



INSIGHTSIAS

SIMPLIFYING IAS EXAM PREPARATION

INDIA AI MISSION

THE INDIAAI MISSION HAS SELECTED EIGHT RESPONSIBLE AI PROJECTS IN RESPONSE TO THE EXPRESSION OF INTEREST (EOI) ISSUED UNDER THE SAFE AND TRUSTED AI PILLAR.



14 OCT - 19 OCT 2024

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GENERAL STUDIES – 1

Topics: Women and women related issues.

1. “THE GENDER GAP: A UN WAKE-UP CALL!”

Context:

A new report from United Nations Women has unveiled a significant gender gap in social protection worldwide, leaving billions of women and girls vulnerable to poverty.

Data points and status:

- **2 billion women and girls** worldwide lack access to social protection (e.g., cash benefits, healthcare, pensions).
- **18%** of nearly 1,000 social protection measures introduced by governments across 171 countries focus on **women’s economic security**.
- **63% of women** globally give birth without maternity benefits, with the figure rising to **94% in sub-Saharan Africa**.
- **25% more likely:** Women aged 25-34 are more likely to live in extreme poverty compared to men of the same age.
- **7.7 times more likely:** Women in fragile settings face a much higher likelihood of extreme poverty due to factors like conflict and climate change.

Examples from the Report:

- **Mongolia:** Extended maternity leave to informal workers like herders and self-employed individuals; also introduced paternity leave to promote caregiving gender equality.
- **Mexico and Tunisia:** Included domestic workers in social security systems, ensuring better protection.
- **Senegal:** Expanded the National Health Insurance scheme to meet rural women’s needs, with support from UN Women.

Challenges:

- **Gender-specific vulnerabilities:** Women face compounded risks due to conflict, economic shocks, and climate change, which are not adequately addressed in existing social protection schemes.
- **Inflation:** Rising food and energy costs since 2022 have disproportionately impacted women, worsening their financial situation.
- **Gaps in maternity benefits:** Lack of maternity leave and financial support leaves women vulnerable during childbearing years, contributing to gender inequality in economic stability.
- **Extreme poverty:** Women, especially in fragile settings, are far more likely to experience poverty,

making gender-responsive policies essential.

- **Funding gap:** Low-income countries need \$77.9 billion (or 15.9% of GDP) to implement basic social protection systems, but lack the fiscal capacity to do so.

Way ahead:

- **Gender-responsive social protection:** Governments must design systems addressing the unique challenges faced by women and girls to ensure inclusivity.
- **International support:** Financial aid from global bodies may be needed to help low-income countries close funding gaps for comprehensive social protection.
- **Innovative policies:** Targeted policies in countries like Mongolia, Mexico, and Senegal show the effectiveness of extending benefits to informal workers.
- **Prioritizing economic security:** Governments should focus more on measures that improve women’s access to resources and benefits, enhancing their economic security.

Conclusion:

The UN Women report highlights the urgent need for **gender-responsive social protection policies to bridge the gap** in economic security for women and girls globally. Countries should prioritize inclusive social protection measures and collaborate internationally to ensure sustainable development that addresses gender inequality.



Insta Links:

1. UN- Women

PYQ:

1. Which of the following gives ‘Global Gender Gap Index’ ranking to the countries of the world? (UPSC-2017)
 - a) World Economic Forum
 - b) UN Human Rights Council
 - c) UN Women
 - d) World Health Organization

Answer: a)

2. “Empowering women is the key to control population growth”. Discuss. (UPSC-2019)

GENERAL STUDIES – 2

Topics: Structure, organization and functioning of the Executive and the Judiciary; Ministries and Departments of the Government; pressure groups and formal/informal associations and their role in the Polity.

1. “MARITAL RAPE: JUSTICE DENIED OR RECOGNIZED?”

Context:

A three-judge Bench headed by Chief Justice of India (CJI) D.Y. Chandrachud has begun hearing a batch of petitions challenging the constitutional validity of Exception 2 to Section 375 of the Indian Penal Code, 1860 (IPC).

About Section 375 of the Indian Penal Code (IPC):

- **Definition of rape:** Section 375 of the IPC defines acts constituting rape committed by a man against a woman.
- **Exceptions:**
- **It provides two exceptions:**
 - **Marital rape decriminalization:** A man is not considered guilty of rape if he has sexual intercourse with his wife, provided she is not under 18 years of age.
 - **Medical procedures:** Medical procedures or interventions are excluded from the definition of rape.
- **Historical context:** Originally enacted during British colonial rule in 1860, the age of marital consent was raised from 10 to 15 years in 1940, and later to 18 years through a 2017 Supreme Court ruling.

Laws governing marital rape:

1. **Section 375 of IPC:** Defines rape but includes Exception 2, which decriminalizes marital rape for wives over 18, granting immunity to husbands for non-consensual sex within marriage.
2. **Independent Thought v. Union of India (2017):** The Supreme Court raised the age of consent in marriage from 15 to 18 but did not criminalize marital rape.
3. **Section 85 of Bharatiya Nyaya Sanhita (BNS), 2023:** Addresses cruelty towards women but doesn't explicitly recognize marital rape as a criminal offense.
4. **Protection of Women from Domestic Violence Act, 2005:** Provides civil remedies like protection orders and monetary compensation for victims of marital abuse but lacks provisions for criminal prosecution of marital rape.

Judicial cases and verdicts:

1. **Joseph Shine v. Union of India (2018):**
 - The Supreme Court dismantled parts of the doctrine of coverture, asserting that marriage shouldn't limit a woman's autonomy.
2. **Hrishikesh Sahoo v. State of Karnataka (2022):**
 - The Karnataka High Court allowed prosecuting a husband for marital rape, citing the 2013 Justice J.S. Verma Committee Report. The ruling was stayed by the Supreme Court.
3. **Delhi High Court Split Verdict (2022):**
 - Justice Rajiv Shakdher ruled that the marital rape exception violates Article 21 and bodily autonomy.
 - Justice C. Hari Shankar upheld the exception, citing that sexual relations are a legitimate marital expectation.

Government's arguments against criminalizing marital rape:

- **Impact on marriage:** The government argued that making marital sexual acts punishable as “rape” could severely impact conjugal relationships and the institution of marriage.
- **Parliamentary decision:** Parliament retained Exception 2 to Section 375 during the 2013 amendments, which exempted marital rape from being criminalized.
- **Separate provisions for consent within marriage:** The government acknowledged violations of consent but argued that the consequences should differ for marital relationships compared to non-marital relationships.
- **Judicial interference:** The government urged the Supreme Court to respect Parliament's decision and not interfere in socio-legal matters concerning marriage.
- **Disproportionate punishment:** Criminalizing marital rape could lead to disproportionate punishment, as it may not consider the nuances of the marital context.

Arguments in favour of criminalizing marital rape:

- **Violation of consent:** Consent remains central to the definition of rape, and marriage should not negate the autonomy of a woman over her body.
- **Arbitrary legal exception:** The marital rape exception is arbitrary, as it discriminates against married women, depriving them of legal protections available to unmarried women.
- **International norms:** Around 77 countries, including Australia, Canada, and the USA, have criminalized marital rape, aligning with international human rights standards.
- **Equal protection under law:** The law should provide equal protection to all women, irrespective of their marital status.

- **Supreme court's recognition:** The Supreme Court has already recognized marital rape under the Medical Termination of Pregnancy (MTP) Act, showing the need for broader criminal recognition.

Way ahead:

- **Legislative review:** Parliament should reconsider the current exception, focusing on gender justice and equal protection of women's rights.
- **Public dialogue:** A broader socio-legal dialogue is essential to align marital rape laws with evolving social norms and international standards.
- **Safeguards:** Implement safeguards to prevent misuse, addressing concerns of false accusations while ensuring justice for victims of marital rape.

Conclusion:

Criminalizing marital rape is a necessary step to protect the dignity and rights of women. While respecting the institution of marriage, it is crucial to ensure consent and equality in marital relationships, moving toward a more just legal framework for all.



Insta Links:

1. Criminalizing-marital-rape-in-India
2. The-issue-of-marital-rape

PYQ:

1. We are witnessing increasing instances of sexual violence against women in the country. Despite existing legal provisions against it, the number of such incidences is on the rise. Suggest some innovative measures to tackle this menace. (UPSC-2014)

2. SUPREME COURT'S ASSAM VERDICT

Context:

The Supreme Court has upheld **Section 6A of the Citizenship Act, 1955**, which grants citizenship to migrants who entered Assam between January 1, 1966, and March 24, 1971, under the Assam Accord. This decision addresses Assam's unique demographic and migration history, balancing regional concerns with national unity.

Background

1. **Assam Accord (1985):** Set March 24, 1971, as the cut-off date for citizenship, aiming to resolve tensions between indigenous Assamese people and migrants.

2. **Section 6A:** Added to the Citizenship Act to implement the Assam Accord, establishing special criteria for Assam, different from India's post-Partition cut-off.
3. **NRC (2019):** Updated to identify legitimate citizens in Assam, excluding 1.9 million people, raising questions about human rights and citizenship.
4. **Legal Challenges:** Petitioners argued Section 6A violates Articles 14 (equality) and 29 (cultural rights) of the Constitution, singling out Assam and threatening its indigenous identity.

Arguments Against Section 6A

1. **Violation of Article 14:** Creates an unequal framework by applying different rules for Assam.
2. **Cultural Erosion:** Threatens the cultural identity of indigenous Assamese under Article 29.
3. **External Aggression:** Cites illegal immigration as "external aggression," threatening Assam's security.
4. **Accord Betrayal:** Seen as undermining the original spirit of the Assam Accord.
5. **Implementation Issues:** Misuse and bureaucratic delays create unrest in Assam.

Arguments in Favor of Section 6A

1. **Parliamentary Competence:** Parliament has the authority to regulate citizenship under Article 11.
2. **Unique Situation:** Assam's demographic challenge justifies a special framework.
3. **Controlled Process:** Section 6A provides a regulated, time-bound process for citizenship.
4. **Alignment with Constitution:** Articles 6 and 7 align with Section 6A.
5. **National Unity:** The ruling upholds fraternity and national cohesion.

Supreme Court Verdict

1. **Affirmation of Legislative Power:** Reaffirms Parliament's right to legislate on citizenship.
2. **Balance of Concerns:** The ruling balances Assam's demographic concerns with national unity.
3. **Judicial Precedent:** Differentiates Section 6A from earlier cases on illegal immigration.
4. **Dissenting Opinion:** Justice Pardiwala called for its prospective invalidation due to outdated relevance.

Way Forward

1. Strengthen border controls to prevent further illegal immigration.
2. Periodic review of Section 6A for effective implementation.
3. Safeguard Assam's linguistic and cultural identity.
4. Broaden national discussions on citizenship policies, including the Citizenship Amendment Act (CAA).
5. Increase public awareness to promote understanding and reduce tensions.

Conclusion

The Supreme Court’s verdict on Section 6A acknowledges Assam’s unique demographic challenges while affirming Parliament’s legislative authority. It balances regional concerns with national unity and may influence future discussions on citizenship laws in India.

Insta Links:

1. [Citizenship-amendment-act-rules-notified](#)
2. [Section-6a-of-the-citizenship-act-1955](#)

PYQ:

1. With reference to India, consider the following statements: (2021)
1. There is only one citizenship and one domicile.
2. A citizen by birth only can become the Head of State.
3. A foreigner once granted citizenship cannot be deprived of it under any circumstances.

Which of the statements given above is/are correct?

- (a) 1 only
- (b) 2 only
- (c) 1 and 3
- (d) 2 and 3

Answer: a)



[Topics: Salient features of the Representation of People’s Act.](#)

3. “THE EXIT POLL TRAP: MISLEADING OR MEANINGFUL?”

Context:

Chief Election Commissioner Rajiv Kumar stated that exit polls were causing distractions and asked media houses to self-introspect before publishing the verdict.

What is an Exit Poll?

- Exit Polls are surveys conducted immediately after voters exit polling stations. These polls aim to predict the election outcome based on voters’ preferences as they leave after voting.
- **Legal backing:** In India, exit polls are regulated under the Representation of the People Act, 1951. Section 126A of the Act prohibits the publication of exit poll results from the beginning of voting until the conclusion of polling across all phases.

Methodology used for exit polls:

1. **Sample size:** A significant, representative sample of voters is selected. Larger samples aren’t necessarily more accurate; it’s about a stratified and random selection.
2. **Stratified sampling:** Ensures representation of various demographics, such as gender, caste, religion, rural/urban voters, etc.
3. **Data collection:** Face-to-face interviews with voters as they leave polling stations, sometimes anonymized for honest responses.
4. **Weighting:** Data is weighted to match demographic profiles of the population, ensuring fair representation.
5. **Analysis:** Pollsters convert vote share estimates to seat projections using swing analysis and historical voting data.

Difference between Exit poll and Opinion poll:

Criteria	Exit Poll	Opinion Poll
Timing	Conducted after voters cast their votes	Conducted before the election
Purpose	Predicts the outcome of an election based on actual voting behavior	Gauges voter intentions before polling
Respondents	Voters who have already cast their vote	General electorate, some of whom may not vote
Accuracy	Generally, more accurate due to real-time data	More speculative as opinions may change
Legal Regulation	Heavily regulated; results published post-election	Less regulated but influenced by media ethics

Challenges in Exit polls:

1. **Sampling bias:** Incorrect sampling or under-representation of marginalized groups may skew results.
Example: Axis MyIndia overrepresented male respondents in their 2024 survey.
2. **Non-disclosure by voters:** Some voters, especially from marginalized groups, may not disclose their true voting preferences, leading to inaccurate predictions.
3. **Swing calculation errors:** Converting vote share to seat share involves complex calculations based on regional swings, which can be misleading.
Example: Today’s Chanakya overestimated NDA’s seat tally in the 2024 election.
4. **Social desirability bias:** Voters may give socially acceptable answers rather than their true choices, distorting the poll results.

Way ahead:

- Improved sampling techniques:** Ensure more robust sampling, including better representation of rural, marginalized, and minority voters.
- Transparency:** Pollsters should disclose their sampling methods, error margins, and assumptions, enhancing trust in results.
- Mixed-method approach:** Combine face-to-face interviews with anonymized responses for greater honesty from voters.
- Technology integration:** Use of AI and data analytics to process large datasets and identify patterns more accurately.

Conclusion:

Exit polls play a critical role in gauging public sentiment, but their accuracy depends on methodology, representation, and proper weighting of data. Enhancing transparency and refining sampling methods can ensure more reliable predictions and a better understanding of voter behavior in future elections.



Insta Links:

- Sansad-TV-perspective-exit-polls

PYQ:

- In the light of recent controversy regarding the use of Electronic Voting Machines (EVM), what are the challenges before the Election Commission of India to ensure the trustworthiness of elections in India? (UPSC-2018)
- To enhance the quality of democracy in India the Election Commission of India has proposed electoral reforms in 2016. What are the suggested reforms and how far are they significant to make democracy successful? (UPSC-2017)

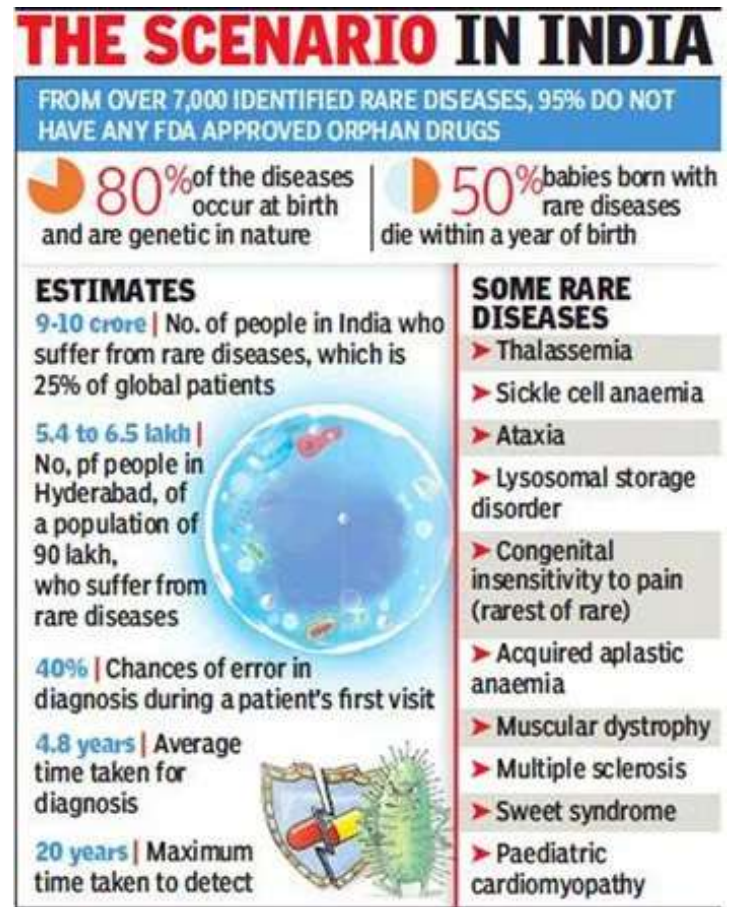
Topics: Issues relating to development and management of Social Sector/Services relating to Health, Education, Human Resources.

4. "ORPHAN DRUGS: A LIFELINE FOR RARE DISEASE PATIENTS"

Context:

The Delhi High Court last week issued directions aimed at improving the availability of so-called "orphan drugs", which are medications used to treat "rare diseases" — de-

finied by the World Health Organization (WHO) as a debilitating, lifelong condition that affects 1 or fewer people in 1,000.



Definition of rare disease:

- India does not have a standard definition for rare diseases.
- Globally, a rare disease is defined as one affecting fewer than 1 in 2,000 individuals.
- In India, there are over 450 identified rare diseases, including Spinal Muscular Atrophy (SMA) and Gaucher's disease.

Indian status:

- Around 50-100 million Indians suffer from rare diseases, with over 75% of the cases being children.
- High morbidity and mortality rates are observed, as most patients do not survive into adulthood due to lack of treatment.
- 80% of patients do not receive necessary treatment.

Categorization of rare diseases:

- Group 1:** Diseases that can be treated with a one-time curative procedure.
- Group 2:** Diseases requiring lifelong treatment with lower costs.
- Group 3:** Diseases with available treatments but at extremely high and lifelong costs.

Challenges:

1. **Unavailability of treatment:** Less than 50% of rare diseases have treatments.
2. **Unaffordable treatment costs:** Drugs for rare diseases (orphan drugs) are highly expensive.
3. **Low focus on R&D:** Pharmaceutical companies view rare diseases as unprofitable, limiting drug development.
4. **Late diagnosis:** Diagnosis takes an average of seven years, leading to delayed or incorrect treatments.
5. **Lack of trained healthcare professionals:** Healthcare professionals are often untrained to diagnose or treat rare diseases.

Government initiatives:

1. **National Policy for Rare Diseases 2021:** Provides financial assistance and sets up 12 Centres of Excellence (CoEs) for treatment.
2. **PLI scheme for rare drugs:** Provides financial incentives for manufacturing orphan drugs.
3. **Customs duty waiver:** Waivers on imported rare disease drugs for personal use.
4. **Digital portal for crowdfunding:** Allows the public to donate funds for patients' treatments.

Way ahead:

- **Increase treatment access:** Expand the range of treatable rare diseases and increase the number of CoEs.
- **Financial assistance:** Enhance financial aid, especially for long-term treatments, and reduce the burden on patients.
- **R&D investments:** Encourage research and development of affordable drugs for rare diseases.
- **Healthcare professional training:** Improve medical education and training for better diagnosis and treatment of rare diseases.
- **Public awareness:** Raise awareness about rare diseases to foster timely diagnosis and better understanding.

Conclusion:

India's rare disease burden demands **urgent attention, with reforms in healthcare infrastructure, treatment access, and research** development. Strengthening policies, enhancing financial support, and improving medical knowledge are essential steps in providing equitable healthcare to millions of affected individuals.

Insta Links:

1. Rare-disease
2. Policy-on-rare-diseases



PYQ:

1. Appropriate local community-level healthcare intervention is a prerequisite to achieve 'Health for All' in India. Explain. (UPSC-2018)

[Topics: Issues relating to poverty and hunger.](#)

5. "INDIA'S STRUGGLE: 2024 GHI SHOWS DECLINE IN HUNGER STATUS"

Context:

The Global Hunger Index (GHI) 2024 reports that India continues to face a **serious level of hunger, ranking 105th out of 127 countries** with a score of 27.3.

India's Status in GHI 2024 (Crisp Points):

- **Rank:** India ranks 105th out of 127 countries with a score of 27.3.
- **Child wasting:** India has the highest global rate of child wasting at 18.7%.
- **Stunting:** 35.5% of children under five are stunted.
- **Undernourishment:** 13.7% of India's population is undernourished.
- **Child mortality:** 2.9% of children die before their fifth birthday.
- **Comparison:** India lags behind South Asian neighbors like Bangladesh, Nepal, and Sri Lanka, which fall into the moderate hunger category.

Methodology used:

- **Indicators:** GHI uses four indicators – undernourishment, child stunting, child wasting, and child mortality.
- **Data sources:** Data is sourced from UNICEF, WHO, World Bank, and FAO, ensuring comparability across countries.
- **Child wasting:** The GHI uses survey estimates vetted for inclusion in the Joint Malnutrition Estimates and WHO Global Database.

Limitations of the report:

- **Data discrepancies:** The Ministry of Women and Child Development raised concerns about GHI not using data from the Poshan Tracker, which shows lower child wasting rates (7.2% vs. GHI's 18.7%).

- **Survey-based estimates:** Reliance on survey data might not fully reflect real-time data from government tracking systems.
- **National representation:** The GHI's methodology may not capture regional variations and improvements in India's nutrition programs.

Way Ahead:

- **Improved data collection:** India should integrate real-time data from systems like Poshan Tracker to improve hunger and nutrition estimates.
- **Focus on maternal health:** Address the intergenerational transfer of undernutrition by improving maternal health and nutrition.
- **Agricultural investments:** Increase focus on sustainable agriculture and nutritious crop production like millets to improve dietary diversity.
- **Social safety nets:** Strengthen access to Public Distribution Systems (PDS) and Integrated Child Development Services (ICDS) for better coverage of vulnerable populations.

Conclusion:

India's performance in the Global Hunger Index highlights serious challenges, especially in child malnutrition. By improving data transparency, maternal health, and investing in sustainable food systems, India can enhance its hunger and nutrition outcomes, aligning better with global targets like **Zero Hunger by 2030**.

Insta Links:

1. [Global-report-on-food-crises-2023](#)
2. [Food-security-in-India](#)

PYQ:

1. Which of the following is/are the indicator/indicators used by IFPRI to compute the Global Hunger Index Report? (2016)
 1. Undernourishment
 2. Child stunting
 3. Child mortality

Select the correct answer using the code given below:

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



Answer: c)

2. Can the vicious cycle of gender inequality, poverty and malnutrition be broken through microfinancing of women SHGs? Explain with examples. (UPSC-2021)

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

6. "DIMMING DIPLOMACY: INDIA-CANADA RELATIONS STRAINED"

Context:

Relations between India and Canada are at a nadir, amidst the row regarding India's alleged involvement in the murder of Khalistani separatist Hardeep Singh Nijjar.

Background of Bilateral Relations:

- **Diplomatic Relations:** Established in 1947, upgraded to a strategic partnership in 2015.
- **Trade:** India was Canada's 10th largest trading partner in 2022-23, with bilateral trade worth US\$ 8.15 billion. CEPA/EFTA trade negotiations are on hold.
- **Nuclear cooperation:** Began in 1956, paused after India's 1974 nuclear test, resumed in 2010.
- **Diaspora:** 1.6 million Indian diaspora members in Canada, with 22 Indian-origin MPs in its House of Commons.

Current issues:

- **Khalistani extremism:** Canada's perceived support for Khalistani groups has strained ties.
- **Nijjar killing:** Relations worsened after the June 2023 killing of Nijjar. PM Trudeau accused Indian agents, which India denied.
- **Diplomatic expulsions:** Both countries expelled diplomats, further escalating tensions.

Diplomatic Principles:

- Diplomatic Immunity:**
 - Defined under the **Vienna Convention** on Diplomatic Relations (1961), ensuring diplomats are not subjected to local jurisdiction.
- Termination of Relations:**
 - **The Vienna Convention** also outlines procedures for ending diplomatic relations and withdrawing diplomats.

Western double standards: India pointed out the hypocrisy of Western democracies, including Canada, when security concerns outweigh their commitment to freedoms.



Impacts:

- **Diplomatic fallout:** Reduced diplomatic engagement, withdrawal of senior diplomats.
- **Economic impact:** Paused trade talks could hurt bilateral trade and market access.
- **Diaspora concerns:** Rising tensions may affect Indian diaspora in Canada specially students abroad.
 - Canada hosts 1.6 million Indian-origin people, making up over 3% of its population.
 - Indian students make up 40% of all international students in Canada, contributing significantly to remittances.
- **Strategic cooperation:** Strain on cooperation in nuclear energy, education, and technology.

Way ahead:

- **Diplomatic engagement:** Both nations must initiate high-level dialogue to ease tensions.
- **Security concerns:** Canada should address anti-India elements, while India should cooperate transparently.
- **Focus on trade:** Resume trade talks to rebuild economic ties.
- **People-to-People ties:** Strengthen diaspora ties and encourage cultural exchanges.

Conclusion:

The diplomatic row between India and Canada poses a significant challenge to bilateral relations, yet both countries stand to benefit from restoring trust and cooperation. By addressing core issues related to extremism and diplomacy, they can work towards stabilizing ties for mutual benefit.

Insta Links:

1. India - Canada
2. India-Canada-Relationship



PYQ:

1. Indian diaspora has scaled new heights in the West. Describe its economic and political benefits for India. (UPSC-2023)
2. Indian diaspora has a decisive role to play in the politics and economy of America and European Countries". Comment with examples (UPSC-2020)

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

7. "KOREAN PENINSULA: A POWDER KEG OF TENSION"

Context:

Simmering tensions between North and South Korea, are now seemingly boiling over. The North Korea has adopted a renewed aggressive stance in the face of tensions with its neighbour, South Korea.



History:

1. **Japanese occupation:** Korea was under Japanese control from 1910 to 1945.
2. **Post-WWII division:** After Japan's defeat, Korea was split along the **38th parallel**. The **USSR** controlled the North, and the **USA** controlled the South.
3. **Korean war:** In 1950, North Korea, backed by

the USSR, invaded South Korea. The war ended with an **armistice in 1953**, creating the **Demilitarized Zone (DMZ)** but no formal peace treaty was signed.

- 4. **Nuclear development:** North Korea has pursued nuclear weapons, leading to international sanctions.

Present status:

- **Military build-up:** North Korea has ramped up its nuclear program, conducting multiple missile tests, and fortifying its borders.
- **Diplomatic stalemate:** Despite previous peace talks, North Korea declared South Korea as its "primary foe" in 2024, ending hopes for reunification.
- **Nuclear tests:** North Korea has withdrawn from the **Non-Proliferation Treaty (NPT)** and has tested nuclear weapons multiple times.

International Implications

- **Global conflicts:** Rising tensions in the Korean Peninsula coincide with other global conflicts, such as Russia-Ukraine and Israel-Palestine.
- **Major power involvement:** Key stakeholders in the Korean Peninsula, including the U.S., China, and Russia, are involved in a broader strategic competition.
- **Conflict possibilities:** While a major conflict may be avoided due to alliances and nuclear deterrence, incidents or skirmishes are possible.
- **Complex alliances:** North Korea's ties with China and Russia and South Korea's alignment with the U.S. add complexity to ongoing global conflicts.

India's stand:

- **Neutral position:** India opposes North Korean nuclear tests but has maintained a neutral stance on sanctions.
- **Diplomatic relations:** India maintains diplomatic ties with both Koreas. It played a significant role in the **1953 ceasefire** and helped negotiate peace.
- **Strategic partnerships:** India has a **special strategic partnership** with South Korea, playing a role in South Korea's **Southern Policy** and India's **Act East Policy**. India also has diplomatic relations with North Korea.

Way ahead:

- **Diplomatic engagement:** Resume dialogue to reduce military tensions and avoid further escalation.
- **International cooperation:** Leverage diplomatic ties with major players like China, Russia, and the US to mediate peace.
- **Denuclearization talks:** Revive international talks on North Korea's denuclearization.

Conclusion:

North and South Korea remain in a delicate and volatile situation, with military tensions rising. A sustained diplomatic effort is crucial for reducing hostility and avoiding a potential conflict, while India can play a supportive role in maintaining regional stability.

NOTE:

No need to memorise everything in topic but make sure you know context so that GS1 world history and prelim's theme will be covered in this.

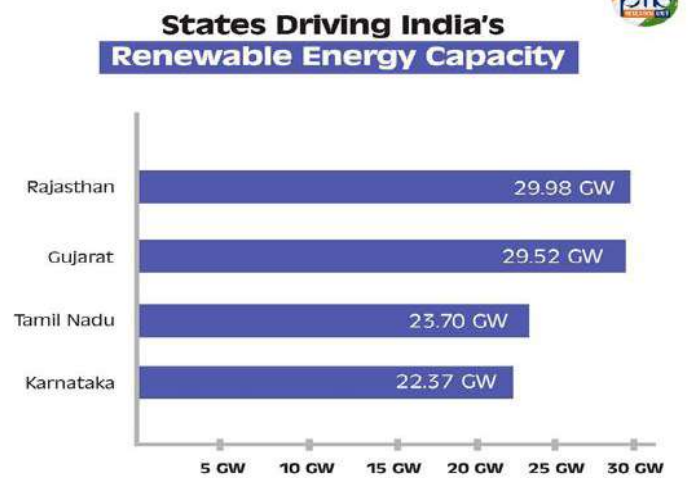
Insta Links:

1. India-Korea-defence-cooperation
2. Both Koreas-violated-armistice-agreement

GENERAL STUDIES - 3

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

1. "GREEN POWERHOUSE: INDIA'S LEAP IN RENEWABLE ENERGY"



As of October 10, 2024

Renewable Energy Capacity in India



As of October 10, 2024

Context:

India has reached a significant milestone in its renewable energy journey, with the country’s total renewable energy capacity crossing the 200 GW (gigawatt) mark as of October 10, 2024.

India’s renewable energy targets:

- **By 2030:** Achieve 500 GW of installed electricity capacity from non-fossil fuel sources.
- **Net-Zero by 2070:** As per India’s commitments at COP26.

Present status of renewable energy in India (as of October 2024):

Category	Installed Capacity (GW)	Contribution (%)
Solar Power	90.76 GW	20.05%
Wind Power	47.36 GW	10.46%
Large Hydro	46.92 GW	10.36%
Small Hydro	5.07 GW	1.12%
Bio Power	11.32 GW	2.50%
Total Renewable	201.45 GW	46.30%
Total Installed Capacity	452.69 GW	

Source: Central Electricity Authority, Government of India.

Government steps:

1. **National Green Hydrogen Mission:** Focuses on developing green hydrogen to reduce carbon emissions and enhance energy security.
2. **PM-KUSUM:** Provides solar irrigation pumps to farmers, promoting solar energy use in agriculture.
3. **PLI Schemes:** Encourages domestic manufacturing of solar PV modules by offering production-linked incentives.
4. **100% FDI:** Allows full foreign direct investment in renewable energy through the automatic route to attract capital.
5. **Waiver of ISTS Charges:** Exempts renewable projects from inter-state transmission system charges until June 2025 to promote clean energy growth.
6. **Renewable Purchase Obligation:** Mandates power utilities to purchase a set percentage of their energy from renewable sources until 2029-30.
7. **Viability Gap Funding:** Provides financial assistance for offshore wind energy projects to make

them commercially viable.

8. **Green Energy Open Access Rules 2022:** Facilitates easier access to renewable energy for businesses, promoting greater usage.

Challenges of renewable energy:

1. **High upfront costs:** Significant initial investments are required for solar and wind energy infrastructure, which can be prohibitive.
2. **Intermittency & variability:** Renewable energy sources like solar and wind are dependent on weather and time, making them less predictable.
3. **Infrastructure needs:** Renewable energy projects require large areas of land and skilled technicians for installation and maintenance.
4. **Policy & Regulatory hurdles:** Inconsistent policies and bureaucratic delays create uncertainty and slow project implementation.
5. **Raw material access:** The renewable sector faces shortages of rare earth materials critical for manufacturing technologies.
6. **Geographical disparities:** Renewable resources like wind and solar are unevenly distributed across regions, limiting adoption in certain areas.

Way ahead:

1. **Technological advancements:** Invest in energy storage solutions and smart grids to manage renewable energy variability.
2. **Policy consistency:** Develop stable, long-term policies to create a favorable investment environment in the renewable sector.
3. **Capacity building:** Enhance training programs for skilled technicians to ensure smooth deployment and maintenance of renewable energy systems.
4. **International collaboration:** Foster partnerships with global entities to access technology and raw materials, boosting the renewable energy sector.

Conclusion:

India’s renewable energy journey has reached a significant milestone, marked by the impressive achievement of over 200 GW of installed capacity. This accomplishment is a testament to the nation’s commitment to a sustainable energy future, driven by a diverse array of renewable sources, including solar, wind, hydro, and bio-energy.

Insta Links:

1. Challenges-posed-by-renewable-energy-projects-in-India
2. Perspective-Indias-green-energy-transition

PYQ:

1. With reference to solar power production in India, consider the following statements: (UPSC-2018)

1. India is the third largest in the world in the manufacture of silicon wafers used in photovoltaic units.
2. The solar power tariffs are determined by the Solar Energy Corporation of India.

Which of the statements given above is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

Answer: d)



2. "Access to affordable, reliable, sustainable and modern energy is the sine qua non to achieve Sustainable Development Goals (SDGs)". Comment on the progress made in India in this regard. (UPSC-2018)

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.

2. "PRECISION MEDICINE: PERSONALIZING HEALTHCARE FOR THE FUTURE"

Context:

Precision medicine is a rapidly evolving approach to healthcare that tailors treatment based on individual genetic, environmental, and lifestyle factors. In India, despite strides in this field, the lack of robust biobank regulations is a major hurdle in advancing precision medicine.

What is Precision Medicine and Biobanks?

- **Precision medicine:** An approach to medical care that customizes treatment based on the genetic makeup, lifestyle, and environmental factors of an individual, rather than adopting a generalized treatment for all.
- **Biobanks:** These are repositories that store biological samples such as blood, tissues, DNA, etc., alongside their genetic data, collected from consenting individuals for research purposes.

Importance of Biobanks in precision medicine:

- **Data repository:** Biobanks provide genetic data essential for identifying disease patterns and developing targeted therapies.
- **Research backbone:** They enable research into genetic disorders, chronic diseases, and personalized treatments.
- **Diversity in research:** Large and diverse biobanks ensure precision medicine benefits more people across varying ethnicities and demographics.

Present status in India:

- **Growth of precision medicine:** The Indian precision medicine market is growing rapidly, expected to be worth over \$5 billion by 2030.
- **Biobanks:** There are 19 registered biobanks in India. Major initiatives like the Genome India Project and Phenome India have begun collecting large-scale genetic data.
- **Policy gaps:** India lacks comprehensive biobank regulations, which hampers growth in precision medicine.

Best Practices from foreign nations:

- **Comprehensive laws:** Countries like the U.S., U.K., Japan, and China have specific laws regulating biobanks, covering aspects like informed consent, privacy, and data security.
- **Oversight:** These nations have centralized authorities overseeing biobank operations, ensuring ethical standards and data protection.

Significance of Biobank regulations:

- **Ensuring ethical standards:** Clear regulations will protect individual rights, ensuring informed consent and preventing misuse of genetic data.
- **Boosting research:** Regulating biobanks can enhance trust, encouraging more public participation in precision medicine research.
- **Global collaboration:** Aligning Indian laws with global standards will facilitate international collaborations in drug development and clinical research.

Challenges:

1. **Lack of comprehensive regulation:** No central authority governs biobank operations, leading to ethical concerns and potential misuse of data.
2. **Informed consent issues:** Participants are often unaware of how their samples will be used, creating risks for privacy violations.
3. **Limited public trust:** Without strong privacy protections, public participation in biobank-related research remains low.
4. **Access by foreign entities:** Inadequate regulations allow foreign companies to access Indian genetic data without ensuring local benefits.

Way ahead:

- 1. Formulate comprehensive biobank laws:** Implement stringent biobank regulations that ensure privacy, consent, and ethical handling of samples.
- 2. Establish central authority:** Create a national body to regulate and oversee biobank operations, ensuring compliance and consistency.
- 3. Encourage public participation:** Through awareness campaigns and data protection assurances, encourage more individuals to contribute to biobanks.
- 4. Promote research and collaboration:** Facilitate collaboration between Indian and international research organizations while ensuring equitable access to research outcomes.
- 5. Incentivize domestic drug development:** Support the development of locally manufactured drugs based on biobank data to lower costs.

Conclusion:

Biobanks are pivotal in driving precision medicine forward. However, for India to become a global leader in this field, it must establish strong legal frameworks ensuring ethical practices, data security, and equitable benefits from research. These steps will build trust and ensure the advancement of personalized healthcare for all.

Insta Links:

1. TDP1
2. Phenome-India



PYQ:

1. The term 'ACE2' is talked about in the context of (UPSC- 2021)
 - a) Genes introduced in the genetically modified plants
 - b) Development of India's own satellite navigation system
 - c) Radio collars for wildlife tracking
 - d) Spread of viral diseases

Answer: d)

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

3. "SAVOURING SUSTAINABILITY: INDIAN THALI'S RISE ON THE GLOBAL STAGE"

Context: The WWF's 2024 Living Planet Report highlights India's food practices as a model of sustainability.

Remarkably, if the world adopted India's consumption habits, we would only need 0.84 of an Earth by 2050 to sustain global food production.

Key highlights of Global Food System:

- **Biodiversity loss:** The food system is responsible for habitat loss, with 71% of habitable land used for livestock grazing.



Food waste:

30-40% of food produced globally is wasted, contributing to greenhouse gas emissions.

- **Nutritional deficiency and obesity:** Despite abundant food production, malnutrition and obesity remain major global issues.
- **Freshwater depletion:** Agriculture uses 70% of global freshwater, leading to declining water lev-

els.

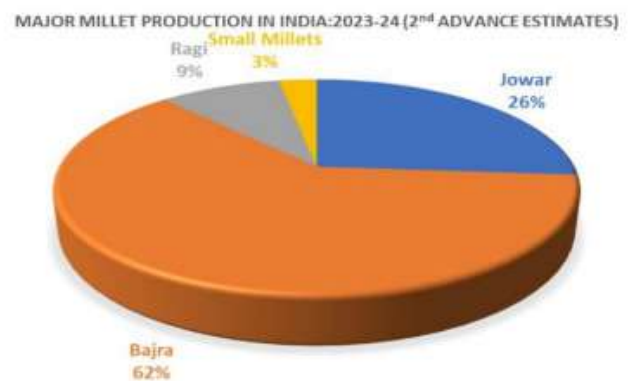
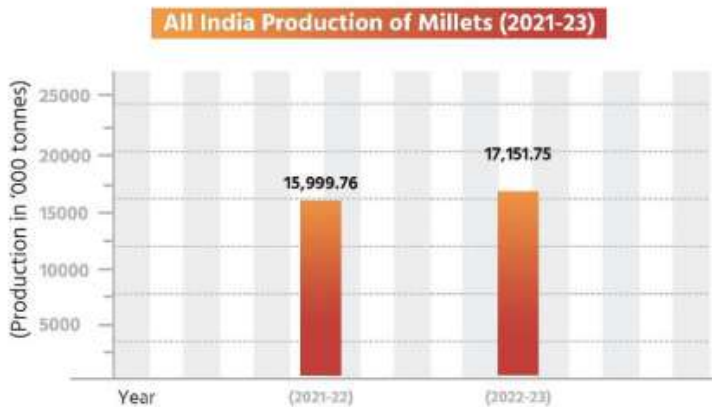
- **Overfishing:** 37.7% of marine fish stocks are overexploited, threatening marine biodiversity.
- **Species extinction:** The food system is the main driver of biodiversity loss, endangering 80% of terrestrial bird and mammal species.

Indian Thali and Food Sustainability:

- The traditional Indian thali is a largely plant-based diet, relying on grains, pulses, vegetables, and lentils, which are environmentally sustainable compared to animal-based diets.
- According to the **WWF’s 2024 Living Planet Report**, if the world followed India’s consumption habits, only 0.84 of an Earth would be required to sustain global food production by 2050.
- The Indian diet helps reduce reliance on fossil fuels, lowers greenhouse gas emissions, and conserves natural resources.

Shree Anna (Millet Mission):

- India has positioned millets, also known as “Shree Anna,” as a crucial element of sustainable nutrition.
- The government has promoted millets through initiatives like the National Millet Campaign and the International Year of Millets in 2023.
- Millets are resilient crops that contribute to environmental sustainability and provide high nutritional value, supporting India’s efforts towards food security.



India paving way for sustainable farming:

- **National Mission for Sustainable Agriculture (NMSA):** Focuses on improving climate-resilient farming.
- **Organic Farming Initiatives:** Programs like Parampragat Krishi Vikas Yojana (PKVY) and Jai-vik-Kheti portal promote organic farming practices.
- **Climate-Resilient Agriculture:** India has developed over 2,000 crop varieties resistant to climate stress.
- **Namami Gange Programme:** Integrates sustainable agriculture with efforts to rejuvenate the Ganga River.
- **Centre of Excellence for Millets:** The Indian Institute of Millets Research (IIMR) in Hyderabad promotes global millet best practices.

Conclusion:

The WWF Living Planet Report 2024 commends India for its holistic and sustainable approach to food production, positioning the nation as a global example for others to follow. As India continues to champion sustainable food practices, it inspires other nations to embrace similar strategies that respect both people and the planet.



Insta Links:

1. Ridding-India-of-food-insecurity
2. 2024-Living-Planet-Report

PYQ:

1. With reference to ‘Initiative for Nutritional Security through Intensive Millets Promotion’, which of the following statements is/are correct? (UPSC-2016)
 1. This initiative aims to demonstrate the improved production and post-harvest technologies, and to demonstrate value addition techniques, in an integrated manner, with a cluster approach.
 2. Poor, small, marginal and tribal farmers have a larger stake in this scheme.
 3. An important objective of the scheme is to encourage farmers of commercial crops to shift to millet cultivation by offering them free kits of critical inputs of nutrients and micro irrigation equipment.

Select the correct answer using the code given below:

- a) 1 only
- b) 2 and 3 only
- c) 1 and 2 only
- d) 1, 2 and 3

Answer: c)

4. "SPOT THE GREENWASH: ESSENTIAL GUIDELINES!"

Context:

The Central Consumer Protection Authority (CCPA) has introduced guidelines to regulate misleading environmental claims and greenwashing in India.

What is Greenwashing?

- **Definition:** Greenwashing refers to the deceptive practice where companies mislead consumers by making unsubstantiated or exaggerated claims about the environmental benefits of their products or services.
- **Purpose:** Companies often use terms like "eco-friendly," "organic," or "sustainable" without proper substantiation to enhance brand image and attract environmentally conscious consumers.

Greenwashing guidelines (2024):

- **Whom do the guidelines apply to?**
 - **Manufacturers, Service Providers, and Traders:** Any individual or company promoting products or services using environmental claims.
 - **Advertisements in all forms:** Applies to advertisements across various media platforms, including digital, print, and television.
 - **Companies making environmental claims:** Entities promoting products or services as "eco-friendly," "organic," or "sustainable," among other terms, are required to substantiate such claims with verifiable evidence.
- **Principles:**
 - Transparency and accuracy in environmental claims.
 - Substantiation with credible evidence.
 - Prohibition of vague terms like "green" or "eco-friendly" without proof.

- **Features:**

- **Clear definitions:** Greenwashing and environmental claims are defined clearly for both consumers and businesses.
- **Substantiation requirements:** Companies must back their claims with reliable scientific evidence and credible certifications.
- **Disclosure requirements:** Full disclosure of relevant details like the aspect of the product being claimed as environmentally beneficial (e.g., manufacturing process or packaging).
- **Third-party certification:** Acceptance of third-party certifications to support claims.
- **Prohibition of misleading terms:** Bans vague terms unless clearly substantiated.

- **Need:**

- To **protect consumers** from misleading environmental claims.
- To **promote transparency** and integrity in the marketplace.
- To encourage businesses to adopt genuine **sustainable practices**.

- **Significance:**

- Enhances **consumer trust** in environmental claims.
- Prevents **deceptive advertising** practices.
- Encourages businesses to **make honest and meaningful contributions** to environmental sustainability.
- Strengthens accountability in the **green marketplace**.

- **Limitations of the Guidelines**

- **Ambiguity in terms:** While the guidelines require substantiation for terms like "sustainable" or "eco-friendly," there might still be ambiguity in defining these terms across various industries.
- **Limited scope for informal sectors:** Small businesses or informal sectors may face challenges in adhering to the stringent requirements of evidence and third-party certification.
- **Enforcement and monitoring challenges:** Monitoring compliance across diverse sectors and ensuring that all companies adhere to these guidelines may present significant logistical challenges.
- **Data verification:** While third-party verification is required, the availability of independent certification bodies may be limited, posing difficulties in enforcement.
- **Consumer awareness:** Consumers may not always fully understand the technical terms or have the tools to verify environmental claims, which may limit the guide-

lines' effectiveness in practice.

Conclusion:

India's regulations on green claims and greenwashing are similar to those in the **United Kingdom and the European Union**. All three focus on transparency and accountability in environmental claims made by companies.

Insta Links:

1. Greenwashing
2. Combating-greenwashing



PYQ:

1. Which one of the following best describes the term "greenwashing:"? (UPSC-2022)
 - a) Conveying a false impression that a company's products are eco-friendly and environmentally sound
 - b) Non-Inclusion of ecological/ environmental costs in the Annual Financial Statements of a country
 - c) Ignoring the disastrous ecological consequences while undertaking infrastructure development
 - d) Making mandatory provisions for environmental costs in a government project/programme

Answer: a)

- **Maladaptive coping strategies:** Rural poor resort to harmful strategies like selling livestock, increasing their vulnerability to future climate shocks.
- **Worsening child labour and unpaid work:** Climate extremes worsen child labour and unpaid work for women, perpetuating long-term social inequalities.

Policy Recommendations:

- **Anticipatory social protection:** Scaling up social protection programs ahead of extreme weather events can prevent households from resorting to adverse coping mechanisms like selling off productive assets.
- **Workforce diversification:** Investing in skills development and vocational training can help rural households diversify from climate-sensitive work, enhancing their resilience to income shocks.
- **Gender-transformative approaches:** Addressing gender norms and improving women's access to non-farm employment is critical for income diversification and climate resilience.
- **Participatory agricultural extension:** Group-based agricultural experimentation helps rural farmers adapt to changing conditions, promoting shared learning and reducing individual risks.
- **Access to adaptive technologies:** Public investments in climate-resilient agricultural technologies are essential for supporting land-constrained households and improving rural livelihoods.

About the Food and Agriculture Organization (FAO):

- **Established:** FAO is a specialized agency of the United Nations, established in October 1945, making it the oldest permanent specialized UN agency.
- **Mandate:** The FAO's mission is to defeat hunger by improving nutrition, increasing agricultural productivity, raising rural living standards, and contributing to global economic growth.
- **Key functions:**
 - **Research:** Conducts research and provides technical assistance in agriculture, forestry, fisheries, and land and water resources.
 - **Education:** Operates educational programs, seminars, and training centers for agricultural development.
 - **Data and Statistics:** Maintains global statistics on production, trade, and consumption of agricultural commodities.
 - **Publications:** Publishes reports such as The State of the World's Forests and The State of Food Security and Nutrition.
- **Headquarters:** Located in Rome, Italy.
- **Membership:** FAO has 194 member states, along with the European Union as a member organization.
- **Funding:** It receives 100% funding from its mem-

5. "THE UNJUST CLIMATE" REPORT

Context:

A national-level dialogue on FAO's "**The Unjust Climate**" report, held in New Delhi on 16 October, focused on the climate vulnerabilities affecting India's rural poor, particularly those trapped in **multidimensional poverty**

Key findings of FAO's "The Unjust Climate" report:

- **Poverty reduction with ongoing challenges:** India has reduced rural poverty from 42.5% in 2005/06 to 8.6% in 2022/24, but transitory poverty remains, driven by extreme weather events.
- **Gender disparities:** Female-headed households experience 8% more income loss from heat stress and 3% more from floods, worsening existing gender inequalities.
- **Vulnerability of rural poor:** Poor households face 5% greater income loss due to heat stress and floods than wealthier households, reflecting the economic disparity in climate impacts.

ber countries.

- **Relief operations:** FAO does not directly manage food relief during conflicts or scarcity; such operations are usually overseen by the World Food Program (WFP).
- **Key reports:** FAO publishes various important reports like SOFO, SOFIA, SOCO, and SOFI, addressing global issues in forests, fisheries, agriculture, and food security.

6. OCEANS ON BRINK

Context:

The report titled **On Track or Off Course?** Assessing Progress Toward the 30x30 Target in the Ocean showed that while governments have made pledges, many protections exist only on paper.

Key Findings

1. **Limited protection:** Only 2.8% of oceans are effectively protected; 8.3% are designated MPAs, but most lack enforcement.
2. **Slow progress:** Since COP15, protected areas increased by just 0.5%, making the 30% target unlikely.
3. **Blue-washing:** Countries like the UK declare large MPAs, but less than 1% are managed effectively.
4. **Regional disparities:** Latin America, Caribbean, North America, and Europe show gaps between declared and managed MPAs.
5. **Few leaders:** Only 14 countries have met the 30% target; Palau and the UK have effectively safeguarded significant portions.

Impact

1. **Climate regulation:** Oceans absorb 90% of heat from human activities and 30% of global CO2 emissions. Weak protection undermines this function.
2. **Biodiversity loss:** Poorly managed MPAs leave species vulnerable to overfishing and habitat destruction.
3. **Livelihoods at risk:** Coastal communities dependent on oceans for fishing and tourism face jeopardized food security and income.
4. **Economic costs:** Inaction increases disaster response costs and the burden of ecosystem restoration.

Challenges

1. **Weak enforcement:** MPAs exist on paper but lack proper monitoring.
2. **Geopolitical barriers:** Weak governance in international waters hinders protection.
3. **Economic vs. conservation:** Industrial activities like mining often take precedence.
4. **Lack of funding:** Developing nations lack resources to manage MPAs; promised financial aid is slow.
5. **Delayed agreements:** The High Seas Treaty, crucial for protecting international waters, faces slow progress.

Solutions

1. **Expand MPAs:** Increase both the number and size of MPAs, following Panama's example of expanding Banco Volcán.
2. **Strengthen management:** Enforce proper man-

Insta Links:

1. [FAO-committee-on-fisheries](#)
2. [World fishery and aquaculture report, 2024](#)

PYQ:

1. The FAO accords the status of 'Globally Important Agricultural Heritage System (GIAHS)' to traditional agricultural systems. What is the overall goal of this initiative? (UPSC-2016)
 1. To provide modern technology, training in modern farming methods and financial support to local communities of identified GIAHS so as to greatly enhance their agricultural productivity.
 2. To identify and safeguard eco-friendly traditional farm practices and their associated landscapes, agricultural biodiversity and knowledge systems of the local communities.
 3. To provide Geographical Indication status to all the varieties of agricultural produce in such identified GIAHS.

Select the correct answer using the code given below:

- (a) 1 and 3 only
- (b) 2 only
- (c) 2 and 3 only
- (d) 1, 2 and 3

Answer: b)



2. The effective management of land and water resources will drastically reduce the human miseries. Explain. (UPSC-2016)

agement of MPAs; the UK's Blue Belt Programme is a model.

3. **Incorporate Indigenous knowledge:** Communities play a key role in conservation, as seen in Canada's Gitdisdzu Luyeks MPA.
4. **Deliver financial aid:** Developed nations must meet funding commitments for conservation.
5. **Improve monitoring:** Better data collection is needed to assess and enhance MPAs.

Best Practices

1. **Community-based conservation:** Engaging locals, as seen in Mozambique, helps reduce reliance on fishing.
2. **Indigenous knowledge:** Incorporating traditional knowledge improves ecosystem management.
3. **Adaptive management:** Flexible MPA management, like the Blue Belt Programme, allows for continuous improvement.
4. **Scalable models:** Panama's Banco Volcán provides a model for scalable MPA expansion.
5. **Public-private partnerships:** Collaboration with private stakeholders brings funding and technology to marine protection.

Conclusion

Achieving the 30x30 target is crucial for marine ecosystems and the planet. While progress has been slow, effective strategies and models exist. Governments must act by expanding MPAs, ensuring management, providing financial support, and fostering global cooperation.



Insta Links:

3. Global-biodiversity-outlook-target-30x30
4. Bottom-reliefs-of-the-Indian-ocean

PYQ:

2. "Momentum for Change: Climate Neutral Now" is an initiative launched by (2018)
 - (a) The Intergovernmental Panel on Climate Change
 - (b) The UNEP Secretariat
 - (c) The UNFCCC Secretariat
 - (d) The World Meteorological Organisation

Answer: c)

Topics: Challenges to internal security through communication networks, role of media and social networking sites in internal security challenges, basics of cyber security; money-laundering and its prevention.

7. "DIGITAL ARREST: UNMASKING THE DARK WORLD OF CYBERCRIME"

Context:

The rise of cybercrimes has given birth to new scams, such as "digital arrest," where cybercriminals impersonate government officials to extort money. These scams have impacted many well-educated and affluent individuals, prompting the Ministry of Home Affairs (MHA) to issue warnings and take preventive actions.

What is Digital Arrest?

- **Definition:** Digital arrest is a form of cybercrime where scammers impersonate officials from law enforcement agencies (CBI, ED, police, etc.) and claim the victim is involved in serious crimes like money laundering or narcotics trafficking. They create a fear psychosis and "arrest" the victim digitally by forcing them to stay on video calls while extorting money under the pretense of avoiding physical arrest.

Status in India:

- **Examples:**
 - **Businessman S.P. Oswal:** Duped of Rs 7 crore after being misled into believing he was involved in a money laundering case.
 - **Scientist in Indore:** Lost Rs 71 lakh after he and his wife were placed under digital arrest for six days.
 - **Bengaluru lawyer:** Extorted Rs 14 lakh and subjected to a fake narcotics test during a digital arrest.

According to Indian Cyber Crime Coordination Centre (I4C) data, multiple such scams have been reported in various states, with significant financial losses.

Consequences of digital arrest:

1. **Financial losses:** Victims lose substantial sums, sometimes their entire savings, to these scams.
2. **Mental trauma:** Victims face immense psychological stress, often leading to depression and suicidal tendencies.
3. **Trust erosion:** The prevalence of these scams erodes public trust in online platforms and even government systems.

Government initiatives:

- **I4C:** The MHA-established Indian Cyber Crime Coordination Centre has been blocking fraudulent accounts, including over 1,000 Skype accounts linked to digital arrest scams.

- **Cyber awareness campaigns:** I4C's "Cyberdost" platform is issuing alerts and spreading awareness about such scams.
- **National cyber-crime reporting portal:** Victims are encouraged to report incidents at the portal or call the helpline (1930).

Challenges:

1. **Lack of awareness:** Many victims are unaware of the existence of digital arrest scams and easily fall prey to them.
2. **Cross-border operations:** These scams often have international elements, making it difficult for law enforcement to track and prosecute the criminals.
3. **Use of deepfake technology:** Scammers use sophisticated technology to impersonate officials, making it harder for victims to detect fraud.
4. **Inadequate cybercrime laws:** India's cyber laws are still evolving, and enforcement is not always efficient in addressing new forms of cybercrime.

Way ahead:

1. **Strengthen cybercrime laws:** Amendments to cyber laws are necessary to keep pace with rapidly evolving technologies.
2. **Public awareness campaigns:** The government must intensify awareness campaigns to educate people about digital arrest scams.
3. **Enhance technology and law enforcement:** Invest in anti-deepfake technology and increase cooperation with international bodies to combat cross-border cybercrimes.
4. **Collaboration with financial institutions:** Work with banks to monitor suspicious transactions linked to these scams.

Conclusion:

Digital arrest scams pose a significant threat to individuals' financial and mental well-being in India. While government initiatives like I4C and public awareness campaigns are steps in the right direction, a multi-pronged approach involving stronger laws, better technology, and public education is essential to curb this menace.



Insta Links:

1. [Cybercrimes-from-southeast-asia](#)

PYQ:

1. In India, it is legally mandatory for which of the following to report on cyber security incidents? (UPSC-2017)
 1. Service providers
 2. Data centres
 3. Body corporate

Select the correct answer using the code given below:

- a) 1 only
- b) 1 and 2 only
- c) 3 only
- d) 1, 2 and 3

Answer: d)

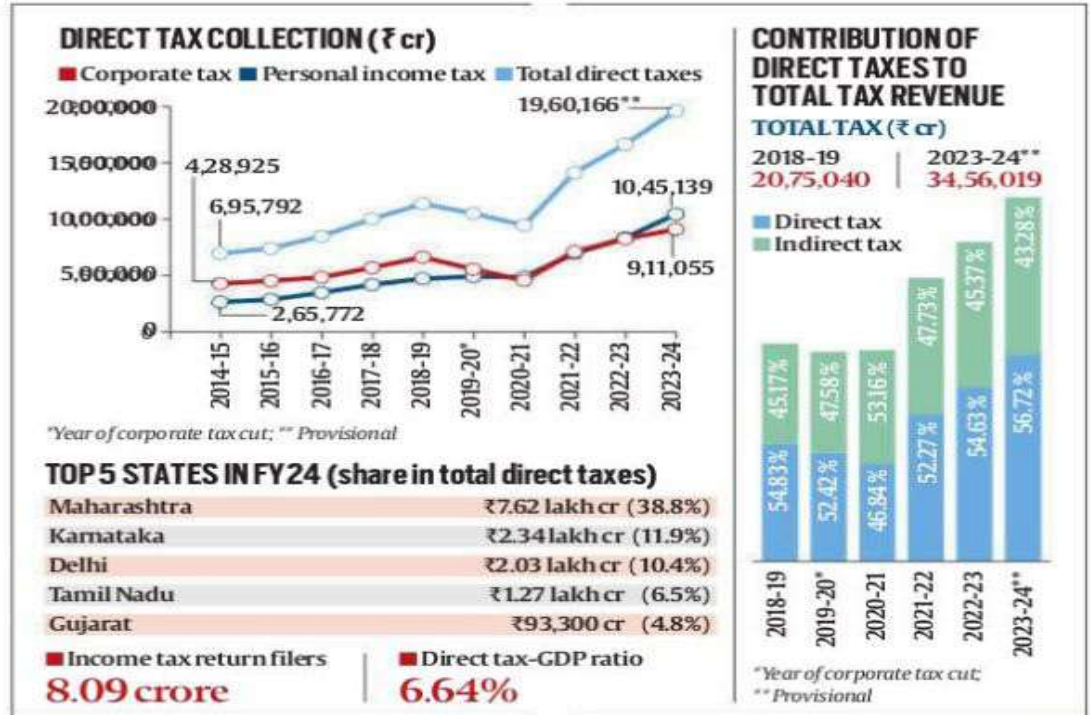
CONTENT FOR MAINS ENRICHMENT

Topic in News	Usage in Answers
<h3 style="color: red;">1. KIDNEY TRANSPLANT RACKET</h3>	<p>Context: A kidney transplant racket, spanning from Dhaka to Delhi, exploited fake family trees, forged documents, and a fake lab to facilitate illegal transplants for Bangladeshi patients in two Noida hospitals. The racket, allegedly involving a prominent surgeon, middlemen, and forged diplomatic approvals, conducted numerous illegal transplants over the years before being busted by Delhi Police.</p> <p>Relevance to UPSC GS2:</p> <ul style="list-style-type: none"> • Health governance • Diplomatic channels <p>Relevance to UPSC GS4:</p> <ul style="list-style-type: none"> • Medical ethics violation: Demonstrates ethical breaches by healthcare professionals, eroding trust in medical practices. • Lack of accountability
<h3 style="color: red;">2. INTERNET VIGILANTISM</h3>	<p>Context: In Pakistan, internet vigilantism has surged, with groups and individuals tracking online content to accuse people of blasphemy, a crime punishable by death. These vigilantes, led mostly by private organizations like the Legal Commission on Blasphemy Pakistan (LCBP), search for online offenders, often entrapping unsuspecting individuals into sharing or engaging with blasphemous content. The cases are largely driven by financial, ideological, or personal motivations.</p> <p>Relevance to UPSC exam:</p> <ol style="list-style-type: none"> 1. Governance & Ethics (GS-4): misuse of power, human rights violations, and abuse of blasphemy laws. 2. Internal Security (GS-3): Demonstrates how misuse of digital platforms can escalate social and legal conflicts, relevant to discussions on cybersecurity, law enforcement, and human rights.
<h3 style="color: red;">3. IFOREST STUDY</h3>	<p>Context: A report by environmental think-tank iForest highlights the multifaceted costs involved in this energy transition, focusing not only on replacing coal with green energy but also addressing non-energy costs such as worker support and land rehabilitation.</p> <p>Key points from the study:</p> <ol style="list-style-type: none"> 1. Total cost estimate: <ul style="list-style-type: none"> ○ India will require more than ₹84 lakh crore (\$1 trillion) to phase out coal mining and thermal power plants. 2. Coal dependency: <ul style="list-style-type: none"> ○ Currently, coal accounts for about 55% of India's commercial energy needs. ○ Coal-based thermal power plants produce over 70% of India's electricity. 3. Coal mining and Thermal power plants: <ul style="list-style-type: none"> ○ India will need to close coal mines producing 1,315 million tonnes per annum and phase out thermal power plants with a capacity of 237.2 gigawatts. 4. Green energy costs: <ul style="list-style-type: none"> ○ Account for 52% of the transition costs, which include building green energy plants and upgrading the electricity grid. 5. Non-energy costs: <ul style="list-style-type: none"> ○ Comprise 48% of total costs, including "just transition costs" to support the livelihoods of around 60 lakh workers dependent on the coal economy, land rehabilitation, and repurposing. 6. Land rehabilitation: <ul style="list-style-type: none"> ○ The study mentions the rehabilitation of 343,504 hectares of coal mining land and 124,789 hectares of land at thermal power plant sites for green repowering.

	<p>Relevance in the UPSC Exam:</p> <ul style="list-style-type: none"> • Environment and Ecology (GS Paper III): • Economics (GS Paper III): Highlights financial challenges in moving from fossil fuels to clean energy • Governance and Social Justice (GS Paper II): Social impacts like worker rehabilitation and community support are central for inclusive growth and social justice. • Essay and Ethics (GS Paper IV) 																												
<p>4. SHETKARI SAMRUDDHI SPECIAL TRAIN</p>	<p>Context: Union Railways Minister, Ashwini Vaishnaw, flagged off the Shetkari Samruddhi Special Train via video conferencing, connecting Maharashtra’s Devlali and Bihar’s Danapur.</p> <p>Key information:</p> <ul style="list-style-type: none"> • Purpose: Facilitate the transport of perishable goods and produce from farmers to new markets at minimal cost. • Features: The train is equipped with small parcel vans for easy and safe transport of perishable goods. <p>Relevance in UPSC exam:</p> <ul style="list-style-type: none"> • Economics (GS Paper III): Highlights agricultural logistics and infrastructure improvement, crucial for market access and rural development. • Governance and Development (GS Paper II) 																												
<p>5. “ENERGIZING TOMORROW: 2024 WORLD ENERGY OUTLOOK SPARKS HOPE!”</p>	<p>Context: The International Energy Agency (IEA) in its World Energy Outlook 2024 highlights the rapid transition toward clean energy, projecting that more than half of the world’s electricity will come from low-emission sources by 2030.</p> <table border="1" data-bbox="395 931 1516 2069"> <thead> <tr> <th>Key Findings</th> <th>Data/Insights</th> </tr> </thead> <tbody> <tr> <td>Clean Energy Growth</td> <td>More than 50% of global electricity to be generated by low-emission sources before 2030.</td> </tr> <tr> <td>Renewable Energy Addition</td> <td>560 GW of renewables capacity added in 2023.</td> </tr> <tr> <td>Investment in Clean Energy</td> <td>Nearly \$2 trillion annually on clean energy projects, double the investment in fossil fuels.</td> </tr> <tr> <td>Nuclear Power’s Role</td> <td>Renewed interest in nuclear power to support clean energy transition.</td> </tr> <tr> <td>Electricity Demand Drivers</td> <td>Growth driven by industry, electric vehicles (EVs), air conditioning, and AI-linked data centers.</td> </tr> <tr> <td>Renewable Power Capacity Projection</td> <td>Expected to rise from 4,250 GW to nearly 10,000 GW by 2030.</td> </tr> <tr> <td>China’s Role in Renewables</td> <td>60% of global new renewable capacity in 2023 added by China.</td> </tr> <tr> <td>Solar Power in China</td> <td>By 2030, China’s solar power generation will exceed the total electricity demand of the U.S. today.</td> </tr> <tr> <td>Carbon Emissions</td> <td>Global CO2 emissions set to peak “imminently”; energy-related CO2 emissions hit a record high last year.</td> </tr> <tr> <td>Global Temperature Rise</td> <td>Current policies put the world on track for a 2.4°C rise by 2100, exceeding the Paris Agreement goal.</td> </tr> <tr> <td>Challenges in Developing Countries</td> <td>Policy uncertainty and high capital costs are hindering clean energy adoption in developing nations.</td> </tr> <tr> <td>COP28 Renewable Energy Target</td> <td>World pledged to triple renewable energy capacity by 2030, but current progress falls short.</td> </tr> <tr> <td>CO2 Emissions and Energy Demand</td> <td>Two-thirds of increased energy demand in 2023 was met by fossil fuels, slowing the decline of coal usage.</td> </tr> </tbody> </table>	Key Findings	Data/Insights	Clean Energy Growth	More than 50% of global electricity to be generated by low-emission sources before 2030.	Renewable Energy Addition	560 GW of renewables capacity added in 2023.	Investment in Clean Energy	Nearly \$2 trillion annually on clean energy projects, double the investment in fossil fuels.	Nuclear Power’s Role	Renewed interest in nuclear power to support clean energy transition.	Electricity Demand Drivers	Growth driven by industry, electric vehicles (EVs), air conditioning, and AI-linked data centers.	Renewable Power Capacity Projection	Expected to rise from 4,250 GW to nearly 10,000 GW by 2030.	China’s Role in Renewables	60% of global new renewable capacity in 2023 added by China.	Solar Power in China	By 2030, China’s solar power generation will exceed the total electricity demand of the U.S. today.	Carbon Emissions	Global CO2 emissions set to peak “imminently”; energy-related CO2 emissions hit a record high last year.	Global Temperature Rise	Current policies put the world on track for a 2.4°C rise by 2100, exceeding the Paris Agreement goal.	Challenges in Developing Countries	Policy uncertainty and high capital costs are hindering clean energy adoption in developing nations.	COP28 Renewable Energy Target	World pledged to triple renewable energy capacity by 2030, but current progress falls short.	CO2 Emissions and Energy Demand	Two-thirds of increased energy demand in 2023 was met by fossil fuels , slowing the decline of coal usage.
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6. INDIA'S DIRECT TAX COLLECTIONS

Context: In FY2023-24, India's direct tax collections reached a significant milestone, constituting 56.72% of total tax revenue, the highest in 14 years.



The Indian EXPRESS

Fri, 18 October 2024

<https://epaper.indianexpress.com/c/76>



Key data released by the Central Board of Direct Taxes (CBDT) report:

Parameter	FY2023-24	Comparison/Trend
Direct Tax to Total Tax Revenue	56.72%	Highest since FY2010 (60.78%)
Indirect Tax to Total Tax Revenue	43.28%	Decreased from FY2022-23
Direct Tax to GDP Ratio	6.64%	Highest in over 20 years
Personal Income Tax Collection	₹10.45 lakh crore	Higher than corporate tax collection
Corporate Tax Collection	₹9.11 lakh crore	Lower due to 2019 corporate tax rate cuts
Tax Buoyancy	2.12	Improved from 1.18 in FY2022-23
Income Tax Filers	8.09 crore	Up from 7.4 crore in FY2022-23
Total Taxpayers	10.41 crore	Up from 9.37 crore in FY2022-23
Cost of Tax Collection	0.44%	Lowest since 2000-01
Assessment Year	2023-24	Increased number of taxpayers

Usage in UPSC syllabus:

- **Economy (Growth and Development):** The data reflects tax buoyancy and its relation to economic growth, relevant for topics like **Taxation Policies, Fiscal Responsibility, and Public Finance.**
- **Public Administration and Governance:** Insights into **tax reforms**, the impact of the **corporate tax cut**, and the changing dynamics of **direct vs indirect taxation** are crucial for understanding **fiscal governance** and **public sector efficiency.**
- **Social Issues and Policy:** Understanding how **direct taxation** (linked to income) affects wealth redistribution and impacts various socioeconomic groups aligns with **equity and justice** in economic policies.

7. CLICK-TO-CANCEL RULE

Context: The United States’ Federal Trade Commission (FTC) will soon implement a “click-to-cancel” rule, which will make it significantly easier for consumers to cancel their subscriptions and memberships.

About Click-to-Cancel rule:

- **Ease of cancellation:** Companies must allow consumers to cancel subscriptions as easily as they signed up, using the same medium (e.g., online, phone).
- **Prohibited barriers:** Businesses cannot force customers to talk to representatives or add charges for phone cancellations if those were not required for signing up.
- **Coverage:** Applies to “negative option programs” like automatic renewals, where failure to cancel leads to continued billing.

Relevance for UPSC syllabus

- **Governance and transparency:** This rule demonstrates regulatory frameworks ensuring consumer rights and transparency, a key topic in governance and ethical policy.
- **Economic reforms:** Reflects consumer protection in the digital economy, tying into broader discussions of economic regulation and technological governance.

8. COMPASSION CASE

Context: R Prakash, a police head constable in Tiruppur city, was on patrol under the **Dedicated Beat System** when he encountered a disabled woman named G Amutha, living under a Neem tree with only an umbrella for shelter. Moved by her plight, Prakash took it upon himself to build her a small shelter using his own funds. Amutha, despite her physical challenges, earns a meager income by turning knitwear waste into yarn. Prakash’s actions not only exemplify compassion but also the dedication of public servants who go beyond their duty to improve the lives of the needy.

Usage in UPSC essay exam:

1. **Empathy and Public Service:** This anecdote can be used to highlight how compassion and empathy are key traits in effective public service.
2. **Social Responsibility:** Can be linked to essays on **social justice** and **responsibility of public officials** in uplifting marginalized individuals.
3. **Example of Citizen-Police Relations:** Demonstrates the **role of police in society** as not only protectors but also enablers of welfare.

Usage in Ethics Case Study:

1. **Demonstrating Ethical Leadership:** The anecdote can be used to show how individuals in positions of responsibility can take initiative to act beyond their defined roles for the public good.
2. **Compassionate Public Service:** This example can be cited to emphasize the importance of empathy, integrity, and **duty towards vulnerable sections**.

FACTS FOR PRELIMS

GS-1

History

1. BATTLE OF WALONG

Context:

To mark the 62nd anniversary of the iconic Battle of Walong during the 1962 war with China, the Army is planning a month-long series of commemorative events.



About Battle of Walong:

- **Location:** Walong, Arunachal Pradesh, near the **Mc-Mahon Line**, was a key battleground in the 1962 Sino-Indian War.
- **Indian Forces:** The 11th Infantry Brigade, comprising the **4th Sikh, 6th Kumaon, and 3rd Battalion of 3 Gorkha Rifles**, defended Walong with about 800 men.
- **Chinese Offensive:** On October 21, 1962, over 4,000 Chinese troops attacked. Despite limited resources, Indian forces resisted for **27 days**.
- **Tactics:** Indian troops used the terrain to set up ambushes and defensive positions, slowing the Chinese advance.
- **Outcome:** Indian forces withdrew on November 16, 1962, after inflicting heavy casualties and delaying the Chinese significantly.
- **Significance:** The Indian defense forced China to divert additional troops from Tawang, demonstrating India's bravery and resilience in its only counterattack of the war.

Insta links:

1. Battle of Walong
2. 1962-India-China-war

GS-2

Salient features of Indian Constitution

2. CHIEF JUSTICE OF INDIA APPOINTMENT

Context:

Chief Justice of India (CJI) D.Y. Chandrachud is set to retire on **November 10, 2024**, and has recommended **Justice Sanjiv Khanna** as his successor to become the **51st Chief Justice of India**.

Process of Chief Justice of India appointment (CJI):

- **Seniority Principle:** The appointment of the CJI is typically based on the senior-most judge of the Supreme Court.
- **Memorandum of Procedure (MoP):** The **Law Ministry** requests a recommendation from the outgoing CJI regarding their successor.
- **Presidential Appointment:** After receiving the recommendation, the **President of India** appoints the next CJI.
- **Tenure and Retirement:** The CJI serves until reaching the age of **65**, and the process repeats upon each CJI's retirement.
- **Merit and Integrity Consideration:** In addition to seniority, **merit and integrity** are important factors in the recommendation, as seen in previous appointments like **Justice Khanna's** own elevation to the Supreme Court.

Insta Links:

1. Appointment-of-Judges

Functioning of Parliament and State Legislatures

3. SECTION 6A OF THE CITIZENSHIP ACT, 1955

Context:

India's Supreme Court upheld Section 6A of the Citizenship Act, granting citizenship to Bangladeshi migrants who entered India before March 25, 1971.

Background:

- **Enacted in 1985** as part of the Citizenship (Amendment) Act, following the **Assam Accord**.
- The **Assam Accord** aimed to resolve issues related to the influx of illegal migrants from **Bangladesh** into Assam after the **Bangladesh Liberation War (1971)**.
- Section 6A was inserted specifically to address the **unique historical and demographic challenges**

faced by Assam due to large-scale migration.

Provisions:

- **Citizenship for Migrants Pre-1966:**
- **Persons of Indian origin** who entered Assam from Bangladesh before **January 1, 1966**, were granted **Indian citizenship** retroactively.
- **Migrants Between 1966-1971:**
- **Migrants who arrived between January 1, 1966, and March 25, 1971** were to register and were granted citizenship after **10 years of residence**, provided they fulfilled certain conditions.
- **Post-1971 Migrants:**
- Persons who entered Assam after **March 25, 1971**, were to be **detected and deported** as per the law.

About Citizenship Act, 1955:

- **Governing Indian Citizenship:** The **Citizenship Act, 1955** regulates who can obtain **Indian citizenship** based on birth, descent, registration, or naturalization.
- **Illegal Immigrants:** The Act bars **illegal immigrants** from obtaining citizenship. An illegal immigrant is someone who:
 - Enters India without valid documents (e.g., passport, visa), or
 - Enters with valid documents but **overstays** beyond the permitted period.
- **Single Citizenship:** India follows a policy of **single citizenship**, and the Act does not allow **dual citizenship**.
- **Constitutional Framework:** Citizenship matters fall under the **Union List** and are dealt with in **Part II of the Indian Constitution (Articles 5-11)**. The term **“citizen”** is not defined in the Constitution, leaving it to statutory laws like the Citizenship Act.

Insta links:

1. Citizenship-amendment-act-rules
2. CAA, 2019
3. Clause-6-of-the-assam-accord

Governance

4. TELE-MANAS

Context:

Tele MANAS (Tele Mental Health Assistance and Networking Across States) is a tele-mental health initiative launched by the Government of India under the National Tele Mental Health Programme (NTMHP) on October 10, 2022.

About Tele MANAS:

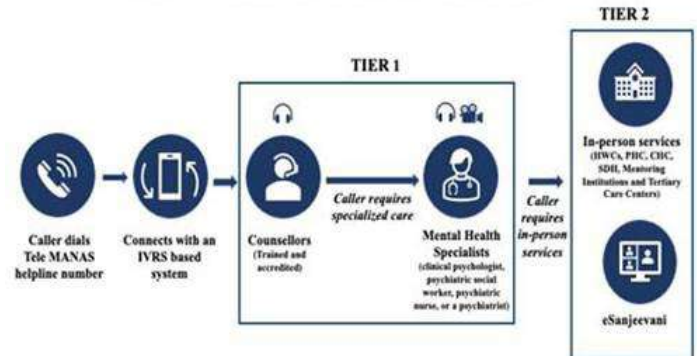
Need for Tele MANAS:

- **Mental health crisis:** 15% of India’s adult popu-

lation requires mental health intervention, with a 70-92% treatment gap.

- **High suicide rates:** Over 1 lakh people die by suicide annually in India.
- **Mental disorders:** Mental disorders are the second leading cause of years lived with disability (YLDs).
- **Untapped healthcare access:** More than 80% of people with mental health issues in India do not seek help, despite mental healthcare being a statutory right under the Mental Healthcare Act, 2017.

Tele MANAS: CALLING MECHANISM



Key features of Tele MANAS:

- **24/7 toll-free helpline:** Provides phone-based counselling, psychotherapy, psychiatric consultations, and referral services.
- **Accessibility:** Designed to make mental health support easily available to individuals across remote and urban areas.
- **Two-tier system:** Tier 1 offers initial counselling and referral services, while Tier 2 provides specialist consultations and follow-up care, including e-prescriptions.
- **Integrated care:** Seamless connections to in-person services and other mental health interventions.
- **WHO praised model:** Recognized by the WHO as an effective, innovative model for large-scale mental health care delivery.

Insta Links:

1. Tele MANAS
2. Chatbot-for-people-in-mental-distress

5. E-MIGRATE PORTAL V2.0

Context:

External Affairs Minister Dr. S Jaishankar launched the revamped eMigrate v2.0 web portal and mobile app, aimed at promoting safe and legal migration for Indian workers.

- This initiative is part of the government’s commitment to **protecting the rights and welfare of Indian migrant workers**, aligning with global migration goals under the 2030 Agenda for Sustainable Development.

e-Migrate Portal v2.0:

- **Launch date:** October 2024.
- **Objective:** Promote safe, transparent, and inclusive migration for Indian workers abroad.
- **Ministry:** Ministry of External Affairs
- **Key features:**
 - Provides a platform for safe and legal migration channels.
 - **24x7 Multilingual helpline:** Offers support for migrant workers in multiple languages, with real-time solutions for urgent issues.
 - **Integration with Digilocker:** Enables paperless submission of documents like passports and employment contracts.
 - **Social Security Net:** Expands social security for migrants through insurance policies and partnerships with the State Bank of India for zero-fee digital payment services.
 - **Mobile app:** Developed for the first time, offering easy access to services, including a job search marketplace for overseas employment.
- **Global need:** The platform aligns with India's global negotiations on migration and the growing demand for domain-specific knowledge in the international workforce.

Insta Links:

1. [India-launches-e-migrate-v2-0-web-portal](#)

6. DRUGS TECHNICAL ADVISORY BOARD

Context:

The Drugs Technical Advisory Board (DTAB) has recommended bringing all antibiotics under the definition of "new drug" in the New Drugs and Clinical Trial (NDCT) Rules, 2019 to combat antimicrobial resistance (AMR).

Recent Recommendations by DTAB:

- **Inclusion of antibiotics as "New Drugs":**
- All antibiotics would fall under the category of "new drugs," requiring manufacturing, marketing, and sale to be more strictly documented and regulated.
- **Union government control:**
- Manufacturing and marketing approvals for antibiotics would need clearance from the Union government, rather than state authorities.
- **Prescription mandatory:**
- Antibiotics would only be available with a valid prescription, curbing over-the-counter purchases and indiscriminate use.
- **Labeling changes:**
- A blue strip or box would be added to antibiotic

packaging to distinguish antimicrobial products, improving public awareness.

- **Focus on AMR:**
- This move is part of efforts to address rising antimicrobial resistance in India, where common infections like UTIs, pneumonia, and typhoid are becoming resistant to standard treatments.

Significance:

- **Curbing Antimicrobial Resistance:** Reducing misuse of antibiotics will help slow the rise of drug-resistant infections.
- **Centralized Regulation:** Bringing antibiotics under central control ensures uniform regulation across the country.
- **Public Health Protection:** Mandatory prescriptions and labeling aim to safeguard public health by preventing self-medication and misuse.

About Drugs Technical Advisory Board (DTAB):

- **Role:** It is the highest statutory body for advising on technical drug-related matters in India.
- **Established under:** The Drugs and Cosmetics Act, 1940.
- **Part of:** Central Drugs Standard Control Organization (CDSCO).
- **Nodal ministry:** Ministry of Health and Family Welfare.
- **Functions:** Advises the central and state governments on technical matters related to the administration of the Drugs and Cosmetics Act and performs other assigned functions under the Act.

Insta Links:

DTAB

7. "SCAM SE BACHO" CAMPAIGN

Context:

Government and Meta join forces for "Scam se Bacho" Campaign to tackle rising online scams.

About "Scam se Bacho" campaign:

- **Aim:** To combat rising online scams and cyber fraud by fostering digital safety and vigilance across India.
- **Partnership:** Collaboration between **Meta** (formerly Facebook) and key government ministries, including:
 - Ministry of Electronics and Information Technology (MeitY)
 - Ministry of Home Affairs (MHA)
 - Ministry of Information and Broadcasting (MIB)
 - Indian Cyber Crime Coordination Centre (I4C)
- **Ministry:** Led by the Ministry of Information and

Broadcasting (MIB).

- **Coverage:** National initiative, aimed at India's over 900 million internet users.
- **Features:**
 - A whole-of-government approach to raising **awareness on cyber safety**.
 - Focus on **educating citizens** to prevent cyber threats and scams.
 - Leverages Meta's global expertise in on-line safety to empower Indian users.
 - Support from the highest levels of government to align with **Digital India's** cyber-security goals.

Insta Links:

1. Cyber-security
2. Steps-taken-by-the-government-to-spread-awareness

8. NATIONAL GREEN HYDROGEN MISSION

Context:

As part of the National Green Hydrogen Mission, the Union Government has sanctioned three pilot projects aimed at using hydrogen in steel production.

About National Green Hydrogen Mission:

- **Budget:** Outlay of ₹19,744 crore up to FY 2029-30 for green hydrogen initiatives.
- **Objectives:**
 - Establish India as a global hub for green hydrogen production, utilization, and export.
 - Foster decarbonization across industries, especially steel, mobility, and energy sectors.
- **Pilot Projects:**
 - Focus on demonstrating green hydrogen use in sectors like steel, mobility, and shipping.
 - Three sanctioned steel sector projects with financial support of ₹347 crore.
- **SIGHT (Strategic Interventions for Green Hydrogen Transition):**
 - Incentivizes the domestic manufacturing of electrolyzers.
 - Promotes the production and usage of green hydrogen.
- **Expected Outcomes by 2030:**
 - **Green Hydrogen Production:** At least 5 MMT per year.
 - **Renewable Energy:** Addition of around 125 GW of capacity.
 - **Investment:** Over ₹8 lakh crore in green hydrogen.
 - **Employment:** Creation of 6 lakh jobs.
 - **Reduction in fossil fuel imports:** Ex-

ceeding ₹1 lakh crore.

- **GHG Emissions:** Averting nearly 50 MMT of annual greenhouse gas emissions.
- **Phase-wise Implementation:**
 - Phase I (2022-26): Focuses on demand creation and deployment in existing hydrogen-using sectors.
 - Phase II (2026-30): Expands to new sectors with commercialization of green hydrogen

Insta links:

1. National-hydrogen-mission Opportunities-and-challenges-of-green-hydrogen-in-India

9. 'KARMAYOGI SAPTAH'

Context:

Prime Minister inaugurated the 'Karmayogi Saptah' - National Learning Week on 19th October 2024 at Dr. Ambedkar International Centre, New Delhi.

About Karmayogi Saptah:

- **Launch Date:** 19th October 2024 by Prime Minister Modi.
- **Objective:** Promote individual and organizational capacity-building for civil servants through competency-linked learning.
- **National Learning Week (NLW):**
 - Largest learning event for civil servants.
 - Aims to create a "One Government" message, aligning civil servants with national goals.
 - Focuses on lifelong learning and continuous development.
- **Learning Targets:**
 - Each Karmayogi is expected to achieve at least 4 hours of competency-linked learning during the week.
 - Learning methods include role-based modules on iGOT, webinars, public lectures, and policy masterclasses by eminent speakers.
- **Workshops & Seminars:**
 - Ministries and departments will organize seminars and workshops to enhance domain-specific competencies.
 - Emphasis on improving citizen-centric service delivery through knowledge sharing and skill development.

Insta links:

1. Mission-Karmayogi

10. 'E-CUBE HINDI LANGUAGE LAB'

Context:

To facilitate easy learning of Hindi for school students, Kerala's general education department has launched the 'E-Cube Hindi Language Lab' for students of classes 5 to 7.

E-Cube English Language Lab: Key Points

- **Objective:** Provides an interactive language learning environment for English, now extended to Hindi.
- **Developer:** Created by KITE (Kerala Infrastructure and Technology for Education).
- **Audience:** Targets students in schools, primarily using school laptops.
- **Interactive Features:**
 - Includes game-based activities for practicing listening, speaking, reading, writing, and discourse creation.
 - Students can record their voices and save activities in audio/video formats.
 - Supports animated conversations to help students speak confidently in real-life situations.
- **Monitoring:**
 - Teachers and head teachers have separate logins to track student progress.
 - Provides feedback mechanisms for teachers to review and guide students.
- **FOSS-based:** Entirely developed using Free and Open-Source Software.

Insta links:

1. Keralam
2. Kerala Landslide

International Relations

11. INTER-PARLIAMENTARY UNION

Context:

Lok Sabha Speaker Om Birla is leading a parliamentary delegation to the 149th Assembly of the Inter-Parliamentary Union (IPU) in Geneva.

About Inter-Parliamentary Union (IPU)

- **Established:** 1889 in Paris to promote representative democracy and world peace.
- **Mission:** Facilitates parliamentary diplomacy and empowers parliaments to promote peace, democracy, and sustainable development.
- **Slogan:** "For democracy. For everyone."
- **Members:** 179 member parliaments and 13 associate members.

- **Headquarters:** Moved to Geneva in 1921.
- **Funding:** Primarily financed by member contributions from public funds.

Key structures:

1. **IPU assembly:** The main body expressing IPU's views on global issues. It brings together parliamentarians to study international problems and make recommendations.
2. **Governing council:** The plenary policymaking body, comprising three representatives from each member parliament. It establishes the annual programme and budget.
3. **Executive committee:** A 17-member body responsible for overseeing IPU's administration. It advises the Governing Council and is led by the IPU President.
4. **Standing committees:** Three committees assist the Assembly in its work.
5. **Meeting of women parliamentarians:** A separate body that discusses gender-related issues and reports to the Governing Council. It includes both male and female parliamentarians.

Insta links:

1. IPU

12. WORLD TELECOMMUNICATION STANDARDIZATION ASSEMBLY

Context:

Prime Minister will inaugurate the International Telecommunication Union - World Telecommunication Standardization Assembly (WTSA) 2024 at Bharat Mandapam in New Delhi.

About World Telecommunication Standardization Assembly (WTSA):

- **Frequency:** Held every four years, with the first assembly in 2002.
- **Role:** Governing conference for the ITU Telecommunication Standardization Sector (ITU-T), setting work programs, working methods, and study group structures.
- **Significance:** Sets global telecommunication standards to ensure interoperability and promote innovation.
- **WTSA 2024:** Scheduled from October 14-24, 2024, in New Delhi, marking the first time hosted in the Asia-Pacific region.
- **Focus Areas:** 6G, AI, IoT, big data, cybersecurity, machine-to-machine communications, and quantum technologies.

About International Telecommunication Union (ITU):

- **Establishment:** Founded in 1865 as the International Telegraph Union, became a UN specialized agency in 1947.
- **Mission:** Coordinates global standardization and development of telecommunication and ICT services.
- **Membership:** Comprises 193 countries and over 1,000 companies, universities, and international organizations.
- **Headquarters:** Located in Geneva, Switzerland.

Insta links:

1. International-telecommunications-union

13. FIVE EYE ALLIANCE

Context:

U.K. is the latest to declare its confidence in the judicial process by Ottawa, which is investigating the alleged involvement of Indian diplomats in the 2023 killing of a pro-Khalistan preacher.

About Five Eyes Intelligence Alliance:

1. **Members:** The alliance includes five English-speaking countries — Australia, Canada, New Zealand, the United Kingdom, and the United States.
2. **Purpose:** It is a multilateral intelligence-sharing network, primarily focused on surveillance and signals intelligence (SIGINT).
3. **Classified information:** Intelligence shared is marked as 'Secret—AUS/CAN/NZ/UK/US Eyes Only,' giving the alliance its name.
4. **Background:**
 - Evolved during World War II to counter the Soviet threat during the Cold War.
 - The U.S. and U.K. collaborated after breaking German and Japanese codes.
5. **Formation:**
 - In 1946, the BRUSA Agreement (now UKUSA Agreement) formalized the intelligence-sharing partnership between the U.S. and U.K.
 - Initially focused on signals intelligence like radio and satellite communications.
6. **Expansion:**
 - Canada joined in 1948, followed by Australia and New Zealand in 1956, making it a five-nation alliance.
7. **Scope:** The alliance covers six key areas, including traffic analysis, cryptanalysis, decryption, and acquisition of communication-related information.
8. **Significance:** The Five Eyes Alliance is one of the most extensive intelligence-sharing networks in the world, key in modern global surveillance and

intelligence operations.

Insta links:

2. Five-eyes-alliance

14. MUSANED PLATFORM

Context:

Saudi Arabia launches new digital platform to ensure wage protection. It ensures a more secure working condition for foreign workers, including those from India.

About Musaned Platform:

- **Purpose:** Musaned is a digital platform created by Saudi Arabia to ensure wage protection and improve working conditions for foreign domestic workers.
- **Coverage:** It benefits workers from 10 African countries (e.g., Sudan, Ethiopia, Kenya) and 9 Asian countries (e.g., India, Bangladesh, Pakistan).
- **Features:**
 - Enables workers to **check employment contracts**.
 - Tracks **financial transactions** between employers and workers.
 - Can be linked to **contract insurance** and **health benefits**.
- **Objective:** To safeguard workers' rights, minimize **illegal immigration**, and meet **Vision 2030** goals of providing a stable working environment.
- **Human rights:** The platform promotes **human rights** by ensuring employers fulfill their obligations.

Insta links:

1. India-and-Saudi-Arabia
2. Indian-migrants-to-gulf-countries

15. INDIAN DEVELOPMENT AND ECONOMIC ASSISTANCE SCHEME

Context:

India has extended a new Line of Credit (LoC) for ₹487.60 crores to Mauritius for financing a water pipeline replacement project. This initiative is part of the Indian Development and Economic Assistance Scheme (IDEAS), which supports developmental projects in partner countries through concessional loans.

About IDEAS scheme:

- **Origin:** Launched in **2003-04** as the "**India Development Initiative**," later renamed as IDEAS Scheme.
- **Aim:** To promote India's political, economic, and strategic interests by providing developmental

assistance to developing countries.

- **Ministry:** The scheme is administered by the **Ministry of External Affairs (MEA)** with support from **Exim Bank**.
- **Features:**
 - Provides Lines of Credit (LoCs) to developing countries for projects in **infrastructure, water, education**, and other key sectors.
 - Projects funded are typically recommended by MEA and are aimed at bolstering socio-economic development in partner countries.
 - The financing includes **concessional terms** to reduce the burden on developing nations.
 - The scheme **fosters diplomatic goodwill**, strengthening India's ties with countries in the Global South.

Insta links:

1. India-Maldives-relations
2. DEA

16. HAEMODIALYSIS (HD) MACHINES

Context:

India is extending humanitarian assistance to two countries by providing **33 tonnes of medical supplies to Lebanon** and **haemodialysis (HD) machines to Papua New Guinea**.

Nations Involved

- **Lebanon:** Recipient of 33 tonnes of Indian medical aid to improve healthcare services.
- **Papua New Guinea:** Recipient of HD machines and portable RO units, fulfilling India's healthcare commitments under the **Forum for India-Pacific Islands Cooperation (FIPIC)**.

About Haemodialysis (HD) Machines:

- **Function:** HD machines filter blood to remove wastes, excess fluids, and toxins for patients with kidney failure.
- **Components:**
 - Uses a **dialyzer**, also known as an artificial kidney.
 - Blood flows through hair-thin hollow fibers inside a **clear plastic cylinder**.
 - **Dialysate fluid** cleans the blood by surrounding the fibers.
 - Wastes diffuse through pores and are flushed away.
- **Outcome:** With each pass through the dialyzer, the blood is gradually cleaned, supporting patients with severe kidney dysfunction.

Insta Links:

1. Indian-pharma-industry

GS-3

Indian Economy

17. "NOBEL PRIZE HONORS STUDY ON INSTITUTIONS AS PILLARS OF SUCCESS"

Context:

The 2024 Nobel Prize in Economics was awarded to **Daron Acemoglu, Simon Johnson, and James Robinson** for their research on wealth inequality between nations. Their work explores the impact of political and economic systems, particularly those introduced by European colonizers, on long-term prosperity and societal institutions.

About their work:

1. **Study of institutions:** The laureates analyzed how political and economic institutions shape nations' prosperity and development.
2. **Impact of colonialism:** They examined the systems imposed by European colonizers and their long-term effects on wealth inequality.
3. **Comparative studies:** A key example includes comparing the **city of Nogales**, divided by the U.S.-Mexico border, to show how different institutional frameworks lead to varying levels of prosperity on either side.
4. **Focus on democracy:** Their research suggests that nations transitioning to democracy experience faster economic growth compared to non-democratic regimes.
5. **Publication:** Acemoglu co-authored "**Why Nations Fail**," a seminal book that explores the roots of economic disparity between nations.

Significance of their work:

1. **Understanding wealth inequality:** Their work highlights how differences in institutions explain why some countries prosper while others do not.
2. **Role of institutions:** It underscores the importance of inclusive political and economic institutions for sustainable growth and reducing inequality.
3. **Practical implications:** The research offers insights into policies needed to reform institutions in poorer countries to foster development.
4. **Global relevance:** Their findings are crucial for addressing one of the world's greatest challenges—narrowing the income gap between nations.
5. **Support for democracy:** Their work emphasizes the positive impact of democratic institutions on economic growth and development.

Insta links:

1. 2023-nobel-prize-in-economics-claudia-goldin

Agriculture

18. WATER CHESTNUT (GOER)

Context:

Water chestnut, or “goer” in Kashmir, is a vital income source for families around Wular Lake, one of Asia’s largest freshwater lakes. However, environmental changes have led to declining production, affecting local livelihoods.

About Water Chestnut (Goer) in Kashmir:

- **Aquatic vegetable:** Grows in Wular Lake, Kashmir; known as “Singhara” in other parts of India.
- **Harvest season:** Collected during autumn, typically starting in late September.
- **Labor-intensive collection:** Harvested by villagers using boats, with protective footwear to avoid injuries from sharp barbed spines on the plants.
- **Edible part:** The edible kernel is peeled, dried, and ground into flour. It’s widely consumed during festivals like Navaratri.
- **Uses:**
 - **Food:** White, crunchy, sweet flesh is eaten fresh or dried and used in fasting rituals.
 - **Fuel:** Dried outer shells are used as fuel in traditional Kashmiri fire pots (kangri) during winter.
- **Nutritional value:** Rich in potassium and fiber, low in sodium and fat, and high in carbohydrates.
- **Economic importance:** Primarily harvested by poorer communities around Wular Lake; provides seasonal income.
- **Challenges:** Declining production due to dry weather and increasing marshland around the lake, impacting livelihoods.

Insta links:

1. Benefit of Water chestnut

19. MINIMUM SUPPORT PRICES

Context:

The Indian government has recently approved an increase in the Minimum Support Prices (MSP) for six Rabi crops for the 2025-26 marketing season.

- **Recent revision in MSP for Rabi crops:** Wheat, Rapeseed & Mustard, Lentil (Masur), Barley, Gram, and Safflower.

About Minimum Support Price:

- **Definition:** MSP is the guaranteed price paid to

farmers for their produce when purchased by the government, ensuring they receive a minimum income.

- **Determination:** MSP is recommended by the Commission for Agricultural Costs and Prices (CACP) based on factors like cost of production, demand and supply, and market trends.
- **Approval process:** The final decision on MSP is made by the Cabinet Committee on Economic Affairs (CCEA), chaired by the Prime Minister.
- **Crops under MSP:** MSP is announced for 22 crops, including 14 Kharif, 6 Rabi, and 2 commercial crops. Fair Remunerative Price (FRP) is set for sugarcane.
- **Types of Production Costs:**
- **CACP uses three cost projections:**
 - **A2:** Paid-out costs for inputs like seeds, labor, and fertilizers.
 - **A2+FL:** Includes unpaid family labor.
 - **C2:** Comprehensive cost including rent and capital interest, used as a benchmark reference.
- **Budget 2018-19:**
- The MSP is set at 1.5 times the All-India weighted average cost of production, ensuring farmers receive fair returns for their produce.

Insta links:

1. Legalising-minimum-support-price-MSP

Science & Technology

20. X-BAND RADAR

Context:

The Union Ministry of Earth Sciences approved the installation of an X-band radar in Wayanad to improve monitoring and prediction of weather conditions, specifically for early warnings related to landslides and floods.

About X-band Radar:

Feature	Details
Purpose	Monitors smaller particles like rain droplets or soil movements.
Frequency Range	8-12 GHz (corresponds to wavelengths of 2-4 cm).
Technology	Uses Doppler radar and Rayleigh scattering to detect object movement.
Resolution	Produces higher resolution images due to shorter wavelength.

Range	Shorter range compared to lower frequency bands, ideal for localized studies.
Application in Wayanad	Will monitor soil movement for landslide warnings and high temporal sampling.
Meteorological Use	Tracks clouds, rain patterns, and storm formation in real time.
Limitations	Shorter range due to higher attenuation of the signal.
Previous Installation in India	First X-band radar installed in New Delhi in 1970.

Insta links:

1. Risat-2br1

21. MECHAZILLA

Context:

SpaceX has achieved a significant milestone in space exploration by landing its Starship rocket using an innovative structure called “Mechazilla.”

About Mechazilla:

- Mechazilla is the massive 400-ft tall rocket-catching structure at SpaceX’s Starbase in Texas.
- Equipped with giant mechanical arms **known as “chopsticks,”** it is designed to catch the Super Heavy booster midair as it returns to Earth after launch.

Working of Mechazilla:

- **Launch & Ascent:** Starship and its Super Heavy booster launch from the ground.
- **Booster separation:** The booster detaches from the Starship upper stage at a high altitude.
- **Controlled descent:** The booster descends using precision thrusters to steer its path back to the landing site.
- **Booster catching:** Mechazilla’s mechanical arms move into position and catch the booster as it hovers, ensuring a controlled landing.

Significance of Mechazilla:

- **Quick reusability:** Reduces turnaround time for rocket refurbishment and re-launch, making missions more efficient.
- **Cost reduction:** Enables rapid reuse of boosters, lowering overall launch costs significantly.
- **Sustainability:** Enhances the sustainability of space missions by minimizing wear and tear on reusable components.
- **Future of space travel:** Could enable more frequent, affordable, and scalable space missions, bringing humanity closer to interplanetary travel

goals.

Insta links:

1. SpaceX-starship-landing

22. INDIA MOBILE CONGRESS

Context:

Industry leaders have lauded Prime Minister Narendra Modi’s vision for Digital India at the 8th India Mobile Congress during the International Telecommunication Union-World Telecommunication Standardisation Assembly (ITU-WTSA) 2024 in New Delhi.

About India Mobile Congress (IMC) 2024:

- **Edition:** 8th edition of Asia’s premier digital technology exhibition.
- **Co-hosted by:** The Department of Telecommunications (DoT) and Cellular Operators Association of India (COAI).
- **Theme:** “The Future is Now” - focusing on integrating advanced technologies into daily life.
- **Focus areas:** 6G, Artificial Intelligence (AI), semiconductors, satellite communication (Satcom), quantum technology, broadcasting, electronics manufacturing, and security.
- **Significance:**
 - **Technological advancement:** Showcases innovations in AI, 6G, quantum tech, etc., fostering collaboration and progress.
 - **Economic impact:** Expected to attract investments, boosting the tech sector and contributing to India’s economy.
 - **Global collaboration:** Connects 120+ countries, enabling exchange of ideas and best practices.
 - **Startup support:** The Aspire program provides startups with investor access, accelerating growth.

Insta links:

1. World-telecommunication-and-information-society-day

23. OSSIFICATION TEST

Context:

The Mumbai police have confirmed that Dharmaraj Kashyap, one of the three accused in the murder case of NCP leader and former Maharashtra Minister Baba Siddique, is not a minor. ANI reported that the confirmation came after an ossification test was conducted on him.

Key methods for estimating age:

1. **Ossification test:**

- **Purpose:** Determines age by assessing bone

development and the union of epiphyses in long bones.

- **Bones used:** Radius, ulna, humerus, tibia, fibula, femur.
 - **Accuracy:** Provides an estimate within a margin of two years (e.g., 16-18 years), allowing for a 6-month error on either side.
 - **Limitations:** Factors such as climate, diet, and heredity can affect ossification rates.
2. **Wisdom teeth:**
 - **Purpose:** The eruption of wisdom teeth (third molars) is used to estimate age.
 - **Age range:** Typically erupts in late teens to early adulthood.
 - **Limitations:** Genetics, oral hygiene, and health can influence the pattern, making this method less accurate if used alone.
 3. **Epigenetic clock technique:**
 - **Purpose:** Measures DNA methylation to estimate chronological age.
 - **Mechanism:** Methyl groups are added to DNA, particularly at CpG sites (cytosine preceding guanine).
 - **Use in forensics:** Still under exploration in Indian forensic science.
 4. **Radiographic techniques:**
 - **Purpose:** X-rays and CT scans assess bone maturity and degeneration.
 - **Use:** Helpful in identifying bone age and diseases that can indicate age progression.

Insta links:

1. Ossification test

24. HABER-BOSCH PROCESS

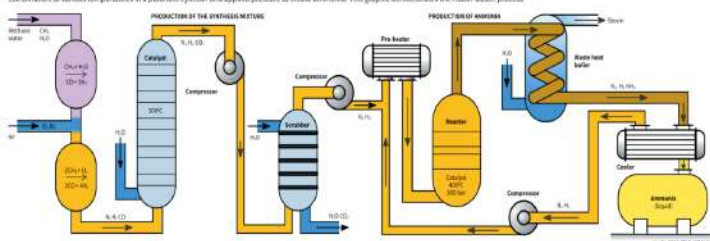
Context:

About Haber-Bosch Process:

- **Purpose:** Fixes nitrogen (N₂) from the air with hydrogen (H₂) to produce ammonia (NH₃), essential for manufacturing fertilizers.
- **Development:** Invented by **Fritz Haber** in the early 1900s and industrialized by **Carl Bosch**.
- **Significance:** Considered one of the most important technological advancements of the 20th century, enabling mass production of fertilizers.
- **Industrial breakthrough:** First large-scale chemical process using high pressure for a chemical reaction.

How ammonia is made on an industrial scale

Ammonia is made of nitrogen and hydrogen. Under extreme heat, the molecules separate and form a compound, but it is short-lived because of the heat. The German chemist Fritz Haber heated the H₂-N₂ combination to various temperatures in a platinum cylinder and applied pressure to create ammonia. This graphic demonstrates the Haber-Bosch process.



How it works:

1. **Nitrogen + Hydrogen reaction:** Combines nitrogen from the air with hydrogen under **high pressure** (150–200 atmospheres) and **moderate temperature** (~400–500°C).
2. **Catalyst:** Mostly iron-based catalysts are used to lower the reaction temperature.
3. **Pressure & Temperature:** Higher pressure increases ammonia yield, while lower temperatures favor the reaction but slow down the rate.
4. **Continuous process:** Ammonia is removed from the reaction batch to maintain an equilibrium that promotes product formation.

Insta Links:

1. Nitrogen pollution
2. Green-ammonia

25. COPPER ZINC TIN SULFIDE NANOPARTICLES

Context:

Scientists from the Institute of Advanced Study in Science and Technology (IASST), Guwahati, have developed a new photocatalyst that can effectively break down sulfamethoxazole into less harmful byproducts, marking a significant step toward solving this environmental issue.

Need:

- Antibiotic contamination in the environment has become a pressing concern due to the increasing levels of broad-spectrum **antibiotics like sulfamethoxazole (SMX)** being released, leading to antibiotic resistance, ecological damage, and health risks.
- Finding efficient ways to degrade such antibiotics into less hazardous chemicals is essential for mitigating these effects.

About Copper zinc tin sulfide nanoparticles:

- **Photocatalyst developed:** The team synthesized **copper zinc tin sulfide (Cu₂ZnSnS₄ - CZTS) nanoparticles** and CZTS-tungsten disulfide (CZTS-WS₂) composite.
- **Composition:** The composite is made from earth-abundant, inexpensive, and non-toxic components using a hydrothermal reaction involving zinc chloride, copper chloride, tin chloride, and tungsten disulfide.
- **Function:** The composite acts as an efficient photocatalyst, which degrades sulfamethoxazole under light exposure.

Significance:

- **Environmental impact:** This photocatalyst helps reduce the harmful effects of antibiotics like sulfamethoxazole in the environment.

- **Efficiency:** The CZTS-WS2 composite exhibited over 80% radical scavenging efficiency and anti-bacterial capabilities.
- **Reusability:** The catalyst can be recovered and reused multiple times without losing its effectiveness, making it economically viable.
- **Photostability:** The composite demonstrates excellent photostability, which makes it valuable for long-term applications in light-harvesting and photocatalysis.

Insta links:

1. Improper-disposal-of-antibiotics

26. JIANGMEN UNDERGROUND NEUTRINO OBSERVATORY

Context:

The Jiangmen Underground Neutrino Observatory (JUNO) in China is set to begin operations in 2025, aiming to gather data on neutrinos to solve fundamental mysteries in particle physics.

Jiangmen Underground Neutrino Observatory (JUNO):

- **Location:** Built 700 meters underground in China's Guangdong province.
- **Purpose:** Designed to detect neutrinos emitted by nearby **nuclear power plants**, the sun, and Earth's mantle.
- **Detector:** Features a **600 metric ton spherical detector** with thousands of light-detecting tubes.
- **Timeline:** Expected to start operations in **late 2025**.
- **Collaboration:** Scientists from France, Germany, Italy, Russia, and the U.S. are involved.
- **Global impact:** Aims to surpass similar projects in the U.S. and Europe in neutrino research.

About Neutrinos:

- **Fundamental particle:** Neutrinos are **elementary particles** produced in high-energy processes like nuclear reactions in stars.
- **Hard to detect:** Neutrinos rarely interact with matter due to their lack of electrical charge.
- **Origins:** Produced by stars, supernovae, and on Earth in nuclear reactors and accelerators.
- **Key in physics:** Studying neutrinos helps understand processes in the sun, the universe's formation, and Earth's interior.
- **Future applications:** Could revolutionize astronomy and medical imaging; potential for **long-distance communication** via neutrinos.

Indian Neutrino Observatory (INO):

- **Proposal:** Conceived in 2005 to study neutrinos

using a detector under Tamil Nadu's Bodi West Hills.

- **Budget:** Initially funded at **Rs 1,500 crore** by the Indian government.
- **Approval:** Received environment ministry clearance in 2018.
- **Challenges:** Faces opposition due to environmental concerns, including its location in a **tiger corridor** and potential impact on local ecology.
- **Status:** Construction is stalled due to opposition from **environmentalists** and local government, with no significant progress to date.

Insta Links:

3. Neutrino-project

27. INDIAAI MISSION

Context:

The IndiaAI Mission has selected eight Responsible AI projects in response to the Expression of Interest (EoI) issued under the Safe and Trusted AI Pillar.

About IndiaAI Mission:

- **Origin:** Launched during the Global Partnership on Artificial Intelligence (GPAI) Summit in 2023, New Delhi, by the Prime Minister of India.
- **Background:** Announced to drive AI innovation and build a comprehensive AI ecosystem in line with the visions of "Making AI in India" and "Making AI Work for India."
- **Aim:** To create an advanced AI infrastructure supporting various sectors, boost AI innovation, enhance data quality, and promote ethical AI practices across the country.
- **Nodal ministry:** Ministry of Electronics and Information Technology (MeitY)
- **Implementing agency:** IndiaAI Independent Business Division (IBD) under the Digital India Corporation (DIC)
- **Key Components:**
 - **IndiaAI Compute Capacity:** Develop AI compute infrastructure with 10,000+ GPUs via public-private partnerships.
 - **IndiaAI Innovation Centre:** Create Large Multimodal Models (LMMs) and sector-specific foundational AI models.
 - **IndiaAI Datasets Platform:** Unified platform providing access to high-quality non-personal datasets for AI research and startups.
 - **IndiaAI Application Development Initiative:** Promote AI applications addressing key challenges in sectors like health-care, agriculture, and governance.
 - **IndiaAI FutureSkills:** Expand AI education through new programs at various academic levels and set up Data & AI Labs in

smaller cities.

- **IndiaAI Startup Financing:** Easier access to funding for AI startups, with Rs 2,000 crore allocated.
- **Safe & Trusted AI:** Ensure responsible AI practices with indigenous tools and frameworks.

Insta links:

1. IndiaAI mission

28. ARTIFICIAL STONE

Context:

A recent study published in **Thorax** highlights the emergence of a severe form of **silicosis**—a lung disease caused by inhaling fine silica dust. This is attributed to the high silica content (over 90%) in artificial stone, compared to natural stones like marble and granite, which contain much less silica

About Artificial Stone:

Artificial stone, also known as **engineered stone or quartz**, is widely used in kitchens due to its aesthetic appeal and durability. However, it poses significant health risks to workers involved in its cutting and polishing.

- **Material Composition:**
 - Made from crushed rocks bound with resins.
 - Contains over 90% silica, compared to 3% in marble and 30% in granite.
- **Advantages:**
 - **Aesthetic appeal:** Smooth, polished look.
 - **Durability:** More resistant to damage than natural stone.
 - **Ease of handling:** Lacks natural imperfections found in natural stone.
- **Health Risks:**
 - Generates fine silica dust when cut or polished.
 - High risk of silicosis, a progressive lung disease caused by silica inhalation.
 - Workers face increased risks due to dry cutting without dust suppression measures like water.
- **Thorax Study Findings:**
 - Documented eight cases of workers, average age 34, with severe lung disease.
 - Conditions include lung transplants, autoimmune diseases, and lung infections.
- **Preventive Measures:**
 - Use of water to suppress dust during cutting.
 - Adoption of nasal filters and other technologies to minimize silica exposure.
 - Advocating for stricter safety measures to protect workers.

Insta Links:

1. Coal-india-ltd-to-launch-m-sand-projects-in-a-big-way

29. NON-KINETIC WARFARE

Context:

The Parliamentary Standing Committee on Defence has prioritized the discussion on the Indian armed forces' readiness to tackle "hybrid warfare," specifically focusing on **non-kinetic warfare**.

About Non-Kinetic Warfare:

- **Definition:**
 - Warfare that goes beyond physical combat and involves electronic warfare, cyberattacks, psychological, information, and economic tactics.
 - It can include non-military stakeholders and aims to disrupt or cripple a country's infrastructure or governance.
- **Methods Used:**
 - **Cyber warfare:** Attacking critical infrastructure like power grids, hospitals, and communication networks.
 - **Information warfare:** Spreading disinformation or controlling the narrative to influence public perception and decision-making.
 - **Electronic warfare:** Jamming or intercepting communication systems.
 - **Psychological warfare:** Manipulating public opinion and morale through fear, misinformation, or propaganda.
 - **Economic warfare:** Disrupting a nation's economy by targeting financial systems or trade.
- **Impact:**
 - Non-kinetic warfare can be deadlier than traditional combat, as conflicts can be won without physical confrontation.
 - A well-coordinated cyber or economic attack can destabilize a nation without the need for conventional military force.
- **Examples:**
 - **Russia-Ukraine conflict:** Use of cyberattacks and disinformation.
 - **Israel-Palestine conflict:** Psychological and information warfare tactics.
 - Lebanon: Use of pager blasts as a form of disruption.
- **Counter-Drone Technologies:**
 - **Kinetic options:** Shooting down drones physically.
 - **Non-kinetic options:** Jamming, taking control, or using laser and electromagnetic waves to disrupt drone operations.

Importance for India:

- As non-kinetic warfare becomes a key component of modern conflicts, India's armed forces must develop both kinetic and non-kinetic capabilities to counter these emerging threats.

Insta links:

1. Hybrid-warfare

Environment & Ecology

30. PMECRG & MAHA-EV MISSION

Context:

The newly operationalised Anusandhan National Research Foundation (ANRF) has launched two initiatives: the Prime Minister Early Career Research Grant (PMECRG) and the Mission for Advancement in High-Impact Areas - Electric Vehicle (MAHA-EV) Mission.

About Prime Minister Early Career Research Grant (PMECRG):

- **Origin:** Launched under ANRF to support early career researchers and boost scientific research.
- **Aim:** To foster high-quality innovative research, drive technological progress, and contribute to India's global leadership in science and technology.
- **Features:**
 - Flexible budget for ease of research.
 - Focus on nurturing young researchers.
 - Encourages groundbreaking discoveries and research excellence.
 - Positions India as a leader in Science & Technology by supporting early career researchers.

About Mission for Advancement in High-Impact Areas - Electric Vehicle (MAHA-EV) Mission:

- **Origin:** Part of ANRF's MAHA scheme designed to address critical scientific challenges and align with national priorities like Atmanirbhar Bharat.
- **Aim:** To develop domestic EV technologies, reduce import dependency, and position India as a global hub for EV component development.
- **Features:**
 - Focus on three critical verticals: EV Batteries and Cells, Power Electronics, Machines, and Drives (PEMD), and EV Charging Infrastructure.
 - Encourages multi-institutional collaboration.
 - Supports India's transition to electric mobility and fosters domestic innovation in the EV sector.
 - Enhances competitiveness and aligns with India's goal of achieving a Viksit Bharat by

2047.

About Anusandhan National Research Foundation (ANRF):

- **Origin:** Operationalised in 2024, chaired by the Prime Minister during its first Governing Board meeting.
- **Ministry:** Ministry of Science & Technology.
- **Aim:** To bridge the gap between academic research and industrial applications, aligning R&D with national priorities.
- **Function:**
 - Promotes inclusive growth, scientific advances, and innovation.
 - Facilitates industry-aligned translational research.
 - Supports capacity building and global positioning of India in key sectors.

Insta links:

1. National-research-foundation

31. KAZIRANGA NATIONAL PARK

Context:

Kaziranga National Park in Assam, renowned for its one-horned rhinoceros, has now earned recognition as the second-largest butterfly diversity hub in India, after Namdapha National Park in Arunachal Pradesh.

Butterflies in Kaziranga:

1. **Species diversity:** Kaziranga is home to 446 butterfly species, making it the second-most diverse butterfly hub in India.
2. **Newly recorded species:** 18 new species, including Burmese Threering, Glassy Cerulean, and Peacock Oakblue, have been documented.
3. **Butterfly conservation:** The first-ever Butterfly Conservation Meet-2024 highlighted the importance of butterfly conservation and raised awareness of Kaziranga's butterfly diversity.



About Kaziranga National Park:

1. **Location:**
 - Situated in Golaghat and Nagaon districts of Assam.
2. **UNESCO World Heritage Site:**
 - Declared a national park in 1974 and a UNESCO World Heritage Site, housing two-thirds of the world's one-horned rhinoceros' population.
3. **Biodiversity:**
 - Hosts a variety of fauna, including royal Bengal tigers, leopards, capped langurs, and migratory birds.
 - Known for its tall elephant grass, water lilies, and wet alluvial grasslands.
4. **Flora and Fauna:**
 - Famous for elephant grasses, rattan cane, and aquatic plants like water hyacinths.
 - Important species include Bengal florican and western hoolock gibbon, India's only ape species.
5. **Ecological importance:**
 - Largest undisturbed area in the Brahmaputra Valley floodplains, offering critical habitats for diverse wildlife.

Insta links:

1. Kaziranga-National-Park

Infrastructure

32. BEML

Context:

State-owned BEML will manufacture the country's first indigenous high-speed train that can travel at a peak speed of 280 kmph.

About BEML:

- **Incorporation:** Founded on 11 May 1964, with Soviet Union assistance.
- **Ownership:** Initially wholly owned by the Indian government under the Ministry of Defence.
- **Headquarters:** Bangalore, Karnataka, India.
- **Industry:** Manufactures heavy equipment for earthmoving, railways, transport, and mining sectors.
- **Disinvestment:** In 1992, the government divested 25% of its holdings. Further strategic disinvestment (26%) with management control transfer was approved by the Indian government.
- **Significance:** Asia's second-largest manufacturer of earthmoving equipment.

Insta links:

2. India-Japan-Bullet-Train-Deal

Defence

33. THAAD MISSILE SYSTEM

Context:

In response to escalating tensions in West Asia, particularly with Iran's missile attacks on Israel, the U.S. has decided to deploy the Terminal High Altitude Area Defense (THAAD) missile system to bolster Israel's air defense.

About THAAD:

- **Purpose:** THAAD is a missile defense system designed to intercept and destroy short- to medium-range ballistic missiles during their final flight phase.
- **Key features:**
 - Uses a powerful radar to detect incoming missiles.
 - Does not rely on warheads; instead, it uses kinetic energy to destroy missiles, making it a safer defense system.
- **Range:** THAAD can hit targets at ranges of 150 to 200 kilometers.
- **Contractor:** Lockheed Martin is the primary contractor behind the THAAD system.
- **Deployment:** First deployed in 2008, THAAD is considered a complementary system to the Patriot missile defense but covers a wider area of defense.

Insta links:

Why-china-is-opposing-thaad-defence-systems-in-south-korea

34. SAMARTHAK VESSEL

Context:

The first of two multi-Purpose Vessels (MPVs) for the Indian Navy, built by L&T Shipyard, was launched at Kattupalli, Tamil Nadu.

- The ship, named 'Samarthak,' is part of India's broader efforts to promote indigenous shipbuilding in line with the 'Aatmanirbhar Bharat' and 'Make in India' initiatives.

About Samarthak Vessel:

- **Name:** Samarthak, meaning 'Supporter,' symbolizing its multi-dimensional capabilities.
- **Shipyard:** L&T Shipyard, Kattupalli, Tamil Nadu.
- **Specifications:**
 - **Length:** 106 meters.
 - **Width:** 16.8 meters.
 - **Speed:** Maximum of 15 knots.
- **Capabilities:**
 - Towing ships.
 - Launching and recovering targets.
 - Operating unmanned autonomous vehi-


- cles.
- o Serving as a platform for trials of indigenous weapons and sensors.
- **Significance:** The ship demonstrates India’s growing capabilities in indigenous shipbuilding, aligned with national defense and economic strategies.

Insta links:

- 2. Survey-vessel-Sandhayak

MAPPING

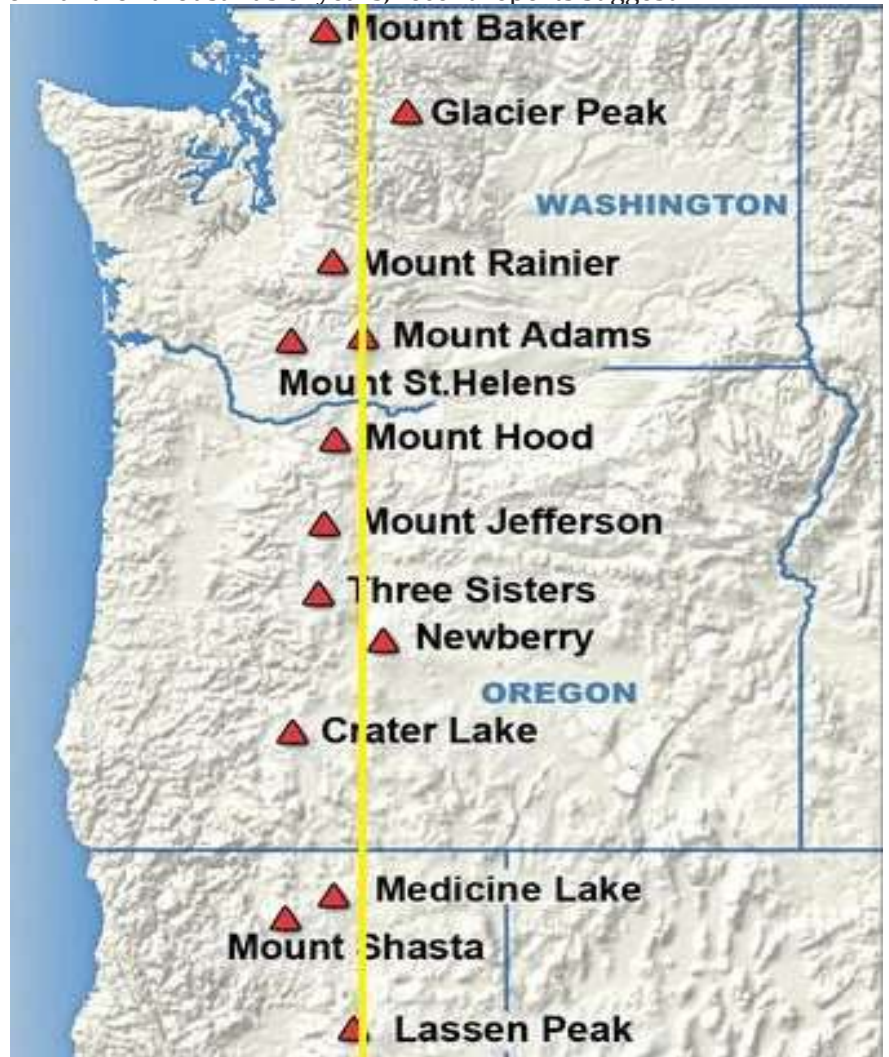
INTERNATIONAL

Place	Why in News?
<p>1. NILE RIVER BASIN COOPERATIVE FRAMEWORK AGREEMENT</p>	<p>Context: The Nile River Basin Cooperative Framework Agreement (CFA) came into force on October 13, 2024, after over a decade of negotiations, aiming to promote equitable and sustainable use of the Nile’s water resources.</p>  <p>About Nile River Agreement:</p> <ol style="list-style-type: none"> 1. Origin: The CFA replaces colonial agreements from 1929 and 1959 that gave Egypt veto powers over Nile usage. 2. Amendments: The CFA introduces Article 14b, ensuring no significant effect on water security for any Nile Basin State. 3. Nations involved: Negotiated among nine Nile Basin countries (Burundi, DR Congo, Egypt, Ethiopia, Kenya, Rwanda, Sudan, Tanzania, Uganda) and later ratified by five nations (Burundi, Ethiopia, Rwanda, Tanzania, Uganda) and South Sudan acceded. 4. Nations rejecting: Egypt and Sudan opposed the CFA, particularly Article 14b, citing concerns about water security. <p>Nile River Facts:</p> <ol style="list-style-type: none"> 1. Length: The Nile is one of the world’s longest rivers, stretching approximately 6,695 kilometers. 2. Sources: Main sources include Lake Victoria, the Blue Nile, the White Nile, and the Kagera River. 3. Countries involved: The Nile Basin includes parts of Tanzania, Burundi, Rwanda, Congo (DRC), Kenya, and Egypt. 4. Delta: The river forms an arcuate delta as it flows into the Mediterranean Sea. 5. Principal streams: The Nile is fed by three main tributaries – the Blue Nile, Atbara, and White Nile. <p>Insta links:</p> <ol style="list-style-type: none"> 1. River-Nile

2. MOUNT ADAMS

Context:

Mount Adams, the largest volcano in Washington, has shown an increase in seismic activity after lying dormant for thousands of years, recent reports suggest.



About Mount Adams:

- **Location:** Washington State, USA.
- **Height:** 12,277 feet (3,742 meters), making it the largest active volcano in Washington by volume.
- **Width:** 18 miles (29 kilometers).
- **Volcanic field:** Lies within the Mount Adams volcanic field, a 1,250 sq.km area with over 120 basaltic volcanoes.
- **Glaciers:** Supports over 10 active glaciers, providing vital water to surrounding ecosystems.
- **Last eruption:** Occurred between 3,800 and 7,600 years ago.

Stratovolcano characteristics:

- **Definition:** Tall, steep, cone-shaped volcanoes.
- **Composition:** Built from layers of ash and lava.
- **Eruption style:** Magma is viscous and gas-rich, causing explosive eruptions.
- **Formation:** Occur at tectonic plate margins where continental plates override oceanic plates.
- **Prevalence:** Comprise ~60% of Earth’s volcanoes, with 85% around the Pacific’s “Ring of Fire.”

Insta links:

1. [Types of volcano](#)
2. [Mount-Ruang-Indonesia](#)

3. ITALY-ALBANIA MIGRATION PACT

Context: The first people to be intercepted at sea by the Italian navy under a controversial migration deal with Albania are on their way to the Balkan nation to have their asylum claims processed.

About Pact:

1. **Migration pact signed:** Italy’s far-right Prime Minister, Giorgia Meloni, and Albanian Prime Minister, Edi Rama, signed a pact in November 2022 to manage asylum claims of migrants.
2. **Asylum processing in Albania:** Under the agreement, migrants intercepted at sea are sent to Albania, where their asylum claims are processed.
3. **Screening criteria:** Only men from “safe” countries such as Bangladesh and Egypt are sent to Albania; vulnerable individuals, including women, children, and men with illnesses or signs of torture, are taken to Italy.
4. **Places in news:**
 1. **Schëngjin:** Port where intercepted migrants arrive in Albania.
 2. **Gjadër:** Location of the former Albanian air force site used to hold migrants while processing their asylum claims.
 3. **Lampedusa:** Southern Italian Island where vulnerable migrants are taken after screening.



Insta links:
[Albania](#)

4. COOGEE BEACH

Context:

Tar balls:

- **Formation:** Result from **oil spills**, forming when oil mixes with seawater, sand, and debris, creating a hardened substance.
- **Size & texture:** Vary from small pebbles to fist-sized, with smooth or rough surfaces depending on environmental exposure.
- **Environmental impact:** Pose significant hazards to marine life and human health due to toxic components like **polycyclic aromatic hydrocarbons (PAHs)**.

Location in the news:

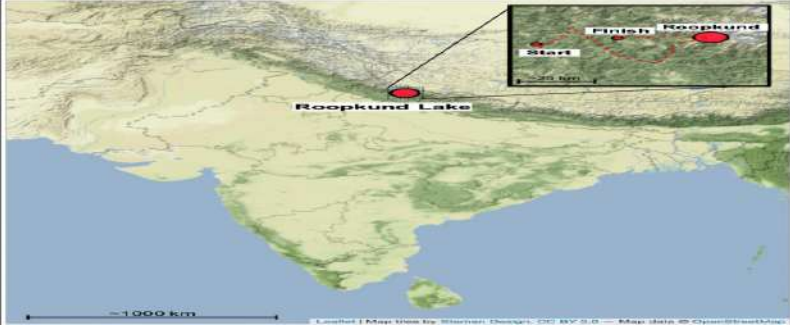
- **Coogee Beach, Sydney:** On October 15, 2024, black, ball-shaped debris, potentially tar balls, were discovered along the length of the beach.



Insta links:

1. [Brown carbon tar balls](#)
2. [Australia](#)

INDIAN

Place	Why in News?
<p>5. ROOPKUND LAKE</p>	<p>Context: Roopkund Lake, the site has drawn significant attention due to the mystery surrounding the skeletons' origins. However, environmental changes linked to climate change are shrinking the lake, raising concerns about its future.</p> <p>About Roopkund lake:</p> <ul style="list-style-type: none"> • Origin: Glacial lake at Mt Trishul base in Uttarakhand, India. • Feeds by melting snow and glaciers. • Geographical location: Chamoli district, Nanda Devi National Park. • Historical mystery: The lake contains human skeletons that date back to 850 AD, with DNA studies suggesting two distinct groups of people, likely pilgrims, who died from a hailstorm. • Current issue: Climate change is shrinking the lake, reducing its depth and area due to shifting precipitation patterns and increased silting from moraine slides, impacting both the lake's ecosystem and cultural significance.  <p>Insta links: Nature</p>