects facing administrative hurdles and provide a resolution within 30 days.

Conclusion:

The committee's recommendations aim to **revive stalled real estate projects** and ensure timely completion of projects, provide relief to homebuyers, and make the real estate sector more resilient and functional.

Insta Links:

- [Real Estate Regulatory Authority \(RERA\) Act of 2016](#)

Topics: Awareness in space.

7. ISRO AND CHANDRAYAAN-3 MISSION

Context:

The [Chandrayaan-3 mission's](#) successful soft landing on the Moon marks India's significant achievement, becoming the

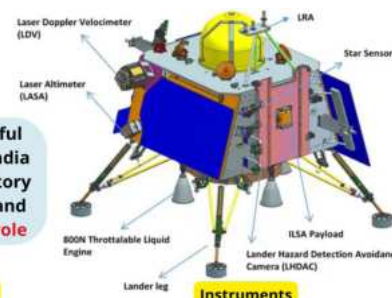
fourth nation in history to reach the lunar surface.

Historical overview of ISRO's major programs – satellites, launch vehicles, and planetary exploration.

Program	Key Achievements
Satellite Programs	
Aryabhata (1975)	Marked India's entry into space era; conducted experiments in X-ray astronomy, aeronomics, and solar physics.
Bhaskar-1 & Bhaskar-2	Experimental remote-sensing satellites laying the groundwork for Indian Remote Sensing (IRS) Satellite system.
IRS-1A (1988)	Launched Earth Observation spacecraft aiding land-based applications like agriculture, forestry, etc.
INSAT Series	Initiated communication revolution, providing nationwide connectivity, broadcasting, meteorological info, etc.
IRNSS (NavIC) (2013)	Started for terrestrial, aerial, marine navigation, location-based services, etc.
Launch Vehicle Programs	
1963 Nike Apache	Initial rocket launch; 'sounding rocket' experiment.
SLV-3 (1980)	India's first launch vehicle; entry into space-faring nations.
PSLV	Reliable and versatile workhorse; enabled critical space missions.
GSLV	Addressed PSLV's limitations; introduced cryogenic engines.
GSLV Mk-III	Heaviest launch vehicle; used for Chandrayaan-2 and Chandrayaan-3 missions.
Planetary Exploration	
Chandrayaan-1 (2008)	Detected water on the Moon; the fifth country to reach the lunar surface.
Mangalyaan (2013)	First interplanetary mission; reached Mars orbit, showcasing interplanetary technology.
Chandrayaan-2 (2019)	Aimed for lunar exploration but faced a setback with the lander's soft landing.
Chandrayaan-3 (2023)	Achieved a successful soft landing on the Moon, contributing to India's lunar capabilities.

Chandrayaan-3 mission

Chandrayaan-3 mission's successful soft landing on the Moon marks India becoming the **fourth nation** in history to **soft-land** on the lunar surface and **1st one to land on Moon's South Pole**.



Comparison of Chandrayaan-1, 2 and 3

Aspect	Chandrayaan-1	Chandrayaan-2	Chandrayaan-3
Launch Year	2008	2019	2023
Objectives	Study lunar surface	Study lunar surface and land rover on lunar South Pole	Demonstrate landing capabilities for Lunar Polar Exploration Mission
Components	Orbiter, Moon Impact Probe	Orbiter, Lander (Vikram), Rover (Pragyan)	Propulsion module, Lander, Rover
Findings	Confirmed lunar water, caves, activity	Built upon Chandrayaan-1's water evidence	—
Communication	Communication issues after 312 days	Lander crash-landed, rover unable to operate	Successfully landed on moon and will operate for 1 lunar day (14 Earth days)
Launch Vehicle	PSLV	GSLV-Mk 3	LVM3
Landing Site	—	Lunar South Pole	Lunar South Pole
Major Partners	—	—	Japan (for Lunar Polar Exploration Mission); support from NASA and ESA (European Space Agencies)

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Challenges of landing on the Moon's South Pole:

Challenges are primarily due to the difficult terrain, extreme temperatures, and areas of permanent shadow. Unlike previous spacecraft that landed **near the lunar equator**, the South Pole presents **greater difficulties with its rugged landscape, extreme cold, and regions that never receive sunlight**.

However, despite these challenges, ISRO is interested in exploring the Moon's South Pole for several important reasons:

- **Water Resources:** The South Pole region is believed to contain significant amounts of water molecules, potentially trapped as ice in shadowed craters.
 - Confirming the presence of water is **crucial for planning future human missions and utilizing lunar resources**.
- **Scientific Discoveries:** The harsh environment and the existence of permanently shadowed areas offer a unique window into the Moon's history and the early Solar System.
 - Studying this region can provide **valuable insights into the origins and evolution of celestial bodies**.
- **Clues to Earth's History:** The Moon is thought to have formed from the debris of a massive impact between a Mars-sized object and early Earth.
 - Exploring the lunar South Pole can shed light on the materials and conditions that existed during this critical event.
- **Global Collaborations:** Successful collaborations between ISRO and NASA have previously confirmed the presence of water on the Moon.
 - Partnerships like the **Indo-Japan LUPEX mission** aim to explore the South Pole further, with plans to send a lander and rover by

2024.

- **Technological Advancements:** Undertaking missions to the lunar South Pole allows ISRO to develop and showcase innovative technologies. This includes advancements in **soft landing techniques, navigation systems, resource utilization**, and long-duration operations that can have broad applications in future space missions.

Instruments and Experiments on Chandrayaan 3:

Lander Experiments:

- **Radio Anatomy of Moon Bound Hypersensitive Ionosphere and Atmosphere (RAMBHA):** This experiment studies the electrons and ions near the moon's surface, investigating their behaviour and changes over time.
- **Chandra's Surface Thermo Physical Experiment (ChaSTE):** ChaSTE focuses on the thermal properties of the lunar surface near the polar region, contributing to our understanding of temperature variations.
- **Instrument for Lunar Seismic Activity (ILSA):** ILSA measures lunar quakes near the landing site, analyzing the composition of the Moon's crust and mantle through seismic activity.
- **LASER Retroreflector Array (LRA):** This passive experiment, provided by NASA, acts as a target for lasers, enabling precise measurements for future missions.

Rover Experiments:

- **LASER-Induced Breakdown Spectroscope (LIBS):** LIBS determines the chemical and mineral composition of the lunar surface, offering insights into its geological makeup.
- **Alpha Particle X-ray Spectrometer (APXS):** APXS identifies elements like magnesium, aluminium, silicon, and more in the lunar soil and rocks, contributing to our understanding of lunar materials.

Study objectives of the mission:

Objective	Details
Discovery of Water	The southern polar region of the Moon, characterized by deep craters in permanent darkness, is believed to contain water ice . Previously, Chandrayaan-1 instruments discovered water and hydroxyl (OH) molecules in the Moon's thin atmosphere and on the lunar surface.

Buried Lava Tubes	Chandrayaan-1's terrain mapping camera and hyperspectral imager found evidence of underground lava tubes . These structures offer a potentially safe habitat for humans in the future, shielding against radiation, meteoric impacts, extreme temperatures, and dust storms on the lunar surface.
Magma Ocean Thesis	The Moon's formation from an impact that led to surface melting, called the magma ocean hypothesis , was studied by Chandrayaan-1's M3 payload. This will be further studied by this mission.
Dynamic Moon	Contrary to the belief of lunar dormancy , Chandrayaan-1 revealed the Moon's dynamic nature interacting with the exosphere . Terrain mapping camera identified volcanic vents, lava ponds, and channels as recent as 100 million years old, indicating recent volcanic activity.
Solar Flares	Chandrayaan-2's Solar X-Ray Monitor observed solar microflares beyond the active region, analyzing elemental abundance from the solar corona.
Mapping of Minerals	CLASS X-ray Fluorescence experiment mapped approximately 95% of the lunar surface using X-rays , a significant improvement compared to past missions. The new mission will further explore abundant oxygen in mineral oxides on the Moon, potentially exploitable as fuel for future space missions.

In the future of ISRO, several potentials and challenges emerge:

Potentials:

- **Global Market Share:** ISRO aims to secure a significant 9% share of the global space market by 2030, indicating its ambition for international prominence.
- **Economic Growth:** Forecasts suggest that India's space economy could expand to an impressive **\$100 billion by 2040**, exceeding the initially projected **\$40 billion figure**.
- **International Collaborations:** The success of endeavours like Chandrayaan-3 opens doors for enhanced international cooperation and partnerships with various countries.

Challenges:

- **Budget Constraints:** Recent trends underscore financial limitations, with budget allocations declining. In the fiscal year 2023-2024, ISRO received ₹12,544 crore, an **8% decrease from the preceding year**.
- **Manpower Issues:** ISRO's workforce has remained largely static for years, and there's a concerning de-

cline in students pursuing advanced space studies, potentially leading to a shortage of skilled personnel.

- **Global Ranking:** Despite impressive accomplishments, India’s global space ranking is relatively modest, **being among the top 15 nations** with satellites in orbit and commanding **just 2% of the overall global space economy**.

About Luna 25: Russia’s Lunar Mission:

Luna 25 was a Russian lunar mission launched by Roscosmos on August 11, 2023. The mission aimed to **soft-land a lander near the moon’s south pole** to study moondust, moon soil, and the atmosphere. However, the mission encountered a glitch and crashed on the moon’s surface on August 20, ending in failure.

About LVM3:

Launch Vehicle Mark 3 (LVM3) (previously known as GSLV-MK III) is a three-stage launch vehicle consisting of **two solid propellants S200 strap-ons** on its sides and a core stage comprising **L110 liquid stage and C25 cryogenic stage**. The vehicle is also dubbed as one of the heaviest for its ability to carry satellites up to 8,000 kg.

Insta Links:
[Chandrayaan-3](#)

Mains Links:
What is India’s plan to have its own space station and how will it benefit our space programme? (UPSC 2019)

8. SIGNIFICANCE OF CHANDRAYAAN-3 MISSION AND ISRO’S FUTURE MISSION

Context:
The article is in continuation of [yesterday’s post on the Chandrayaan-3 Mission](#).

Significance of Chandrayaan-3 for India:

Aspects	Significance of Chandrayaan-3
Planetary Exploration	Establishes India’s credentials as a serious player in planetary exploration
Space policies	Grants India the ability to contribute to and influence future space policies

Diplomatic Outreach	Enhances India’s diplomatic relations and support in the international community
Technological Advancement	Demonstrates India’s advanced space technology capabilities
National Influence	Elevates India’s position in global space discussions and collaborations
Future Collaborations	Paves the way for partnerships with other space agencies and nations
Confidence and Capability	Boosts India’s confidence to undertake complex space missions
Transition	Reflects India’s progress from a developing country to a developed one

Other upcoming Planetary missions of ISRO:

- **Lunar Polar Exploration Mission (LUPEX):** Aims to explore the Moon’s polar regions and shaded areas; Investigate water distribution and study lunar surface conditions.
- **XPoSat (X-ray Polarimeter Satellite):** India’s **first polarimetry mission**; Studies dynamics of astronomical X-ray sources.
- **Aditya-L1:** India’s first space-based solar observatory; Studies the Sun, including solar corona, emissions, winds, and flares.
- **NISAR (NASA ISRO SAR Mission):** Joint mission by NASA and ISRO; Utilizes synthetic aperture radar (SAR) to map the entire globe in 12 days.

About LUPEX Mission:

Aspect	Details
Mission	LUPEX (Lunar Polar Exploration) is a collaborative mission between ISRO and JAXA (Japan Aerospace Exploration Agency) scheduled for 2024-25.
Target Area	Polar regions of the Moon, including permanently shaded regions
Objectives	Explore lunar polar regions, investigate water abundance, study lunar surface conditions, and potential for establishing long-term stations
Power Source	Onboard battery for landing in permanently shaded areas
Components	Launch vehicle and rover (contributed by JAXA)
	Lander (provided by ISRO)

Importance	Aims to study regions of the Moon not well-illuminated by the Sun
	Focuses on understanding water distribution and potential for future exploration
	Investigate conditions for potential lunar habitats
	Contributes to India's lunar exploration capabilities

Topics: Conservation related issues, environmental pollution and degradation, environmental impact assessment.

9. IMPACT OF GEOPOLITICS ON CLEAN ENERGY TARGETS

Context:

The move to clean energy is complicated by geopolitical factors, particularly in the case of Indonesia's nickel reserves, which are crucial for battery manufacturing.

What is geopolitics?

Geopolitics refers to the **interplay between geography, political power, and international relations**, shaping how nations interact, cooperate, and compete on the global stage.

Impact of geopolitics in a move to clean energy:

Geopolitical Factor	Complications for Clean Energy	Examples
Resource Dependence	Reliance on specific countries for critical minerals like lithium, cobalt, and rare earth elements.	China's dominance in rare earth production impacts clean energy industries relying on these minerals.
Trade Disputes	Trade conflicts affecting supply chains for renewable energy components.	US-China trade tensions disrupt solar panel and wind turbine supply chains, increasing costs.
Investment Sources	Dependence on foreign investment for clean energy infrastructure.	Indonesia's reliance on Chinese investment for nickel processing affects its clean energy plans.
Technology Transfer	Reliance on foreign technology for clean energy production.	Restrictions on technology transfer impact the development of advanced renewable energy technologies.

Political Stability	Instability in producing countries affecting energy security.	Political turmoil in oil-producing countries can disrupt global energy markets, impacting renewables.
Sanctions and Embargoes	Sanctions limiting access to clean energy technologies and resources.	US sanctions on Iran restrict its ability to access international clean energy technologies.
National Interests	National interests conflict with global clean energy goals.	Countries prioritize fossil fuel industries for economic reasons , hampering renewable energy efforts.
Climate Policy Agendas	Differing climate policies affecting international co-operation.	Countries with divergent climate policies may resist cooperating on global clean energy initiatives.
Access to Finance	Limited access to international funding for renewable projects.	Developing countries face challenges in securing financing for large-scale clean energy projects.

Measures that need to be taken:

- **Diversification of [Supply Chains](#):** Develop partnerships with multiple countries to ensure a stable and diversified supply of key materials.
- **International Collaboration, strategic alliances and technology transfer**
- **Promote Fair Trade Practices:** Advocate for fair trade practices and open markets to prevent trade disputes that disrupt clean energy supply chains.
- **Investment in Domestic Production:** Provide incentives and subsidies for local manufacturing of renewable energy equipment.
- **Innovation and Research**
- **Capacity Building:** Support training and knowledge sharing to enhance local expertise in renewable energy technologies.
- **Climate Agreements:** Encourage countries to set ambitious renewable energy targets and contribute to reducing carbon emissions.
- **Financial Mechanisms:** Facilitate access to green bonds and other sustainable financing options for clean energy initiatives.
- **Sustainable Sourcing Guidelines:** Develop and promote guidelines for sustainable sourcing of materials used in renewable energy technologies.

Conclusion:

In the pursuit of a **cleaner and sustainable energy future**, the intricate interplay of geopolitics presents both challenges and opportunities. By fostering collaborative partnerships, **diversifying supply chains**, and investing in research, countries can mitigate geopolitical barriers and pave the way for a greener tomorrow.

Insta Links:

[Global Financial Pact on Climate Change: Key Takeaways](#)

Mains Links:

Discuss the significance of climate finance for developing countries and the key challenges they face in accessing climate finance. (15M)

10. DEBT-FOSSIL FUEL TRAP REPORT

Context:

Poor countries burdened with heavy debts are **compelled to rely on fossil fuels to generate revenue** for repaying loans from richer nations, highlights the Debt-Fossil Fuel Trap report.

- **The Debt-Fossil Fuel Trap** report has been released by the **anti-debt campaigner’s Debt Justice and partners** in affected countries.

Findings of the Report “The Debt-Fossil Fuel Trap”:

- **Fossil fuel extraction** is seen as a means to generate revenue and alleviate debt for countries in the global south
 - **Example of Suriname: Resource-Based Loans:** Creditors are entitled to **30% of oil revenue** until 2050, incentivizing continued oil exploitation.
 - **Argentina** supports fracking in **Vaca Muerta (Northern Patagonia)** to ease the debt crisis.
- **Revenues from fossil fuel projects** often fall short of expectations, leading to further debt.
- External debt payments for global south countries have risen by 150% between 2011 and 2023, reaching a 25-year high
- **54 countries in a debt crisis**, cutting public spending during the pandemic to repay loans
- **Extreme weather events** force countries to borrow more money for adaptation and mitigation efforts.
 - **For instance, Dominica’s debt** as a percentage of GDP rose from 68% to 78% after Hurricane Maria hit the island in 2017.

The report recommends the following actions to address the issues highlighted:

Recommendations	Description
Ambitious Debt Cancellation	Implement comprehensive debt cancellation for countries in need, across all creditors, without imposing economic conditions.
Transition to Clean Energy	Encourage the adoption of clean and renewable energy sources to reduce dependency on fossil fuels.
Wealthy Government Support	Wealthy governments and institutions should play a role in supporting countries to exit the debt-fossil fuel trap.
Sustainable Development	Promote sustainable development strategies that prioritize environmental protection and economic stability.
Ethical Investment	Ensure that financing and investments align with environmental and social sustainability, rather than contributing to fossil fuel dependence.
Equitable Financing	Offer fair and just financing terms that do not exacerbate debt burdens or perpetuate reliance on fossil fuels.

Insta Links:

[How can methane released in livestock belches be reduced?](#)

GENERAL STUDIES – 4

1. CAN AI BE ETHICAL AND MORAL?

Context:

As AI plays a growing role in decision-making, concerns arise about its ethical implications in governance.

Ethics vs. Morality:

Ethics is a broader and more systematic study of principles that guide behavior in a given context, while **morality** is the individual’s internalized sense of right and wrong shaped by personal and cultural factors.

The integration of AI into decision-making raises questions about whether AI can exhibit ethical behaviour and morality.

AI’s Potential for Ethical and Moral Behavior:

Aspect	AI’s Potential for Ethical and Moral Behavior
--------	---

Views	
Understanding Ethics and Morality	For e.g., AI systems can be trained to identify hate speech and offensive content to maintain a respectful online environment.
Bias Mitigation	AI can be programmed to mitigate biases and avoid unfair discrimination.
Decision-Making	AI can make ethical decisions based on predefined rules and data. (but lacks true moral understanding)
Counterview	
Learning from Data	AI learns from data, which might include biased or unethical information, leading to unintended consequences.
Ethics in AI: Kantian Perspective	Applying Kantian ethics to AI decision-making within governance raises concerns. Delegating decisions to algorithms could undermine human moral reasoning and responsibility . Isaac Asimov's 'Three Laws of Robotics' also highlights the challenges in translating ethics into AI rules.
Programming Ethics into AI: A Complex Task	Programming ethical AI is more challenging than programming AI for tasks like chess due to the intricate nature of ethical considerations.
Autonomy and Intent	AI lacks consciousness and intent, making its actions neither inherently moral nor immoral. E.g., A robot that assists the elderly with daily tasks completes them efficiently but without genuine care or compassion.
Accountability and Liability	As AI assumes decision-making roles , accountability questions arise. If AI-based decisions turn out to be unethical, who bears responsibility? Punishing AI is problematic as it lacks emotions. Deciding who is accountable—AI developer, AI user, or AI itself—poses a significant challenge
Unintended Consequences	E.g., Social media algorithms, while aiming to show relevant content, might inadvertently create echo chambers and reinforce biases.

Continuous Learning	AI's ability to learn and adapt can lead to ethical shifts over time, requiring ongoing evaluation.
Human Oversight	The ethical behaviour of AI often requires human oversight and intervention. E.g., Content moderation platforms use AI to flag potentially inappropriate content, but human moderators make final decisions.

Conclusion:

Ethics integration into AI is intricate, and its implications must be approached with care. **While AI can contribute to decision-making**, ensuring its ethical behaviour requires addressing complex challenges and considering liability scenarios.

For Generative AI: What are the potential applications and ethical concerns? [Click Here](#)

Insta Links:

[A new global standard for AI ethics](#)

CONTENT FOR MAINS ENRICHMENT

GS-3

1. JAL SANSADS

Context:

Sheela Asopa, an educator in Rajasthan, has established **student-led "jal sansads"** (water parliaments) in over **150 schools in the Jodhpur district**.

Under her guidance, these water parliaments have transformed water practices in schools, focusing on water conservation. Students actively engage in activities such as conducting [water audits](#), **spreading awareness through rallies and campaigns**, **maintaining digital calendars and e-magazines**, and implementing [rainwater harvesting systems](#).

Asopa's inspiration stems from her childhood experiences of observing her **mother's efforts to fetch water**.

Over the years, she introduced various water conservation programs in schools, teaching students about plumbing, fixing leaks, and understanding water usage.

In recognition of her efforts, the **Union Ministry of Jal Shakti awarded Asopa the [National Water Award](#) in June 2023**

Usage: Her example can be used in Essay/Ethics/ Geogra-

phy/ Environment paper.

2. INDIA AS A PREMIER WEDDING DESTINATION

Context:

The **Ministry of Tourism** has launched a **comprehensive campaign to position India as a premier global wedding destination**.

- The campaign aims to **tap into the potential of India's substantial wedding industry** while aligning with Prime Minister's **mission to boost tourism**. The initiative intends to showcase India as an ideal **location for weddings and promote the growth of wedding-related tourism**.
- The campaign's approach is holistic, aiming to create a memorable experience for couples from around the world who wish to celebrate their special day in India. **It seeks to seamlessly integrate India's rich cultural heritage and modern elegance.**

Usage: This can be used as an example in GS3 paper – Qns related to tourism – Way Forward or Government initiatives in developing Tourism Sector.

3. ECO-ANXIETY

What is Eco-anxiety?

Eco-anxiety refers to a **chronic fear or worry about environmental issues** and the potential negative impacts of climate change.

It is characterized by a **sense of distress and anxiety** related to the state of the planet's environment, including concerns about the future well-being of **ecosystems**, wildlife, and human populations due to factors like pollution, climate change, and natural disasters. This emotional response can **lead to feelings of helplessness, sadness, and fear** about the Earth's future.

Usage: The term can be used in ethics/Essay/Environment/ Society Questions to show the behavioural implications of Climate change.

4. SEAMLESSM4T

Meta has introduced an **advanced AI model called SeamlessM4T** that can translate and transcribe nearly **100 languages across text and speech**. This model aims to break language barriers and facilitate **communication across diverse languages**.

It has the ability to **recognize when a speaker is code-switching** or when someone moves between two or more languages in one sentence. It also recognizes **gender bias in languages**.

Unlike separate models, **SeamlessM4T's integrated approach reduces errors and delays**, enhancing translation efficiency and quality. The model covers various translation scenarios, including **speech-to-text, speech-to-speech, and text translation**.

Usage: The example can be used to showcase how S&T can be used to preserve and communicate traditional language and break language barriers.

5. CLEANTECH SOLUTIONS

Context:

The article discusses the **potential of cleantech solutions** to drive an **inclusive green future** in India. It highlights that for **effective climate action**, it's crucial to align **environmental initiatives with economic development goals**.

The green economy approach is emphasized as a way to achieve this alignment, by integrating solutions that simultaneously address environmental challenges and developmental needs.

Examples of this approach are:

- **Solar dryers** converting throwaway tomatoes into **sun-dried ones in Andhra Pradesh**
- **Biomass-powered cold storages** helping farmers in **Maharashtra selling lemons** make a gain that is **three to five times** that of the original price
- **Solar silk reeling machines** reduce drudgery for **thigh-reelers and double** their income in Odisha

Research at the **Council on Energy, Environment and Water (CEEW)** shows that just 12 such cleantech solutions (varying from solar pumps to cold storages to charkhas and looms) have the potential to **impact at least 37 million livelihoods or about 16%** of our rural population.

Usage: The examples can be used in environmental questions.

GS-4

6. KRUSHNACHANDRA ATAKA

Krushnachandra Ataka (from the Kondh tribe), a **33-year-old tribal agricultural labourer from Odisha's Rayagada district**, has achieved an inspiring feat.

After working for 13 years as an agriculture daily wage labourer and 2 years as a migrant labourer, he cracked the [National Eligibility cum Entrance Test \(NEET\)](#) for medical colleges. Despite facing financial challenges and a gap in his education, he persevered and secured admission to the Saheed Rendo Majhi Medical College and Hospital.

His determination to become a doctor is fueled by the hope of **serving his region, which lacks access to proper medical care**. Ataka's journey exemplifies how determination and the pursuit of education can transform lives and contribute to society.

Usage: His example can be used to **show the values of Determination, resilience, perseverance, commitment** to education despite challenges, and willingness to serve the community.

7. JOHN WARNOCK

Context:

John Warnock, co-founder of **Adobe Systems** and a tech industry trailblazer, has **passed away at 82**.

He is renowned for his **pivotal role in creating the Portable Document Format (PDF)**, revolutionizing document sharing.

Initially an average student, Warnock's passion for math was ignited by a high school teacher. He earned **degrees in math and electrical engineering** from the University of Utah, solving a **long-standing algebra problem** during his studies.

In the realm of computer science, Warnock contributed significantly to image rendering and cutting-edge internet projects. Teaming up with **Charles Geschke**, he **founded Adobe in 1982**. Their creation, PostScript, enabled practical small-scale printing and paved the way for revolutionary PDF technology.

Usage: His example can be used to show values of Innovation, leadership, Perseverance etc.

FACTS FOR PRELIMS

GS-1

1. VAST MEGALITHIC SITE IN KERALA

Context:

A recent archaeological excavation conducted by the **State Archaeology Department** in Kerala, uncovered a significant number of [megalithic](#) "hat stones," also known as Thoppik-

kallu in Malayalam.

- Hat stones are **hemispherical laterite stones that were used as lids on burial urns** during the **megalithic period**.
- This discovery is notable as **it could potentially be the largest collection of hat stones found at an unprotected site in the state**.

Key Findings:

- The team found **numerous [megalithic burial sites and relics](#)**, including a **unique rock-cut laterite burial chamber**, during the pipeline work that prompted the excavation.
- This site yielded a **large number of earthen urns and distinctive iron implements**, shedding light on the **culture and life of people who inhabited the area over 2,000 years ago**.
- Ashes were discovered within the urns and beneath the hat stones, which is different from the more common occurrence of cremated bones. **This suggests unique mortuary practices at this site**.



2. ANCIENT MAILARA CULT IN COASTAL KARNATAKA

Context:

Recent discoveries of **two sculptures near Kundapura, Udupi district**, have confirmed the presence of the **ancient Mailara cult in the coastal region**.

- One sculpture was found in a well at Basrur and **depicts a royal hero on a horse holding a sword and a bowl in his hands**. This unique piece lacks the usual Mylaladevi figure on the horse's back. **The sitting posture of the horse is unusual and dates it to the 15th century A.D.**
- The second discovery is a **small stone tablet depicting Mailara and Mylaladevi both mounted on an ornate horse while holding swords in their right hands**. This relief, found in a tank during dredging, is in **side profile and appears to be from the 17th century**.

Basrur was a **significant trading city during the Medieval period**, with trading **guilds like Uhayadesi and Nanadesi playing active roles**. This environment fostered various cults, including the popular **Mylara cult that was widespread in the Deccan region**.

About Mailara Cult:

The Mailara cult is a religious tradition centred around the **worship of a folk deity named Mailara, who is believed to be a manifestation of Lord Shiva**.

This cult is prevalent in parts of southern India, **particularly in the Deccan region**, including Karnataka, Maharashtra, Andhra Pradesh, and Tamil Nadu. The cult has its own **unique rituals, practices, and beliefs that have developed over time**.

Mailara is often associated with other regional deities like **Mallanna in Andhra Pradesh and Khandoba in Maharashtra**. The cult has a diverse following that **includes people from various castes and occupations, ranging from agricultural and pastoral communities to martial groups**.

3. INDIAN OCEAN DIPOLE TURNS POSITIVE

Context:

A report by the Australian Bureau of Meteorology said that the **IOD index has risen beyond the positive threshold**.

- The IOD refers to **temperature shifts in the Indian Ocean basin, impacting monsoons in India**. A **positive IOD event**, characterized by **warmer temperatures in the western basin, can enhance India's South-West monsoon**.
- However, the IOD index must remain above the threshold for a sustained period to officially declare a **positive event**.
- The positive IOD event tends to **benefit the South-west monsoon**.

For Australia, a positive IOD event often leads to **low rainfall between October and December, delayed monsoon onset, and reduced tropical cyclone activity**.

About IOD:

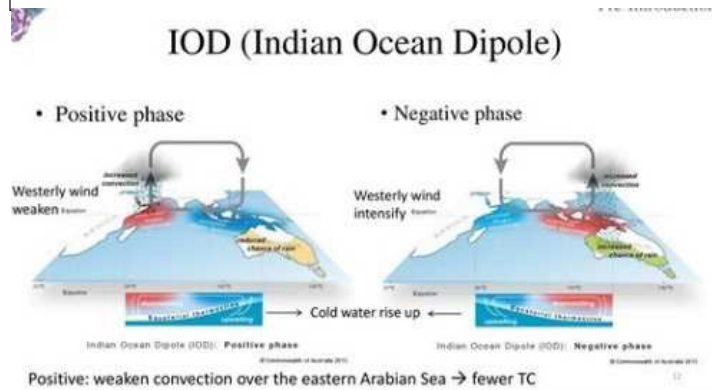
IOD stands for the **Indian Ocean Dipole**. It refers to a climate phenomenon characterized by the **difference in sea surface temperatures between the western and eastern parts of the Indian Ocean**.

There are **two phases of the Indian Ocean Dipole**:

Positive IOD: In this phase, the **western Indian Ocean becomes warmer than the eastern part**. This leads to **increased convection and rainfall in the western Indian Ocean region, including parts of East Africa and the Arabian Peninsula**,

while causing drier conditions in the eastern Indian Ocean, including Australia and Indonesia.

Negative IOD: In this phase, the **eastern Indian Ocean becomes warmer than the western part**. This leads to **higher rainfall and cooler conditions in the eastern Indian Ocean region, including Australia and Indonesia**, while causing drier conditions in the western Indian Ocean region.



4. THE FUJIWHARA EFFECT

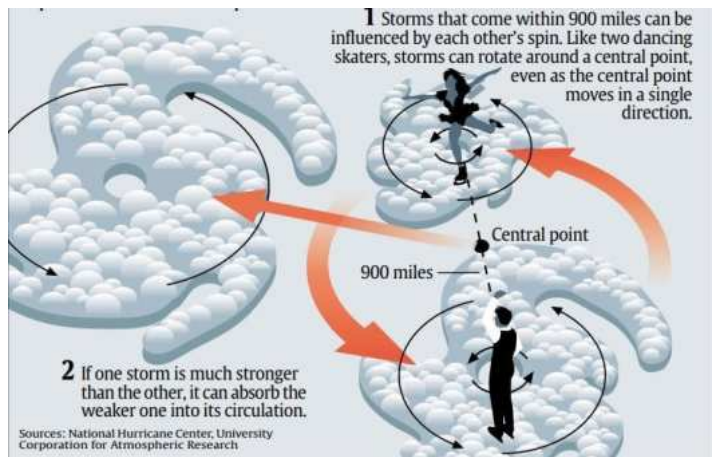
Context:

The **western coast of the United States** recently experienced **Hurricane Hilary**, which transformed into a **sub-tropical storm upon reaching the US**.

- This event led to the **National Hurricane Centre (NHC)** issuing its inaugural tropical storm watch for certain areas of **Southern California**.
- California had an **exceptionally wet winter** with multiple **'atmospheric river' storms**, and the area also witnessed the intriguing phenomenon of the **'Fujiwhara effect'** during one of these storms, where **two low-pressure areas interacted in an unexpected manner**.

About The Fujiwhara effect:

- The **"Fujiwhara effect,"** where two **cyclones** (or hurricanes) spinning in the same direction interact in a **dance-like manner around a common centre**. If one cyclone is stronger, it can absorb the weaker one.
- When of **similar strength, they might merge or rotate around each other**. In some rare instances, the two cyclones could merge into a **mega-cyclone with significant destructive potential**.
- The Fujiwhara effect was **first described by Japanese meteorologist Sakuhei Fujiwhara in 1921**.



GS-2

5. NINTH COMMONWEALTH PARLIAMENTARY ASSOCIATION

Context:

The Ninth Commonwealth Parliamentary Association (CPA) India Region Conference took place in Udaipur, India, and was inaugurated by [Lok Sabha Speaker](#).

- In his address during the valedictory session, Lok Sabha Speaker emphasized the importance of updating outdated laws to suit the current times and needs of the country.
- He highlighted the role of legislatures in enabling thorough debates and discussions to address present and future challenges.
- He expressed concern over the decline in dignity and decorum in legislatures and stressed the significance of legislators' behaviour in improving people's lives.

The conference brought together Presiding Officers from 23 states and union territories, as well as Members of Parliament and Members of the Legislative Assembly of Rajasthan. The discussions focused on various aspects of parliamentary democracy and the need for the effective functioning of legislatures in addressing societal challenges and fostering democratic values.

About [Commonwealth](#) Parliamentary Association:

The Commonwealth Parliamentary Association (CPA) serves [Parliamentarians](#) from Commonwealth countries by facilitating regular consultation and the exchange of ideas and information among members of the Commonwealth Parliament.

Founded in 1911 as the Empire Parliamentary Association (EPA) with administration by the UK Branch, the CPA adopt-

ed its current name in 1948 to reflect its evolving ties with the Commonwealth.

6. FIRST ABDM MICROSITE

Context:

The National Health Authority (NHA) introduced the ABDM Microsite project to accelerate the adoption of digital health services across India.

- Mizoram is the first state to operationalize an ABDM Microsite, ensuring that healthcare facilities, including private clinics, small hospitals, and labs, become ABDM-enabled and offer digital health services to patients.
- The CEO of NHA highlighted the importance of the project, emphasizing its role in digitizing healthcare services across the country.

Mizoram's efforts have made Aizawl the first ABDM Microsite in India, setting an example for other states.

About ABDM Microsites:

- ABDM Microsites are specific geographical areas where efforts are concentrated to onboard small and medium-sized private healthcare providers. These Microsites are primarily managed by State Mission Directors of ABDM, with NHA providing financial resources and guidance.
- Patients can link their health records generated at these facilities with their Ayushman Bharat Health Accounts and access and share these records through ABDM-enabled Personal Health Record applications.

Apart from Mizoram, states like Andhra Pradesh, Madhya Pradesh, Uttar Pradesh, Maharashtra, and Chhattisgarh have also made progress in implementing ABDM Microsites.

7. GRAND CROSS OF THE ORDER OF HONOUR

Context:

The Greek President has awarded the Indian Prime Minister with The Grand Cross of the Order of Honour.

- The Order of Honour, established in 1975, features the head of goddess Athena on its front side, along with the inscription "ONLY THE RIGHTEOUS SHOULD BE HONOURED."
- The citation recognizes PM's efforts in promoting global awareness of India, advancing economic growth and reforms, and prioritizing environmental protection and climate change.

His contribution to **strengthening Greek-Indian friendship in mutually beneficial domains** is also acknowledged.



8. THE LAND SCHEME IS RESERVED ONLY FOR DOMICILES: J&K ADMINISTRATION

Context:

The Jammu and Kashmir Lieutenant Governor's administration has announced that the **land reserved for the landless scheme under the Pradhan Mantri Awas Yojana (Gramin)** will be exclusively available to domiciles of the Union Territory.

- A person will be considered landless if they are a resident of J&K and lack land in their name or their family's name, not eligible to inherit a specific amount of land.
- The state land will be leased to landless beneficiaries under PMAY (G)/Awas plus of the Rural Development Department. Lease payment includes a token amount and nominal rent.
- The lease will be for 40 years, extendable for another 40, but failure to build a house within two years leads to lease cancellation.

9. NIKAH HALALA

Context:

The Law Commission has asked the All India Muslim Personal Law Board (AIMPLB) to clarify its stance on **nikah halala** and **muta**, contentious forms of marriage, as well as the Islamic law's stance on the minimum age for marriage.

- This inquiry arises due to **Supreme Court petitions filed by Muslim women seeking to ban these forms of marriage.**

Nikah halala involves a woman marrying and divorcing another man before remarrying her original husband, while muta refers to short-term consensual marriages.

AIMPLB expressed **opposition to the prevalent practice of nikah halala and deemed muta an inconsequential issue.** The delegation also **defended the minimum marriage age**, stating that Islam allows marriage when individuals are of age and can fulfil marital responsibilities.

AIMPLB firmly **opposed the proposed Uniform Civil Code (UCC)** and stressed that any change in Shariah law's fundamental principles is non-negotiable.

10. INDIA SMART CITIES AWARD CONTEST, 2022

Context:

Indore has been named the best Smart City and Madhya Pradesh as the top State for their outstanding performance in the **Smart Cities Mission**.

- The second and third positions among cities were secured by **Surat and Agra**, while **Tamil Nadu, Rajasthan, and Uttar Pradesh** were ranked second, third, and fourth respectively in the State category of the India Smart Cities Award Contest (ISAC) 2022.
- Chandigarh** won the award for the best Union Territory. The awards, are organized by the Ministry of Housing and Urban Affairs under the Smart Cities Mission.

The awards celebrate cities, projects, and ideas that promote sustainable development in the 100 smart cities, aiming to create inclusive, safe, healthy, and collaborative urban spaces.

The selection process involved two stages: a **qualifying assessment and a proposal submission**, with a total of 845 nominations from 80 smart cities leading to 66 winners in various categories.

The Smart Cities Mission, initiated in 2015, seeks to enhance citizens' quality of life by implementing smart solutions across sectors like infrastructure, environment, and governance.

GS-3

11. OFFSHORE WIND POWER PROJECTS

Context:

The Union Ministry of New and Renewable Energy (MNRE) has invited bids for **surveying sites earmarked for offshore wind power projects** in Tamil Nadu, India.

What are offshore wind power projects?

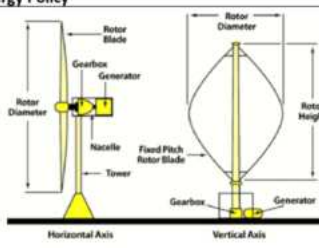
Offshore wind power projects involve **generating electricity from wind turbines** installed in bodies of water, typically **oceans or seas**. Offshore wind power offers the advantage of **stronger and more consistent wind speeds** compared to onshore locations, potentially leading to higher energy generation.

What is the Government Plan?

The government's plan involves **auctioning projects with a capacity of 4 GW** (this year) and an **additional 3 GW capacity** in the subsequent financial year. The projects will be executed using two different models:

- one with **government-backed viability gap funding**
- other involving **competitive bidding for site leasing** and subsequent development **without financial support**

Status of Wind Power in India
Status of Wind Power in India

Information	Details
Installed Capacity	India ranks 4th globally in installed wind energy capacity with 42.8 GW (onshore wind) as of April 2023 . (After China, the United States, and Germany)
Wind Power Potential	India has estimated wind power potential of about <ul style="list-style-type: none"> • 302 GW at 100m • 695 GW at 120 meters • 1,164 GW at 150 meters above ground level across India (for onshore sites)
States	Tamil Nadu> Gujarat> Maharashtra> Karnataka> Rajasthan>Andhra Pradesh
Offshore Wind Energy in India	Despite India's extensive coastline (7600 Km), no operational offshore energy projects exist . Government aims to diversify energy sources and achieve 500 GW of renewable energy capacity .
Government Initiatives for Wind Energy	<ul style="list-style-type: none"> • Policy for Repowering of Wind Power Projects, 2016 • National Wind-Solar Hybrid Policy, 2018 • National Offshore Wind Energy Policy
Types of Turbine Used in the Wind Power:	<p>Vertical Axis Wind Turbines (VAWT): VAWTs are wind turbines with blades that rotate around a vertical axis, resembling an eggbeater. It has lower efficiency compared to HAWT.</p> <p>Horizontal Axis wind turbines (HAWT): HAWTs are the more common type of wind turbines, with blades that rotate around a horizontal axis, resembling a propeller. They are highly efficient at capturing wind energy and are typically used in large-scale wind farms</p> 



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12. INFRASTRUCTURE DEBT FUND-NBFCs (IDF-NBFCs)

Context:

The Reserve Bank of India (RBI) has issued revised guidelines for Infrastructure Debt Fund-**NBFCs** (IDF-NBFCs) with the aim of enhancing their role in financing the infrastructure sector.

About the New norm:

- According to the new norms, **IDF-NBFCs** must have a **minimum net owned fund (NOF)** of Rs 300 crore and a **capital-to-risk weighted assets ratio (CRAR)** of at least **15%**, with a minimum **Tier 1 capital** of **10%**.
- They will be allowed to raise funds through **rupee or dollar-denominated bonds** with at least a five-year maturity
- The requirement for a **sponsor for IDF-NBFCs** has been removed, and shareholders will now undergo **scrutiny similar to other NBFCs**.

Aim: These changes are intended to **facilitate a greater flow of long-term debt** into infrastructure projects and **harmonize financing** regulations in the infrastructure sector.

What are IDF-NBFCs?

Infrastructure Debt Fund-Non-Banking Financial Companies (IDF-NBFCs) are specialized financial entities registered as **NBFCs** with the purpose of facilitating the flow of **long-term debt** into infrastructure projects.

- They raise funds by **issuing bonds, typically with a minimum maturity of five years**, to support infrastructure development.
- These entities play a **crucial role in financing large-scale infrastructure** projects in sectors like transportation, energy, and telecommunications.

NBFC permitted to:

- **Refinance infrastructure projects** that have completed at least one year of commercial operations
- Finance **Toll-Operate-Transfer (TOT) projects** as a direct lender.

13. THE ISSUE WITH TURMERIC SUPPLEMENTS

Context:

Australia's **Therapeutic Goods Administration (TGA)** issued a medical advisory regarding the **potential risk of liver injury** associated with the use of medicines and herbal supplements containing turmeric or its active ingredient, **curcumin**.

- The advisory was prompted by **18 reports of liver problems received by TGA**, linked to products containing **curcuma longa (turmeric) or curcumin**.

- The TGA concluded that there is a **“rare risk” of liver injury from taking curcuma longa or curcumin in medicinal forms**, particularly for individuals with existing or previous liver issues.

Research from other countries:

- France’s ANSES reported cases of hepatitis linked to **turmeric-containing food supplements**. Turmeric’s ability to **stimulate bile secretion for digestion** is noted, making it advisable for those with bile duct disease to avoid it.

Safety Standards:

- The European Food Safety Authority suggests an **acceptable daily intake of 180 mg of curcumin for a 60 kg adult**, while the WHO/Food and Agricultural Organisation recommends 3 mg/kg of body weight.

About Turmeric:

- Turmeric is a flowering plant, **Curcuma longa** of the ginger family, it is used as a **condiment, dye, drug and cosmetic** in addition to its use in religious ceremonies.
- India is a **leading producer and exporter of turmeric in the world**. India produces 80% of turmeric in the world.
- Turmeric has been studied for its **potential health benefits, including anti-inflammatory and antioxidant properties**, as well as its role in **traditional medicine and cuisine**.



14. BHARAT NEW CAR ASSESSMENT PROGRAMME (BHARAT NCAP)

Context:

The **Union Minister of Road Transport and Highways**, will be launching the **Bharat New Car Assessment Programme**

(**Bharat NCAP**).

- This initiative is a significant move towards **enhancing road safety by elevating the safety standards of motor vehicles weighing up to 3.5 tonnes in India**.
- The program aims to **provide consumers with a tool for comparing the crash safety of different motor vehicles available in the market**.
- Manufacturers can voluntarily submit their cars for testing according to **Automotive Industry Standard (AIS) 197**.
- Based on the test results, **vehicles will be assigned star ratings for both Adult Occupants (AOP) and Child Occupants (COP) safety**.

The program is expected to **drive the demand for safer cars, pushing manufacturers to cater to customer safety preferences**.

15. GENE-EDITED MUSTARD

Context:

Researchers in India have **made significant advancements in the breeding of mustard plants to create varieties with lower levels of glucosinolates**, compounds that **contribute to the pungency of mustard oil and meal**.

- The low-glucosinolate mustard lines were developed using **gene editing technology known as CRISPR/Cas9**.
- By editing specific genes responsible for **transporting glucosinolates to seeds**, researchers were able to **produce mustard seeds with glucosinolate content below the 30 ppm threshold**, making them more acceptable for consumption and livestock feed.

These genetically edited mustard lines are **non-genetically modified (non-GM)**, in contrast to **transgenic genetically modified crops**. This research holds the potential to **enhance domestic oilseed production in India**, thereby **reducing the country’s dependence on imported vegetable oils**.

16. DEFINITION OF GREEN HYDROGEN

Context:

The **Ministry of New and Renewable Energy (MNRE)** in India has introduced the **Green Hydrogen Standard** for the country as part of the **National Green Hydrogen Mission**.

The Ministry has **defined Green Hydrogen as hydrogen with a well-to-gate emission (including various production processes) of no more than 2 kg CO₂ equivalent per kg of hydrogen**.

- This standard **specifies the emission limits that hydrogen production must adhere to in order to be classified as 'Green'**, indicating it comes from renewable sources.
- The standard covers both **electrolysis-based and biomass-based methods of producing hydrogen**.
- The standard also **outlines that the Ministry will provide a detailed methodology for the measurement, reporting, monitoring, verification, and certification of green hydrogen and its derivatives**.
- The [Bureau of Energy Efficiency \(BEE\)](#), under the **Ministry of Power**, will be responsible for accrediting agencies to **monitor, verify, and certify [Green Hydrogen](#) production projects**.

17. COP28: GABON WRAPS UP \$500 MILLION DEBT-FOR-NATURE SWAP

Context:

Gabon has announced a ground-breaking \$500 million debt-for-nature swap, making it the largest such deal in Africa and the second-largest in the world.

- [Debt-for-nature swaps](#) involve indebted developing nations seeking assistance from developed world financial institutions to pay off their debt in exchange for conservation efforts.

Gabon's debt has been restructured under a Blue Bond, and it has **partnered with the Bank of America, the US International Development Finance Corporation (USDFC), and The Nature Conservancy (TNC) for this swap**.

- The swap will **refinance \$500 million of Gabon's national debt to fund marine conservation projects**.
- The Blue Bond initiative will generate an expected \$163 million in financing, **with Gabon committing to spending \$5 million annually for the next 15 years on marine conservation**.
- This funding will contribute to **advancing conservation goals, protecting endangered species, and supporting Gabon's sustainable 'blue economy'**.
- Gabon aims to protect **30% of its lands, freshwater systems, and oceans by 2030**.

The initiative builds on Gabon's previous efforts, such as its '**Gabon Bleu**' project, which expanded marine protected areas and made Gabon the first central African nation to establish a marine protected area network.

The country has already created **20 protected areas covering 26% of its ocean territory**, and the new funds will further this expansion. The deal aligns with global efforts, such as the **high-seas treaty, to protect 30% of the world's oceans and lands by 2030**.

Gabon is a country situated on the **west coast of Central Africa**. It shares borders with **Equatorial Guinea, Cameroon, the Republic of the Congo**, and the Gulf of Guinea. Covering around 270,000 square kilometres, it features coastal plains, mountains like the Cristal Mountains and the Chaillu Massif, and an eastern savanna.

18. ACOUSTIC SIDE CHANNEL ATTACKS

Context:

A research paper titled "**A Practical Deep Learning-Based Acoustic Side Channel Attack on Keyboards**" published with the support of **Durham University's ethics committee** reveals that **Artificial Intelligence (AI)** can be utilized to decipher passwords by analysing the sound produced by keystrokes.

- This method, known as **Acoustic Side Channel Attacks (ASCA)**, exploits the acoustic signals of **keyboard clicks to interpret typed information**.
- Despite being around for decades, **the advancement of AI and deep learning has heightened the risks associated with ASCAs**.
- The accuracy of **ASCAs has been demonstrated through experiments, achieving up to 95% accuracy in recognizing keystrokes** from various sources like nearby phones and laptop keyboards.

The paper emphasizes that **users can adopt defence strategies, such as altering typing techniques, using touch-based typing, employing stronger passwords with varied cases and avoiding easily predictable phrases, to mitigate the threat of ASCAs**.

About Acoustic Side-Channel Attacks:

An Acoustic Side Channel Attack (ASCA) is a **type of cybersecurity attack that exploits sound or acoustic signals to gather sensitive information**.

In the context of computer security, a **side channel attack refers to a method where an attacker targets unintended information leakage or signals emitted by a system, rather than directly attacking the cryptographic algorithms themselves**.

19. DEMON PARTICLE

Context:

Researchers at the University of Illinois have discovered a **massless particle, often referred to as a "demon particle,"** which could pave the way for the **development of superconductors capable of functioning at room temperature**.

- [Superconductors](#), which can **conduct electricity without resistance**, currently require extremely low

temperatures, **often below 100 degrees Fahrenheit.**

- This new discovery could **potentially lead to the creation of superconductors that work at room temperature**, revolutionizing various fields, including computing and medical imaging.

The team identified the potential existence of the demon particle while **investigating the properties of the metal strontium ruthenate**, which is similar to high-temperature superconductors.

About Demon Particle:

The prediction of the demon particle was first made by the **theoretical physicist David Pines in 1956**. Pines theorized that electrons passing through a solid would exhibit unique behaviours. **This particular particle is intriguing because it lacks mass, making it possible for it to exist and form plasmons (collective units of electrons) at room temperature**, where larger particles wouldn't typically form plasmons.

Why it is named a 'Demon' particle?

This name was chosen because the particle's properties, including being massless, chargeless, and not interacting with light, seemed to **defy conventional understanding**, much like a mythical or supernatural entity. The term "demon" was used metaphorically to convey the **unusual and counterintuitive nature of this theoretical particle**.

20. NAMOH 108

Context:

The Lucknow-based **CSIR-NBRI (National Botanical Research Institute)** has reportedly developed a **new variety of lotus flowers called 'Namoh 108'**, characterized by **having 108 petals**.

- The name "Namoh 108" is a combination of the **religious significance of the 'lotus flower' and the digit '108,' which holds importance in Hinduism.**

Features of Namoh 108:

- The lotus variety flowers from March to December and is rich in nutrients.
- It's the first lotus variety in India to have its **genome completely sequenced for its characteristics.**

The release also included products derived from the lotus, such as **apparel made from lotus fibre and a perfume called 'Frotus' extracted from lotus flowers.**



21. PACIFIC ISLANDS FACE THE RISK OF DROWNING

Context:

The [World Meteorological Organization \(WMO\)](#) has issued a warning that **sea levels around the Pacific Islands are rising at a rate of approximately 4 mm per year**, slightly faster than the global average.

- This accelerated rise **poses a serious threat to low-lying islands like Tuvalu and the Solomon Islands.** The warning comes from the **WMO's State of the Climate in the South-West Pacific 2022 report.**
- The report also highlighted the **occurrence of marine heatwaves in a substantial region northeast of Australia and south of Papua New Guinea, spanning more than six months.**
- The report revealed that the **region experienced 35 natural hazards in the previous year, leading to over 700 deaths.** These events directly affected more than 8 million individuals.

The findings of the WMO report **highlight the urgent need for comprehensive climate action to mitigate these impacts and safeguard the future of these vulnerable island nations.**

22. DRDO'S UAV TAPAS

Context:

The **Defence Research and Development Organisation (DRDO)** announced that there were no casualties or collateral damage resulting from **the crash of the Tapas unmanned aerial vehicle (UAV)** during an experimental flight trial in **Karnataka, India.**

- The UAV was undergoing a **trial flight from ATR Challakere when it encountered a technical snag and crashed in nearby farmland.** DRDO assured that investigations into the technical issue are ongoing.

About TAPAS UAV:

- The Tapas UAV, previously known as Rustom-2, is a **Tactical Airborne Platform for Aerial Surveillance-Beyond Horizon-201**. It's a long-endurance drone developed by the **Aeronautical Development Establishment in India**.
- With a wingspan of 20.6 meters and a top speed of 225 kmph, **the drone can cover a range of over 250 km using the C Band frequency data link developed by DRDO**.
- The UAV has the capability to **fly autonomously or via remote control, making it suitable for pre-programmed missions**. It boasts a **compact and light-weight design**, allowing for
- **easy transport and deployment in various environments**.

The drone's real-time data collection and transmission capabilities **provide valuable intelligence for decision-making**. It has an impressive **flight endurance of several hours and can operate in both daylight and darkness**.

23. ADVISORY BOARD ON BANK FRAUDS

Context:

The [Central Vigilance Commission \(CVC\)](#) has reconstituted the **advisory board on Banking and Financial Frauds (ABBFF)**, responsible for **conducting initial examinations of bank frauds** before recommending further investigation by agencies like the [Central Bureau of Investigation \(CBI\)](#).

- The ABBFF's authority **encompasses examining the roles of officials and whole-time directors in public sector banks, insurance companies, and financial institutions when frauds amounting to ₹3 crores and above occur**.

The CVC now requires all these entities to refer matters involving such fraud amounts to the ABBFF for **advice before initiating criminal investigations**. The ABBFF is also authorized to **conduct periodic fraud analysis within the financial system**, providing inputs for **fraud-related policy formulation** to the RBI and CVC.

The ABBFF, headquartered in New Delhi, is mandated to **provide advice within a month of receiving initial references from the Ministry, Department, CVC, or investigative agencies**. Notably, the suggestion from the [Indian Banks Association \(IBA\)](#) for introducing a "sunset clause" to limit actions against bankers for credit decisions after a specific period hasn't been accepted by the CVC.

24. MARKET COUPLING

Context:

The Central Electricity Regulatory Commission ([CERC](#)) has released a staff paper on implementing market coupling in India's power sector.

What is Market coupling?

Market coupling is a **process in the energy sector** where bids from various power exchanges are matched to **determine a uniform market clearing price** for electricity trading.

- It aims to **optimize transmission infrastructure** use, maximize economic surplus, and create simultaneous benefits for both buyers and sellers.
- This process helps in **efficient price discovery and integration of different electricity markets** or geographies, promoting transparency and competition in the energy trading sector.

The **CERC (Central Electricity Regulatory Commission)** has introduced provisions for market coupling among power exchanges in the country under its **CERC Power Market Regulations (PRC) 2021**. However, these provisions are yet to be officially implemented.

The benefits of market coupling include:

- Optimal utilization of transmission infrastructure.
- Maximization of economic surplus by considering all bid types leads to the creation of simultaneous benefits for both buyers and sellers.

India has three power exchanges:

- **Indian Energy Exchange (IEX): 90% market share**
- **Power Exchange of India (PXIL)**
- **Hindustan Power Exchange (HPX)**

25. MEITY-NSF RESEARCH COLLABORATION

Context:

The **Ministry of Electronics and Information Technology (MeitY)** has introduced its **inaugural Joint Call for proposals in collaboration with the National Science Foundation (NSF) (USA)** as part of its research partnership.

- The initiative is based on areas of shared interest highlighted in a **Joint Statement made by the governments of India and the United States**.
- The first Joint Call solicits proposals in the fields of **semiconductor research, next-generation communication technologies/networks/systems, cybersecurity, sustainability and green technologies, and Intelligent Transportation Systems**.

This collaborative effort aims to advance technology through various stages **such as prototype development, pilot-scale demonstrations, field deployment, and technology transfer acceleration.**

About

The National Science Foundation is an independent agency of the United States federal government that supports fundamental research and education in all the non-medical fields of science and engineering. Its medical counterpart is the National Institutes of Health.

26. PANDEMIC FUND FOR STRENGTHENING ANIMAL HEALTH SYSTEM OF INDIA

Context:

The G20 Pandemic Fund has approved a \$25 million proposal from India's Department of Animal Husbandry & Dairying, Ministry of Fisheries, Animal Husbandry & Dairying (DAHD).

The proposal focuses on "Animal Health Security Strengthening in India for Pandemic Preparedness and Response."

- The G20 Pandemic Fund, established during Indonesia's G20 Presidency, finances crucial investments to enhance pandemic prevention, preparedness, and response capacities at national, regional, and global levels, with a specific emphasis on low- and middle-income countries.
- The key components of the approved proposal include strengthening disease surveillance and early warning systems, expanding the laboratory network, improving interoperable data systems, enhancing capacity for data analytics and risk communication, fortifying health security for trans-boundary animal diseases, and facilitating regional cooperation through cross-border collaboration.

Significance:

- Beyond providing dedicated resources for pandemic prevention, preparedness, and response, the Pandemic Fund will encourage increased investments, improved collaboration among partners, and serve as an advocacy platform.
- The project's impact aims to decrease the risk of pathogens crossing from animals (both domesticated and wildlife) to humans, thereby safeguarding the health, nutrition, and livelihoods of vulnerable populations.

The project will be executed in partnership with the [Asian Development Bank](#) (ADB) as the lead implementing entity, alongside The World Bank and the Food and Agriculture Or-

ganization (FAO).

27. GONDIA, GADCHIROLI TO HOST MAHARASHTRA'S 1ST ELEPHANT RESERVE

Context:

A preliminary proposal for the feasibility of establishing an elephant reserve in the Gondia-Gadchiroli region of east Maharashtra has been submitted in response to the frequent movement of elephants in the area.

- Given the frequent movement of elephants along the borders of Gondia, Gadchiroli, and Chhattisgarh, the establishment of an elephant reserve would aid the forest department in managing development more effectively.
- Maharashtra has a relatively small elephant population, making the establishment of an elephant reserve crucial for their protection.

This initiative follows the Maharashtra government's 2020 decision to designate nearly 3,000 hectares of forest land as an elephant reserve in the Sindhudurg district, marking the first instance of such a reserve being established in the state.



28. BACTERIA THAT 'EAT' METHANE

Context:

A study conducted by researchers at the University of Washington suggests that utilizing bacteria known as methanotrophs, which consume methane, could potentially slow down the rate of global heating.

- Methane is a potent greenhouse gas emitted from various sources including energy production, indus-

try, agriculture, and waste management.

- The researchers have identified a specific strain of bacteria, **methylovimicrobium buryatense 5GB1C**, that **efficiently removes methane**, even when **present in lower concentrations**.
- Unlike many other proposed methane reduction strategies, **this method doesn't produce nitrous oxide emissions**, which have a significant global warming potential.

29. PFIZER'S RSV VACCINE

Context:

The Food and Drug Administration (FDA) has granted approval to Pfizer's vaccine, **Abrysvo**, aimed at safeguarding new-borns from **respiratory syncytial virus (RSV)** by vaccinating pregnant individuals during the **latter stages of pregnancy**.

- Abrysvo has been authorized for use in adults aged 60 and above to protect them from RSV. The vaccine generates **passive immunity by producing antibodies against RSV in pregnant individuals**, which are then passed on to their foetuses in the uterus.

Abrysvo's approval is based on its **demonstrated effectiveness in reducing the risk of severe lower respiratory tract disease** caused by RSV in new-borns. However, concerns have been raised about potential **preterm births in response to the vaccine**, similar to issues seen with another competitor vaccine.

About Respiratory syncytial virus (RSV) infection:

Respiratory syncytial virus (RSV) infection is a **common respiratory illness that primarily affects infants, young children, and older adults**. RSV belongs to the family of **viruses called Paramyxoviridae** and is a leading cause of **lower respiratory tract infections**, such as **bronchiolitis and pneumonia**, especially in children under the age of two.

The virus spreads through respiratory droplets when an infected person **coughs or sneezes**, and it can also be **transmitted through direct contact with contaminated surfaces**.

30. ULTRA-PROCESSED FOOD

Context:

A report jointly released by the [World Health Organisation \(WHO\)](#) and the **Indian Council for Research on International Economic Relations (ICRIER)** highlights a significant and concerning increase in the **sales of ultra-processed foods in India over the past decade**.

- The study shows that **sales of items like chocolate and sugar confectioneries dropped from 10% in 2019 to 1% in 2020 due to the pandemic**, but then quickly recovered to **9% in 2021**. Similarly, retail

sales of salty snacks and beverages reduced from 14% each in 2019 to 9% and 1% in 2021, respectively.

- The report suggests that by 2032, despite a decline in market share, ultra-processed foods such as **chocolate, sugar confectioneries, salty snacks, and ready-made food** will continue to dominate the market.

About Ultra-processed foods:

Ultra-processed foods are a **category of food products that have undergone multiple stages of processing**, often involving the **addition of various artificial ingredients**, such as **preservatives, colours, flavours, and additives**.

These foods typically contain **minimal whole or natural ingredients** and are characterized by their **convenience, long shelf life, and often addictive taste profiles**.

31. DHOLPUR-KARAULI TIGER RESERVE IN RAJASTHAN

Context:

India has **established its 54th tiger reserve in the Karauli and Dholpur districts of Rajasthan**, following approval from the **National Tiger Conservation Authority (NTCA)**.

- This new reserve marks **Rajasthan's fifth**, joining the existing reserves of **Ranthambore, Sariska, Mukundra Hills, and Ramgarh Vishdhari**.
- The Dholpur-Karauli Tiger Reserve's **approval is seen as a significant step forward for wildlife conservation in the state**.

Stats on Tiger Population:

- Over recent years, India has seen an **increase in tiger population, rising from 2,967 in 2018 to 3,682 in 2022, signifying an annual growth rate of 6%**.
- Notably, **Madhya Pradesh has the highest number of tigers (785)**, followed by **Karnataka (563)**, **Uttarakhand (560)**, and **Maharashtra (444)**.

Rajasthan has also experienced growth in its tiger population, **which has risen from 32 in 2006 to 88 in 2022**.



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Dholpur-Karauli tiger reserve in Rajasthan

32. 1ST HYDROGEN BUS IN LEH

Context:

India's largest power producer, NTPC Ltd, has begun a trial run of its first [hydrogen](#) bus in Leh as part of the [Green Hydrogen Mobility Project](#).

The programme:

This initiative aims to achieve **carbon-neutral status** for **Ladakh**. NTPC plans to establish a **hydrogen fuelling station**, and a solar plant, and deploy [five fuel cell buses](#) for intracity routes in Leh.

Notably, these buses are designed to operate in **sub-zero temperatures and high-altitude conditions**.

NTPC Limited (founded 1975; HQ: New Delhi; Maharatna Company) is a major Indian Central Public Sector Undertaking owned by the Ministry of Power and the Indian Government.

33. C.R. RAO

Context:

Renowned statistician **Calyampudi Radhakrishnan Rao**, known as **C.R. Rao**, has passed away at the age of **102**. He was among the **world's most eminent statisticians** and spent a significant part of his career in India.

Rao was instrumental in **pioneering fundamental statistical concepts** like the **Cramer–Rao inequality** and **Rao–Blackwellization**, which are widely taught in statistics and econometrics.

He played a key role in **developing statistical education and research in India**, serving on various government committees and contributing to the field's growth. He received nu-

merous awards, including India's [Padma Bhushan](#) and [Padma Vibhushan](#).

He served as **chairman of the Committee on Statistics and Demographic and Communication for Population Control**.

His famous book is **“Statistics and Truth: Putting Chance to Work”**

Ethical values: C.R. Rao's life embodied ethical values such as dedication to **education, professionalism, pioneering statistical concepts**, and contributing to society through his work in statistics

34. RAIL-SEA-RAIL (RSR) INITIATIVE

Context:

The **Ministry of Coal** is driving a transformative initiative known as **Rail-Sea-Rail (RSR)** to revolutionize coal transportation in India.

- This strategy **integrates rail and sea transportation** to create an **efficient movement of domestic coal**, connecting mining sites, ports, and end-users.
- The goal is to **enhance logistical efficiency, reduce transportation costs**, and **reshape the coal transportation landscape**.

Stats regarding Coal:

- Major coal-producing states like **Odisha, Chhattisgarh, Jharkhand**, and parts of **Madhya Pradesh** contributed around **75% of domestic raw coal dispatch** in FY'23.
- The Ministry envisions **doubling India's coal production** by FY'30, with a projected **Compound Annual Growth Rate (CAGR)** of approximately **7.7%**.
- Currently, **railways handle about 55% of coal evacuation**, with a **target of increasing it to 75% by FY'30**. The committee is promoting **RSR coal evacuation with the aim of reaching 112 million tons by 2030**, a significant increase from the current **40 million tons**. This approach aims to **reduce congestion, explore export opportunities**, and **minimize the carbon footprint**.

Benefits of RSR Initiative:

- The **Rail-Sea-Rail initiative** aims to transform logistics through an **eco-friendly coastal shipping mode**.
- Opting for RSR could result in **substantial cost savings for end-users in Southern India**, potentially **cutting logistics costs**.
- Over the past four years, **Rail-Sea-Rail coal transportation** has seen **impressive growth of around 125%**.

The Ministry of Coal is committed to **refining its Rail-Sea-Rail Coal Evacuation strategy** to meet the nation's growing energy needs and establish a robust energy supply system.

35. WHY RURAL INDIA SHIFTED TO SUGARS AND PROCESSED FOODS

Context:

A research study conducted by the **International Crops Research Institute for the Semi-Arid Tropics (ICRISAT)** has revealed that **rural families in India** are increasingly relying on **carbohydrates and sugary processed foods** instead of **protein and micronutrient-rich options**.

Key Findings:

- The **shift from traditional diets** is attributed to factors like **limited access to such nutrient-rich foods** and the **ease of sourcing cheaper alternatives**.
- This transition is exacerbated by the **decreasing availability of wild foods from forests, which used to be part of their diet**.
- The research also points out that **rural-to-urban migration** leads to changes in **dietary habits** as people are **exposed to packaged foods heavily promoted in cities**.
- Sugary processed foods become popular due to their **convenience and longer shelf life** compared to fresh fruits and vegetables.

Solutions:

- The study calls for **policy interventions to strengthen nutrition-sensitive food supply chains**.
- ICRISAT suggests solutions that include **raising awareness about nutrition and educating people about healthy eating habits and the significance of locally grown foods**.
- The study underscores the importance of **traditional farming practices and local markets** in ensuring access to nutritious food in rural areas.

36. HUBBLE SPACE TELESCOPE CAPTURES 'GHOSTLY' GLOW OF DISTANT GALAXY

Context:

The **Hubble Space Telescope** has captured an image of a distant galaxy named **ESO 300-16**, situated approximately **28.7 million light-years** away in the **Eridanus constellation**.

- **ESO 300-16** is categorized as an **irregular galaxy** due to its **vague shape and absence of features like spiral arms or a nuclear bulge**.
- It resembles a **cloud formation, formed by clusters**

of small stars. The galaxy's core is surrounded by **soft, diffuse light**, and a **bubble of bright blue gas** is visible at its centre.

About [Hubble Space Telescope](#):

- NASA launched **Hubble** in **1990**.
- Expanding the frontiers of the visible Universe, the **Hubble Space Telescope** looks deep into space with **cameras that can see across the entire optical spectrum from infrared to ultraviolet**.
- The **Hubble Space Telescope** makes **one orbit around Earth every 95 minutes**.

37. DEFICIENCY IN MICRONUTRIENTS IN SOIL LINKED TO THE HEALTH OF CHILDREN AND WOMEN

Context:

A new study titled "**Soil micronutrients linked to human health in India**," has revealed a significant connection between **soil micronutrients and the nutritional well-being of individuals**, particularly **children and adult women**.

Key Findings:

- The study found that **districts with a higher proportion of soil zinc samples** showed notably lower rates of **child stunting and underweight**.
- **Soil zinc availability** was linked to **increased height in women**.
- The research also highlighted a **strong correlation between soil iron availability and health outcomes**, including **anaemia among women** and **haemoglobin levels among both children and women**.

Relevance to India:

- Around **35% of the country's soil** is estimated to be **deficient in zinc**, and about **11% is estimated to lack iron**.
- India accounts for **about one-third of the global population affected by micronutrient deficiencies**, as indicated by the **Global Nutrition Report 2018**.

The study suggests that **leveraging soil mineral availability** could potentially help **mitigate the prevalence of anaemia** across a large portion of the population.

38. INDIGENOUS ASTRA BEYOND VISUAL RANGE AIR-TO-AIR MISSILE

Context:

The **Light Combat Aircraft (LCA) LSP-7**, known as "[Tejas](#)," successfully launched the **indigenous Beyond Visual Range (BVR) air-to-air missile called ASTRA**.

- The missile was **fired from the aircraft at an altitude of approximately 20,000 feet and achieved all test objectives flawlessly**.

The test was closely supervised by the **Aeronautical Development Agency (ADA)**, **Defence Research and Development Organisation (DRDO)**, **Hindustan Aeronautics Limited (HAL)**, **Centre for Military Airworthiness and Certification (CEMILAC)**, and **Directorate General of Aeronautical Quality Assurance (DG-AQA)**.

About ASTRA:

- ASTRA is an advanced **BVR air-to-air missile developed by various DRDO laboratories**, including the **Defence Research and Development Laboratory (DRDL)** and **Research Centre Imarat (RCI)**.
- It's designed to **engage and destroy agile supersonic aerial targets**.

To read about LCA Tejas: [Click here](#)

39. FIDE CHESS WORLD CUP

In the **FIDE World Cup finals**, **Magnus Carlsen** secured his **first-ever title**, defeating Indian chess prodigy **R. Praggnanandhaa** in **Baku, Azerbaijan**. **Praggnanandhaa** has become the **second Indian after Viswanathan Anand** to reach a World Cup final.

Praggnanandhaa's spirited performance earned him a spot in the prestigious **Candidates Tournament**, despite his loss.

About [FIDE World Cup](#):

The **FIDE World Cup**, **established in 2000 by the International Chess Federation (FIDE)**, encompasses various iterations. Since 2005, it's been a **128-player single-elimination chess tournament**, a vital part of the **World Chess Championship qualification**. The format includes **7 rounds of "mini-matches" with 2 games each**, followed by **rapid and blitz tiebreaks** if needed. The final consists of **4 games before tiebreaks**.

About the Candidates Tournament:

It has been organized by FIDE since 1950 and determines the **challenger for the World Chess Championship**. The winner faces the reigning World Champion. Historically held triennially until 1992, since 2013, it follows a **2-year cycle**.

About the World Chess Championship

It determines the **world champion in chess**. **Ding Liren (China) won the 2023 championship**, defeating **Ian Nepomniachtchi**, while **Magnus Carlsen** opted not to defend his title.

40. FIFA WOMEN'S WORLD CUP 2023

The **ninth FIFA Women's World Cup** was co-hosted by **Australia and New Zealand**, marking the **first time it was held in the Southern Hemisphere**. **Spain** won the event by defeating **England** in the final. The **USA** has won the **Women's World Cup title four times**.

About the [FIFA Women's World Cup](#)

It is a professional football tournament for senior women's national teams, organized by **FIFA**. It occurs every four years, following the men's World Cup, and began in 1991. The 2023 edition, co-hosted by **Australia and New Zealand**, featured **32 teams** in a month-long event.

41. KHELO INDIA INITIATIVE

This initiative was introduced by the **Indian government in 2017** and serves as a dynamic platform to nurture sports talent and revive the sporting culture of India. It encompasses the:

- Khelo India Youth Games (KIYG) (commenced 2018)**: Annual national competition for youngsters representing states
- Khelo India University Games (KIUG) (commenced 2020)**: Showcases university students' talent in sports
- Khelo India Winter Games (Commenced 2020)**: Promotes winter sports in India

Part of the **Khelo India State Centres of Excellence (KISCE) scheme**: It aims to enhance sports infrastructure by supporting existing training facilities. It provides financial aid, staff, equipment, and resources at the grassroots level.

42. FACTS ABOUT CINNAMON

Context:

A study conducted by the **ICMR-National Institute of Nutrition (NIN)** has revealed that **cinnamon and its active components, cinnamaldehyde and procyanidin B2**, when administered orally to rats, exhibited an **inhibitory effect on early-stage prostate cancer**.

- The research aimed to evaluate the **chemo-preventive potential of cinnamon and its bioactive compounds** in male rats.

The study also suggested that these substances **could mitigate oxidative stress, reduce the spread of cancer cells** in

the prostate gland, and offer benefits to bone health. However, further studies are required before dietary recommendations can be made based on these findings.

43. BEES CAN MONITOR POLLUTION

Context:

Two recent studies have employed honey bees as **effective biomonitoring tools to assess contamination in urban environments**.

- Honey bees were found to **effectively map pollution patterns and reveal the most sensitive markers of contamination tracing toxic metals and antimicrobial resistance genes**.

Process:

Bees' foraging behaviour allows them to pick up contaminants, offering insights into pollution patterns. They can reveal the **presence of toxic metals near pollution sources** and help understand factors contributing to contamination. Bees also aid in assessing the **spread of antimicrobial resistance genes**, which can be ingested from water bodies. This approach provides a valuable tool for monitoring pollution and addressing environmental health concerns.

These studies highlight the **importance of comprehensive monitoring to address environmental health challenges**.

44. GLOBAL BIODIVERSITY FRAMEWORK FUND (GBFF) RATIFIED

Context:

The Global Biodiversity Framework Fund (GBFF) has been ratified and launched **during the 7th Assembly of the Global Environment Facility (GEF)** in Vancouver, Canada.

What is the Global Biodiversity Framework Fund?

GBFF (1st approved in July this year under the Global Environment Facility (GEF)) aims to support the **Kunming-Montreal Global Biodiversity Framework's goals by 2030**. Contributions from countries, non-profits, and the private sector are welcome.

Fund Allocations:

- 20% will be allocated to **Indigenous Peoples and local communities (IPLCs)**
- 25% to **GEF agencies**
- 36% to **SIDS (Small Island Developing States)**
- 3% to **LDCs (Least Developed Countries)**

The allocation for **IPLCs will be reviewed for two years** and the allocations for **SIDS and LDCs will be reviewed for three years**.

What is the Kunming-Montreal Global Biodiversity Framework?

Adopted at COP15 (2022), it includes **4 goals and 23 targets** for achievement by 2030. It **aims to restore ecosystems, conserve areas, prevent species extinction, reduce pollution risks, tackle climate change, and more**.

- Signatories committed to channelling **USD 200 billion per year** for conservation.
- Companies to report biodiversity impacts.
- Focus on reducing harmful subsidies and enhancing monitoring

Global Biodiversity Framework Fund (GBFF) Ratified



Context: The Global Biodiversity Framework Fund (GBFF) has been ratified and launched during the 7th Assembly of the **Global Environment Facility (GEF)** in **Vancouver, Canada**

What is Global Environment Facility (GEF)?	
Establishment	The GEF was established on the eve of the 1992 Rio Earth Summit .
Purpose	A family of funds dedicated to addressing biodiversity loss, climate change, pollution, and environmental issues .
Structure	Unique governing structure including an Assembly, Council, Secretariat, agencies, advisory panel, and evaluation office.
Financial Assistance	Provides support for major international Conventions:
	Minamata Convention on Mercury (2013)
	Stockholm Convention on Persistent Organic Pollutants (2001)
	UNCBD (1993)
	UNCCD (1994)
	UNFCCC (1992)
Membership	184 member countries, including India.
Secretariat	Based in Washington, D.C.
Trustee	The World Bank serves as the GEF Trustee , administering the GEF Trust Fund with contributions from donors.
GEF Council	The GEF Council is the main governing body of the Global Environment Facility . It consists of 32 members appointed by constituencies of GEF member countries, with responsibilities including developing policies, evaluating programs, and approving projects for GEF-funded activities. Meetings are held twice annually , and decisions are made by consensus .

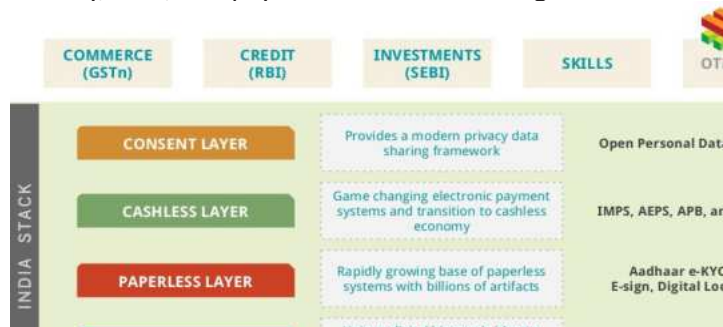


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MAPPING

1. TRINIDAD AND TOBAGO

India and Trinidad and Tobago have signed a **memorandum of understanding (MoU)** to share **India Stack**, a collection of open APIs and digital public goods designed to facilitate identity, data, and payment services on a large scale.



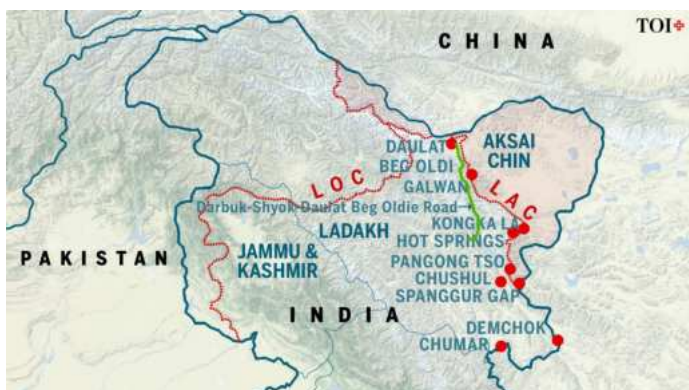
[Trinidad and Tobago](#) is a country located in the southern-most part of the Caribbean. It comprises two main islands, Trinidad and Tobago, along with several smaller islands. It is known for its distinctive Creole traditions and cuisines.



2. 'LIKARU-MIG LA-FUKCHE' ROAD (LADAKH)

The Border Roads Organisation (BRO) has commenced the **construction of the world's highest motorable road**, the 'Likaru-Mig La-Fukche' road, in [Ladakh's Demchok sector](#). This road project aims to provide connectivity to the military outposts in the sensitive **Fukche sector**, lying near the contested [Line of Actual Control \(LAC\)](#).

The road will reach an altitude of about 19,400 feet, surpassing the existing **highest motorable road at Umling La in Ladakh**. Notably, an all-woman unit of the BRO, led by Colonel Ponung Doming, is supervising the construction. Additionally, the BRO is undertaking other significant projects, including the **Shinku La tunnel** and the construction of the '[Nyoma Airfield](#)'.



3. NIGER

The African Union has suspended [Niger](#) from its institutions and activities due to the recent coup that overthrew the democratically elected president. The suspension will last until the restoration of constitutional order.

In Niger, the military coup has led to the **detention of President Mohamed Bazoum**. The coup plotters have named **General Abdourahmane Tchiani** as the new leader, citing security concerns related to jihadist violence.

Niger or the Niger is a landlocked country in West Africa. It is a unitary state bordered by **Libya to the northeast, Chad to the east, Nigeria to the south, Benin and Burkina Faso to the southwest, Mali to the west, and Algeria to the northwest**. Over 80% of its land area lies in the Sahara (Sahel Region).

About [African Union](#):

The African Union (Addis Ababa, Ethiopia; Founder: **Muammar Gaddafi**) is a continental union consisting of 55 member states located on the continent of Africa. The AU was announced in the Sirte Declaration in Sirte, Libya, on 9 September 1999, calling for the establishment of the African Union.



4. JAPAN

Japan is set to release treated **radioactive water from the Fukushima nuclear plant** into the Pacific Ocean, a move that has been met with opposition from neighbouring countries.

The water, which has **accumulated since the 2011 tsunami that damaged the plant**, will be released over **30 years after being filtered and diluted**. The water contains **tritium and carbon-14**, both of which emit low levels of radiation and may impact marine biodiversity.

[Japan](#) is an island country in East Asia. It is situated in the **northwest Pacific Ocean** and is bordered on the west by the Sea of Japan, extending from the **Sea of Okhotsk** in the north toward the East China Sea, the Philippine Sea, and Taiwan in the south.



5. PANAMA CANAL

A severe drought in [Panama](#) is causing extensive delays for cargo ships transiting the **Panama Canal**, a vital route connecting almost **2,000 ports across 170 countries**.

About the [Panama Canal](#)

The Panama Canal is an **82 km artificial waterway in Panama**, connecting the Atlantic and Pacific Oceans and dividing North and South America. It allows ships to avoid the lengthy and dangerous voyage around **Cape Horn**. Panama itself forms an **isthmus** (a narrow land strip connecting two larger landmasses) **between North and South America**.

This differs from straits, which are narrow waterways joining larger bodies of water, like the **Strait of Gibraltar**.

The **canal lifts ships through locks to Gatun Lake** and then lowers them. Originally under **French control in the late 1800s**, the United States completed the project in **1914** and **managed it until 1999** when Panama took over. It's now operated by the **Panama Canal Authority**.



6. DENMARK

Context:

Denmark's justice minister has announced the **intention to ban the burning of religious texts, including Islam's holy book, the Quran**.

The proposed legislation seeks to **prevent the inappropriate treatment of significant religious objects in public places**. The move follows incidents of Quran burnings in both **Denmark and Sweden**, which have triggered widespread outrage and calls for a ban in Nordic countries.

Denmark is a **Scandinavian country comprising the Jutland Peninsula** and numerous islands. It's linked to nearby Sweden via the **Öresund Bridge**. **Copenhagen**, its capital, is home to **royal palaces and the colourful Nyhavn harbour**, plus the **Tivoli amusement park** and the iconic "**Little Mermaid**" statue.

