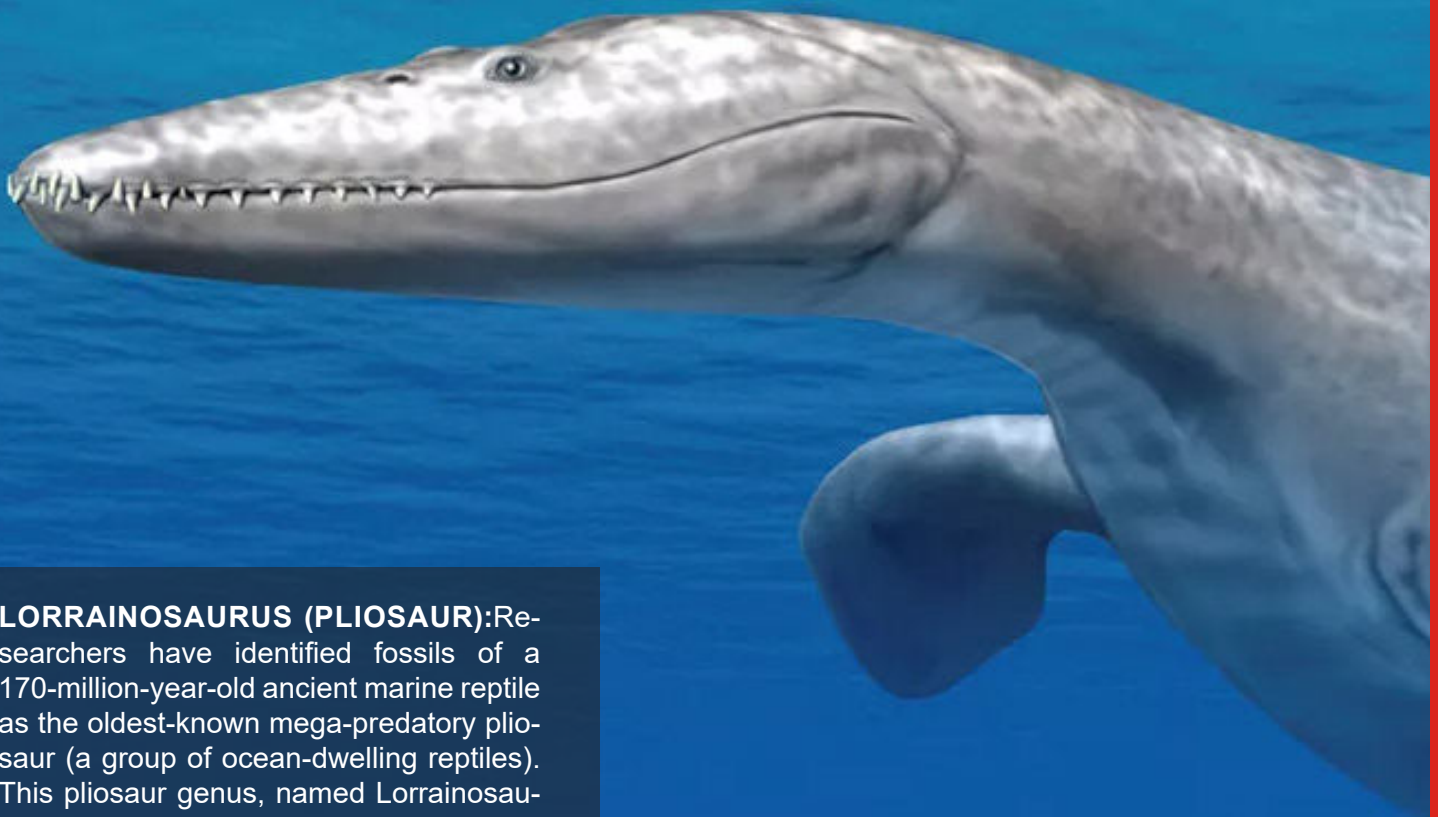




INSIGHTSIAS

SIMPLIFYING IAS EXAM PREPARATION



LORRAINOSAURUS (PLIOSAUR): Researchers have identified fossils of a 170-million-year-old ancient marine reptile as the oldest-known mega-predatory pliosaur (a group of ocean-dwelling reptiles). This pliosaur genus, named Lorrainosaurus, was found in northeastern France.

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WEEKLY CURRENT AFFAIRS

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Rajya Sabha	Lok Sabha
<ul style="list-style-type: none"> • Vice President of Nation is the speaker. • Administratively 2nd head of nation. 	<ul style="list-style-type: none"> • Speaker is elected through voting by elected members. • Administratively 3rd head of nation.
<ul style="list-style-type: none"> • Administrative heads and responsible for flawless workings of Respective houses. • Power to take penal actions against members of respective houses. • Power to vote for motion in situation of deadlock. • Power to suspend the respective houses sine-die or for particular period. 	

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GENERAL STUDIES – 2

Topics: Parliament and State Legislatures – structure, functioning, conduct of business, powers & privileges and issues arising out of these.

1. SPEAKER: NEED FOR IMPARTIALITY AND INTEGRITY

Context:

The article discusses the need for impartiality and integrity in the functioning of Speakers in Indian parliamentary bodies.

About Speaker:

Role of a Speaker	Definition
Who is a Speaker?	A presiding officer in a legislative body responsible for maintaining order during debates, ensuring rules are followed, and representing the institution. Typically elected by members , they play a crucial role in the legislative assembly's functioning.
Constitutional Articles	Article 93 and Article 178 of the Indian Constitution govern the election of the Speaker and Deputy Speaker in the Lok Sabha and State Assemblies.
Origin	Originated in medieval Britain as a House of Commons spokesman. Initially seen as an agent of the Crown until the 17th century. Evolved to be an impartial Chairman since the 19th century.
Powers and Functions of the Speaker	The final interpreter of the provisions of the Constitution, Rules of Procedure, and parliamentary precedents
	Presides over joint sittings of both Houses of Parliament
	Makes final decisions regarding disqualifications of members under the Anti-defection Act
	Appoints chairmen of parliamentary committees and supervises their functioning
	Maintains quorum and decorum in the house for conducting its business
	Decides whether a bill is a money bill , and this decision is final
	Can allow a secret sitting of the House at the Leader of the House's request
	Has a casting vote in case of a tie

Importance of Speaker's Independence	Supreme Authority in the Lok Sabha/State Assembly, with vast powers to ensure the orderly conduct of business
	Symbol of the nation's freedom and liberty
	Conscience and guardian of the House
	Represents the collective voice of the parliament/ State assembly

Speakers- Parliament	
Rajya Sabha	Lok Sabha
<ul style="list-style-type: none"> Vice President of Nation is the speaker. Administratively 2nd head of nation. 	<ul style="list-style-type: none"> Speaker is elected through voting by elected members. Administratively 3rd head of nation.
<ul style="list-style-type: none"> Administrative heads and responsible for flawless workings of Respective houses. Power to take penal actions against members of respective houses. Power to vote for motion in situation of deadlock. Power to suspend the respective houses sine-die or for particular period. 	

Issues with the functioning of speakers in India:

Issues	Examples
Favour Ruling Party	Several judgments on the anti-defection law highlight partisan conduct of speakers in state assemblies. Recently, the leader of the Congress party in the Lok Sabha , Adhir Ranjan Chowdhury, was suspended for his remarks against the Prime Minister (which was later revoked)
Party Interest Over National Interest	Speakers who are active members of the ruling party may refuse essential debates in the national interest to avoid embarrassing the ruling party.
Increased Disruption in Parliament	Partisan conduct and apathy of the speaker towards opposition demands lead to frequent disruptions in Parliament by the Opposition. Disruption of Parliament damages its prestige and hinders its primary function of making laws through careful debate.
Bills are Not Referred to Committees	Stalling parliamentary proceedings has resulted in the passing of significant bills without discussion. E.g., In the 2021 monsoon session of Lok Sabha , not a single bill was referred to any select committee for review.

Wide Discretion	Speakers exercise wide discretion in matters of Money Bills, decorum maintenance, and the suspension of members.
	Bills are sometimes labeled as 'Money Bills' to bypass the Upper Houses. E.g., The Aadhar bill , introduced as a Money bill
Misuse of Powers under the 10th Schedule	The role of the Speaker in recent political crises, such as in Maharashtra (2022) , has raised concerns about the misuse of powers under the 10th Schedule.
	Other Examples include the dismissal of governments in Uttarakhand and Arunachal Pradesh , where Speakers helped ruling parties by disqualifying MLAs under the 10th Schedule
Appointment System	- Speakers are typically elected by the ruling party , leading to questions about their independence from party influence.
Lack of Tenure Security	The Constitution of India doesn't provide a fixed tenure for speakers , making their position dependent on their selection, which can influence their actions in the House.

Associated Cases:

- **Kihoto Hollohan vs Zachillhu (1992)**: Minority judges argued that the Speaker's power to decide on defections undermines democratic principles.
- **Nabam Rebia v Bemang Felix case (2016)**, the Supreme Court held that it is "constitutionally impermissible" for a speaker to proceed with disqualification proceedings, if a no-confidence motion against him is pending.
- **Keisham Meghachandra Singh vs The Hon'ble Speaker Manipur (2020)**: The Supreme Court recommended amending the Constitution to create an independent tribunal led by judges to handle such matters.

Suggestions to improve the impartiality of the Speaker in India:

Suggestions	Explanation
Resignation from Political Party	Upon selection as Speaker, the individual should resign from their political party to avoid conflicts of interest.
Ireland Model	Follow the Ireland model, where the Speaker is someone who has given up political ambitions and built credibility.

British Model ('Once a Speaker, Always a Speaker')	Adopt the British model, where Speakers usually remain unopposed by major political parties, enhancing objectivity.
	Adopt practices from the UK, where Speakers resign from associated political parties to reflect impartiality
Continuity Based on Impartiality	A committee, like the one headed by V.S. Page , suggested allowing Speakers to continue if they have been impartial and efficient in their previous tenure.
Election on an Independent Ticket	It is suggested that, anyone seeking the position of Speaker may be required to run for election on an independent ticket .
Disqualification Power Shift	Shift the power of disqualification under the anti-defection law to the President or Governor , who decide based on the suggestions of the Election Commission of India (2nd ARC recommendation).
Imposition of Disciplinary Actions	Grant the Speaker the power to impose various disciplinary actions , such as a salary cut for members disrupting the house.
Formation of a Parliamentary Committee	Allow the Speaker to create a parliamentary committee to recommend the removal of MPs who regularly disrupt the house. The committee's decisions should be subject to judicial review .
Independent Tribunal for Disqualification	Establish an independent tribunal to resolve questions related to the disqualification of members based on defection.

Conclusion

Jawaharlal Nehru rightly mentioned on Speaker's role, "The speaker represents House. He represents the dignity of the house, the freedom of the house and because the House represents a nation, in particular, way speaker becomes a symbol of national freedom and dignity. Therefore a free position should always be occupied by the persons of outstanding ability and impartiality

Mains Links:

Q. What are the roles and responsibilities of the speaker of Lok Sabha? How is the Deputy Speaker of Lok Sabha elected? The office of the Deputy Speaker is not a ceremonial post but a constitutionally mandated one. Comment on its importance. (15M)

Topics: India and its neighbourhood- relations.

2. ELECTION OF MALDIVES NEW PRESIDENT: INDIA-MALDIVES RELATIONS

Context:

President-elect Mohamed Muizzu of the Maldives has made it clear that he wishes to **remove Indian troops from the country** while safeguarding the Maldives' independence and sovereignty.

Political System in Maldives:

Historically, Maldives had an **Executive Presidency system**, transitioning to a multi-party democracy in 2008. No incumbent president has been re-elected since then. Maldives uses a **two-round electoral system similar to France**, requiring a candidate to secure more than 50% of votes in the second round if no one achieves it in the first.

Background of the Issue?

Aspect	Details
Historical Tensions	Prior to President Solih's term, political and diplomatic tensions existed between the Maldives and India, especially during Abdulla Yameen's presidency (2013-2018) . Yameen's pro-China orientation strained relations with India.
India's Military Presence	During Yameen's presidency, the Maldives requested the return of Indian-gifted helicopters , indicating a desire to reduce Indian military presence in the country.
Political Opposition	The 'India Out' campaign was launched by the political opposition, particularly those who opposed President Solih's alignment (India First Policy) with India. It aimed to rally against what they saw as a pro-India foreign policy and gain support from segments critical of Indian involvement.
Geopolitical Rivalry	The broader context of the campaign was the geopolitical rivalry between India and China in the Indian Ocean region . International media framed the Maldives' elections as a referendum on India and China, with a focus on how the incoming president would position the country in this rivalry.

India's current presence in Maldives:

Currently, **75 Indian military personnel** are in the Maldives to maintain and operate Dornier aircraft and helicopters gifted by India. These assets have been in the Maldives for over a decade, serving various functions.

India-Maldives Relations	
In the recent Maldivian presidential election, Mohamed Muizzu won and expressed his intent to remove Indian troops from the Maldives (as part of his 'India Out' campaign) against the outgoing President Ibrahim Mohamed Solih's 'India first' foreign policy	
Dimension	Example
Historical	India and the Maldives share a historical connection . The Maldives became independent in 1965 , following British colonial rule.
Security Partnership	Both countries engage in joint military exercises like "Ekuverin," "Dosti," "Ekatha," and "Operation Shield." India plays a crucial role in providing training opportunities for the Maldivian National Defence Force , fulfilling a significant portion of their defense training requirements.
India's Operation in Maldives	Operation Cactus (1988) (Indian Armed Forces aided the Maldivian government in thwarting a coup attempt); Operation Neer (2014) (drinking water assistance to address a water crisis); Operation Sanjeevani (essential medicines support against COVID-19)
Economic Cooperation	India is the Maldives' second-largest trading partner . Indian companies, such as Afcons, are involved in projects like the Greater Male Connectivity Project (GMCP) , emphasizing economic cooperation between the two nations.
Infrastructure Projects	Indian credit lines support infrastructure development in the Maldives, as seen in projects like the Hanimaadhoo International Airport Development . India also inaugurated the National College for Policing and Law Enforcement (NCPL) in 2022.
Grant Assistance	India provides grant assistance, including 100 million Rufiyaa, for projects like the High Impact Community Development Project (HICDP) scheme in the Maldives, highlighting financial support for community development.
Sports and Education	Development of a sports complex in Gahdhoo and academic partnerships between Maldives National University and Cochin University of Science and Technology .
Rehabilitation Centre	Indian assistance contributed to the construction of a drug detoxification and rehabilitation center in Addu, addressing critical healthcare needs in the Maldives.
China Factor	The increasing strategic presence of China in the Maldives is a factor of concern for India. The Maldives has gained significance in China's "String of Pearls" construct in South Asia. The evolving dynamics of Sino-Indian relations add complexity to this situation. Visit Insights IAS Daily Current Affairs

India's interests in Maldives:

In the past **four years**, India has emerged as the **Maldives' main security** and economic partner, committing over **\$1 billion towards the socio-economic development** needs of Maldivians.

India's interests in the Maldives are tied to its security concerns regarding China's growing presence in the Indian Ocean region, and the Maldives is part of the **'Colombo Security Conclave'** for regional maritime cooperation. India's national security is closely linked to its collective security efforts in the region, as emphasized by National Security Adviser Ajit K. Doval.

Challenges in India-Maldives relations:

- **Political Instability:** For instance, the arrest of Maldives' opposition leader Mohamed Nasheed in 2015 and the subsequent political crisis strained India's relationship with Maldives.
- **Radicalisation:** The increasing number of Maldivians being drawn towards terrorist groups like the Islamic State (IS) and Pakistan-based jihadist groups is a concern for India.
- **China's Strategic Presence:** China's increasing strategic presence in Maldives is a challenge for India. The Maldives has emerged as an important 'pearl' in China's "String of Pearls" construct in South Asia, which is a concern for India's security.
- **China's dominance:** In 2018, Maldives cancelled an

agreement with India to develop a key naval base on the island of Marao. The move was seen as a result of China's growing influence in the Maldives.

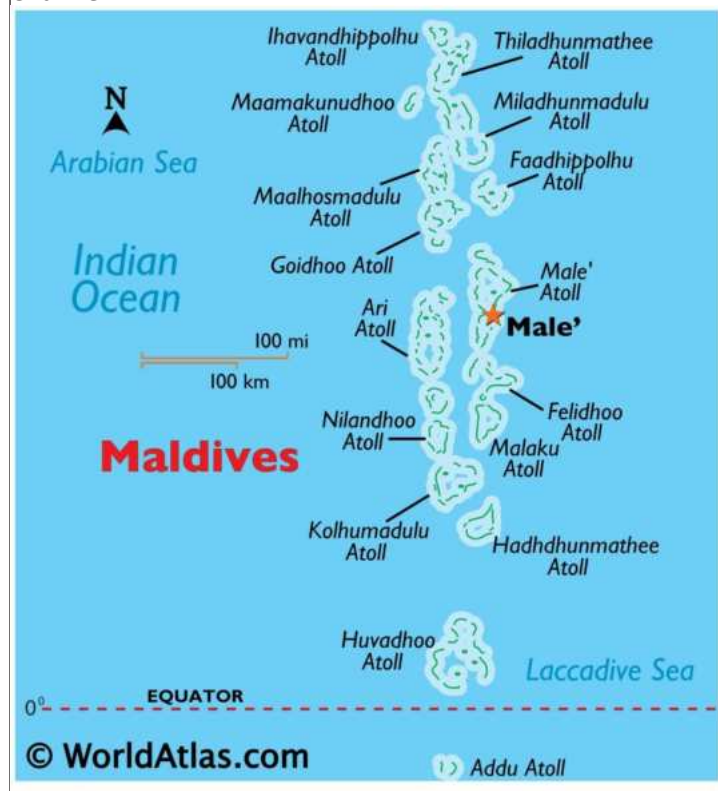
- **Political actions:** Maldives cancelled a \$511 million contract awarded to Indian company GMR to develop Male International Airport in 2012, which strained the relationship between the two countries.
- **Domestic Politics:** The India Out campaign in Maldives, which seeks to create anti-India sentiments among the people of Maldives

Conclusion:

India needs to play a **crucial role in ensuring regional security in South Asia** and surrounding maritime boundaries by actively participating in the **Indo-Pacific security space**. India should adhere to its **tradition of promoting a multi-polar and rule-based global order** with its neighbours, adopting an accommodative stance

About Maldives:

It is strategically located at **vital sea lanes**, facilitating maritime trade between the Gulf of **Aden**, the **Gulf of Hormuz**, and the **Strait of Malacca**. The physical geography includes coral reefs, atolls, and a large Exclusive Economic Zone (EEZ). Rising sea levels pose a threat to this low-lying archipelago, and it's separated from India's Minicoy by the Eight Degree Channel.



[Insta Links](#)
[India-Maldives](#)

Mains Links

Discuss the political developments in the Maldives in the

last two years. Should they be of any cause for concern to India? (UPSC 2013)

Prelims Links:

Q. Which one of the following pairs of islands is separated from each other by the 'Ten Degree Channel'? (UPSC 2014)

- (a) Andaman and Nicobar
- (b) Nicobar and Sumatra
- (c) Maldives and Lakshadweep
- (d) Sumatra and Java

Ans: A

GENERAL STUDIES – 3

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

1. WORKER'S PRODUCTIVITY: LONG WORKING HOURS

Context:

Recently, NR Narayana Murthy (Founder of Infosys) suggested that Indian youth should work long hours to improve productivity.

What is Productivity?

It is the **efficiency of using resources like labour and capital** to produce goods and services. It impacts a nation's living standards and economic growth.

Type of Productivity:

Type	Description
Labour Productivity	Measures output per hour of work, directly influencing wages, living standards, and purchasing power.
Capital Productivity	Evaluates output from physical assets like machinery and buildings, impacting profitability and competitiveness.
Total Factor Productivity	Accounts for output growth beyond labour and capital, are often associated with innovation, efficiency, and technological progress.

Benefits of long working hours:

Aspect	Benefits
Economy	1. Increased economic output and GDP growth.
	2. Enhanced competitiveness on a global scale.
	3. Expansion of employment opportunities .
	4. Potential for higher tax revenues for the government.
Businesses	1. Higher production and potential for increased profits.
	2. Greater flexibility to meet market demands.
	3. Improved innovation and product development.
	4. Enhanced market share and sustainability.
Individuals	1. Opportunities for higher income and career growth.
	2. Improved job security and advancement prospects.
	3. Ability to meet financial goals and aspirations.
	4. Gaining valuable work experience and skills.
Society	1. Reduced unemployment and poverty rates.
	2. Improved overall living standards .
	3. Enhanced infrastructure and public services.
	4. Potential for social and community development .

Demerits of long working hours:

Aspect	Demerits
Economy	Decreased worker productivity and burnout .
	Increased healthcare costs due to stress-related issues e.g., Higher medical expenses
	Limited opportunities for new entrants in the job market.
Businesses	Reduced employee morale : Frequent resignations and recruitment expenses
	Diminished creativity and innovation in the long run.
	Greater absenteeism due to health and personal issues e.g., More sick leave requests

Individuals	Poor work-life balance : Stress-related health problems
	Limited time for personal and family life leading to Strained relationships
	Reduced personal development and skill acquisition e.g., Limited time for education, hobbies, and self-improvement
Society	Potential for decreased family stability e.g., Increased divorce rates and family conflicts
	Reduced community engagement and social cohesion e.g., Less time for participation in community activities and volunteering

Indian workers' productivity status:

Despite Indians working an average of **nearly 48 hours per week (ILO data)**, one of the highest figures worldwide, their hourly output stands at **\$8.47**. In contrast, countries like **France**, where the average workweek is **around 30 hours**, manage to achieve significantly higher productivity of **over \$58 per hour**.

Indian workers' productivity remains relatively low despite their long working hours due to various factors:

- **Impact of Agriculture**: A significant portion of the workforce in agriculture can lower a country's overall productivity
- **Outdated technology** use and technology diffusion in workers
- **Insufficient skills**
- **Suboptimal work conditions**
- **Lack of innovation**

The **number of hours worked is not the sole determinant of productivity**, and other factors, such as technological advancement and human capital, play a crucial role in enhancing overall productivity.

How the productivity of Indian workers can be improved without increasing the number of working hours?

Approach	Description
Technological Adoption	Invest in modern technologies and automation to streamline processes and reduce manual labour.
Skills Enhancement	Provide training and education to workers to improve their skill sets and adapt to changing job requirements e.g., Skill India Mission
Better Work-Life Balance	Promote flexible work arrangements , telecommuting, and support for employees' well-being to reduce stress and burnout. Encourage concepts like 15 Minutes work neighbourhoods . Put health before wealth

Infrastructure Upgrade	Develop better infrastructure, including transportation and communication , to reduce time wasted in commuting and improve access to resources e.g., Delhi Metro, RRTS between Delhi and Meerut, etc.,
Innovation and R&D	Encourage research and development to foster innovation , leading to improved products and services.
Incentive Programs	Offer performance-based incentives to motivate employees and reward exceptional productivity
Collaborative Culture	Promote a collaborative work culture to enhance teamwork and problem-solving.
Meaning of Success	Success has different meanings for different people: Economic success is not the only yardstick to measure the success of human life.
Understand employees and employers have different mindsets	Entrepreneur and employee mindsets are different: If an employee has to work 70+ hours for a basic salary, then it is not a great idea. The employee may as well take the entrepreneurship path where there is an opportunity to create a company and keep the profits

What is "8 hours work" debate and hustle culture?"

Hustle culture is defined as one that encourages employees to work more than normal working hours.

- Work is on their minds even when they have free time or on holidays.
- The major requirement of this culture is to complete a job on target at a faster pace than usual.

Last year, A LinkedIn post by the CEO of a company advising youngsters to work 18 hours a day, **at least for four to five years** initially in their career, **faced a backlash and was ridiculed**

Conclusion:

Improving productivity without increasing working hours is not only beneficial for workers but also contributes to economic growth and overall well-being.

Insta Links:

[New trends in work culture](#)

Mains Link:

Q. Do you think rejecting hustle culture youngsters or going for moonlighting is rejecting the idea of work is worship embedded in Indian Culture? Discuss. 10M

Topics: [Effects of liberalization on the economy, changes in industrial policy and their effects on industrial growth.](#)

2. INDIA'S MOST FAVOURED NATION (MFN) APPROACH

Context:

The Supreme Court's recent decision on tax treaties sheds light on **India's Most Favoured Nation (MFN) approach**.

What is the [Most Favoured Nation \(MFN\)](#)?

It is a **principle in international trade and diplomacy** that promotes equal treatment among trading partners. When a country grants **MFN status to another**, it agrees to extend the same **trade privileges and favourable terms** to that partner as it does to its **most favoured trading partner**.

Explanation:

For example, if **Country A gives Country B MFN status**, it must offer the same trade benefits to Country B as it does to its best trading partner, Country C. This ensures fairness and non-discrimination in international trade.

Legal Status of MFN:

Article 1 of GATT 1994 mandates WTO member countries to grant Most Favoured Nation (MFN) status to each other, ensuring equal trade treatment. There can be exceptions, like **bilateral trade agreements** and special access for developing nations.

For instance, India initially granted **MFN status to all WTO members, including Pakistan**. However, India suspended **Pakistan's MFN status in 2019** due to security concerns, and Pakistan never reciprocated MFN status for India.

Background of the MFN Controversy?

In 2020, India changed its **dividend tax policies**, creating relative advantages for investors from certain countries. The treaties India separately negotiated with **new members of the OECD** gave investors from these countries a **relative advantage due to lower tax rates**.

Now, investors from **France, the Netherlands, and Switzerland (Old OECD members)** also started to look for lower tax rates benefits from India. However, controversy arose over the **question of whether the lower tax rates should automatically apply to the three countries without any formal notification**.

What did the court say?

Delhi High Court ruled that **no formal notification was needed**, and benefits could be given immediately to investors from the 3 countries as well.

SC judgement:

SC reversed this HC judgment saying that **a formal notification is required for changes under the MFN clause**, meaning benefits don't apply automatically. As a result, companies in the old OECD countries (such as the Netherlands) receiving dividends from India can't claim lower tax rates based on treaties with new OECD members like Slovenia and must follow the **original treaty rate**.

Implications of the judgement:

- The decision may **lead to additional tax revenue** for the Indian government but could potentially strain relations with tax treaty partners.

Benefits of Most Favored Nation (MFN) Status:

Benefit	Explanation
Equal Trade Treatment	MFN status ensures all trading partners receive the same trade privileges.
Non-Discrimination	Prevents preferential treatment for specific countries, promoting fair trade relations.
Promotes Fair Competition	Encourages competition on a level playing field, fostering innovation and economic growth.
Expanding Market Access	MFN status allows access to a broader market with potentially more favourable trade terms.
Reduced Tariffs and Barriers	Lower trade barriers and tariffs can result from MFN status, reducing costs for businesses.
Enhances Economic Cooperation	Encourages countries to work together for mutual economic benefits.
Fosters Diplomatic Relations	Trade ties built on MFN status can promote diplomatic and political relationships.

Major Issues with Most Favored Nation (MFN) Provision:

Issue	Explanation	Example
Unilateral Interpretations	Countries may unilaterally interpret MFN clauses, causing potential conflicts and uncertainties in tax treaties.	France, the Netherlands, and Switzerland unilaterally applied lower tax rates retroactively when new OECD members joined, leading to disputes and legal challenges.

Impact on Investors	Changes in MFN provisions directly affect investors, influencing their tax liabilities and investment decisions.	Investors from the Netherlands sought lower tax rates on dividends from India based on MFN clauses, impacting their investment strategies.
Tax Treaty Shopping	Investors may exploit MFN provisions to seek more favourable tax treatment, potentially resulting in unequal treatment and revenue distortions.	Prime examples are the Vodafone Case and Tiger Industries (Mauritius resident company although controlled by USA) where shares of Flipkart (Singapore based however primary assets were Indian based) were sold to Luxembourg-based company SARL , in the whole Flipkart- Walmart deal .
Inconsistencies Among Treaties	Varying MFN provisions and interpretations in different treaties create complexity and ambiguity in the tax landscape	
Inconsistencies in its application	The US and other members of the Group of Seven (G7) will revoke Russia's "Permanent Normal Trade Relations (PNTR)" status (same as MFN) to punish Russia for war over Ukraine	

Key Actions to Address MFN Issues:

- Clarity and Notification:** Establish clear and standardized notification requirements for invoking MFN to reduce ambiguity and disputes.
- Regular Treaty Reviews:** Periodically review tax treaties to assess their economic benefits and adapt to changing economic conditions.
- Global Cooperation:** Promote international cooperation and coordination on tax treaty matters to ensure consistency and fairness across jurisdictions.
- Independent Judicial Oversight:** Ensure the inclusion of independent judicial members in tax treaty decision-making bodies, enhancing transparency and fairness.

About Double Taxation Avoidance Agreement or DTAA:

It is a tax treaty signed between India and another country (or any two/multiple countries) so that taxpayers can avoid paying double taxes on their income earned from the source country as well as the residence country

What is Permanent Normal Trade Relations (PNTR)?

The status of Permanent Normal Trade Relations (PNTR) is a legal designation in the United States for free trade with a foreign nation. It is the same as MFN, only that in the US it is called PNTR.

Insta Links:
MFN Status

Prelims Links:

Q. India enacted the Geographical Indications of Goods (Registration and Protection) Act, 1999 in order to comply with the obligations to (UPSC 2018)

- (a) ILO
- (b) IMF
- (c) UNCTAD
- (d) WTO

Ans: D

Q. In the context of which of the following do you sometimes find the terms 'amber box, blue box and green box' in the news? (UPSC 2016)

- (a) WTO affairs
- (b) SAARC affairs
- (c) UNFCCC affairs
- (d) India-EU negotiations on FTA

Ans: A

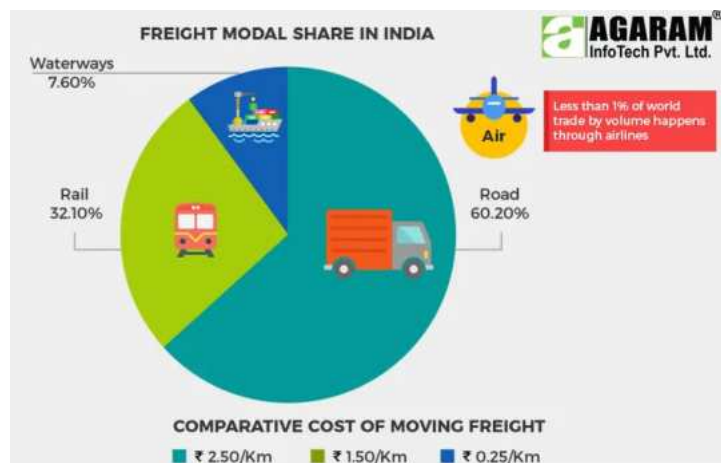
Topics: Infrastructure: Energy, Ports, Roads, Airports, Railways etc.

3. ENHANCING THE TRANSPORT OF CARGO BY INDIAN RAILWAYS

Context:

The [article](#) addresses the pressing need for enhancing the transport of cargo by railways in India.

What is the modal share of freight (cargo) in India?



The railway is one of the **cheaper modes of transportation for moving bulk cargo**. However, it only has about **32% share**

Government initiative for increasing bulk cargo in Railways: Dedicated Freight Corridor:

The North-South Dedicated Freight Corridor (North-South DFC) is a proposed freight railway connecting New Delhi to Chennai, spanning approximately 2,343 km with 43 planned stations. The Ministry of Railways has tasked the Dedicated Freight Corridor Corporation of India (DFCCIL) with conducting Preliminary Engineering & Traffic Surveys (PETS) for four additional corridors, including the

- **East-West Corridor** (Kolkata-Mumbai, 2,330 km)
- **East Coast Corridor** (Kharagpur-Vijayawada, 1,100 km)
- **Southern Corridor** (Chennai-Goa, 899 km)

Relaxation of Rake Movement Rules:

This allows for loading from/to multiple locations, permits mini rakes, and introduces private freight terminals (PFTs).

Gati Shakti Terminal (GCT) Policy:

This policy aims to convert all PFTs and private sidings into GCTs. A private siding is a railway line owned by a company and connected to a railway.

Partnership with Private Freight Operators:

Indian Railways has encouraged private freight operators to invest in wagons, facilitating the induction of privately owned wagons for specialized cargo such as automobiles and fly ash.

Other initiatives for Indian Railways:



Measures taken by Govt. in Railways Sector



Measure	Description
New Trains	<ul style="list-style-type: none"> Introducing Vande Bharat trains to stimulate local manufacturing and enhance travel experience Vistadome Trains for scenic routes and improved tourism
Special Freight Train Operations Scheme	Enables private enterprises to operate freight trains from their private terminals for faster cargo movement
Mission Raftaar	<ul style="list-style-type: none"> Aims to double the average speed of freight trains Increases average speed of Superfast/Mail/Express trains by 25 kmph
Amrit Bharat Station Scheme	Upgrades stations with facilities inspired by mega-upgraded stations like New Delhi and Ahmedabad , at lower cost
Indian Railway Management Service (IRMS)	Reforms management structure to rationalize top-heavy bureaucracy
TCAS (Train Collision Avoidance System)	Developed to minimize accidents due to human errors
National Rail Plan (NRP) for 2030	The objective of the Plan is to create capacity ahead of demand , which in turn would also cater to future growth in demand right up to 2050.
Measures to expedite project commissioning	<ul style="list-style-type: none"> Assure finance through extra-budgetary resources for throughput enhancement projects Focus on proper project preparation, land acquisition, EPC contracts, mechanization, and monitoring for faster commissioning

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Role of National Rail Plan (NRP) for 2030: Indian Railways have recently prepared a National Rail Plan (NRP) for India – 2030 to create a 'future ready' Railway system by 2030. The objective of the Plan is to create capacity ahead of demand, which in turn would also cater to future growth in demand right up to 2050.

Features of the plan:

Feature	Description
Focus on freight	Increase the modal share of Railways in freight to 45% by 2030 .
	Substantially reduce transit time: Achieve this by increasing the average speed of freight trains to 50 kmph.
National Rail Plan, Vision 2024	Accelerate the implementation of critical projects by 2024.
	100% electrification and multi-tracking: Focus on congested routes for electrification and multi-tracking.
	Aim to upgrade speed to 160 kmph on Delhi-Howrah and Delhi-Mumbai routes.
	Target speed upgrades to 130 kmph on all other Golden Quadrilateral-Golden Diagonal (GQ/GD) routes.
Identify new Dedicated Freight Corridors	The goal is to eliminate all Level Crossings on GQ/GD routes.
	To arrest the trend of falling market share of railways in the country and also shift the advantage in favour of rail transport
Identify new High-Speed Rail Corridors	
Assess rolling stock requirements for passenger traffic as well as wagon requirements for freight.	
Sustained involvement of the Private Sector in areas like operations and ownership of rolling stock, development of freight and passenger terminals, development/operations of track infrastructure etc.	

Suggestions for Indian Railways:

What should IR do?	Details
Reducing barriers	IR should minimize non-price barriers for private players to enter the rail transport sector.
Developing common-user facilities	Create such facilities at cargo aggregation and dispersal points, with a focus on mining clusters, industrial areas, and major cities.
Collaboration with State governments	Collaborate with State governments as they possess crucial knowledge about these clusters and their transportation needs.
Transport new commodities	Explore the transportation of new commodities, such as fly ash, to diversify cargo options.

Wagon-design reforms	Encourage and liberalize the design of new wagons that allow for more efficient and higher-capacity loading.
Parity in environmental regulation	Ensure equal and consistent environmental regulations for all modes of transportation to prevent cargo shifting to road transport due to regulatory disparities.

The fiscal health of Indian Railways:

The [Comptroller and Auditor General \(CAG\)](#) reported that in the fiscal year 2021-22, the financial health of [Indian Railways](#) entered a “**concern zone**.”

Key Findings	Details
Operating Ratio (OR)	The railway operator spent ₹107 to earn ₹100 due to increased pension funding
Net Surplus	Indian Railways couldn't generate a net surplus in 2021-22
Total Expenditure	Ministry of Railways' total expenditure increased over 35% more than the previous year.
High revenue Expenses	Over 75% of total working expenses are spent on staff costs, pension payments, and rolling stock lease charges
Dependence on Budgetary Support and Resources	Inadequate internal resource generation led to greater dependence on Gross Budgetary Support (GBS) and Extra Budgetary Resources (EBR)
Cross-Subsidization of Passenger Fares	Passenger fares subsidized by profits from freight operations

For Challenges hindering the development of Railways in India: [Click Here](#)

Key recommendations from Vivek Debroy's committee for Indian Railways: [Click Here](#)

Insta Links:

- [Growth in Indian railways](#)

Mains Links:

Q. Why is Public Private Partnership (PPP) required in infrastructure projects? Examine the role of the PPP model in the redevelopment of Railway Stations in India. (UPSC 2022)

Topics: Science and Technology- developments and their applications and effects in everyday life Achievements of Indians in science & technology; indigenization of technology and developing new technology.

4. GI TAGS: HOW DOES IT HELP?

Context:

This article explores the significance of [Geographic Indication \(GI\) tags](#) and the challenges faced by India in their effective utilization.

What is a GI Tag?

A [geographical indication \(GI\)](#) is a name or sign used on products which correspond to a **specific geographical location** or origin. A GI is primarily an **agricultural, natural or manufactured product** (handicrafts and industrial goods).

Typically, such a name conveys an **assurance of quality and distinctiveness** (e.g., **Basmati Rice**), which is essentially attributable to the place of its origin. A GI right **prevents non-compliant product standards** but allows similar production techniques within the standards by anyone. The registration of a geographical indication is **valid for a period of 10 years**. It can be renewed from time to time for a **further period of 10 years each**.

Laws governing the GI tag:

- GIs are covered under the **Paris Convention** for the Protection of Industrial Property.
- Governed by the WTO's Agreement on [Trade-Related Aspects of Intellectual Property Rights \(TRIPS\)](#).**
- In India, the GI tag is regulated by the **[Geographical Indications of Goods \(Registration and Protection\) Act, 1999](#)**.
 - Administered by the **Controller General of Patents, Designs, and Trade Marks**, who is also the Registrar of Geographical Indications.

Benefits of GI tags:

Benefit	Description	Examples
Revenue Generation	Higher economic gains, quality production, profit distribution	Darjeeling Tea, Basmati Rice
Global Market Access	Facilitating global reach for products	Kanchipuram Silk Sarees, Jaipur Blue Pottery
Entrepreneurship	Encouraging talent-driven entrepreneurship	Pashmina Shawls (Kashmir)
Employment Creation	Boosting employment opportunities	Banarasi Brocades, Bhagalpuri Silk

Women Empowerment	Increasing female labour force participation	Warli Paintings, Madhubani Art
Preserving Traditions	Conserving traditional crafts, culture, and food	Kalamkari Fabric, Alphonso Mango
Community Benefits	Supporting biodiversity, local knowledge, and resources	Coorg Coffee, Mysore Sandalwood
Soft Power	Enhancing regional soft power	Scotch Whisky (Scotland), Swiss Watches (for Switzerland)
Consumer Confidence	Assuring consumers of product authenticity	Parmigiano-Reggiano Cheese, Swiss Watches
Intellectual Property	Protecting regionally owned intellectual property rights	Roquefort Cheese, Darjeeling Tea

Challenges facing India regarding GI-Tags include:

- Lack of Commercial Strategy:** Insufficient strategies for leveraging GIs in global markets.
- Limited Organized Efforts:** Absence of coordinated efforts beyond establishing distinctiveness.
- Quality Control Neglect:** Focus on source indication rather than quality control, as seen with Alphonso Mango.
- Marketing and Branding Gaps:** Inadequate promotion, branding, and advertising, exemplified by Basmati rice.
- State Conflicts:** Ongoing state-level disputes over GI ownership, as seen in the **Rasogolla case**.
- Unauthorized Use:** Misuse of GIs by unauthorized parties, misleading consumers and hurting genuine producers.
- Revenue Loss:** Unfair practices lead to revenue loss for legitimate GI right-holders.
- Ongoing IP Controversy:** GI protection remains a contentious issue in intellectual property rights.

The way forward:

- Digital Literacy:** Prioritize digital literacy for GI producers through NGOs and stakeholders.
- Ethical Capitalism:** Promote ethical capitalism, social entrepreneurship, de-urbanization, and female workforce inclusion.
- Mandatory Audits:** Implement regular audits and consultations with GI producers.
- Organized Marketing:** Develop organized marketing and enhance product exclusivity and premium status.
- Legal protection to GIs:** It also extends to the protection of traditional knowledge and traditional cultural expression contained in the products.

Conclusion:

GIs have the potential to be our growth engine. Policy-makers must pay heed to this and give Indian GI products their true reward

Insta Links:

[Geographical Indication tags](#)

Prelims Links:

Q. Kalamkari painting refers to (UPSC 2015)

- (a) a hand-painted cotton textile in South India
- (b) a handmade drawing on bamboo handicrafts in North-East India
- (c) a block-painted woollen cloth in the Western Himalayan region of India
- (d) a hand-painted decorative silk cloth in North-Western India

Answer: A

5. INNOVATION ECOSYSTEM IN INDIA: CHALLENGES AND SOLUTIONS BIOSPHERE RESERVES: POCKETS OF HOPE

Context:

The [article](#) discusses how Biosphere reserves play a crucial role in conserving biodiversity, reducing pollution, and enhancing climate resilience.

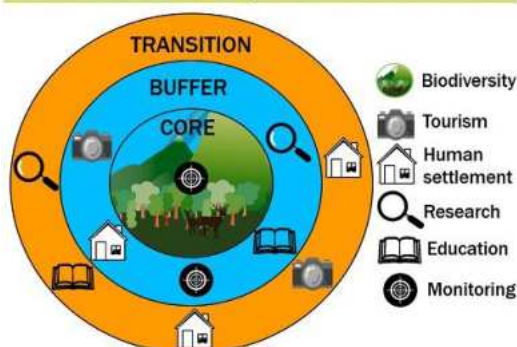
- November 3** is celebrated as **World Biosphere Reserve Day** (to raise awareness of the importance of biosphere reserves)

What are Biosphere reserves?

Biosphere reserves are areas **designated by UNESCO** to promote the conservation of biodiversity, sustainable development, and scientific research. They consist of three zones:

- a core zone** for the strict protection of ecosystems
- a buffer zone** where people live and work in harmony with nature
- a transition zone** for sustainable activities.

Zones of Biosphere Reserves



Aim: Biosphere Reserves try to **balance economic and social development** and maintenance of associated **cultural values** along with the preservation of nature.

Status of Biosphere Reserves in India:

There are **748 reserves in 134 countries**, including **22 trans-boundary sites**. India has **18 internationally recognized Biosphere reserves**, with the **Nilgiri** reserve being the first. The latest addition is **Panna** in Madhya Pradesh.

Twelve of the eighteen biosphere reserves are a part of the World Network of Biosphere Reserves, based on the UNESCO **Man and the Biosphere (MAB) Programme** list.



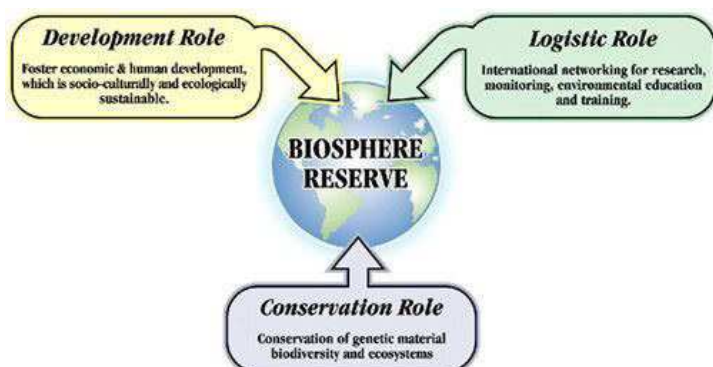
Difference between National Park, Wildlife Sanctuary and Biosphere Reserve

Table 4.52 : Comparison of National Park, Wildlife Sanctuary and Biosphere Reserve

National Park	Wildlife Sanctuary	Biosphere Reserve
1. Attention is not given to biotic community as a whole. Rather conservation is connected to habitats for particular wild animal species such as lion, tiger, rhinoceros etc.	Attention is not given to biotic community as a whole. Conservation rather is species oriented such as citrus, pitcher plant, Great Indian bustard etc.	Attention is focussed on biotic community as a whole. Thus, conservation is ecosystem oriented.
2. The approach is not based on scientific principles.	The approach is not based on scientific principles.	The approach is based on sound scientific principles.
3. The size ranges from 0.04 to 3,162 sq. kms.	The size ranges from 0.61 to 7,818 sq. kms.	Size well over 5,670 sq. kms.
4. Boundaries circumscribed by state legislation.	Limits are not sacrosanct.	Boundaries incumscribed by state legislation.
5. No biotic interference permissible except in buffer zone.	Limited biotic interference occur.	No biotic interference permissible except in buffer zone.
6. Tourism is not only permissible, but is often encouraged.	Tourism is permissible.	Normally tourism is not permissible.
7. Research and scientific management are lacking.	Research and scientific management are lacking.	Research and scientific management are carried out.
8. Due attention is not given to gene pool conservation of economic species, particularly of plants.	Proper attention is not given to gene pool conservation of economic species, particularly of plants.	Due attention is given to conservation of plants as well as animal species.

Functions of Biosphere Reserves:

Function	Description
Conservation	Managing genetic resources, endemic species, ecosystems , and landscapes.
	Preventing conflicts like man-animal incidents .
	Protecting the wildlife, culture, and customs of tribal communities.
	Support a wide variety of ecosystems , from tropical rainforests to alpine deserts
Development	Promoting sustainable economic and human growth on sociocultural and ecological levels.
	Strengthening the pillars of sustainable development: social, economic, and environmental protection .
	Play a crucial role in combating climate change by acting as carbon sinks
Logistic Support	Promoting research, environmental education, training, and monitoring in the context of conservation and sustainable development.



The threats to Biosphere Reserves (BRs) include: Deforestation, Invasive species, Land use changes like mining, Urbanization and population growth causing exploitation.

Initiatives aimed at conserving Biosphere Reserves (at the India level):

Initiative	Description
South and Central Asian Biosphere Reserve Network Meeting (SACAM) in Chennai	UNESCO organized the SACAM in collaboration with the Indian Ministry of Environment, Forests, and Climate Change , providing a platform for sharing expertise and fostering partnerships in sustainable environmental practices within South and Central Asia.

UNESCO's Man and the Biosphere Programme (MAB)

UNESCO's MAB, initiated in 1971, focuses on establishing a scientific basis for **improving the relationship between people and their environments** by combining natural and social sciences, economics, and education to promote **innovative approaches to economic development** that are socially and culturally appropriate and environmentally sustainable.

It grants protection not only to the **flora and fauna** but also to the human communities and their ways of life within biosphere reserves.

Local community engagement in conservation

In biosphere reserves **like the Sundarbans and the Gulf of Mannar** in India, local communities are actively engaged in managing and conserving their ecosystems. This includes collaborative efforts to protect **mangrove forests, forming self-help groups, and promoting eco-tourism**.

Plastic checkpoints in the Gulf of Mannar Biosphere Reserve: The Gulf of Mannar Biosphere Reserve Trust has introduced the concept of plastic checkpoints where community members inspect vehicles and tourists for plastic waste. This waste is collected, recycled, and used in road construction, promoting sustainable waste management.

Global initiatives:

- **World Network of Biosphere Reserves:** UNESCO's World Network of Biosphere Reserves connects and supports designated sites globally, **fostering collaboration in biodiversity conservation and sustainable development**.
- **International Cooperation:** Biosphere Reserves often involve collaboration between neighbouring countries, enhancing international cooperation for conservation efforts. E.g., **Khangchendzonga Biosphere Reserve**
- **Sustainable Development Goals (SDGs):** The United Nations' SDGs, particularly Goal 15 (Life on Land) and Goal 14 (Life Below Water), emphasize the importance of conserving biodiversity and sustainable management of ecosystems, aligning with biosphere reserve objectives.

Insta Links:

- [Panna Tiger Reserve gets UNESCO's 'Biosphere Reserve' Status](#)

Prelims Links:

Q. The most important strategy for the conservation of biodiversity together with traditional human life is the establishment of (UPSC 2014)

- (a) biosphere reserves
- (b) botanical gardens
- (c) national parks
- (d) wildlife sanctuaries

Ans: A

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

6. COAL: NECESSARY FOR INDIA'S GREEN TRANSITION

Context:

The transition to green energy in India is encountering challenges, especially in coal-rich states. While there's a global focus on **decarbonization and renewable energy (RE)**, coal continues to play a significant role in India's energy landscape.

What is Energy transition?

Energy transition involves **shifting from fossil-based energy production to renewable sources**, aiming to reduce or eliminate carbon emissions and greenhouse gases. In India, by 2030, solar and wind energy could make up **51% of generation capacity**, a significant increase from about **8% in 2019 to 31% in 2030**.

Status of Energy Transition in India

Renewable electricity is growing at a faster rate in India than any other major economy, with new capacity additions on track to **double by 2026**. In 2022, wind and solar made up **92%** of India's capacity additions to power generation.

What are the issues with this energy transition?

The growth of RE assets primarily benefits **western and southern states**, leading to potential fiscal consequences for RE-poor, coal-rich states such as Jharkhand, Odisha, and West Bengal (mainly Eastern states). They face a decline in **coal royalties as RE expands**, and they'll have to import more power from other states, which will strain their budgets.

Other Challenges in phasing out coal for India due to energy transition:

Challenge	Description
Energy Security	Coal is a vital source of energy for India's economy. It powers 55% of the country's energy needs and generates 72% of India's electricity . Coal is also a vital source of jobs and economic growth.
Government Revenue	Coal mining and related activities generate significant revenue for the government through royalties, cesses, levies, and dividend payouts. Reducing coal usage impacts this revenue.
Direct Employment	Coal production employs hundreds of thousands of people directly , providing social security benefits. The decline in coal usage may result in job losses.
Indirect Employment	Numerous auxiliary services and businesses, such as coal washery workers, traders, and transporters , depend on coal-related activities. A coal phase-out affects their employment.
Induced Dependence	Communities and businesses in areas near coal mining have developed an induced dependence on coal. A transition impacts their economic well-being.
Informal Coal Economy	Small-scale coal operations and illegal trades support a significant informal coal economy with millions of dependents. Their livelihoods are at stake.
Social Welfare Provider	Coal India Limited (CIL) has assumed the role of a welfare provider in coal regions, offering essential services like housing, roads, schools, and healthcare. Transitioning from coal may disrupt this support.

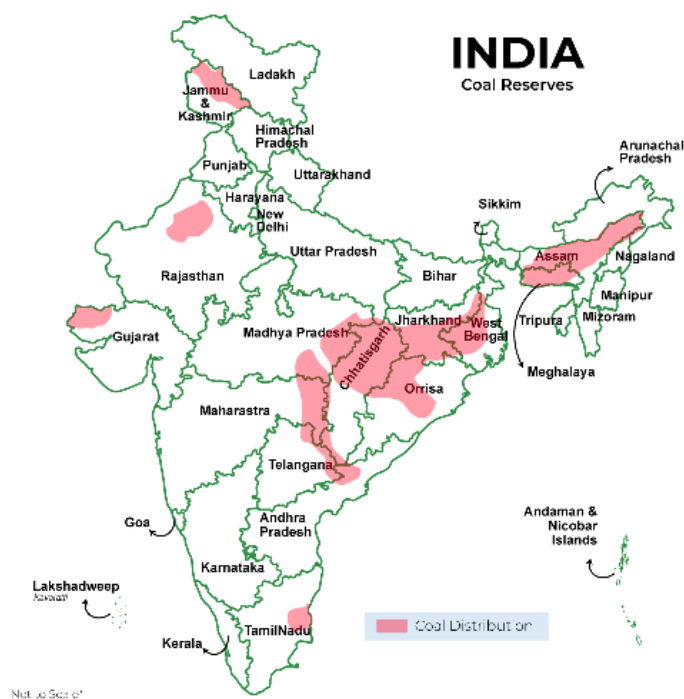
Strategies for ensuring a Balanced Energy Transition:

Strategy	Description
Support for RE-Poor States	Provide support and involvement in the transition for states with fewer renewable energy resources to address their unique challenges.
Financial Assistance	Offer preferential lending for renewable energy (RE) projects in states with limited RE resources to encourage investment and development.
Increased Federal Negotiations	Empower RE-poor states by giving them a more significant role in federal power discussions , potentially by reviving institutions like the Inter-State Council to ensure their voices are heard.

Financial Transfers	The Finance Commission can play a crucial role by providing explicit financial aid to RE-poor states , helping them navigate the transition.
Collaborative Policies	Implement just transition mechanisms and collaborative industrial policies that consider the economic well-being of communities affected by the energy transition.
Equitable Green Policy	Ensure that all states, not just historically privileged ones, benefit from green industrial policies , creating a more equitable transition for all regions.

About Coal in India:

Keyword	Explanation
Coal	A type of fossil fuel found in sedimentary rocks, often referred to as 'Black Gold.' It is a conventional energy source used for various purposes, including domestic heating, industrial processes, and electricity generation.
Leading Coal Producers	China is the world's largest coal producer . In 2022, China produced over 52% of the world's coal. India is the second largest producer , with a global share of nearly 9% , however, despite high production , around 30% of India's coal is imported.
Distribution of Coal in India	Different regions in India where coal is found, such as Gondwana Coal Fields (predominantly found in regions like Jharkhand-West Bengal, Chhattisgarh-Odisha, and Maharashtra) and Tertiary Coal Fields (mainly in extra-peninsular regions like Assam, Meghalaya, and others).
Reserve	The top 5 States in terms of total coal reserves in India are Jharkhand > Odisha > Chhattisgarh > West Bengal > Madhya Pradesh
Classification	Various types of coal based on their carbon content and properties, including Anthracite, Bituminous, Lignite, and Peat.



India, the largest coal producer, relies on coal imports for several reasons:

- **Domestic Demand and Buffer Stock:** To meet the high domestic demand and maintain buffer stocks, India imports coal. Domestic supplies often fall short, leading to the import route.
- **Shortage of Good Coking Coal:** India lacks reserves of high-quality coking coal crucial for steel and related industries, necessitating imports.
- **Lower Cost of Imported Coal:** Imported coal is cost-effective compared to similar coal from Coal India for many coal-fired power plants.
- **Coal Transport Challenges:** Despite a vast railway network, transporting coal from mines to coastal power plants faces major connectivity bottlenecks.

Government Initiatives for the Coal sector

- **Exploration of Coal and Lignite scheme:** This initiative focuses on assessing coal resources, preparing project reports for mining, and facilitating the auction of new coal blocks to recover costs from successful bidders
- **UTTAM** (Unlocking Transparency by Third Party Assessment of Mined Coal) Application for coal quality monitoring
- **New coal linkage policy** to ensure adequate supply of fuel to power plants through reverse auction
- **Online Coal Clearances System**
- **Coal Allocation Monitoring System (CAMS)**
- Opening up of commercial coal mining

For Major points of the Coal Ministry Action Plan 2023-24:
[Click Here](#)

Conclusion

Coal accounts for 55% of the country's energy needs. Coal is and will continue to be the backbone of India's economic and development growth. Thus India has to go for '**Just transition**' to balance the need for Renewable, without severely affecting Coal dependent economy.

Related News:

The Ministry of Coal has made a request to the Department of Financial Services (DFS) to **classify coal as part of the infrastructure sector**.

The inclusion of coal in the **master list of Infrastructure sub-sectors** has several benefits, including securing financial assistance for commercial coal mines, making the coal sector more investor-friendly, and enabling banks and financial institutions to formulate effective policies.

The **Ministry of Finance** introduced the **Harmonized Master List of Infrastructure sub-sectors (HMLIS) in 2012** to guide financial institutions and agencies supporting infrastructure development. Inclusion in the HMLIS is based on criteria such as economic importance and contributions to human capital. This inclusion facilitates **easier access to long-term funding at lower interest rates**

Insta Links

[Coal production in India](#)

Mains Links

Q. Despite India being one of the countries of Gondwanaland, its mining industry contributes much less to its Gross Domestic Product (GDP) in percentage. Discuss. (UPSC 2021)

Q. "In spite of adverse environmental impact, coal mining is still inevitable for development". Discuss. (UPSC 2017)

Prelims Links:

Q. Consider the following statements: (UPSC 2019)

- Coal sector was nationalized by the Government of India under Indira Gandhi.
- Now, coal blocks are allocated on lottery basis.
- Till recently, India imported coal to meet the shortages of domestic supply, but now India is self-sufficient in coal production.

Which of the statements given above is/are correct?

- 1 only
- 2 and 3 only
- 3 only
- 1, 2 and 3

Ans: A

Q. Which of the following is/are the characteristic/characteristics of Indian coal? (UPSC 2013)

- High ash content
- Low sulphur content
- Low ash fusion temperature

Select the correct answer using the codes given below:

- 1 and 2 only
- 2 only
- 1 and 3 only
- 1, 2 and 3

Ans: A

7. UN REPORT ON GROUNDWATER EXTRACTION: EVERY DROP COUNTS

Context:

A recent United Nations University report **warns that 27 out of 31 aquifers in India** are depleting faster than they can be replenished due to excessive groundwater extraction.

What are Aquifers?

They are **underground layers of rock or sediment** that can store and transmit groundwater. They are like natural reservoirs that hold water, and they play a crucial role in providing freshwater for wells, springs, and other water sources.

Key Status about Groundwater (GW):

- India is the largest user of Groundwater (GW)** (accounting for 1/4th of total withdrawal)
- 87% of GW is used for Irrigation
- Currently, 67% of GW units are safe (extraction < 70% of recharge), 14% Overexploited and 4% at the Critical
- Extraction is very high in **Haryana, Punjab** (78% of wells are overexploited), **Rajasthan** etc.
- Climate Concerns:** In southwest India, increasing temperatures might hinder groundwater replenishment.

Legal and regulatory frameworks for groundwater:

Framework	Description
Article 21	Recognizes the fundamental right to clean water under the right to life.
Central Ground Water Authority	Established by the Environment (Protection) Act, 1986 , responsible for framing groundwater policies and programs.

Supreme Court	Upholds the ' public trust doctrine ,' (2004) treating groundwater as a public resource, not private ownership.
Government Schemes	Initiatives like Atal Bhujal Yojana, Jal Shakti Abhiyan, and Aquifer Mapping and Management Programme for groundwater management.
Indian Easement Act, 1882	Historically determined groundwater rights are often linked to land ownership.
Central Ground Water Board	Established in 1970 , it develops groundwater policies and programs.
Model Groundwater Bills	Revised multiple times, empowers state boards to create laws and manage water resources.
National Green Tribunal	Directs the Central Ground Water Authority to regulate extraction and mandates permission for extraction.
Polluter Pays Principle	Addresses groundwater contamination case-by-case, with polluters bearing remediation costs.

For Reasons for the use of ground waters in irrigation: [Click Here](#)

For Problems associated with such rampant use: [Click Here](#)

Initiatives:

International:

- **The United Nations-Water Summit on Groundwater 2022:** Organised to raise awareness on groundwater conservation.
- **"Groundwater: Making the invisible visible"** campaign run by UN-Water throughout 2022.

National:

- **Aquifer Mapping and Management Programme**
- **Jal Shakti Abhiyan (2019):** Launched in 256 water-stressed districts to improve groundwater conditions in these areas.
- **Atal Bhujal Yojana** is a groundwater management scheme launched in 2019.

About Atal Bhujal Yojana:

Atal Bhujal Yojana (ABY)



Context: The National Level Steering Committee of the Atal Bhujal Yojana, has decided to continue the ABY for another two years beyond 2025, till 2027

Key features of the Atal Bhujal Yojana (ABHY)	
About	Atal Bhujal Yojana (ABHY) is a central sector scheme , for sustainable management of groundwater with community participation.
Objective	It envisages people's participation through the formation of ' Water User Associations ', water budgeting, preparation & implementation of Gram-panchayat-wise water security plans, etc. It aims to bring behavioural changes in communities and promotes demand-side interventions for water conservation and smart water management. It emphasizes reducing water demand in irrigation and implementing efficient water techniques.
Launched in	2020
Ministry	Ministry of Jal Shakti
Funding	Government of India and World Bank on a 50:50 basis
Participating States	Gujarat, Haryana, Karnataka, Madhya Pradesh, Maharashtra, Rajasthan, and Uttar Pradesh
Selection Criteria for States	Groundwater exploitation, degradation, legal and regulatory instruments, institutional readiness, and experience in groundwater management initiatives
Focus Areas	Over-exploited and water-stressed areas
Water Conservation Interventions	Demand-side interventions , reducing water demand in irrigation, promoting efficient water techniques (drip/sprinkler, irrigation through the pipeline, mulching, crop diversification, etc.)
Performance-based Incentives	States performing well can receive additional incentive funds
Monitoring and Evaluation	Pre-defined targets called Disbursement Linked Indicators (DLIs) <small>Visit Insights IAS Daily CA</small>

Way forward:

Strategy	Description
Water-Efficient Crops	Promotion of less water-intensive crops like millet to reduce water consumption in agriculture.
Efficient Watering	Emphasis on water-saving irrigation techniques to minimize water wastage and over-extraction.
Technology Adoption	Introduction of monitoring technologies for borewells to increase awareness and encourage responsible usage.
Awareness and Education	Educational efforts to inform the public about the real-time status of borewells and the need for water conservation.
Institutional Innovations	Innovative approaches within the water sector to ensure sustainable water management.
Demand-Side Management	Addressing the connection between power subsidies and excessive groundwater extraction, especially in states like Punjab, to conserve resources.

Conclusion

The effective answer to the groundwater crisis is to integrate conservation and development activities, from water extraction to water management, at the local level; making communities aware and involving them fully is therefore critical for success.

Insta Links

[Growing water crisis and One water Approach \(OWA\)](#)

Mains Links

Q. Bring out the problems associated with groundwater irrigation in India. Critically analyse the role of Participatory Irrigation Management (PIM) in improving agricultural production on a sustainable basis. (15M)

GENERAL STUDIES – 4

1. MP MAHUA MOITRA CASE AND LOK SABHA ETHICS COMMITTEE PROCEEDINGS

Context:

The article discusses the **proceedings of the Lok Sabha Ethics Committee** against Member of Parliament Mahua Moitra and emphasizes the **distinction between parliamentary and judicial probes**.

What is the case about?

MP Mahua Moitra is facing proceedings from the **Lok Sabha Ethics Committee** over **allegations of receiving money for posing questions in Parliament**. She is said to have, also, shared a password for online submission of questions. If implicated, the act could be considered a breach of privilege and contempt of the House.

Previous instances of MPs being expelled for accepting money for parliamentary work:

Year	MP(s) Expelled	Reason for Expulsion
1951	H.G. Mudgal	Guilty of promoting a business association's interests
2005 (Cash-for-Query Scandal)	11 MPs	Found guilty of accepting money for posing questions
2008 (Cash for Votes Scandal)	Few of the involved	During a trust vote in 2008, MPs were allegedly offered bribes to vote in favour of the government

About Lok Sabha's Ethics Committee:

Aspect	Details
About	<p>The Ethics Committee is a parliamentary body responsible for examining cases of ethical misconduct among Members of Parliament (MPs).</p> <p>The members of the Ethics Committee are appointed by the Speaker for a one-year term.</p>

History	The Ethics Committee of the Rajya Sabha was established on March 4, 1997, by then Vice President K R Narayanan .
	An ad hoc Ethics Committee was constituted in 2000 (late Speaker G M C Balayogi) and became a permanent part of the House in 2015.
Procedure for Complaints	Complaints can be made by any person through another Lok Sabha MP, with evidence and an affidavit.
	Members can complain without providing an affidavit .
	The Speaker can refer complaints against MPs to the Committee.
	The Committee conducts a Prima Facie inquiry before deciding to examine a complaint.
Overlap with Privileges Committee	It presents its report to the Speaker for House consideration , with provision for discussion on the report.
	The Ethics Committee and the Privileges Committee often deal with similar issues. The Ethics Committee can take up only cases of misconduct involving MPs
	More serious accusations, especially those related to corruption , typically go to the Privileges Committee .
	MPs and non-MPs both can be examined for Breach of Privilege if their actions attack the authority and dignity of the House.
	Privileges extend to individual Members and the House as a whole.

Limitations of the Ethics Committee

- **Lack of clear definitions for "unethical conduct,"** leaving decisions to committee discretion.
- **The committee may not address more serious cases** of misconduct or violations of law, as these often go to the Privileges Committee.
- **It focuses on maintaining parliamentary discipline** but lacks authority in criminal investigations.
- **Decisions rely on a common-sense approach** and may not strictly adhere to legal standards or rules of evidence.

The key difference between judicial and parliamentary probes:

- **Nature:**
 - **Judicial Probe:** Judicial probes are conducted by legally trained professionals within the judiciary. They follow legal procedures and adhere to the rules of evidence.
 - **Parliamentary Probe:** Parliamentary probes

are conducted by members of the parliament or its committees, who are not necessarily legally trained. They follow parliamentary rules and procedures.

- **Purpose:**

- **Judicial Probe:** Judicial probes aim to establish legal guilt or innocence, often in criminal or civil matters. They can lead to legal consequences, including criminal charges or civil liability.
- **Parliamentary Probe:** Parliamentary probes primarily focus on issues related to parliamentary discipline, ethics, or breaches of privilege. Their purpose is to maintain the integrity of parliamentary proceedings and may result in actions like suspension or expulsion of MPs.

Ethical issues related to Ms Mahua Moitra's case:

The ethical issues with the conduct of **Ms Mahua Moitra** include allegations of accepting bribes for parliamentary questions, the unauthorized use of her **parliamentary ID** in Dubai while she was in India, and the potential involvement of her parliamentary login in targeting the **Adani Group and the Prime Minister**. These allegations raise questions about the integrity and transparency of parliamentary proceedings and the **ethical behaviour** of a Member of Parliament.

Outcome:

If the Ethics Committee **deems a complaint to have merit**, it can make recommendations. Typically, this involves **recommending the suspension of the MP** for a specified period. However, the final decision **rests with the House**, which includes all MPs. They will determine whether to **accept the committee's recommendations** and decide the nature and extent of any punishment if deemed necessary. In the event of expulsion or a potentially adverse decision, the accused MP has **the option to challenge it in a court of law**. The grounds for challenging such a decision in court are limited and generally encompass **claims of unconstitutionality, gross illegality, or a denial of natural justice**.

Way forward:

Reforms in the parliament to enhance ethics and transparency:

- **Declaration of Members' Business Interests:** This practice is in place for Rajya Sabha members and involves disclosing personal, pecuniary, or direct interests that could create conflicts of interest. It promotes transparency and accountability.
- **The Second Administrative Reforms Commission (ARC) recommended:**
 - **Code of Ethics for Ministers:** In addition to the existing Code of Conduct, there should be a Code of Ethics to guide Ministers in upholding constitutional and ethical standards

in their duties.

- **Dedicated Units:** Offices of the Prime Minister and Chief Ministers should establish units to monitor adherence to the Code of Ethics and Conduct, including handling public complaints.
- **Responsibility of PM/CM:** The Prime Minister or Chief Minister should ensure that Ministers follow the Code of Ethics and Conduct.
- **Annual Report:** An annual report on adherence to these codes, including any violations and actions taken, should be submitted to the legislature.
- **Minister-Civil Servant Relationship:** The Code of Ethics should cover the principles of the Minister-civil servant relationship.
- **Public Disclosure:** The Code of Ethics, Code of Conduct, and the annual report should be made public.

Conclusion:

The need for these reforms is to **address conflicts of interest and enhance ethical standards** among MPs, contributing to good governance and transparency in the legislative process. The reforms are essential for fostering ethical conduct and transparency within the Lok Sabha.

Mains Links:

Q. To what extent, in your view, the Parliament is able to ensure accountability of the executive in India? (UPSC 2021).

2. PRISONER'S DILEMMA

Context:

Recently, the Defence Minister mentioned the concept of **"Prisoner's Dilemma"** to highlight the **importance of countries collaborating instead of working against each other in international relations**.

What is the Prisoner's Dilemma?

It is a **classic concept in game theory** that illustrates a situation where individuals can make **rational choices** that lead to a suboptimal outcome for both. It involves two suspects (**prisoners**) who can either cooperate by remaining silent or betray each other by confessing to a crime. The possible outcomes are:

- **If both remain silent** (cooperate), they both get a minimal sentence for a lesser offence.
- **If both confess** (betray), they both receive a moderate sentence.
- **If one remains silent while the other confesses**, the one who confesses goes free, and the silent one receives a heavy sentence.

Its application in International Relations:

The Prisoner's Dilemma concept is often applied to international relations to understand situations where countries face **choices with conflicting interests**. It helps explain why **nations may not always cooperate** for the best collective outcome. For example, **in arms races**, two countries may each **choose to arm themselves** (confess) to gain a competitive advantage, **even though disarmament** (remaining silent) would be collectively better by reducing the risk of war and saving resources.

3. EXAMPLES OF ETHICS

Example 1: Impact of Conflict on Children

Context:

Kailash Satyarthi, a Nobel Peace Prize winner known for his work in safeguarding children's rights, condemns the **harm inflicted on children in the conflict (the present Israel-Palestine conflict has profoundly affected both Israeli and Palestinian children)**

Ethical issues related to the impact of war on children:

Issue	Description
Targeting of Children	The deliberate targeting of children in armed conflicts is a clear violation of international humanitarian law .
Child Soldiers	The recruitment and use of child soldiers by armed groups, exploit their vulnerability and violate their rights.
Mental and Emotional Trauma	The long-lasting psychological and emotional trauma experienced by children due to exposure to violence, death, and destruction.
Displacement and Separation	Forced displacement of children and the separation from their families , lead to a breakdown in family structures and safety.
Lack of Access to Education	War disrupts education systems , denying children their right to education and hindering their future prospects.
Child Casualties	The high number of child casualties , injuries, and deaths in armed conflicts, reflects a failure to protect the most vulnerable.
Recruitment for Propaganda	The use of children in propaganda by armed groups to promote their cause, exploiting their innocence for political purposes.
Denial of Humanitarian Aid	Obstacles to delivering humanitarian aid to children in conflict zones, cause unnecessary suffering and deprive them of basic necessities.

Example 2: Reconciliation over retribution

Conflict:

The [article](#) emphasizes the **need for reconciliation over retribution** in conflicts.

What is Reconciliation?

Reconciliation refers to the **act of restoring or building harmonious relationships**, often after a conflict or dispute. It involves resolving differences, promoting understanding, and fostering peace and cooperation among parties.

What is Retribution?

Retribution is the **act of seeking revenge or retribution** for a perceived wrong or harm. It typically involves **punishing those** responsible for an offence, often with the aim of seeking vengeance or inflicting pain as a form of payback. However, often **Revenge Begets More Violence**.

Difference between Reconciliation and Retribution:

Reconciliation focuses on resolving conflicts and fostering peace, while retribution is about seeking revenge and punishment.

Why Reconciliation over retribution is better way to resolve conflict?

Reconciliation focuses on **healing, understanding, and building relationships**, rather than perpetuating a cycle of revenge and harm. It promotes long-term peace, cooperation, and the potential for both parties to move forward positively. E.g., **Gandhi's practice of non-violence** defused animosity, contrasting with retaliatory tactics.

Why sometimes Retribution over Reconciliation is better?

Sometimes retribution over reconciliation may be considered a better way to resolve conflict when there's a need to hold individuals or groups accountable for heinous crimes, and reconciliation could lead to impunity.

Historical Example: The Nuremberg Trials after World War II, where Nazi war criminals were held accountable and faced retribution for their actions, were considered necessary to ensure justice and prevent future atrocities.

Other methods of Conflict resolution:

Method	Description
Communication and Dialogue	Open and honest communication to understand each other's perspectives and find common ground.
Mediation	A neutral third party helps disputing parties reach an agreement through facilitated discussions.
Negotiation	Parties directly engage in discussions and make concessions to reach a mutually acceptable solution.

Legal Resolution	Involves using the legal system, such as arbitration or litigation, to settle disputes.
Conflict Prevention	Proactively addressing issues to prevent conflicts from arising in the first place.
Restorative Justice	Focuses on repairing harm and restoring relationships, often used in criminal justice.
Empathy and Understanding	Practising empathy and actively listening to build understanding and empathy.

Mains Links:

Q. Discuss the significance of reconciliation as a key virtue pivotal in the development of individuals in a country, and give suitable examples to substantiate. (15M)

CONTENT FOR MAINS ENRICHMENT

1. VARSHA RAIKWA (RADIO BUNDELKHAND)

Varsha Raikwar, a radio jockey at Radio Bundelkhand, uses her radio show “**Shubh Kal**” to address climate change and agriculture-related issues.

The radio show encourages farmers to **share traditional farming solutions** and connects them with experts. The program promotes sustainable practices, such as [vermicomposting](#) and [organic farming](#), to mitigate the impact of climate change on agriculture.

Impact of her work:

Varsha Raikwar’s work has inspired **positive changes**, including the development of water tanks and the adoption of **eco-friendly practices** among farmers. The radio station also reaches a wider audience through its mobile application, and it conducts “**narrow casting**” sessions in villages to engage with farmers on environmental solutions.

2. 2023 CHAMPIONS OF THE EARTH

Context:

The [United Nations Environment Programme](#) (UNEP) has announced the 2023 [Champions of the Earth](#), recognizing **individuals and organizations** for innovative solutions to combat plastic pollution.

The award, the **UN’s highest environmental honor**, acknowledges efforts to address the **global plastic crisis**.

Awardees and their contributions include:

Awardee	Category	Work Description
Mayor Josefin Belmonte, Quezon City, Philippines	Policy Leadership	Implementing policies to combat climate crisis, end plastic pollution, and promote green urban initiatives.
Ellen MacArthur Foundation, United Kingdom	Inspiration and Action	Mainstreaming a life-cycle approach for plastics , fostering collaborations among decision-makers, academia, and more to address climate, biodiversity, and plastic pollution.
Blue Circle, China	Entrepreneurial Vision	Utilizing blockchain and IoT to track and manage plastic pollution lifecycle , including collection, regeneration, re-manufacturing, and resale.
José Manuel Moller, Chile	Entrepreneurial Vision	Leading Algramo , a social enterprise offering refill services to reduce plastic pollution and lower costs of everyday essentials.
Council for Scientific and Industrial Research, South Africa	Science and Innovation	Employing cutting-edge technology and multidisciplinary research to develop innovative solutions for plastic pollution, including sustainable alternatives and local manufacturing .

Previous, Indian awardees include: Indian [wildlife biologist Dr. Purnima Devi Barman](#) (2022); PM Narendra Modi (2018); Tulsi Tanti (Chairman of the Suzlon Group), and Afroz Alam, a lawyer who led the clean-up at **Mumbai’s Versova beach**.

About the award:

The **UNEP’s Champions of the Earth award**, the UN’s top environmental annual honor, celebrates individuals, groups, and organizations for their transformative contributions to the environment. It has recognized leaders in government, civil society, and the private sector **since its establishment in 2005**, honoring those leading efforts to protect our natural world.

To fight the pervasive impact of pollution on society, **UNEP**

had launched [#BeatPollution](#), a strategy for rapid, large-scale and coordinated action against air, land and water pollution.

3. MATTHEW PERRY (F.R.I.E.N.D.S STAR)

Context:

Matthew Perry, known for his role as Chandler Bing in "Friends," died recently.

Life lessons drawn from Matthew Perry's experiences:

Life Lesson	Description
Overcoming Adversity	His journey from adversity , including a life-threatening health crisis, demonstrates the importance of resilience and facing personal challenges.
Battling Substance Addiction	Perry's battle with substance addiction and his openness about it highlights the courage needed to combat addiction and seek help. He was an advocate for addiction recovery , running the Perry House sober living facility and lobbying for drug courts.
Legacy Beyond Laughter	His comedic legacy and relatable characters show the power of humour and authenticity in forming lasting connections.

4. CHILDREN AS POLITICAL CITIZENS

Context:

The [article](#) discusses the importance of **child participation in governance** and the need to recognize children as political citizens.

"Children as political citizens" refers to the concept of recognizing and involving children in the political and decision-making processes of a society or nation.

It emphasizes the [United Nations Convention on the Rights of the Child \(UNCRC\)](#) and its focus on the [right to participation among children](#). Child participation should go beyond **school-based initiatives** and be recognized as a **robust and sustained institutional process**.

Examples:

Activist	Background & Initiatives
G r e t a Thunberg	Swedish teenager known for climate activism . Started the " Fridays for Future " movement to demand climate action. A prominent voice for environmental issues and youth engagement in climate politics.
M a l a l a Yousafzai	Pakistani activist advocating for girls' education. Spoke out against the Taliban's ban on girls' education and survived an attack. Symbol of girls' right to education worldwide.
Thandiwe Abdullah	Co-founder of the Black Lives Matter Youth Vanguard . Advocates for racial justice and equality. Raises awareness about systemic racism and police brutality.
E m m a Gonzalez	Survivor of the Parkland school shooting in the U.S. Co-founded the "Never Again MSD" movement advocating for stricter gun control laws to prevent further school shootings.

Usage: The examples can be used in Governance/ Ethics/ Essay Questions

5. 2023 BRITISH ACADEMY BOOK PRIZE: NANDINI DAS

Context:

India-born author Nandini Das has won the 2023 British Academy Book Prize for **Global Cultural Understanding**, receiving a prize of GBP 25,000 for her book 'Courting India: England, Mughal India and the Origins of Empire.'

About the book:

The book provides a **fresh perspective on the origins of the British Empire** through the story of the first English ambassador to India in the 17th century, Sir Thomas Roe. The prize recognizes works of **non-fiction that contribute to understanding** different world cultures and their interactions.

About the Prize:

The **British Academy Book Prize**, established in 2013 (formerly the Nayef Al-Rodhan Prize), recognizes outstanding non-fiction works in fields like humanities and social sciences. It honours books that display rigour, and originality, and enhance understanding of global cultures and interactions.

Prestigious literary awards and their distinguished Indian-origin recipients:

Literary Award	Description	Notable Indian-Origin Recipients
Pulitzer Prize	Awarded for excellence in various fields	Vijay Seshadri, Sid-dhartha Mukherjee, Geeta Anand, Jhumpa Lahiri, Danish Sidi-diqui, Sanghamitra Kalita, Gobin Behari Lal, and others
Booker Prize	Recognizes the best novel in English	Salman Rushdie, Arundhati Roy, Kiran Desai, Aravind Adiga, and others
International Booker Prize	Honours translated literature works	Geetanjali Shree for "Tomb of Sand" (2022)
Nobel Prize in Literature	Prestigious award for remarkable literary contributions	Rabindranath Tagore (1913)

Usage: The examples can be quoted as India's achievement in literature in Essay/Science Questions.

6. APOLLO 13 SPACECRAFT RECOVERY

Context:

Ken Mattingly, an astronaut known for his crucial role in helping the damaged Apollo 13 spacecraft return safely to Earth, has passed away at the age of 87.

What happened to the Apollo 13 spacecraft?

The Apollo 13 spacecraft (on a mission to the moon landing in 1970) suffered an **oxygen tank explosion**, which disrupted the mission and threatened the lives of the crew. They had to abort their lunar landing.

How was the spacecraft brought back to Earth?

The recovery of Apollo 13 is a story of **teamwork, innovation, and determination**. When an oxygen tank exploded, Astronauts Jim Lovell, Jack Swigert, and Fred Haise, along with ground control and fellow astronaut Ken Mattingly, worked tirelessly to solve the crisis. They **converted the lunar module into a lifeboat**, conserved power and resources, and navigated by the stars. With their collective efforts, they managed to **swing around the moon and safely return to Earth**, proving the **resilience of human ingenuity** and the spirit of exploration.

FACTS FOR PRELIMS

GS-1

1. BANNI FESTIVAL

Context:

During the traditional Banni festival in **Devaragattu, Andhra Pradesh's Kurnool district**, three individuals lost their lives, and over a hundred were injured on the night of October 24.

About the Banni Festival:

Feature	Description
Nature	Traditional stick-fight
Occurrence	Celebrated on the night of Dussehra (Vijaya Dasami) annually
Origin	Associated with the Vijayanagara Empire
Purpose	To symbolically snatch idols from the deities' team , leading to the Banni Fight
Historical Significance	Celebrates the victory of Lord Mala Malleswara Swamy and Goddess Parvati over the demonish Mani and Mallasura , who troubled the people in the Devaragattu region
Rituals	Takes place at midnight - Procession of idols of deities Malamma and Malleshwara Swamy from the hill temple at Neraneki - Devotees carry long sticks or lathis to hit each other on the head with these sticks
Location	It is held on the premises of Mala Malleswara Swamy Temple (situated at the border of Andhra Pradesh and Karnataka).

2. BABA FARID: JERUSALEM-IN-INDIA CONNECTION

Context:

India's connection with Jerusalem traces back 800 years to the establishment of **Baba Farid's lodge**.

What is the story?

Legend has it that **Baba Farid, a Sufi saint from Punjab**, meditated at this spot in Jerusalem, and Indian Muslims on their way to Mecca began visiting the place to pray. Over time, this humble spot evolved into a **shrine and hospice for Indian travelers**. The property is now under the **ownership of Waqf Board of India**, accessible solely to individuals of Indian citizenship or heritage.

Who was Baba Farid?

Baba Farid, born in **1173 near Shakarganj, Pakistan**, was from a family that migrated from Kabul to Punjab. He followed the **Chishti Order** and was a pioneering Sufi who wrote verses in Punjabi. His significant impact is seen in Sikhism, where many of his verses are included in the **Guru Granth Sahib**, the holy scripture of Sikhs. Baba Farid's most famous disciple **Shaikh Nizamuddin Auliya (1238-1325)** was responsible for making Delhi an important centre of the Chishti silsilah.

3. PICHWAI PAINTING

Context:

Chennai's Collage is hosting an art exhibition showcasing Pichwai paintings, some of which date back 350 years.

- Pichwai art originated in Nathdwara, near Udaipur, and is traditionally created on cloth, typically khadi.

Features:

- The paintings use stone pigments for gold and silver tones and vegetable dyes for vibrant colours like orange, red, chrome yellow, and kesari.
- The detailed work is meticulous and time-consuming, taking several months to complete a single piece.
- The art form has evolved over time, with modern themes and influences incorporated by artists.

In recent years, there has been a resurgence in Pichwai art, attracting younger buyers and encouraging artists to return to their hometowns in Rajasthan to learn and continue the traditional techniques.



4. KOZHIKODE AS 'CITY OF LITERATURE' AND GWALIOR AS THE 'CITY OF MUSIC'

Context:

Kozhikode, a city in Kerala, and Gwalior, a city in Madhya Pradesh, have been included in UNESCO's Creative Cities Network (UCCN).

- These cities were chosen to represent specific creative fields, with Kozhikode falling under the category of literature and Gwalior under music.
- Indian cities that are part of this network include Varanasi (music), Srinagar (crafts and folk arts), Hyderabad (Gastronomy), Jaipur (Crafts and Folk Arts) and Chennai (music).

About Kozhikode

It has a rich literary tradition and is known for producing prominent writers and cultural figures. The city has a history of significant literary contributions, with the first Malayalam novel, Kundalatha, being authored there in 1887

UNESCO Creative Cities Network:

1. The UNESCO Creative Cities Network (established in 2004 by UNSECO), consists of 350 cities in over a hundred countries. Its purpose is to encourage cooperation among cities that recognize creativity as a key element for sustainable urban development
2. Categories include: 1. Crafts and folk arts 2. Media arts 3. Film 4. Design 5. Gastronomy 6. Literature and 7. Music.
3. The network aims to leverage the creative, social, and economic potential of cultural industries, aligning with UNESCO's objectives of promoting cultural diversity and enhancing resilience to challenges like climate change, inequality, and rapid urbanization.
4. It promotes a culture of creativity in urban planning and solutions to urban issues.

5. WHITE HYDROGEN

Context:

Two scientists in northeastern France discovered a substantial deposit of "white hydrogen," considered one of the largest concentrations of this clean energy source ever found.

What is White Hydrogen?

White hydrogen is a clean-burning energy source found naturally in the Earth's crust. It is Natural hydrogen and is found as naturally occurring molecular hydrogen on or on Earth. The name white hydrogen distinguishes it from green hydrogen (produced from renewable energy sources from the electrolysis of water), and from grey, brown or black hydrogen, (which is obtained from fossil sources)

Significance:

- White hydrogen is seen as a **potentially abundant and untapped source** of clean-burning energy.
- White hydrogen's estimated cost is around \$1 per kilogram**, significantly lower than green hydrogen, which costs about **\$6 per kilogram**, making it a more affordable clean energy source.
- White hydrogen **deposits have been identified worldwide** including in the US, eastern Europe, Russia, Australia, Oman, France, and Mali.

UN Human Rights Council

An **inter-governmental body within the UN** system focused on strengthening the promotion and protection of human rights worldwide. Established in **2006 (HQ: Geneva)**, replacing the former United Nations Commission on Human Rights - **OHCHR** serves as the Secretariat. Composed of **47 UN Member States, elected by the UNGA based on equitable geographical distribution**. Members serve for **three years**, with no immediate re-election after two consecutive terms

6. HUMAN RIGHTS AND AGENCIES INVOLVED

Context:

The UN has said that there has been a rise in **intimidation and violence in the West Bank**, particularly in the Nablus area. This violence has led to the displacement of over 820 Palestinians.

Various UN agencies involved in the protection of Human Rights:

Organization	Description
OCHA (United Nations Office for the Coordination of Humanitarian Affairs)	Part of the United Nations Secretariat . Responsible for coordinating humanitarian actors in emergency response. Established in 1998 (HQ: Geneva) , formerly the United Nations Department of Humanitarian Affairs. The mandate includes mobilizing aid, sharing information, supporting humanitarian efforts , and advocating for crisis-affected communities.
UNRWA (United Nations Relief and Works Agency)	Established by the UN General Assembly in 1949 (HQ: Amman and in Gaza). Supports Palestinian refugees in five fields of operation . The mission focuses on helping Palestinian refugees in Jordan, Lebanon, Syria, the West Bank (including East Jerusalem), and the Gaza Strip. Funded primarily by voluntary contributions and financial support (including about USD 5 million every year from India) . Defines Palestine refugees based on their place of residence during the 1948 conflict
UNHCR (United Nations High Commissioner for Refugees)	A global organization under the UN dedicated to saving lives, protecting the rights, and improving the future of refugees and forcibly displaced communities. Founded in 1950 (HQ: Geneva) , primarily to assist European refugees.

GS-2

1. INTERNATIONAL COMPETITION NETWORK

Context:

The **Competition Commission of India (CCI)** has achieved **membership** in the 18-member steering committee of the **International Competition Network (ICN)**, a global body dedicated to **competition law enforcement**.

- The ICN includes **140 competition agencies** and serves as an **informal platform for antitrust authorities** to foster **regular communication** and address **practical competition concerns**.
- The ICN's members comprise both **national and multinational competition authorities**, and they collaborate in **project-oriented working groups** to produce results in the realm of **competition enforcement**.

The **Competition Commission of India (CCI)** is a **statutory body** that enforces the **Competition Act, 2002**. The CCI was established in 2009 by the Ministry of Corporate Affairs

2. JAPAN-INDIA SEMICONDUCTOR SUPPLY CHAIN PARTNERSHIP

Context:

A **Memorandum of Cooperation (MoC)** has been signed between the **Ministry of Electronics and Information Technology of India** and the **Ministry of Economy, Trade, and Industry of Japan**.

- It is focused on the **Japan-India Semiconductor Supply Chain Partnership** and aims to **strengthen co-operation** between the two countries in enhancing the **semiconductor supply chain**.
- It encourages both **government-to-government (G2G)** and **business-to-business (B2B)** cooperation

to advance a resilient semiconductor supply chain and leverage each country's strengths.

The **MoC is part of India's broader initiatives for international cooperation in information technology and aims to strengthen collaboration with Japan in the semiconductor industry.** It aligns with the "India-Japan Digital Partnership" and is seen as a step toward enhancing semiconductor supply chain resilience for mutual benefit.

A semiconductor is a material that has electrical conductivity between that of a conductor and an insulator. Semiconductors can be compounds, such as gallium arsenide, or pure elements, such as germanium or silicon.

Properties

- **Electrical conductivity:** Semiconductors have electrical conductivity between that of a conductor, such as copper, and an insulator, such as glass.
- **Resistivity:** Semiconductors' resistivity falls as their temperature rises.
- **Conducting ability:** Semiconductors' conducting ability can be increased by chemical treatment.

Uses

Semiconductors are used as a foundation for computers and other electronic devices.

Developments in semiconductor technology have made electronic devices smaller, faster, and more reliable

3. INDIGENOUS CHARGING STANDARDS

Context:

The **Bureau of Indian Standards (BIS)** has approved an indigenous AC and DC combined charging connector standard, known as **IS17017 (Part 2/Sec 7): 2023**, for light electric vehicles (LEVs).

- This standard is the world's first of its kind and has been developed in India.

Significance:

- This initiative allows **original equipment manufacturers (OEMs) in India to move away from relying solely on international standards and protocols.**
- The new standard addresses the need for a **standardized connector for combined AC and DC charging systems for two-wheelers, three-wheelers, and microcars, offering a hybrid and cost-efficient infrastructure for all forms of charging.**
- It enables **interoperable networks for both fast and slow charging, making it convenient for customers to charge their EVs without carrying bulky chargers.**

This development is seen as a **significant step towards driving faster EV adoption in India and potentially worldwide,**

contributing to the growth of electric mobility

The **Bureau of Indian Standards (BIS)** is India's **national standards body.** It's part of the **Department of Consumer Affairs**, which is under the Ministry of Consumer Affairs, Food & Public Distribution. The BIS was established by the **Bureau of Indian Standards Act, 2016**, which came into effect on **October 12, 2017.**

The BIS is responsible for:

Standardization, Marking, Quality certification of goods, Hallmarking, Laboratory services, and Training services.

4. VENUS HAD EARTH-LIKE PLATE TECTONICS BILLIONS OF YEARS AGO

Context:

A new study suggests that **Venus, despite being a scorching wasteland, may have once had plate tectonics similar to those on early Earth.**

- The research **uses atmospheric data from Venus and computer modelling to propose that Venus' current atmosphere and surface pressure could only have resulted from early plate tectonics.**
- Plate tectonics is essential for life as it stabilizes surface temperatures and leads to the development of **habitable environments.**
- The study suggests that **Venus had plate tectonics between 4.5 billion and 3.5 billion years ago, similar to Earth, but with limited plate movement and fewer plates involved.**

Significance:

- This finding **raises the possibility of early microbial life on Venus and highlights that both planets were once more alike than previously thought.**
- The study also **suggests that planets may transition in and out of different tectonic states, impacting their habitability.**
- The research **provides a proof of concept that atmospheres can offer insights into a planet's ancient history and development.**
- The study's findings may have implications for understanding **other planets and moons, including Jupiter's Europa, which shows evidence of Earth-like plate tectonics.**

The study opens the **door for further investigation into the fate of Venus and its potential implications for Earth's habitability.**

5. CARBON NANOFLORETS

Context:

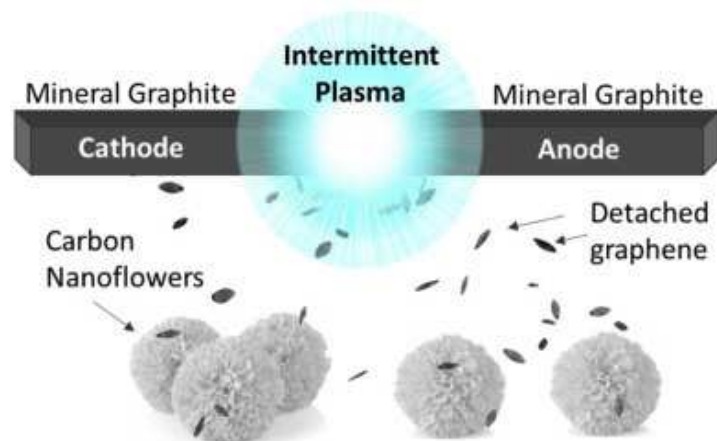
Researchers at the **Indian Institute of Technology (IIT) Bombay** have created **carbon nanoflorets** that can **efficiently convert sunlight into heat**.

What are Carbon nanoflorets?

Carbon nanoflorets are a **unique nanostructure composed of carbon atoms arranged in a distinctive floret-like morphology**. They have a high surface area and various potential applications in fields such as materials science, electronics, and nanotechnology due to their exceptional properties and structure.

- These nanoflorets can absorb light at multiple frequencies, including infrared, visible light, and ultra-violet, making them highly efficient at converting sunlight into thermal energy.
- Additionally, their **unique shape ensures minimal light reflection and efficient heat retention**.
- A 1-square-meter coating of these nanoflorets can **vaporize 5 litres of water in an hour**, surpassing commercial solar stills.

It can provide **ecologically sustainable heating** and has **potential uses in various sectors, including construction and healthcare**.



6. PREMATURE MORTALITY FROM MAJOR NON-COMMUNICABLE DISEASES

Context:

India is expected to fall short of meeting the targets set by the World Health Organization (WHO) and the **United Nations Sustainable Development Goals (SDG)** in reducing premature deaths from major **Non-Communicable Diseases (NCDs)**.

- An analysis by the **Indian Council of Medical Research (ICMR)** indicates that India's progress toward **reducing premature mortality from four major NCDs**, including cancer, cardiovascular disease, chronic respiratory diseases, and diabetes, **will likely miss the WHO's target of 25% reduction by 2025 compared to 2010**.

Key Findings:

- The study reveals that **NCDs account for a substantial portion of all deaths in India, with 22% being premature deaths in 2019**.
- The reduction in **premature mortality depends on various risk factors such as tobacco use, alcohol consumption, physical inactivity, obesity, dietary choices, and high blood pressure**.
- Compared to **lower and middle-income countries and other nations like Moldova, Peru, China, and Sweden**, India's progress in reducing NCDs is **comparatively slower**.

7. HUNGER HOTSPOTS

Context:

The **FAO and WFP** have issued a warning that acute food insecurity is expected to worsen in **18 hunger hotspots**, covering 22 countries (e.g., Countries like Afghanistan, Nigeria, Somalia, South Sudan, and Yemen are at the highest concern level)

What are hunger hotspots?

Hunger hotspots are regions or countries **identified by organizations like FAO and WFP** where acute **food insecurity** is a pressing concern. These areas have a high number of people facing **critical food shortages** and worsening factors that are expected to intensify life-threatening conditions in the near future.

Other Hotspots:

1. **Haiti, the Sahel** (Burkina Faso and Mali), Malawi, Guatemala, Honduras and **Sudan**
2. **Pakistan, the Central African Republic, Ethiopia, Kenya, the Democratic Republic of the Congo, the Syrian Arab Republic, and Myanmar**. Lebanon, El Salvador, and Nicaragua are newly added to the list

The warning is based on the high number of **people facing critical acute food insecurity** and worsening factors that are expected to exacerbate the situation in the coming months.

GS-3

1. THE LEWIS MODEL IN ECONOMIC DEVELOPMENT

Context:

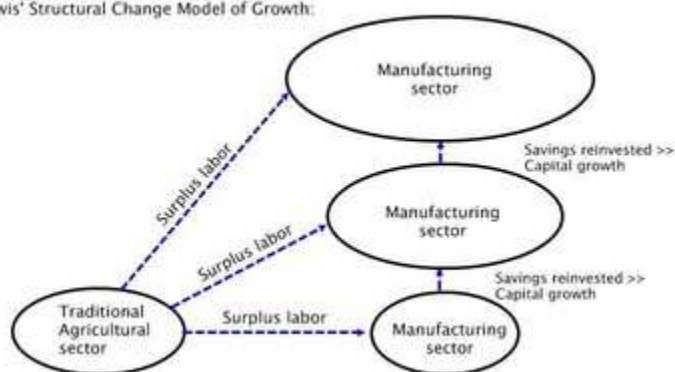
The Lewis Model, which envisioned the shift of surplus labour from agriculture to manufacturing, hasn't played out in India as expected.

What is the Lewis Model?

The Lewis Model, developed by economist **William Arthur Lewis**, proposed that in **underdeveloped countries** with a surplus of low-wage labour in agriculture, industrialization could lead to economic growth.

This model suggests that **as long as the wages in the industrial sector** are marginally higher than subsistence wages in agriculture, **surplus labour can transition to the industrial sector**, boosting economic development.

Lewis' Structural Change Model of Growth:



Why does this model work in China but not in India?

The Lewis Model worked in China but has faced challenges in India due to differences in **industrialization, technological advancement, and labour transitions**.

In China, the model was successful because of its **ability to absorb a massive surplus rural labour force**, turning China into the **"world's factory."**

In contrast, India faces hurdles in implementing the Lewis Model because **manufacturing is becoming more capital-intensive and reliant on labor-displacing technologies like robotics and artificial intelligence**. This shift limits the ability of labour-intensive industries to absorb surplus agricultural labour.

Additionally, India is experiencing **disguised unemployment in the agricultural sector**, which complicates labour transitions.

As a result, Niti Aayog is exploring new models for job creation in and around agriculture, focusing on value addition and agribusiness as potential sources of employment. **Bio-fuels, bio-based products, and sustainable agriculture practices** are seen as potential areas for employment generation, offering alternatives to traditional farm-based jobs.

2. NANOPHOTONIC ELECTRON ACCELERATOR (NEA)

Context:

Researchers **have activated the world's smallest particle accelerator**, known as a "nanophotonic electron accelerator" (NEA), which is approximately the size of a **small coin**.

What are particle accelerators?

It is a device that **accelerates charged particles**, such as electrons or protons, to very high speeds and energies. These accelerated particles are then used for various scientific and **practical purposes**, including fundamental research in particle physics, medical treatments, and industrial applications.

- E.g., [the Large Hadron Collider](#) (LHC)

How this miniature accelerator is different from LHC?

NEA consists of a **small microchip containing an even smaller vacuum tube** which is made up of thousands of individual pillars. Unlike **traditional particle accelerators (like LHC)**, this tiny accelerator relies on directing miniature laser beams at thousands of individual "pillars" on a microchip to accelerate electrons. While the **NEA's energy field is weaker than large particle accelerators** like the Large Hadron Collider (LHC), its smaller size and potential for further enhancements make it promising for applications in medical treatments, particularly for **precise radiotherapy**. The NEA's compact design offers advantages for medical purposes and could replace more **invasive cancer treatment methods**.

3. LORRAINOSAURUS (PLIOSAUR)

Context:

Researchers have identified fossils of a **170-million-year-old ancient marine reptile** as the oldest-known mega-predatory pliosaur (a group of ocean-dwelling reptiles). This pliosaur genus, named **Lorrainosaurus**, was found in northeastern France.

What are pliosaurs?

Pliosaurs were a **type of marine reptile** that lived over **200 million years ago** (during the early Middle Jurassic period). They were known for their **short necks**, large conical teeth and **massive skulls**. These creatures evolved into enormous

apex predators, **some exceeding 10 meters in length**. They were major marine predators of their time, akin to today's **Killer whales**. They are one of the **largest aquatic carnivorous reptiles** that have ever lived and are often referred to as **sea monsters**



About Lorrainosaurus:

It was one of the **first large pliosaurs** and played a significant role in the evolution of these apex predators that ruled the oceans for millions of years.

The fossils of Lorrainosaurus were **discovered in 1983** and were recently analyzed, shedding light on this ancient marine reptile's significance.

4. GLOBAL DECLARATION FOR RIVER DOLPHINS

Context:

In a significant move to protect the **world's six surviving species of river dolphins**, 11 Asian and South American countries have signed a groundbreaking **Global Declaration for River Dolphins**.

Need for such initiative:

River Dolphins are top predators in some of the world's greatest river systems and important **indicators of the river's health**. This initiative comes after **decades of alarming population declines** in river dolphins, with numbers plummeting by 73% since the 1980s due to various threats, including unsustainable fishing practices, pollution, habitat loss, and even the impact of climate change.


Aim of the declaration:

The declaration's aim is to **halt the decline and bolster the most vulnerable river dolphin** populations through collaborative efforts.

Surviving species of river dolphins:

Species	Habitat	IUCN
Amazon River Dolphin	Freshwater rivers in South America	Endangered
Ganges River Dolphin	Ganges and Brahmaputra River systems in India and Bangladesh	Endangered
Indus River Dolphin	Pakistan and River Beas (a tributary of the Indus River in Punjab)	Endangered
Irrawaddy Dolphin	Coastal areas in South and Southeast Asia, rivers including Ayeyarwady (Myanmar), Mahakam (Indonesian Borneo), Mekong, and Chilka Lake (India)	Endangered
Tucuxi Dolphin	Amazon River system in Brazil, Colombia, Ecuador, and Peru	Endangered
Yangtze Fin-less Porpoise	Yangtze River (the longest river in Asia)	Critically Endangered

About Gangetic River dolphin:

Gangetic Dolphins	Scientific Name: <i>Platanista gangetica</i>	
Location	Ganges-Brahmaputra-Meghna and Karnaphuli-Sangu river systems of Nepal, India, and Bangladesh	
Habitat	Freshwater	
Hunting Method	Emitting ultrasonic sound as they are blind; also known as 'susu'	
Other Dolphin species	Irrawaddy dolphins: Inhabit coastal areas, estuaries, and rivers in Southeast Asia. Endangered status. The population size of around 7,000 individuals. Face habitat degradation and hunting. Indus Dolphins: Found in the Indus River (freshwater) in Pakistan. Endangered status. The population of less than 2,000 individuals . Impacted by water diversion and habitat degradation.	
Conservation Status of Gangetic Dolphin	Indian Wildlife (Protection) Act 1972 - Schedule I International Union for the Conservation of Nature (IUCN) - Endangered Convention on International Trade in Endangered Species (CITES) - Appendix I (most endangered) Convention on Migratory Species (CMS) - Appendix II (migratory species that need conservation and management or would significantly benefit from international cooperation)	
Steps Taken for Conservation	Project Dolphin Visit Insights IAS Daily CA Vikramshila Ganges Dolphin Sanctuary, Bihar Conservation Action Plan for the Ganges River Dolphin 2010-2020	

5. DARK PATTERN SALES DEEMED 'CYBERCRIME'

Context:

The Ministry of Civil Aviation in India is addressing deceptive online practices by airlines and travel agents (such as IndiGo, SpiceJet, and MakeMyTrip), which have been termed "**cybercrime**." These practices, known as "**dark patterns**," trick consumers into making unintended purchases while booking flight tickets.

More about [Dark Pattern](#):

Term	Definition
Dark Patterns	Digital design techniques used to manipulate customer behaviour are often considered an unfair trading practice and potentially a cybercrime.
Usage by Companies	Social media and Big Tech firms like Apple, Amazon, Facebook, Google, LinkedIn, Microsoft, and Skype employ dark patterns to their advantage.
Example	For instance, LinkedIn users may receive unsolicited sponsored messages from influencers, and disabling this option can be a complex process with multiple steps.
Forms of Dark Patterns	1. False Urgency: Creating a false sense of urgency or scarcity to prompt immediate purchases
	2. Basket Sneaking: Including additional items or charges at checkout without user consent.
	3. Interface Interference: Manipulating the design to highlight specific information and obscure other relevant details.
	4. Bait and Switch: Advertising one outcome but delivering another.
	5. Drip Pricing: Withholding elements of prices upfront or obscuring them during the user experience.
	6. Other Forms: Forced action, Subscription trap, Confirm shaming, Disguised advertising, Nagging, and more.
Regulatory Measures (India)	India has taken several regulatory measures to address dark patterns, including:
	1. Summoning cab and two-wheeler aggregators to address their charges and algorithms.
	2. Forming a consultation group to combat fake online reviews.
	3. Applying the Advertising Standards Council of India (ASCI) code, which covers misleading ads in various media, including online advertising.

[Draft Guidelines for Prevention and Regulation of Dark Patterns](#)

6. GIR COW BREED

Context:

The Rashtriya Gokul Mission, India's initiative to enhance **indigenous cattle breeds**, has primarily promoted the **Gir cow breed** due to its **high milk yield** and adaptability.

What is Gir Cow Breed?

The Gir cow is an indigenous breed of cattle in India known for its **high milk yield, adaptability to various regions, and calm temperament**. It is characterized by its distinctive hump over the shoulders and a reddish-brown coat. Gir cows are prized for their milk production, with purebred Gir cows yielding **18-20 liters of milk per day**. Gir is originated in **Gir forests in Gujarat** and also found in **Maharashtra** and adjacent **Rajasthan**

Other indigenous cattle breeds: **Red Sindhi, Sahiwal, Hallikar** etc

What is the issue with adopting Gir Cow Breed?

[Rashtriya Gokul Mission's](#) focus on Gir breed risks threatening the **purity of other indigenous breeds**. While the Gir cow has its advantages, experts argue that focusing solely on one breed is detrimental. They suggest that **genetically superior cows** should be identified and bred from various indigenous breeds to maintain **regional traits and diversity**.

About the [Rashtriya Gokul Mission](#):

Keywords	Explanation
Rashtriya Gokul Mission	A program for indigenous bovine breed development and conservation
Implementation Since	Started in December 2014
Continued Under	Part of Rashtriya Pashudhan Vikas Yojna from 2021 to 2026
Nodal Ministry	Managed by the Ministry of Fisheries, Animal Husbandry and Dairying
Objectives	Aims to enhance bovine productivity , promote high genetic merit bulls, expand artificial insemination coverage (increase artificial insemination to 70%), and conserve indigenous cattle and buffalo

7. JIOSPACEFIBER

Context:

Reliance Jio has successfully demonstrated JioSpaceFiber, **India's first satellite-based gigabit internet service**, at the India Mobile Congress.

This technology, developed in partnership with **Luxembourg-based SES**, leverages medium Earth orbit (MEO) satellites, particularly SES's O3v and o3b mPOWER networks.

How is it different from Elon Musk's Starlink?

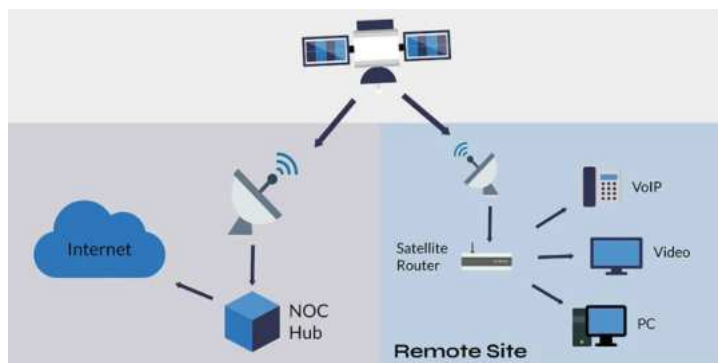
Unlike the more common **low-Earth orbit (LEO) satellite internet** (e.g., **StarLink** or **OneWeb**), JioSpaceFiber uses MEO satellites, orbiting at a greater distance from the planet, which may result in **higher latency** (latency is the time that

data takes to transfer across the network). However, MEO satellites **can cover larger areas** with fewer satellites.

To access JioSpaceFiber, a **larger satellite dish may be required**. Reliance Jio has already connected four remote locations using this technology.

What is Satellite Internet?

Satellite internet is an online connection provided by satellites in space. Internet service providers launch satellites into orbit around Earth, and these satellites communicate with user equipment, including a modem and satellite dish, to transmit and receive data. It's advantageous for **connecting remote or rural areas and enabling multi-device access**.



8. HAEMOGLOBIN

Context:

In a recent discovery published in Nature, scientists found that **haemoglobin**, typically associated with red blood cells, is also produced by **chondrocytes**, the cells responsible for making cartilage in the body.

What is haemoglobin?

Haemoglobin is a Iron containing **protein found in red blood cells** that carries **oxygen from the lungs to the body's tissues** and returns carbon dioxide to the lungs for exhalation. It plays a crucial role in oxygen transport and maintaining the body's overall oxygen balance.

What does the new study says?

A recent study revealed that **chondrocytes**, responsible for forming **cartilage**, produce haemoglobin, contrary to the previous belief that **only Red Blood Cells (RBCs)** contained it.

Chondrocytes play a role in strengthening and flexibilizing cartilage, and they rely on haemoglobin for oxygen transport and survival. Haemoglobin within chondrocytes stores and releases oxygen as needed.

What are Cartilage?

Cartilage is a flexible and **connective tissue** found in various parts of the body, such as joints, the nose, and ears. It

provides support and cushioning while allowing for smooth movement in the joints.

9. AMANGARH TIGER RESERVE

Context:

The [Amangarh Tiger Reserve](#), an **extension of the Jim Corbett National Park**, has seen a marginal increase in its tiger population. However, this growth in the tiger population has had **unintended consequences for the leopards** in the area.

What is the Issue?

The territorial nature of tigers, with **one big cat ruling over 8 square kilometers**, is causing leopards to be pushed out of the forests. This phenomenon has led to leopards venturing into **human habitats**, resulting in over 35 leopards being captured in such areas and 16 people being killed in leopard attacks. The expansion of the **Amangarh Tiger Reserve** is seen as a potential solution to protect big cat habitats and prevent future conflicts.

About Amangarh Tiger Reserve:

Aspect	Information
Location	Located in Amangarh, Bijnor district , Uttar Pradesh.
	Situated in the Terai region , covering approximately 578 sq km.
	Shares boundaries with Jim Corbett National Park in Uttarakhand.
	Originally part of Jim Corbett National Park , remained in Uttar Pradesh after the creation of Uttarakhand.
Establishment	Declared a tiger reserve in 2012.
Flora	Vegetation includes grasslands, wetlands, and dense forests.
Fauna	Mammals: Tigers, Elephants, Swamp Deer, Hog Deer, Sloth Bear, Porcupine
	Birds: Hornbill, Red Jungle Fowl, Pea Fowl, Bengal Florican,
	Reptiles: Monitor Lizard, Turtles, Gangetic Dolphin, Mugger, Gharia, etc.

10. 'REFERENCE' FUEL

Context:

India has begun producing "reference" petrol and diesel, which are specialized fuels used for testing automobiles, making it part of a **select group of nations that produce these high-quality fuels**.

- The **Indian Oil Corporation (IOC)** has developed these fuels with **higher specifications to replace im-**

ports, ensuring a **reliable supply at a lower cost** for vehicle manufacturers and testing agencies.

Reference fuels are **high-quality fuels** used by gasoline and diesel vehicle manufacturers. They are used for:

1. Engine development
2. Performance assessment
3. Ensuring operability across global climatic conditions
4. Calibration and testing of vehicles

Reference fuels are **premium products**. They have higher octane numbers than normal fuels

11. AGE OF MOON

Context:

A recent study using crystals brought back by Apollo astronauts in 1972 has revealed that the Moon is approximately **40 million years older** than previously believed.

- The research used these lunar crystals to pinpoint the Moon's formation age, revising it to a minimum of **4.46 billion years old**.
- These crystals, which are the oldest known solids to form after a massive impact, serve as a reference point for lunar chronology.
- The study utilized an analytical method called atom probe tomography to determine the age of the crystals and revealed that the Moon is indeed at least **4.46 billion years old**.

Significance:

This information is **crucial for understanding the Moon's role in stabilizing Earth's rotational axis and affecting tides**, which, in turn, has influenced life on Earth.

12. SUBSURFACE WATER ICE MAPPING (SWIM) PROJECT

Context:

The Subsurface Water Ice Mapping Project (SWIM) has created a map of Mars, indicating regions where NASA missions have detected **subsurface water ice**.

- This map is a **valuable resource for scientists to identify potential landing sites** for the first astronauts on Mars.
- **Water ice on Mars is crucial for drinking, rocket fuel, and other purposes**, as the planet's thin atmosphere cannot sustain liquid water.

The Subsurface Water Ice Mapping (SWIM) project is a **NA-SA-funded project** that aims to detect where there's **most likely water ice beneath Martian ground**. The project also aims to locate the **best places to access water ice buried under the Martian**.

The SWIM project supports NASA's Mars Exploration Pro-

gram in identifying the location and nature of **potential water resources on Mars**. Scientists can **use the map to decide where the first astronauts to set foot**.

The SWIM project uses the **High-Resolution Imaging Science Experiment (HiRISE)** to study fresh impact craters. The **fourth comprehensive map of potential subsurface water ice locations on Mars** was released.

13. UNITED NATIONS FORUM ON FORESTS (UNFF)

Context:

The Ministry of Environment, Forest and Climate Change is hosting a Country-Led Initiative (CLI) event as part of the United Nations Forum on Forests (UNFF) at the Forest Research Institute in Dehradun, Uttarakhand.

Aim of the initiative:

The event aims to contribute to discussions on **Sustainable Forest Management** and the UN Strategic Plan for Forests (UNSPF), focusing on thematic areas related to **forest fires and forest certification**.

The meeting is expected to result in **frameworks and recommendations for forest fire and forest certification management**, to be discussed at the 19th session of UNFF in May 2024.

About the United Nations Forum on Forests (UNFF):

About:	The UNFF is an intergovernmental policy forum that promotes the management, conservation, and sustainable development of all types of forests and aims to strengthen long-term political commitment to this end.
Establishment:	UNFF was established in 2000 by the UN Economic and Social Council . It has universal membership and is composed of all Member States of the United Nations .
Major Related Events related to the forest:	<p>1992: UN Conference on Environment and Development adopts the "Forest Principles" and Agenda 21.</p> <p>Intergovernmental Panel on Forests (1995) and Intergovernmental Forum on Forests (1997) were established to implement the Forest Principles from 1995 to 2000</p> <p>2000: UNFF is established as a functional commission of the UN Economic and Social Council</p>

	2006: UNFF agrees on four Global Objectives for Forests
	2007: UNFF adopts the UN Non-Legally Binding Instrument on All Types of Forests (Forest Instrument)
	2009: UNFF adopts a decision on financing for sustainable forest management , calling for the creation of a Facilitative Process to assist countries in reversing a 20-year decline in forest financing , with an initial focus on Small Island Developing States (SIDS) and Low Forest Cover Countries (LFCCs).
	2011: The International Year of Forests, "Forests for People"
The Four Global Objectives on Forests:	Reverse the loss of forest cover worldwide through sustainable forest management (SFM)
	Enhance forest-based economic , social, and environmental benefits
	Increase significantly the area of sustainably managed forests
	Reverse the decline in official development assistance for SFM and mobilize increased financial resources for the implementation of SFM.

14. LIGHT COMBAT HELICOPTER PRACHAND

Context:

The Indian Army's Light Combat Helicopter (LCH) Prachand recently conducted its inaugural firing during both day and night operations.

- Besides the 20mm nose gun and 70mm rockets, the LCH is equipped with a helicopter-launched anti-tank guided missile and a new air-to-air missile, which is distinct from the 'Mistral-2' used on the IAF LCH.

The Prachand is India's first indigenous multi-role combat helicopter. It was developed by Hindustan Aeronautics Limited (HAL).

Features

- Designed for: The Indian armed forces operating in deserts and mountainous areas
- Range:** 700 km
- Flight ceiling:** The highest among all attack helicopters in the world
- Landing and take-off altitude:** 5,000 meters (16,400 ft)
- Weapons:** Can carry lethal weapons and destroy targets

Various types of aircraft used by the Indian Air Force:

Aircraft Type	Examples
Fighter Aircraft	Sukhoi Su-30MKI - Dassault Rafale - MiG-29 - Tejas (Light Combat Aircraft)
Attack Aircraft	SEPECAT Jaguar - HAL Tejas - MiG-27
Transport Aircraft	Lockheed C-130J Super Hercules - Antonov An-32 - Boeing C-17 Globemaster III
Helicopters	HAL Dhruv - Mil Mi-17 - Boeing AH-64E Apache - HAL Rudra (Weaponized Dhruv); HAL's Prachand
Reconnaissance Aircraft	IAI Heron - Embraer EMB 145 AEW&C - HAL Cheetah
Trainer Aircraft	HAL HJT-16 Kiran - BAE Hawk - Pilatus PC-7 Mk II
Airborne Early Warning and Control (AEW&C)	Embraer EMB 145 AEW&C - DRDO Netra
Aerial Refueling Aircraft	Ilyushin Il-78 (MARS)
Unmanned Aerial Vehicles (UAVs)	DRDO Rustom - IAI Searcher II - General Atomics MQ-9 Reaper

15. HYDROCLIMATE EXTREMES

Context:

A recent study at Banaras Hindu University examined the impact of global warming on hydroclimate extremes over the Indian River Basins (IRBs).

- Hydroclimatic extremes are **extreme events that can have substantial impacts on human societies and ecosystems**. These events include **Floods, Droughts, Heatwaves, and Rainstorms**.
- The study used **high-resolution simulated precipitation data from the Coupled Model Intercomparison Project-6 (CMIP6) experiments**.

Findings:

- The findings indicate that the **frequency of extreme rainfall is expected to increase over the Western Ghats and Northeast River basins**, while heavy rainfall intensity is projected to increase over the **Upper Ganga and Indus basins**.
- The research highlights an **agricultural drought in the lower Ganga basin due to a decline in mean rainfall**.

Significance:

- It emphasizes the need for policymakers to develop strategies to manage water surplus or scarcity. The study predicts a **4% to 10% increase in heavy rainfall** over the western part of Indian River basins and significant precipitation changes in specific areas.

- These changes in hydroclimate extremes **could have a substantial impact on agriculture, health, and socio-economic conditions.**
- The study also **identifies major hotspots for future urban flooding in highly populated cities, suggesting that policymakers should design basin-specific climate adaptation and mitigation strategies,** including water and emergency services policies, to minimize the risk associated with extreme events in these basins.

Historical Importance of Bletchley Park:

- During the war, **Bletchley Park played a pivotal role in breaking the 'unbreakable' Enigma code, which was used by the Nazis.**
- The site is also known for **creating the Turing Bombe, a device that expedited code-breaking efforts.**
- **Bletchley Park contributed to the development of the Colossus, often considered the world's first programmable electronic computer.**

16. BLETCHLEY DECLARATION

Context:

Bletchley Park, the historic site known for its **crucial role in World War II**, is hosting the **world's first global summit on artificial intelligence (AI) safety in 2023.**

- **Britain, along with 28 other countries and the European Union, published the "Bletchley Declaration" at Bletchley Park, England.**

The focus of the Bletchley Declaration:

This declaration aims to **enhance global collaboration on artificial intelligence (AI) safety.** It has a **two-fold focus:** identifying shared AI-related risks and enhancing scientific understanding of these risks, as well as creating cross-country policies to address them.

About Bletchley Declaration

Aspect	Details
Recognition of AI Potential	Acknowledges AI's potential to enhance human well-being.
Risks Associated with AI	Recognizes the risks posed by AI, including Frontier AI (highly capable foundation generative AI models)
Nature of Risks	Highlights that substantial risks may arise from potential intentional misuse or unintended control issues related to alignment with human intent. The complexity of these capabilities makes prediction difficult.
International Cooperation	Emphasizes the need for international cooperation to address AI-related risks, as they are inherently global.
Collaborative Approach	States that all actors, including companies, civil society, and academia, must collaborate to address these risks.
Mitigation Agenda	Outlines the agenda for risk mitigation, which will focus on building a shared scientific understanding and developing risk-based policies that span across countries.

17. MERCURY CONTAMINATION

Context:

Tropical birds in Central and South America are exhibiting signs of **mercury** contamination due to **artisanal and small-scale gold mining** operations, according to a new study.

- **Birds living within 7 km of gold mining activity were found to have mercury concentrations over four times higher than those in other areas.**

Why mercury is used in Gold mining?

Mercury is used in gold mining because **it forms an amalgam with gold**, allowing for the extraction of gold from ore. This **amalgamation process is a simple and effective way** to capture fine gold particles, but it also leads to significant environmental and health concerns due to mercury pollution.

Key Findings:

- The research suggests that **mercury may be playing a role in the declining biodiversity of tropical birds, which has been observed in recent decades.**

Mercury contamination has been linked to **neurological illness, immune diseases, and reproductive failure in both humans and birds.** Birds are considered sensitive indicators of ecosystem health and are often referred to as the **"canary in the gold mine"** for their **ability to signal environmental issues.**

18. NECP AND EEPF LAUNCHED BY EESL

Context:

The **National Efficient Cooking Programme (NECP)** and **Energy Efficient Fans Programme (EEFP)** were launched by **Energy Efficiency Services Limited (EESL)** to promote energy-efficient and eco-friendly solutions in India.

About the National Efficient Cooking Programme (NECP) and the Energy Efficient Fans Programme (EEFP):

Programme	Description
NECP	Launched by Energy Efficiency Services Limited (EESL) , it aims to transform cooking practices in India by introducing induction-based cook stoves
	Target: To deploy 20 Lakh Induction cook-stoves across India
	Benefits: The cookstoves offer a cost advantage of 25-30 per cent over traditional cooking methods. It supports India's Go-electric campaign and contributes to carbon mitigation goals.
EEFP	Launched by Energy Efficiency Services Limited (EESL) , it aims to enhance the market for efficient fans by deploying one crore 5-star energy-efficient ceiling fans across India
	Benefits: Low Energy Consumption: Conventional fans typically consume 75-80W whereas contemporary 5-star fans consume only 28-32W.
About Energy Efficiency Services Limited	Energy Efficiency Services Limited (EESL), operating under the Ministry of Power (founded in 2009) , is a leading Energy Service Company. Their portfolio encompasses energy-efficient products like LED bulbs , tube lights, fans, air conditioners, streetlights, and electric vehicles. EESL is a joint venture of state-run power companies , responsible for the implementation of the Unnat Jyoti by Affordable LEDs for All scheme . It has reduced the prices of LED bulbs by 75%.

Major findings from the 2023 Adaptation Gap Report:

Highlights	Recommendations
Adaptation finance needs are 10-18 times higher than current public flows.	Developed countries should double their climate finance for adaptation from 2019 levels by 2025.
Adaptation costs are expected to significantly increase by 2050 . For example, coastal protection costs will rise due to sea-level rise .	The report emphasizes the need for urgent climate action in three domains: mitigation, adaptation, and addressing loss and damage .
The adaptation finance gap is expanding.	Increase and improve budget tagging and tracking for integrating adaptation into budget planning.
Action plan on loss and damage has overlooked non-economic losses like cultural heritage and indigenous knowledge.	Mobilize private investments , by methods like resilience bonds, and insurance.
Only 2% of gender-tagged international adaptation finance is gender-responsive.	Leverage remittances which often contribute significantly to Gross Domestic Product. Financing Small and Medium Enterprises (SMEs) , stimulating them to offer adaptation-relevant products and services

MAPPING

1. GUDAVI BIRD SANCTUARY (KARNATAKA)

Context:

Several birds, including spoonbills, herons, and black-headed ibis, have suddenly died at Gudavi Bird Sanctuary in Sorab taluk (Shimoga District in Karnataka)

Gudavi Bird Sanctuary is a tourist destination in the Malenadu region of Karnataka (part of Soraba Taluk of Shivamogga district). It is located on the **Gudavi Lake banks**. Shivamogga is also famous for **Mandagadde Bird Sanctuary**, and **Bhadra Wildlife Sanctuary**, northwest of Shivamogga is **Jog Falls**.

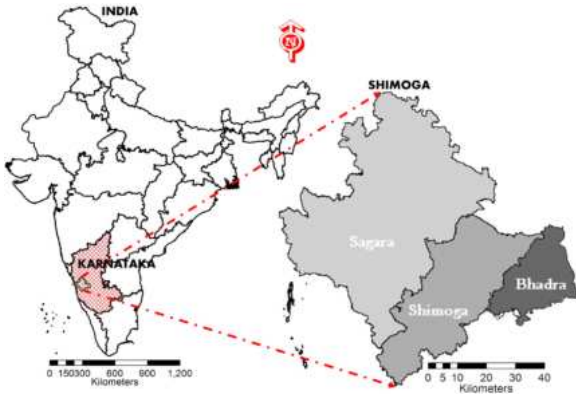
19. 2023 ADAPTATION GAP REPORT

Context:

Adaptation Gap Report 2023 released by the **United Nations Environment Programme**

What is an Adaptation Gap?

The Adaptation Gap is the difference between the funds needed to adapt to climate change in countries (generally developing and least developed countries) and the actual financial support received. For instance, developing countries require **\$215-387 billion** annually for climate adaptation, but they are only receiving about **\$21 billion**.



2. VENEZUELA

Context:

The recent thaw in U.S.-[Venezuela](#) relations is due to Maria Corina Machado's victory in the opposition primary and the Biden administration's decision to ease sanctions on Venezuela's oil and mining sectors in exchange for fair elections in 2024. Geopolitical shifts related to the Russia-Ukraine conflict also played a role. The sanctions relief is expected to revive Venezuela's economy.

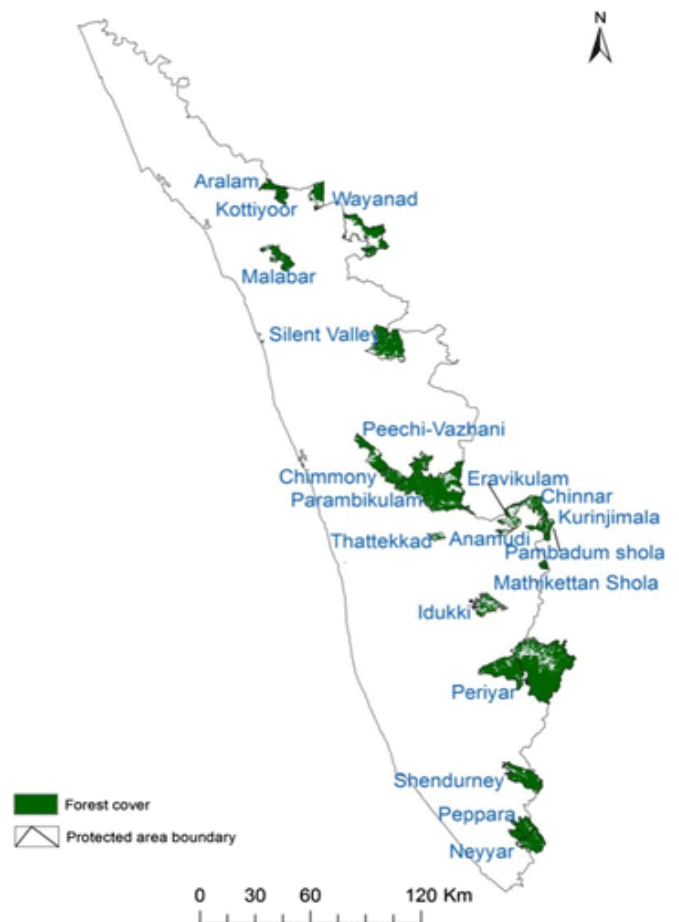
About Venezuela:

It is a country on the **northern coast of South America**. To the northwest are the Andes Mountains and the colonial town of Mérida, a base for visiting Sierra Nevada National Park. Caracas, the capital, is to the north. The country's economy is strongly depending on hydrocarbons, as well as on loans from **China and Russia**. Traditionally, petroleum represents more than **85% of Venezuela's exports**.



These Maoists have been increasingly active in and around the Aralam Wildlife Sanctuary, even infiltrating local houses and engaging in activities like distributing propaganda materials. The Kerala government deployed **Kerala Thunderbolts force and helicopters** to locate those responsible.

Aralam Wildlife Sanctuary is the northernmost wildlife sanctuary of Kerala (in the Kannur District). It is 55 km² in area and located on the **western slope of the Western Ghats**. It was established in 1984 with its headquarters near **Iritty**. The sanctuary borders **Wayanad-Brahmagiri**, Wayanad's north slopes, **Karnataka's Brahmagiri Wildlife Sanctuary**, and Coorg's forests, with **Katti Betta** as its highest peak.



4. AGARTALA-AKHAURA RAILWAY

Context:

The Tripura-Bangladesh railway link (about 12km) was recently inaugurated. This project, known as the Agartala-Akhaura railway, has **the potential to dramatically reduce travel time between Agartala and Kolkata from 31 hours to just 10 hours**, opening up new opportunities for tourism, trade, and people-to-people exchanges between the two countries. Funding for the project is entirely provided by India, with contributions from the Ministry for Development of North East Region and the Ministry of External Affairs.

3. KERALA'S ARALAM WILDLIFE SANCTUARY

Context:

Recently, suspected Maoists launched an attack on forest watchers in Kerala's Aralam Wildlife Sanctuary, near the Chavachi area.

Other Rail Link are:

Train Name	Route	Description
Bandhan Express	Kolkata to Khulna	Rebooted an old rail link; Previously Barisal Express; Restored in 2017; Crosses the Petrapole-Benapole border.
Maitree Express	Kolkata to Dhaka Cantonment	Started in April 2008.
Mitali Express	Siliguri to Bangladesh capital	Announced by PM Modi in March 2021.



5. RAFAH BORDER CROSSING

Context:

Egypt agreed to receive wounded Palestinians from Gaza, and Palestinian dual nationals from its Rafah border crossing. This decision comes in response to the recent conflict between Hamas militants and Israel.

About the Rafah Crossing:

The Rafah Crossing is the **southernmost exit point** from the **Gaza Strip** and shares a border with **Egypt's Sinai Peninsula**. It is controlled by **Egypt** and is the only exit that does not lead to Israeli territory. Currently, both **Erez and Kerem Shalom border crossings**, controlled by Israel, are closed, making Rafah the primary entry and exit point for **Gaza's people and humanitarian aid**.



6. PAKISTAN-AFGHANISTAN BORDER

Context:

Pakistan has enforced the expulsion of **Afghan** migrants, with a primary focus on Afghans, who constitute the largest group of refugees in the country.

Over **4 million Afghans reside in Pakistan**, with an estimated **1.7 million lacking** proper documentation. Despite appeals from the UN, rights groups, and Western embassies, Pakistan remains firm in its decision to **deport Afghan migrants, citing economic strain and security concerns**. The deportations have been criticized, with some filing petitions to challenge the mass expulsion in the Supreme Court.

The Durand Line forms the Afghanistan-Pakistan border, a 2,670-kilometre international border between Afghanistan and Pakistan in South Asia. The western end runs to the border with Iran and the eastern end to the border with China.

**Other Boundary Lines:**

Line	Description
McMahon Line	Proposed by Lieutenant Colonel Sir Arthur Henry McMahon in 1914 at the Shimla Convention. Separates Tibet, China, and India. LAC alignment in the eastern sector follows the 1914 McMahon Line.
Radclyffe Line	Drawn by Sir Cyril Radcliffe , it divided British India into India and Pakistan. Serves as the border between India and Pakistan (west) and India and Bangladesh (east) . Named after the chairman of the Boundary Commissions, Sir Cyril Radcliffe.