



INSIGHTSIAS

SIMPLIFYING IAS EXAM PREPARATION



AFRICAN PENGUIN

THE AFRICAN PENGUIN, OR CAPE PENGUIN, IS NOW "ENDANGERED" PER THE IUCN, WITH UNDER 10,000 BREEDING PAIRS, MOSTLY IN SOUTH AFRICA.

18 NOV - 23 NOV 2024

WEEKLY CURRENT AFFAIRS

WWW.INSIGHTSONINDIA.COM

INSIDE

GENERAL STUDIES – 2

Topics: Appointment to various Constitutional posts, powers, functions and responsibilities of various Constitutional Bodies.

1. Comptroller & Auditor General 4

Topics: Important aspects of governance, transparency and accountability, e-governance applications, models, successes, limitations, and potential; citizens charters, transparency & accountability and institutional and other measures.

2. Bail & Undertrials 5

Topics: India and its neighbourhood- relations.

3. India's Neighbourhood Policy 6

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

4. Rio G20 Summit 7

GENERAL STUDIES – 3

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

1. China and Renewable Energy 8

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. Impacts of Social Media on Democracy 9

Topics: Awareness in the fields of IT, Computers, robotics, nano-technology, bio-technology and issues relating to intellectual property rights.

3. Intellectual Property Rights 10

4. Centrifugal Process & Uranium Enrichment 12

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

5. High-Performance Buildings 12

6. Delhi Air Pollution 13

CONTENT FOR MAINS ENRICHMENT

1. All-India Services (Conduct) Rules, 1968 15

2. Chhattisgarh Cattle Marking 15

3. Story of Morning Mama 16

4. Women in Urban Governance 16

5. WEP and Urban Company Collaboration 17

6. India-CARICOM Summit 17

7. Nova, An AI-Powered Humanoid 18

8. Quotes on Socialism 18

FACTS FOR PRELIMS

GS-1

Art & Culture

1. UNESCO Sites in News 18

2. Indira Gandhi Prize for Peace, Disarmament, and Development, 2023 19

History

3. St. Francis Xavier 19

4. Kanhirapoil Megalithic Site 19

Geography

5. Māori Group 20

6. High-Altitude Sickness 20

GS-2

Governance

7. Grievance Redressal Assessment and Index (GRAI) 2023 21

8. “Bhu-Neer” Portal	21	29. Guru Ghasidas-Tamor Pingla Tiger Reserve	32
9. PM Vidyalaxmi Scheme	22	30. African Penguin	33
10. VISION Portal	22	31. Green World Environment Award 2024	33

International Relations

11. World Anti-Doping Agency	23	32. Reducing Methane from Organic Waste Declaration	34
12. United Nations Relief and Works Agency for Palestine Refugees	23	33. Mealworm Larvae	34
13. The State of the World’s Children 2024	23	34. Climate Change Performance Index (CCPI), 2025	34
14. International Criminal Court	24	35. Ranthambore Tiger Reserve	35
15. The Global Alliance Against Hunger and Poverty	24	36. Paris Agreement	35

GS-3

Indian Economy

16. Central Value Added Tax (CENVAT) Credit	25
17. “Jobs At Your Doorstep” Report	25

Agriculture

18. Biofloc Technology and Recirculating Aquaculture Systems	26
19. Marine Fisheries Census 2025	27

Energy & Infrastructure

20. “Waves” OTT Platform	28
21. Solar Energy Corporation of India (SECI)	28

Health

22. Jeddah Commitments on AMR	29
-------------------------------	----

Science & Technology

23. ‘One Day One Genome’ Initiative	29
24. Technologies to Resolve Stubble Burning	29
25. Artificial Intelligence (AI) Data Bank	30

Environment & Ecology

26. Global Energy Efficiency Alliance	31
27. Oriental Pied Hornbill	31
28. Thai Sacbrood Virus	32

Internal Security

37. Bharat National Cyber Security Exercise	36
---------------------------------------------	----

Defence

38. Exercise Poorvi Prahar	36
39. Long-Range Hypersonic Missile	37
40. ATACMS (Army Tactical Missile Systems)	37
41. RS-26 Rubezh	37

MAPPING

INTERNATIONAL

1. Nigeria Nation	38
2. El Cajas National Park	39
3. Salt Chimneys at Dead Sea	40
4. Reykjanes Peninsula	41
5. Cayirhan Coal Mine	42

INDIAN

6. Willingdon Island	42
7. Panchachuli Mountain Range	43
8. Ashtamudi Lake	44

GENERAL STUDIES – 2

Topics: Appointment to various Constitutional posts, powers, functions and responsibilities of various Constitutional Bodies.

1. COMPTROLLER & AUDITOR GENERAL

Context:

During the 4th Audit Diwas event in New Delhi, Lok Sabha Speaker Shri Om Birla highlighted the critical role of the Comptroller & Auditor General (C&AG) in promoting accountability, transparency, and good governance.

About Comptroller and Auditor General of India (CAG):

Basics:

- **Independent Constitutional Office:** Established under Article 148, CAG ensures accountability in public financial administration.
- **Guardian of Public Purse:** Oversees the entire financial system at both Central and State levels.
- **Appointment and Tenure:**
 - Appointed by the President by warrant under his hand and seal.
 - Holds office for six years or until age 65, whichever is earlier.
- **Salary and Service Conditions:** Determined by Parliament and charged upon the Consolidated Fund of India.
- **Non-Eligibility for Further Office:** Post-retirement, the CAG cannot hold office under Central/State Governments.

Relevant Articles:

- **Article 149:** Parliament defines CAG's duties and powers.
- **Article 150:** Determines the format of Union and State accounts on CAG's advice.
- **Article 151:** CAG reports submitted to the President and laid before Parliament.
- **Article 279:** Certifies net proceeds of taxes, binding on the government.

Powers and Duties of CAG:

- **Audit Financial Transactions:** Audits expenditures from the Consolidated, Contingency, and Public Accounts of India and states. Also examines receipts, debts, and remittances of the government.
- **Scrutiny of Revenue:** Ensures effective rules for revenue assessment, collection, and allocation.
- **Audit of Local Bodies:** Audits transactions of local authorities and government-funded bodies upon request.

- **Formulation of Accounts:** Advises the President on the format for maintaining Union and State accounts.
- **Reporting to Legislatures:** Submits audit reports to the President (Centre) and Governors (States) for legislative scrutiny.
- **Public Accounts Committee Role:** Acts as a guide and advisor to PAC, assisting in scrutinizing government expenditures.

Challenges and Issues:

- **Limited Powers:** Cannot enforce compliance for timely information.
- **Ambiguity in Scope:** Lack of clarity on auditing Public-Private Partnerships (PPPs) and power distribution companies.
- **Secret Service Expenditure:** Cannot audit such expenditures; relies on administrative certifications.
- **Delays in Reporting:** Significant reduction in CAG reports over recent years.
- **Conflict of Interest:** Appointment process influenced by the Executive, raising transparency concerns.
- **Single-Member Structure:** Debate on converting the CAG into a multi-member body for better decision-making.

Recommendations for Reform

- **Expand Audit Scope:** Include PPPs, Panchayati Raj Institutions, and government-funded societies.
- **Strengthen Appointment Process:** Create a collegium-style mechanism for CAG selection.
- **Enhance Powers:** Amend the CAG Act of 1971 to include punitive measures for non-compliance.
- **Timely Access to Information:** Mandate access to records within seven days; penalize undue delays.
- **Transparency and Independence:** Adopt international best practices to ensure independence in selection and functioning.
- **Capacity Building:** Equip CAG to audit emerging areas like SDGs and Goods and Services Tax (GST).

Conclusion:

The CAG is indispensable for ensuring financial accountability and transparency in governance. Strengthening its powers and operational framework will enhance its effectiveness, fostering public trust in fiscal administration.

Insta Links:

1. Comptroller-and-auditor-general-of-India

PYQ:

1. "The Comptroller and Auditor General (CAG) has a very vital role to play." Explain how this is reflect-

ed in the method and terms of his appointment as well as the range of powers he can exercise. (150 words, 10 marks)

Topics: Important aspects of governance, transparency and accountability, e-governance applications, models, successes, limitations, and potential; citizens charters, transparency & accountability and institutional and other measures.

2. BAIL & UNDERTRIALS

Context:

India's judicial and prison systems face challenges, with undertrial prisoners forming a major portion of inmates. Amendments under the Bharatiya Nagarik Suraksha Sanhita (BNSS) aim to streamline bail and reduce prison overcrowding, reinforcing justice and rights.

Bail and Its Types:

- **Definition:** Bail refers to the temporary release of an accused person awaiting trial, often under specified conditions.
- **Types of Bail:**
 - **Regular Bail:** Granted to those in police custody (Sections 437 & 439 of CrPC).
 - **Interim Bail:** Temporary relief until a regular or anticipatory bail hearing.
 - **Anticipatory Bail:** Pre-arrest bail under Section 438 of CrPC for individuals fearing arrest.

Modifications in BNSS Regarding Bail:

- **First-Time Offenders:** Entitled to bail after serving one-third of their maximum sentence (excluding cases with life imprisonment or death penalties).
- **Mandatory Bail:** Courts must consider bail upon charge sheet filing unless there are compelling reasons to deny it.
- **Special Provisions:** Focus on vulnerable groups like women, children, and sick individuals.
- **Timely Disposal:** Emphasis on reducing delays in bail application processes.

Recent Trends in Undertrial Prisoners in India:

- **Population Statistics:** As of 2022, undertrials constitute 75.8% of the prison population (4,34,302 out of 5,73,220 prisoners).
- **Gender Analysis:** 76.33% of incarcerated women are undertrials.
- **Duration:** 8.6% of undertrials have been imprisoned for over three years.

Source: NCRB Prison Statistics India, 2022

Key Supreme Court Judgments on Bail:

1. **Satender Kumar Antil vs. CBI (2023):** Established guidelines for timely disposal of bail applications and emphasized "bail, not jail."
2. **Hussainara Khatoon vs. State of Bihar (1979):** Ensured the right to free legal aid for fair trials.
3. **Charles Sobhraj vs. Superintendent, Central Jail, Tihar (1978):** Highlighted prisoner rights, including access to humane living conditions.
4. **Shaheen Welfare Association vs. Union of India (1996):** Allowed bail for undertrials with prolonged detention exceeding two years.
5. **Upendra Baxi vs. State of U.P. (1983):** Stressed dignity and humane treatment for inmates.

Challenges:

- **Implementation Gaps:** Delayed compliance with bail conditions despite legal provisions.
- **Economic Barriers:** Inability to afford bail amounts or arrange sureties.
- **Judicial Discretion:** Inconsistent application of bail principles across cases.
- **Administrative Delays:** Prolonged processing time for bail applications.
- **Documentation Issues:** Lack of identity proof and legal representation hampers undertrial release.
- **Social Barriers:** Marginalized individuals face systemic biases in accessing bail.

Measures:

- **Reform Legislation:** Develop comprehensive laws to streamline bail processes.
- **Focus on Rehabilitation:** Implement programs to support reintegration and reduce recidivism.
- **Open Prison Models:** Expand systems like Rajasthan's "open prisons" for eligible inmates.
- **Strengthen Legal Aid:** Enhance access to legal aid services for undertrials.
- **Streamline Processes:** Ensure jail superintendents promptly notify courts about eligible undertrials.
- **Political Will:** Prioritize reforms with sustained funding and commitment.

Insta Links:

1. Bail-is-the-rule-and-jail-is-the-exception

PYQ:

1. Discuss how emerging technologies and globalisation contribute to money laundering. Elaborate measures to tackle the problem of money laundering both at national and international levels. (UPSC-2021)

Topics: India and its neighbourhood- relations.

3. INDIA'S NEIGHBOURHOOD POLICY

Context:

India's neighbourhood policy is under scrutiny as its relations with several neighbouring countries face challenges. With a history of deep cultural and historical ties, India's approach to its neighbours must balance its growing global aspirations with regional sensitivities.

India's Neighbourhood Policy:

- **Neighbourhood First Policy:**
 - Emphasizes prioritizing relations with immediate neighbours.
 - Seeks economic integration, development partnerships, and cultural ties.
- **Gujral Doctrine:**
 - Advocates non-reciprocity and goodwill gestures toward neighbours.
 - Focuses on non-interference, respect for sovereignty, and peaceful dispute resolution.
- **Act East Policy:**
 - Connects India with Southeast Asia for trade, security, and cultural integration.
 - Strengthens ties with Myanmar, Bangladesh, and ASEAN countries.

Present Diplomatic Means to Handle Neighbours:

- **Economic Initiatives:**
 - Trade agreements and infrastructure projects like BBIN and SAARC.
 - Investments in energy, transport, and connectivity in Nepal, Bhutan, and Bangladesh.
- **Security Cooperation:**
 - Joint exercises and counter-terrorism efforts, e.g., BIMSTEC and Quad.
 - Border management agreements with Bhutan, Nepal, and Bangladesh.
- **Cultural Diplomacy:**
 - Leveraging historical and religious ties with Nepal and Sri Lanka.
 - Promoting Indian soft power through educational scholarships and cultural exchanges.
- **Aid and Assistance:**
 - Humanitarian assistance during crises (e.g., earthquake relief in Nepal).
 - Development aid to Bhutan, Maldives, and Afghanistan.

Positive Impacts:

- **Economic Growth:**
 - Enhanced trade and energy cooperation with Bangladesh and Bhutan.

- Cross-border projects like Maitree Super Thermal Power Project with Bangladesh.
- **Regional Stability:**
 - Cooperation on counter-terrorism and maritime security in the Indian Ocean region.
 - Proactive measures in disaster management strengthen goodwill.
- **Soft Power:**
 - Popularity of Indian culture, films, and educational initiatives in neighboring countries.
 - Religious tourism initiatives, such as Ramayana Circuit.

Negative Impacts:

- **Trust Deficit:**
 - Perceptions of India as a "big brother" in Nepal and Sri Lanka.
 - Accusations of interference in internal politics, e.g., Maldives and Nepal.
- **Chinese Influence:**
 - China's Belt and Road Initiative offers economic alternatives to India's neighbours.
 - Strategic encirclement through infrastructure projects like Hambantota Port in Sri Lanka.
- **Security Concerns:**
 - Rise in anti-India sentiment used for political gains in Bangladesh and Maldives.
 - Border disputes with Nepal strain bilateral ties.

Measures to Prioritize Neighbour Relations:

- **Respect Sovereignty:**
 - Avoid overt interference in domestic politics of neighboring countries.
 - Uphold the principle of non-reciprocity in bilateral agreements.
- **Strengthen Economic Ties:**
 - Enhance cross-border infrastructure and connectivity projects.
 - Promote regional trade blocs like BIMSTEC and BBIN.
- **Collaborate on Shared Challenges:**
 - Partner in addressing climate change, disaster management, and health crises.
 - Ensure equitable sharing of water resources in transboundary rivers.
- **Engage Strategically:**
 - Counterbalance Chinese influence by offering competitive investments and aid.
 - Focus on soft-power diplomacy through cultural and educational exchanges.
- **Transparent Communication:**
 - Regular summits and dialogues to address grievances and foster trust.
 - Encourage people-to-people contact to mitigate misunderstandings.

Conclusion

India’s neighbourhood policy must focus on fostering trust, mutual respect, and collaboration. Strengthening ties with its neighbours through economic, cultural, and diplomatic initiatives is crucial for regional stability and India’s global aspirations.

Insta Links:

1. Neighbourhood First Policy
2. PYQ

PYQ:

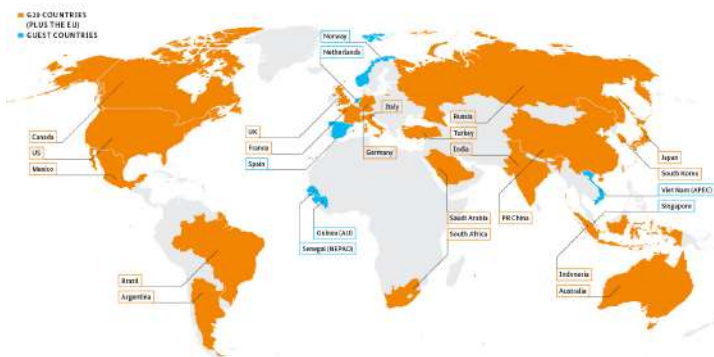
1. “China is using its economic relations and positive trade surplus as tools to develop potential military power status in Asia”. In the light of this statement, discuss its impact on India as her neighbour. (UPSC-2017)

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

4. RIO G20 SUMMIT

Context:

The G20 Rio de Janeiro Declaration focuses on tackling global challenges and crises while fostering strong, sustainable, and inclusive growth.



About G20 Overview:

- **Host Country:** Brazil
- **Theme:** “Building a Just World and a Sustainable Planet”
- **History:** Formed in 1999 to address global economic challenges; evolved into a forum for economic and social issues, representing 19 countries and two regional bodies (African Union and European Union).
- **Troika (2024):** India (2023 presidency), Brazil (2024 presidency), and South Africa (2025 presidency).
- **2025 Host:** South Africa

Major Outcomes of the Rio G20 Summit Declaration:

1. **Global Alliance Against Hunger and Poverty:**
 - **Aim:** Mobilize finance and knowl-

edge-sharing for country-led programs to fight hunger and poverty.

- **Features:** Focus on cash transfers, school feeding programs, and microfinance.
2. **Task Force on a Global Mobilization Against Climate Change (TF-CLIMA):**
 - **Aim:** Address structural barriers and foster private capital for climate action.
 - **Features:** Mainstream climate change into financial agendas and explore transparent credit rating systems.
 3. **Tropical Forest Forever Facility (TFFF):**
 - **Aim:** Conserve forests through innovative financing mechanisms.
 - **Features:** Mobilize funds to support developing countries in combating deforestation.
 4. **G20 Bioeconomy Initiative (GIB):**
 - **Aim:** Promote sustainable economic growth through bio-based innovations.
 - **Features:** Adoption of 10 voluntary principles for bioeconomy development.
 5. **Principles for Just and Inclusive Energy Transitions:**
 - **Aim:** Ensure equitable and inclusive energy transitions globally.
 - **Features:** Triple renewable energy capacity and improve energy efficiency by 2030.
 6. **Voluntary Contributions for Pandemic Preparedness:**
 - **Aim:** Strengthen global health systems and universal health coverage.
 - **Features:** Enhanced cooperation for vaccine access and local health innovation.
 7. **Roadmap for Multilateral Development Banks (MDBs):**
 - **Aim:** Reform MDBs for increased lending capacity and better resource mobilization.
 - **Features:** Capital adequacy reforms and integration with private capital.
 8. **Digital Economy and AI Governance:**
 - **Aim:** Promote responsible AI use while addressing risks.
 - **Features:** Establishment of guidelines for AI in workplaces and promoting digital inclusion.

Positives:

- **Focus on Inclusion:** Emphasis on reducing inequalities through sustainable and inclusive policies.
- **Climate Action Leadership:** Strong commitment to net-zero targets and biodiversity conservation.
- **Health and Education:** Strengthened investment in health systems and digital education.
- **Global Collaboration:** Improved coordination among G20 nations for global governance reforms.

Limitations:

- **Ambiguity in Funding:** Lack of concrete timelines or clear financial commitments for many initiatives.
- **Limited Consensus:** Divergences in national circumstances delay uniform climate action and financial reforms.
- **Exclusion of Certain Nations:** The framework still favors major economies, leaving smaller nations with limited representation.
- **Lack of Enforcement Mechanisms:** Most initiatives rely on voluntary participation without binding commitments.

Insta Links:

1. G20-new-delhi-leaders-declaration

PYQ:

1. In which one of the following groups are all the four countries members of G20? (UPSC- 2020)
 - a) Argentina, Mexico, South Africa and Turkey
 - b) Australia, Canada, Malaysia and New Zealand
 - c) Brazil, Iran, Saudi Arabia and Vietnam
 - d) Indonesia, Japan, Singapore and South Korea

Answer: a)

GENERAL STUDIES - 3

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

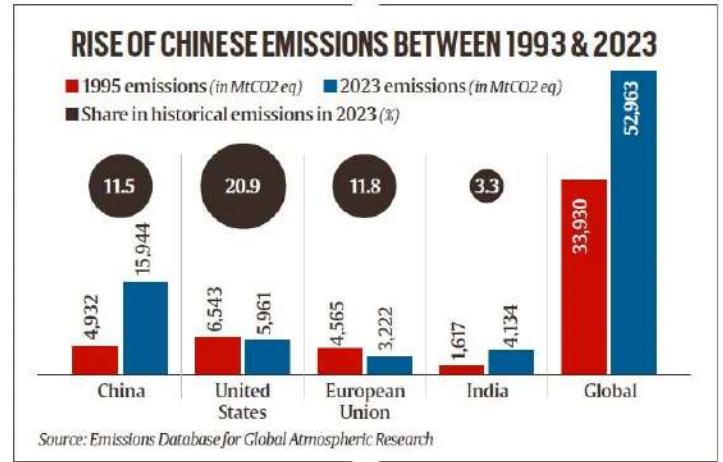
1. CHINA AND RENEWABLE ENERGY

Context:

China, the largest greenhouse gas emitter and a renewable energy leader, plays a pivotal role in global climate action. Reducing its emissions is vital but poses challenges for renewable energy supply chains and global transitions.

China's Status in Solar Power:

- **Global Leader:** China dominates over 80% of global solar panel manufacturing and 60% of wind turbine production.
- **Renewable Growth:** Added 300 GW of renewable energy capacity in 2023, nearly meeting its 1,200 GW renewable energy target six years ahead of schedule.
- **Cost Competitiveness:** Solar PV production costs in China are 10-35% lower than in India, the US, and Europe.



China Paradox:

- **Necessity of Emission Reductions:** Needs to reduce emissions by 66% by 2030 to comply with the Paris Agreement 1.5°C target.
- **Reliance on Fossil Fuels:** Despite renewables growth, coal still generates over half of China's electricity, supporting industries like solar and wind manufacturing.
- **Impact on Global Supply Chains:** Reducing emissions too rapidly could disrupt China's fossil fuel-dependent manufacturing processes, slowing renewable energy deployment globally.

Unique Advantages of China in Renewable Energy:

- **Cost Leadership:** Solar PV manufacturing costs are 10-35% lower than in India, the US, and Europe.
- **Manufacturing Dominance:** Controls over 80% of global solar panel and 60% of wind turbine production.
- **Integrated Supply Chain:** Monopoly across all steps of the solar PV supply chain, from raw materials to finished products.
- **Scale of Production:** Massive industrial scale enabling economies of scale and competitive pricing.
- **Government Support:** Proactive policies and subsidies driving renewable energy growth and exports.
- **Technological Edge:** Advanced manufacturing techniques and extensive R&D in clean energy technologies.

Impact of China's Emission Reductions and Transition to Renewables:

- **Impact on China:**
 - **Industrial Slowdown:** Rapid fossil fuel phase-out could hinder manufacturing, including renewable energy equipment.
 - **Economic Challenges:** Strain on industries heavily dependent on coal and fossil fuels.
- **Impact on India:**
 - **Supply Chain Vulnerability:** India's solar

module imports (85% from China) could face disruptions, affecting its renewable energy goals.

- **Rising Costs:** Dependence on Chinese imports makes it vulnerable to cost escalations in solar PV and wind equipment.
- **Impact on the World:**
 - **Global Renewable Targets:** Reduced Chinese production might delay the global renewable energy tripling target by 2030.
 - **Dependency Risks:** Highlights the need for diversifying supply chains and reducing over-reliance on China for critical technologies.

India's Potential as a Competitor to China:

- **Ambitious Goals:** Aims to achieve 280 GW of solar energy out of 500 GW of renewable capacity by 2030.
- **Domestic Manufacturing Push:** Current annual solar module manufacturing capacity of 15 GW, with plans to scale up.
- **Government Support:** Policies and subsidies to promote renewable energy and reduce import dependence.
- **Geographical Advantage:** High solar insolation and vast land availability for renewable energy projects.

Conclusion:

While China's emission cuts are vital for global climate goals, they pose risks to renewable energy supply chains. Diversifying production and enhancing India's manufacturing capacity are critical to reducing global dependency on China and ensuring a balanced energy transition.

Insta Links:

1. [Indias-achievements-in-renewable-energy](#)

PYQ:

1. "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. IMPACTS OF SOCIAL MEDIA ON DEMOCRACY

Context:

Social media has revolutionized communication and in-

formation dissemination globally. While it fosters democratic values by empowering voices and facilitating debates, it also poses challenges through misinformation, hate speech, and monopolistic control.

Social Media and Its Types:

- **Definition:** Social media platforms allow users to create, share, and interact with content online.
- **Types:**
 - **Social Networks:** Platforms like Facebook, LinkedIn for connections.
 - **Microblogging sites:** Platforms like X (formerly Twitter) for quick updates and news sharing.
 - **Media sharing platforms:** Instagram, YouTube for visual and video content.
 - **Discussion forums:** Reddit, Quora for topic-based discussions.

Recent Examples of Social Media Impacting Democracy:

1. **US Elections:** X and Facebook played significant roles in spreading political campaigns and misinformation during elections.
2. **Palestine conflict:** social media brought real-time updates about the situation, showcasing atrocities and fostering global awareness.
3. **Sri Lanka riots:** Lack of local content moderation on Facebook exacerbated the spread of hate speech.
4. **Farmer Protests in India:** social media amplified protests, leading to global attention and support.

Positive Impacts of Social Media on Democracy:

- **Enhanced political participation:** Empowers citizens to engage in discussions and hold governments accountable.
E.g. Youth-led campaigns during climate protests.
- **Global connectivity:** Enables sharing of ideas and real-time updates across borders.
E.g. Ukraine-Russia conflict updates mobilized international aid.
- **Amplification of Marginalized Voices:** Offers a platform for underrepresented groups to voice concerns.
E.g. #MeToo movement started global conversations about gender justice.
- **Transparency and Accountability:** Brings government actions under public scrutiny.
E.g. Social media whistleblowers exposing corruption.

Negative Impacts of Social Media on Democracy:

- **Spread of Misinformation:** Unverified content can manipulate public opinion.
E.g. Fake news during COVID-19 led to vaccine hesitancy.
- **Polarization and Echo Chambers:** Algorithms amplify like-minded content, reinforcing biases.

- E.g. Partisan political debates in the US.
- **Hate Speech and Extremism:** Platforms fail to control harmful content.
E.g. Rohingya crisis in Myanmar exacerbated by Facebook posts.
- **Monopolistic control:** Ownership by individuals or corporations affects neutrality.
E.g. Elon Musk's influence on X.
- **Censorship:** Governments can suppress dissent by manipulating platform policies.
E.g. Internet shutdowns during protests in authoritarian regimes.

Suggested measures:

- **Strengthen moderation:** Increase local-language moderators to manage hate speech and misinformation.
E.g. Facebook should hire moderators fluent in regional languages.
- **Regulate algorithms:** Make algorithms transparent to prevent the amplification of harmful content.
- **Promote decentralized platforms:** Encourage platforms like Mastodon and Bluesky to reduce monopolistic influence.
- **Legal safeguards:** Enact stringent laws to prevent misuse of social media for spreading fake news.
- **Media literacy:** Integrate information verification techniques in school curriculums.
- **Independent oversight:** Set up international bodies to monitor the neutrality of platforms.

Conclusion:

Social media is a powerful tool for democracy, amplifying voices and enabling transparency. However, its potential to harm through misinformation and monopolistic control necessitates regulation, decentralization, and education to ensure it serves democratic ideals responsibly.

Insta Links:

2. Social-Media-on-Society

PYQ:

1. What are social networking sites and what security implications do these sites present? (UPSC-2013)
2. Child cuddling is now being replaced by mobile phones. Discuss its impact on the socialization of children. (UPSC-2023)

Topics: Awareness in the fields of IT, Computers, robotics, nano-technology, bio-technology and issues relating to intellectual property rights.

3. INTELLECTUAL PROPERTY RIGHTS

Context:

The World Intellectual Property Organization (WIPO) has highlighted India's exceptional performance in its 2024 **World Intellectual Property Indicators (WIPI)** report, showcasing India as a rising leader in patents, trademarks, and industrial designs.



What are Intellectual Property Rights (IPR)?

- **Definition:** Intellectual Property Rights (IPR) protect creations of the human mind, including innovations, literary works, designs, and symbols.
- **Objectives:**
 - Promote innovation by granting creators exclusive rights.
 - Encourage fair competition while balancing public interest.
 - Protect traditional knowledge and cultural heritage.

Types of IPR:

- **Patents:** Protection for inventions meeting novelty, non-obviousness, and industrial applicability.
- **Copyrights:** Rights over artistic, literary, and creative works (e.g., books, music, software).
- **Trademarks:** Distinctive signs or symbols identifying goods/services.
- **Industrial Designs:** Aesthetic and functional designs of products.
- **Geographical Indications:** Protection for products linked to specific regions (e.g., Darjeeling Tea).
- **Trade Secrets:** Confidential business information protected against unauthorized use.

International Conventions:

- **Paris Convention (1883):** Protects industrial property internationally.
- **Berne Convention (1886):** Governs international copyright protection.
- **Patent Cooperation Treaty (1970):** Simplifies global patent application processes.
- **Budapest Treaty:** Ensures recognition of microorganism deposits in patent procedures.
- **Marrakesh Treaty:** Facilitates access to published works for visually impaired persons.

Laws Governing IPR in India:

- **Patents Act, 1970:** Governs patent filings and protection.
- **Designs Act, 2000:** Protects industrial designs.
- **Trademarks Act, 1999:** Regulates trademark registration.
- **Geographical Indications Act, 1999:** Protects GIs specific to regions.
- **Copyright Act, 1957:** Ensures protection of creative works.
- **CIPAM (Cell for IPR Promotion and Management):** Implements National IPR Policy.

India's Performance in WIPO 2024 Intellectual Property Report:

- **Patent Growth:**
 - India ranked **6th globally** with **64,480 filings** (+15.7% growth in 2023).
 - **55.2% of filings by residents**, reflecting a shift towards local innovation.
- **Trademark Filings:**
 - India ranked **4th globally**, with a **6.1% increase** in 2023.
 - **90% filings by residents**, highlighting domestic brand awareness.
- **Industrial Designs:**
 - **36.4% growth** in applications, emphasizing product innovation.
- **Patent-to-GDP Ratio:**
 - Improved from **144 (2013)** to **381 (2023)**, reflecting an innovation-driven economy.

Advantages of IPR:

- **Promotes Innovation:** IPR incentivizes creators and inventors by offering exclusive rights, motivating them to invest in developing new ideas, products, and technologies.
- **Economic Growth:** Licensing and commercialization of IPR assets generate revenue, contributing to the national and global economy.
- **Encourages Fair Competition:** Protects intellectual creations, ensuring businesses maintain unique identities and build trust in the marketplace.

- **Supports Research:** Allows researchers access to patented information, fostering further development and innovation in technology and science.
- **Cultural Preservation:** Safeguards traditional knowledge and practices, ensuring they are credited and economically benefit indigenous communities.

Government Initiatives:

- **National IPR Policy, 2016:** A comprehensive framework to streamline IPR laws and procedures, making them accessible and efficient.
- **KAPILA Program:** Focuses on creating awareness among students and faculty about IP filing processes and their benefits.
- **Startup India:** Encourages startups to innovate by providing IP support and reducing associated costs for filing patents and trademarks.
- **Atal Innovation Mission (AIM):** Promotes problem-solving skills and entrepreneurship through initiatives like Tinkering Labs and Incubation Centers.
- **Digital Modernization:** Enhances IP processes by digitizing filings, reducing processing times, and improving transparency.
- **SPRIHA Program:** Strengthens academia's role in IP awareness and research by integrating IPR education into higher learning institutions.

Issues and Disadvantages:

- **Cost Barrier:** High registration and enforcement costs deter small businesses and individuals from seeking IP protection.
- **Evergreening:** Companies misuse patents to extend monopoly rights, especially in pharmaceuticals, affecting accessibility to affordable drugs.
- **Piracy:** Despite legal protections, unauthorized use or copying of IP continues, harming the original creator's financial interests.
- **Global Inequities:** Differences in IPR laws across countries create challenges for innovators to secure consistent protection worldwide.
- **Limited Awareness:** Lack of knowledge about IPR, especially in rural areas and MSMEs, results in underutilization of IP protection benefits.

Conclusion:

India's performance in WIPO's 2024 report cements its position as a global innovation hub, reflecting a mature IP ecosystem and effective government support. Continued reforms, education, and enforcement are essential to sustain this momentum and leverage IPR for economic growth.

Insta Links:

2. WIPI-2024

PYQ:

1. With reference to the 'National Intellectual Prop-

erty Rights Policy’, consider the following statements: (UPSC-2017)

1. It reiterates India’s commitment to the Doha Development Agenda and the TRIPS Agreement.
2. Department of Industrial Policy and Promotion is the nodal agency for regulating intellectual property rights in India.

Which of the above statements is/are correct?

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

Answer: c)

2. Consider the following statements: (UPSC-2019)

1. According to the Indian Patents Act, a biological process to create a seed can be patented in India.
2. In India, there is no Intellectual Property Appellate Board.
3. Plant varieties are not eligible to be patented in India.

Which of the statements given above is/are correct?

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

Answer: c)

4. CENTRIFUGAL PROCESS & URANIUM ENRICHMENT

Context:

Iran announced plans to launch advanced centrifuges in response to a censure resolution by the UN’s International Atomic Energy Agency (IAEA), escalating tensions over its nuclear program.



About Centrifugal Process:

- **Definition:** Centrifuges spin uranium gas at high speeds to enrich uranium by increasing the concentration of the fissile isotope U-235.
- **Uses:** Low-enriched uranium (LEU) is used for nuclear reactors, while highly enriched uranium (HEU) can be used for nuclear weapons.
- **Efficiency:** Advanced centrifuges enrich uranium faster and require fewer machines compared to older designs.
- **Origins:** Iran’s centrifuge program began in the 1980s using designs and components acquired from A.Q. Khan’s proliferation network.
- **International Concerns:** The process raises fears of nuclear weapons development due to its dual-use nature.

About Uranium Enrichment:

- **Definition:** Enrichment is the process of increasing the proportion of U-235 isotope in uranium to make it suitable for use in nuclear reactors or weapons.
- **Natural Uranium Composition:** Contains 0.7% U-235 (fissile isotope) and 99.3% U-238 (non-fissile).
- **Purpose:** Enhances U-235 concentration from 0.7% to 3-5% for standard nuclear reactors (LEU) or up to 20% for specialized reactors (HALEU).
- **Fission Process:** U-235 undergoes nuclear fission to produce heat for energy generation in reactors.
- **Methods of Enrichment:** Isotope separation techniques like gas centrifuges and gaseous diffusion are commonly used.

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

5. HIGH-PERFORMANCE BUILDINGS

Context:

High-Performance Buildings (HPBs) are essential for achieving sustainable living in the face of climate change, rising urbanization, and energy demands. Designed to conserve resources, enhance energy efficiency, and withstand extreme weather, HPBs represent the future of sustainable construction and urban resilience.

High-Performance Buildings:

- **Definition:** HPBs are designed to optimize energy efficiency, reduce resource consumption, and provide resilience against unpredictable climatic conditions.
- **Need:**
 - **Carbon Emissions:** Buildings account for 28% of global energy-related emissions; in India, the sector contributes 20% of national emissions.
 - **Urbanization:** India’s urban population

is projected to reach 600 million by 2030, increasing the demand for energy-efficient infrastructure.

- **Global Goals:** Meeting the UN's goal of a 30% energy efficiency improvement in buildings by 2030 requires immediate action.
- **Integrative Design:**
 - Encourages collaboration among architects, engineers, and building owners to achieve measurable performance goals.
 - Uses **digital modeling** for predicting outcomes and refining designs before construction, ensuring operational efficiency and cost-effectiveness.
Example: Passive design strategies optimize natural sunlight and thermal mass to reduce heating and cooling needs.
- **Sustainable Materials:**
 - Prioritize materials with **low embodied carbon** and high recycled content.
 - Use low-emission materials to enhance indoor air quality by minimizing volatile organic compounds (VOCs).
Example: Indian Institute of Human Settlements (IIHS) uses lifecycle assessments to choose durable materials for its Bengaluru campus.
- **Energy Efficiency:**
 - **Passive Strategies:** Utilize natural light, building orientation, and thermal mass to minimize reliance on mechanical systems.
 - **Active Strategies:** Employ energy-efficient HVAC systems, smart technologies, and renewable energy sources to achieve net-zero energy goals.
Example: Infosys Hyderabad campus uses radiant cooling systems and daylighting controls to reduce energy use.
- **Water Conservation**
 - **Efficient Fixtures:** Low-flow faucets and dual-flush toilets conserve water.
 - **Reuse Systems:** Rainwater harvesting and wastewater recycling for irrigation and sanitation.
Example: Infosys campuses recycle 100% of wastewater using advanced treatment systems.
- **Handling Climate Risks**
 - Incorporate **climate-resilient features** like flood protection, durable materials, and renewable energy systems.
 - Ensure **passive survivability** to maintain habitability during power outages.

Example: Infosys Crescent building in Bengaluru uses advanced cooling systems and consumes far less energy than standard office buildings.

India's Initiatives for Energy-Efficient Buildings:

- **Eco-Niwās Samhita:** A code for energy-efficient residential buildings.
- **Energy Conservation Building Code (ECBC):** Sets energy performance standards for commercial buildings.
- **Energy Conservation (Amendment) Act, 2022:** Aims to improve energy efficiency across sectors.
- **NEERMAN Awards:** Recognizes innovation in energy-efficient buildings.
- **Green Rating for Integrated Habitat Assessment (GRIHA):** Promotes sustainable building practices.

Limitations:

- **Operational Neglect:** Focus on initial costs often overlooks long-term operational efficiency.
- **Diverse Typologies:** Energy efficiency varies across building types, complicating standardization.
- **Split Incentives:** Mismatch in benefits between owners and tenants reduces support for energy-efficient upgrades.
- **Loss of Indigenous Knowledge:** Overreliance on foreign technologies sidelines cost-effective local solutions.
- **Fragmented Systems:** Lack of integration between design, construction, and operations reduces overall building performance.

Conclusion:

High-Performance Buildings are indispensable for sustainable urbanization and achieving global energy goals. Despite limitations, India's initiatives are fostering progress. As practices become more widespread, HPBs can set benchmarks for future-ready, climate-resilient construction.

Insta Links:

1. [Global-energy-efficiency-alliance](#)

PYQ:

1. "Investment in infrastructure is essential for more rapid and inclusive economic growth." Discuss in the light of India's experience. (UPSC- 2021)

6. DELHI AIR POLLUTION

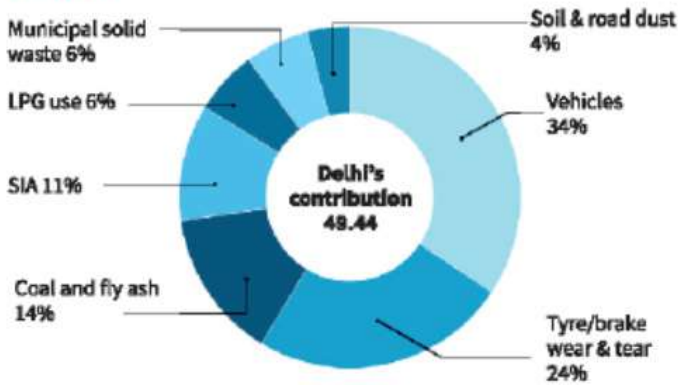
Context:

Delhi's air pollution crisis is worsening, with high levels of particulate matter (PM2.5 and PM10) and other pollutants creating severe health and environmental issues.

Delhi Air Pollution Status:

- **Air Quality Index (AQI):** Frequently hovers between 300-500, indicating “very poor” to “severe” air quality.
- **PM2.5 Dominance:** Major contributor to unhealthy AQI levels.
- **Seasonal Variation:** Worse during winters due to temperature inversion and slow wind speeds.
- **Health Impact:** Significant rise in cardio-respiratory and neurological issues.

Chart 3: Source apportionment of PM2.5 from within Delhi



Causes of air pollution in Delhi:

- **Natural causes:**
 - **Temperature inversion:** Traps pollutants close to the surface during winters.
 - **Low wind speed:** Reduces dispersion of pollutants.
 - **Dust storms:** Transport particulate matter from surrounding regions.
- **Anthropogenic causes:**
 - **Vehicle emissions:** Accounts for 58% of PM2.5 levels.
 - **Stubble burning:** Seasonal contribution from neighbouring states.
 - **Industrial emissions:** Pollutants from power plants and factories.
 - **Construction activities:** Dust and particulate emissions.
 - **Waste burning:** Unregulated burning of municipal and agricultural waste.

Consequences of Air Pollution:

1. **Health impacts:**
 - Increased risk of **cardiovascular diseases, strokes, asthma, and lung cancer.**
 - Vulnerable populations (children, elderly) disproportionately affected.
 - Cognitive decline linked to prolonged exposure.
2. **Environmental damage:**
 - Reduced visibility, soil acidification, and water pollution.
 - Impacts biodiversity, including urban greenery.

3. Economic costs:

- Healthcare expenses for pollution-related illnesses.
- Productivity loss due to poor health.

Government measures to reduce pollution:

1. Initiatives for Controlling Air Pollution

- **National Clean Air Programme (NCAP):**
 - Aims to reduce particulate matter (PM2.5 and PM10) by **20-30% by 2024** in 122 cities.
 - Focuses on long-term measures, including city-specific action plans.
- **System of Air Quality and Weather Forecasting and Research (SAFAR):**
 - Provides real-time air quality monitoring and forecasting.
 - Helps public and authorities take timely measures to combat pollution.
- **Commission for Air Quality Management (CAQM):**
 - A statutory body to monitor and control air pollution in Delhi-NCR and adjoining areas.
 - Facilitates inter-state coordination for pollution management.
- **Graded Response Action Plan (GRAP):**
 - Implements emergency measures like banning diesel generators and stopping construction activities based on AQI levels.

2. Initiatives for reducing vehicular pollution:

- **BS-VI Emission Standards:**
 - Strict emission norms for vehicles to reduce pollutants like nitrogen oxides and particulate matter.
- **National Electric Mobility Mission Plan (NEM-MP):**
 - Promotes the adoption of electric vehicles (EVs) to reduce dependency on fossil fuels.
 - Includes subsidies and incentives for EV buyers and manufacturers.
- **Promotion of Public Transport:**
 - Expansion of metro networks, introduction of e-buses, and carpooling incentives.

3. Legal and policy support:

- **Right to Pollution-Free Environment:** Declared as part of the fundamental Right to Life (Article 21) by the Supreme Court in **M.C. Mehta vs. Union of India.**

Resolving the issue of air pollution:

- **Promote public transport:** Expand metro, bus services, and electric fleets with last-mile connectivity.

- **Adopt clean energy:** Transition to **solar and wind energy** in industries and households.
- **Enforce green construction practices:** Strict monitoring of dust control and material usage.
- **Encourage behavioural changes:** Promote carpooling and ban single-use plastic.
- **Enhance monitoring and data use:** Leverage AI and IoT for real-time air quality tracking and actionable insights.

Conclusion

Delhi's air pollution crisis demands comprehensive solutions, combining government action, community participation, and sustainable practices. Only a multi-stakeholder approach can protect public health and restore environmental balance.

Insta Links:

1. Air Pollution

PYQ:

1. Describe the key points of the revised Global Air Quality Guidelines (AQGs) recently released by the World Health Organisation (WHO). How are these different from its last update in 2005? What changes in India's National Clean Air Programme are required to achieve revised standards? (UPSC-2021)

CONTENT FOR MAINS ENRICHMENT

Topic in News	Usage in Answers
1. ALL-INDIA SERVICES (CONDUCT) RULES, 1968	<p>Context: Kerala has suspended two IAS officers, N. Prashant and K. Gopalakrishnan, for alleged violations of the All-India Services (Conduct) Rules, 1968.</p> <p>The All-India Services (Conduct) Rules, 1968:</p> <ul style="list-style-type: none"> • Ethical Standards: Officers must maintain high ethics, integrity, honesty, political neutrality, accountability, and transparency. • Constitutional Supremacy: Must uphold constitutional values in all actions. • Media Engagement: Officers can communicate in public media only in bona fide discharge of duties; criticism of government policies is prohibited. • Court or Press Appeal: Cannot approach courts or press to vindicate actions under criticism without prior government approval. • Omnibus Clause: Officers shall not act in a manner deemed "unbecoming of a member of the service." • Amendments Over Time: The rules have been updated but lack explicit provisions for social media conduct.
2. CHHATTISGARH CATTLE MARKING	<p>Context: Chhattisgarh reported 231 road accident deaths from stray cattle in 2.5 years, exceeding Maoist-related fatalities. The government is addressing this with awareness drives and marking cattle horns.</p> <p>Initiatives Taken:</p> <ul style="list-style-type: none"> • Painting Cattle Horns: Stray cattle horns are painted with reflective, high-quality paint to help drivers spot them at night. • Collar Belts for Cattle: Collar belts are being tied to stray cattle to increase visibility and reduce collision risks. • Awareness Drives: Chaupals (village meetings) are organized to educate rural communities about keeping roads free of cattle.

3. STORY OF MORNING MAMA

Context: In Banda Aceh, Indonesia’s conservative province, Qurrata Ayuni defied norms to establish Morning Mama, the city’s **only woman-run café**. Orphaned by the 2004 tsunami, she built a sanctuary for women—free from smoke, noise, and prejudice—offering a safe space to work and thrive. Morning Mama empowers women, employs female baristas, and challenges gender biases, inspiring resilience and self-reliance across Aceh and beyond.

Relevance to UPSC Syllabus:

- **Essay Paper:**
 - Topics related to *Women Empowerment, Overcoming Adversity, Social Entrepreneurship, or Gender Equality.*
- **General Studies Paper I:**
 - Society: Role of women and social empowerment.
 - Diversity of the world, cultural norms, and their impact on women.
- **General Studies Paper IV:**
 - Ethics: Case study on *Resilience and Leadership* or *Ethical Entrepreneurship.*
- **Interview Stage:**
 - Questions on practical approaches to women’s empowerment, societal challenges, and entrepreneurship.

4. WOMEN IN URBAN GOVERNANCE

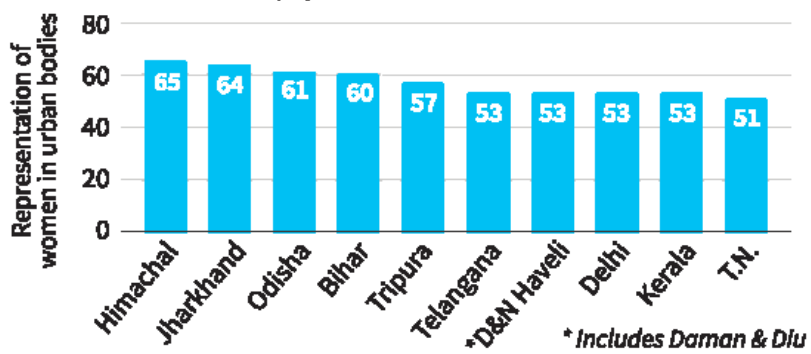
Context: The report “Roadmap for India’s City Systems Reforms,” released by the non-profit organization **Janaagraha**, highlights significant insights into urban governance in India

Key Data from the Report:

- **Women Representation:**
 - Nearly **46% of councillors** in India are women.
 - In **19 out of 21 capital cities** with active ULBs (e.g., Patna, Shimla, Ranchi, Bhubaneswar), over **60% of councillors are women.**
 - **Top 10 States** with the highest number of women councillors:

Breaking the glass ceiling

Himachal Pradesh has the highest representation of women in urban local bodies (%)



- Women’s Quota in ULBs:
 - 17 States have legislated 50% women’s reservation in ULBs, exceeding the constitutional minimum of 33%.

Usage in UPSC Exam Syllabus:

- **GS Paper II:**
 - **Constitutional Amendments:** 74th Amendment and decentralization.
 - **Governance:** Role of urban local bodies in democracy and citizen participation.
 - **Social Justice:** Women’s representation in governance and gender quota in local bodies.
- **Essay Writing:**
 - Topics on **women in governance, urban governance, and decentralization.**
- **Ethics Case Studies (GS Paper IV):**
 - Role of women leaders in local governance and participatory decision-making.

5. WEP AND URBAN COMPANY COLLABORATION

Context: NITI Aayog’s Women Entrepreneurship Platform (WEP), in collaboration with Urban Company, launched a pilot program aimed at empowering women-led MSMEs in the beauty and wellness sector.

Key Points:

- **Program Focus:** Aims to train women entrepreneurs managing salons and parlors in six areas: skilling, legal compliance, access to finance, market and business development, mentorship, and networking.
- **Objective:** Enhance sustainability and scalability of women-led MSMEs in beauty and wellness, fostering a robust entrepreneurial ecosystem.
- **Collaboration:** A significant partnership between NITI Aayog’s WEP and Urban Company to drive women’s economic empowerment.

Relevance to UPSC Syllabus:

- **GS Paper II:** Government policies and interventions for development in various sectors and their implications on the growth of women entrepreneurs.
- **GS Paper III:** Economic development, especially MSMEs’ role in employment generation and inclusive growth.
- **Essay:** Women empowerment and entrepreneurial inclusivity in India.

6. INDIA-CARICOM SUMMIT

Context: Prime Minister, during the India-CARICOM Summit held in Georgetown, Guyana, introduced a seven-pillar framework to enhance cooperation between India and Caribbean nations.

- He proposed redefining the **acronym “CARICOM”** to signify key areas of collaboration, reflecting India’s commitment to strengthening ties with the Caribbean Community.

Seven Pillars (acronym “CARICOM”) Proposed by PM:

1. **Capacity Building:**
 - Announced **1,000 IT scholarships** and proposed a regional forensic centre.
 - Expanded India’s technology centre in Belize to include all CARICOM members.
 - Online training for civil servants.
2. **Agriculture and Food Security:**
 - Shared India’s advancements in **agriculture technology** like drones.
 - Promoted **millet cultivation** for nutrition and sustainability.
3. **Renewable Energy and Climate Change:**
 - Invited CARICOM to join the **International Solar Alliance** and other global initiatives like the Coalition for Disaster Resilient Infrastructure and the Global Biofuel Alliance.
4. **Innovation and Technology:**
 - Shared India’s **digital payment systems (UPI) and eMarketplace model**.
 - Proposed collaboration on **“Stack” infrastructure** to support SMEs.
5. **Cricket and Culture:**
 - Offered **11 women’s cricket scholarships** for each CARICOM nation.
 - Proposed cultural exchanges through **Festivals of India** and **Bollywood film festivals**.
6. **Ocean Economy and Maritime Security:**
 - Positioned CARICOM as “large ocean countries” with potential for **marine resource development**.
 - Pledged support for **maritime security** against piracy and trafficking.
7. **Medicines and Healthcare:**
 - Shared affordable healthcare solutions via the **Janaushadi scheme**.
 - Proposed telehealth programs and advanced cancer treatment technologies.
 - Suggested adopting the **Indian Pharmacopeia** to reduce healthcare costs.

<h2 style="color: red;">7. NOVA, AN AI-POWERED HUMANOID</h2>	<p>Context: Nova, an AI-powered humanoid, is revolutionizing education at a government school in Punalur, Kerala. With multilingual capabilities and a focus on improving communication skills, the humanoid provides an engaging, interactive learning experience, introducing children to advanced technology.</p> <p>About Humanoid Robot:</p> <ul style="list-style-type: none"> • Nova: AI-powered humanoid designed to assist in education. • Capabilities: Speaks four languages (English, Malayalam, Hindi, Arabic) and interacts with students using GPT-4o technology. • Focus: Enhances communication skills, encourages curiosity, and familiarizes students with technology. <p>UPSC Relevance:</p> <ul style="list-style-type: none"> • GS Paper II (Governance): Role of technology in education and skill enhancement. • GS Paper III (Science & Tech): AI applications in education and social sectors. • Essay: Technology and its transformative impact on learning.
<h2 style="color: red;">8. QUOTES ON SOCIALISM</h2>	<p>Context: Chief Justice of India (CJI) Sanjiv Khanna clarified that socialism in India reflects the idea of a welfare state ensuring equality of opportunity, rather than imposing a rigid or dictatorial framework.</p> <p>Key Quotes and Statements by CJI:</p> <ul style="list-style-type: none"> • “Socialism in India means a welfare state that provides equality of opportunity for all, not a dictatorial dogma.” • “Socialism has never prevented the private sector from thriving; we have all benefited from it.” • “The idea of socialism runs through many Articles of the Constitution.” • “Socialism and secularism are integral parts of the Basic Structure of the Constitution.”

FACTS FOR PRELIMS

GS-1

Art & Culture

1. UNESCO SITES IN NEWS

Context:

Hundreds of cultural professionals, including archaeologists and academics, called on the United Nations to **safe-guard war-torn Lebanon’s heritage** in a petition ahead of a crucial UNESCO meeting.



About UNESCO Places in News:

- **Baalbek (Lebanon)**
Ancient Roman ruins located in eastern Lebanon, designated a UNESCO World Heritage Site.
- **Tyre (Lebanon)**
A Phoenician city in southern Lebanon, known for its historical harbour and Roman ruins.
- **Anjar (Lebanon)**
An early Islamic city featuring Umayyad ruins, located in the Beqaa Valley.
- **Bakhmut (Ukraine)**
Historic sites in this city face threats amid ongoing conflict with Russia.
- **Lviv (Ukraine)**
A UNESCO World Heritage city, known for its medieval and Renaissance architecture, threatened by the Ukraine-Russia conflict.

About Hague Convention, 1954:

- **Background:** Adopted under UNESCO after observing the large-scale destruction of cultural heritage during armed conflicts.
- **Objective:** To safeguard cultural property such as monuments, archaeological sites, art, manuscripts, and scientific collections.
- **Scope:** Applies during armed conflict as well as in peacetime to ensure preparation for potential threats.

- **Symbol:** Introduced the “**Blue Shield**” emblem for marking and identifying cultural heritage sites.
- **India’s Role:** India is a signatory to the convention and actively supports its implementation.

Insta Links:

1. Hoysala temples

2. INDIRA GANDHI PRIZE FOR PEACE, DISARMAMENT, AND DEVELOPMENT, 2023

Context:

The Indira Gandhi Prize for Peace, Disarmament, and Development 2023 was awarded to **classical pianist and conductor Daniel Barenboim** and **Palestinian peace activist Ali Abu Awwad**.



About Indira Gandhi Prize for Peace, Disarmament, and Development:

- **Established:** 1986 by the Indira Gandhi Memorial Trust in honour of former Prime Minister Indira Gandhi.
- **Objective:** To recognize individuals or organizations for their efforts toward peace, disarmament, and development.
- **Components:** Includes a monetary award of ₹25 lakh and a citation.
- **Categories:** Peace, Disarmament, and Development.
- **Criteria:** Awardees are selected based on sustained efforts that positively impact global challenges, benefiting human welfare and international peace.
- **Significance:** Regarded as one of the highest accolades in the field of peace and development.

Insta Links:

1. Indira-gandhi-peace-prize

History

3. ST. FRANCIS XAVIER

Context:

The decennial exposition of the sacred relics of St. Francis Xavier in Goa, a 45-day spiritual and cultural event, draws millions of pilgrims and tourists.

About St. Francis Xavier:

- **Name:** St. Francis Xavier, also called “Goencho Saib” (Lord of Goa).
- **Arrival in Goa:** Arrived in 1542 as a Spanish Jesuit missionary under the order of King John III of Portugal.
- **Mission:** To restore Christianity among Portuguese settlers in Goa.
- **Death:** Died in 1552 on Shangchuan Island, China, and his body was transported to Goa in 1554.
- **Relics:** The “incorruptible” body is housed in the Basilica of Bom Jesus, Old Goa, since 1624.
- **Legacy:** Canonized as a saint in 1622; revered globally, especially by Catholics.
- **Patronage:** Considered the patron saint of Goa and known for his miraculous relics.

Insta Links:

1. St-Francis-Xavier

4. KANHIRAPOIL MEGALITHIC SITE

Context:

Megalithic carvings unearthed at Kanhirapoil, Kerala, reveal India’s rich prehistoric heritage, offering insights into ancient rituals and cultural practices.

About Kanhirapoil megalithic site:

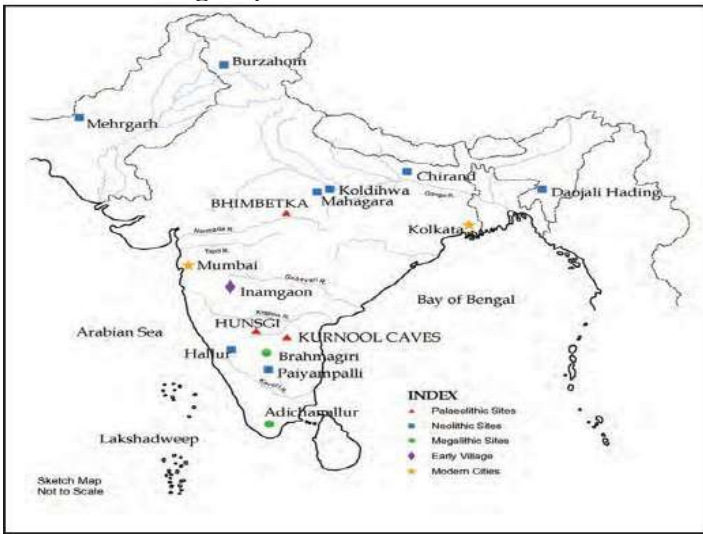
- **Discovery details:** 24 pairs of carved footprints and a human figure were found on a private property in Madikkai grama panchayat, Kasaragod, Kerala.
- **Artistic features:** Carvings include footprints of varying sizes (6–10 inches), likely representing both children and adults, with a human figure accompanied by circular pits.
- **Cultural parallels:** The findings resemble prehistoric rock art at Avalakki Pera in Udupi and other sites in Kerala, including Edakkal Caves and Erikkulam Valiyapara.

About Megaliths:

- **Definition:** Megaliths are monuments made of large stones, often serving as burial sites away from settlements.
- **Chronology:**
 - Megalithic cultures in South India date

from the **3rd B.C. to the 1st A.D.** as per Brahmagiri excavations.

- **Geographical spread:**
 - Found in Deccan (south of Godavari), Punjab Plains, Indo-Gangetic basin, Rajasthan, Gujarat, and Burzahom in Jammu and Kashmir.
- **Iron usage:**
 - A hallmark of this period, with iron tools for agriculture and weapons discovered across sites like Junapani (Vidarbha) and Adichanallur (Tamil Nadu).
- **Cultural elements:**
 - Subsistence through agriculture, hunting, and animal husbandry; rock paintings depict hunting scenes, cattle raids, and group dances.



MAP: Some Important Archaeological Sites

Insta links:

1. Doddalathur-megalithic-site

Geography

5. MĀORI GROUP

Context:

New Zealand’s parliament briefly paused as Māori Party MPs performed a haka to protest the **Treaty Principles Bill**, opposing changes to the 184-year-old Treaty of Waitangi.



About Māori Group:

- **Origin:** Indigenous Polynesian people of New Zealand (Aotearoa) who migrated from East Polynesia between 1320-1350.
- **Cultural Development:** Over centuries in isolation, the Māori developed a distinctive culture, including language, mythology, crafts, and performing arts.
- **Treaty of Waitangi:** Signed in 1840 with the British, it established coexistence but has been a source of ongoing political and economic redress.
- **Population:** Māori are the second-largest ethnic group in New Zealand, following European New Zealanders (Pākehā), with over 170,000 Māori living in Australia.

About Haka:

- **Definition:** A ceremonial dance in Māori culture expressing pride, strength, and unity.
- **Origin:** Traditionally an ancient war dance performed by **both men and women**.
- **Purpose:** Used for social functions, celebrations, welcoming guests, or as a war cry/challenge.
- **Expression:** Involves vigorous movements, rhythmic chanting, foot-stomping, and body-slapping.

Insta Links:

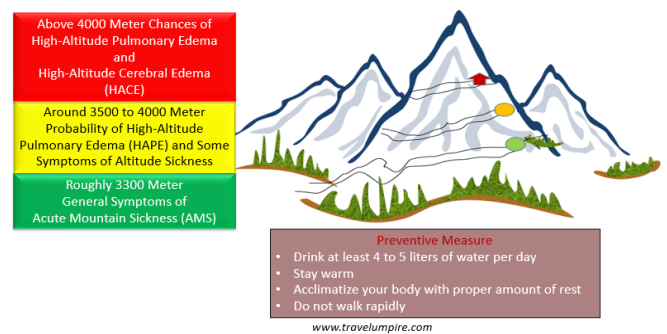
1. Maori group

6. HIGH-ALTITUDE SICKNESS

Context:

The recent death of a trekker in Uttarakhand due to respiratory failure highlights the critical dangers posed by high-altitude sickness in the Himalayas.

Types of altitude sickness according to the Height



What is High-Altitude Sickness?

- **Definition:** High-Altitude Sickness, also known as Acute Mountain Sickness (AMS), occurs when the body struggles to acclimatize to low oxygen levels at elevations above 8,000 feet (2,400 meters).
- **Types:**
 - **HAPE:** High-Altitude Pulmonary Edema (fluid in lungs).
 - **HACE:** High-Altitude Cerebral Edema (fluid in brain).
- **Symptoms:** Headache, nausea, fatigue, shortness

of breath, confusion, and, in severe cases, coma.

Why Does It Happen?

- **Low Oxygen Levels:** Reduced oxygen in the air leads to hypoxia in body tissues.
- **Physiological Strain:**
 - Hyperventilation increases breathing rate.
 - Thicker blood due to increased red blood cell production strains the heart.
- **Rapid Ascent:** Climbing too quickly without acclimatizing exacerbates risks.

Preventive and Mitigative Measures:

- **Gradual Ascent:**
 - Rest every 3-4 days at altitudes above 3,000 meters.
 - Avoid sleeping elevation increases of more than 500 meters per day.
- **Medications:**
 - **Acetazolamide:** Enhances acclimatization.
 - **Dexamethasone:** Reduces severe inflammation.
 - **Nifedipine:** Preventive for those prone to HAPE.

Insta Links:

1. Altitude-sickness

GS-2

Governance

7. GRIEVANCE REDRESSAL ASSESSMENT AND INDEX (GRAI) 2023

Context:

The Grievance Redressal Assessment and Index (GRAI) 2023 was launched by the Union Minister, Dr. Jitendra Singh, to evaluate the effectiveness of grievance redressal mechanisms across 89 Central Ministries and Departments.

About GRAI 2023 Report:

- **Department Involved:**
 - Conceptualized and designed by Department of Administrative Reforms and Public Grievances (DARPG).
- **Departments Assessed:**
 - A total of **89 Ministries/Departments** assessed.
 - **Grouped based on grievance volume:**
 - **Group A:** >10,000 grievances (28 Ministries/Departments).
 - **Group B:** 2,000–9,999 grievances

(33 Ministries/Departments).

- **Group C:** <2,000 grievances (28 Ministries/Departments).

- **Dimensions & Indicators:**

- **4 Dimensions:** Efficiency, Feedback, Domain, Organisational Commitment.
- **Indicators: 11 indicators** across the dimensions to evaluate performance.

- **Criteria:**

- Data from CPGRAMS (**January–December 2023**).

- **Growth Trends:**

- **85 out of 89** Ministries/Departments improved scores over 2022.
- **57%** exhibited incremental growth up to 25%.

Group	Composite Topper
Group A	Department of Agriculture and Farmers Welfare
Group B	O/o Comptroller & Auditor General (CAG)
Group C	Department of Investment & Public Asset Management

About Grievance Redressal Assessment and Index (GRAI):

- **Ministry:** Department of Administrative Reforms and Public Grievances (DARPG).
- **Launch Year:** 2022 (First edition released in 2023).
- **Aim:**
 - Present a comparative assessment of grievance redressal mechanisms.
 - Enhance transparency and citizen satisfaction in governance.
- **Data Source:** Centralized Public Grievance Redressal and Management System (CPGRAMS).
- **Reference Period:** January–December

Insta links:

Grievance-redressal-mechanism

8. "BHU-NEER" PORTAL

Context:

The Hon'ble Minister of Jal Shakti launched the "Bhu-Neer" portal during the ceremonial conclusion of India Water Week 2024.

About the "Bhu-Neer" Portal:

- **Ministry:** Ministry of Jal Shakti, developed by Central Ground Water Authority (CGWA) in collaboration with NIC.
- **Aim:** To regulate, manage, and monitor ground-water resources transparently and efficiently, promoting sustainability.

• **Key Features:**

- **PAN-Based Single ID System:** Simplifies user registration for all stakeholders.
- **NOC with QR Code:** Ensures verifiable and trackable compliance documentation.
- **Streamlined Processes:** Simplifies permit application for groundwater withdrawal.
- **Centralized Database:** Offers access to legal frameworks, groundwater policies, and sustainable practices at state and national levels.
- **Ease of Doing Business:** Aligns with the Prime Minister’s vision by making groundwater regulation seamless and faceless.

Insta links:

1. Ground-water-contamination

9. PM VIDYALAXMI SCHEME

Context:

On November 6, 2024, the Union Cabinet approved PM Vidyalaxmi, a **Central Sector Scheme** aimed at providing financial support to meritorious students pursuing higher education.

- The scheme offers collateral-free and guarantor-free loans to cover tuition fees and related expenses for students admitted to select quality institutions ranked by the **National Institutional Ranking Framework (NIRF)**.

About PM Vidyalaxmi Scheme:

- **Objective:** To provide financial assistance to meritorious students, eliminating financial constraints in accessing quality higher education.
- **Eligibility:** Available to students admitted to top 860 HEIs in India, as per NIRF rankings, covering over 22 lakh students annually.
- **Loan features:** Offers collateral-free, guarantor-free education loans with a user-friendly, digital application process.
- **Credit guarantee:** Government provides a 75% credit guarantee on loans up to ₹7.5 lakhs, supporting banks in loan expansion.
- **Interest subvention:** For families with an annual income up to ₹8 lakhs, a 3% interest subvention is provided on loans up to ₹10 lakhs. Full interest subvention is available to students with family incomes up to ₹4.5 lakhs under the PM-USP scheme.
- **Complementary schemes:** Supplements existing schemes like CSIS and CGFSEL under PM-USP, offering comprehensive support for technical and professional courses in approved HEIs.

How PM Vidyalaxmi Differs from Other Schemes?

- **Broader Income Coverage:** Extends benefits to

middle-income families with an income cap of ₹8 lakh, unlike earlier schemes focused on low-income groups.

- **Interest Subvention:** Offers 3% interest subvention during the moratorium period for loans up to ₹10 lakh, benefiting 1 lakh students annually.
- **Institution Eligibility:** Restricts eligible institutions to top NIRF-ranked colleges and universities, unlike earlier schemes that required NAAC and NBA accreditation.
- **Focus on Quality:** Targets high-ranking institutions, reducing the number of eligible institutions to around 860, emphasizing quality over quantity.
- **Simplified Loan Process:** Uses the Vidyalaxmi portal for streamlined loan applications, tracking, and linkage with major public and private banks.
- **Outlay and Reach:** Allocates ₹3,600 crore for the period 2024-2031, aiming to benefit 22 lakh students.

Insta Links:

1. [Higher-education-in-India](#)

10. VISION PORTAL

Context:

Union Minister launched the **VISION Portal** (Viksit Bharat Initiative for Student Innovation and Outreach Network) to democratize startup skills and innovation among underprivileged children.

About VISION Portal:

- **Launch:** Inaugurated on **November 21, 2024**.
- **Ministry:** Operates under the **Ministry of Science and Technology**.
- **Aim:**
 1. Promote **education, skill development, and innovation** for underprivileged children.
 2. Democratize access to startup ecosystems and enable inclusivity.
- **Features:**
 1. Provides **mentorship and training** for students from remote areas.
 2. Facilitates access to **startup opportunities** across sectors like IT, agriculture, and biotechnology.
 3. Aligns with India’s aspirations for Vision India 2047, promoting economic growth and sustainability.

Insta links:

1. Skill-development

International Relations

11. WORLD ANTI-DOPING AGENCY

Context:

India, in collaboration with the World Anti-Doping Agency (WADA), will host the Global Learning and Development Framework (GLDF) Results Management Training in New Delhi.

- Training aims to **standardize anti-doping procedures**, foster collaboration among nations, and strengthen the global sport integrity framework.
- This workshop is organised by the National Anti-Doping Agency (NADA) India in collaboration with WADA, with support from the **Japan Sports Agency (JSA)** and the Japan Anti-Doping Agency (JADA).

About World Anti-Doping Agency (WADA):

- **Establishment:** Formed in 1999 as an independent international agency funded equally by governments and the sports community.
- **Initiation:** Founded by the International Olympic Committee (IOC) to lead the fight against doping in sports.
- **Headquarters:** Located in Montreal, Canada.
- **Core Activities:**
 - Conducting scientific research on anti-doping.
 - Providing education and capacity-building initiatives.
 - Monitoring the implementation of the World Anti-Doping Code, which standardizes anti-doping policies globally.

Insta Links:

1. Doping-in-sports

12. UNITED NATIONS RELIEF AND WORKS AGENCY FOR PALESTINE REFUGEES

Context:

India has fulfilled its **annual contribution of USD 5 million for the year 2024-25** to the United Nations Relief and Works Agency for Palestine Refugees in the Near East (UNRWA), with the release of the second tranche of USD 2.5 million.

About United Nations Relief and Works Agency (UNRWA):

- **Establishment:** Created by the UN General Assembly in 1949.
- **Objective:** Provides relief, health, education, and social services to Palestinian refugees who lost homes and livelihoods after the 1948 Palestine

war.

- **Headquarters:** Initially based in Beirut, moved to Vienna (1978), and later to the Gaza Strip (1996) following the Oslo Accords.
- **Mandate:** Continuously renewed by the UN General Assembly; currently extended until June 30, 2026.
- **Services:** Offers education, healthcare, social relief, infrastructure improvement, microfinance, and emergency aid during conflicts.
- **Operations:** Active in Jordan, Lebanon, Syria, Gaza Strip, and West Bank (including East Jerusalem), serving over 5 million Palestinian refugees and their descendants.
- **Funding:** Primarily relies on voluntary contributions from UN Member States and receives limited UN budget support for international staffing.

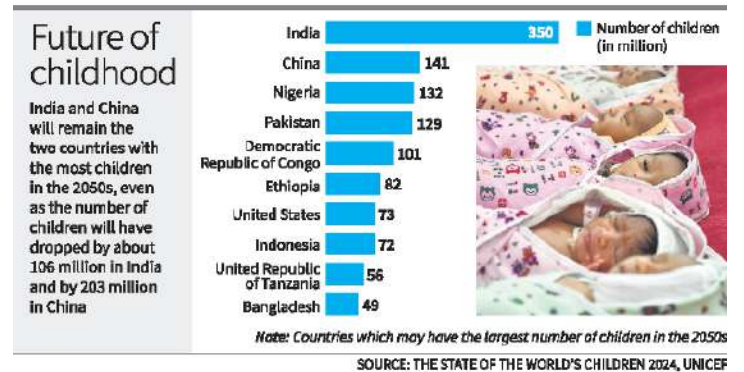
Insta Links:

2. UNRWA

13. THE STATE OF THE WORLD'S CHILDREN 2024

Context:

The State of the World's Children 2024 report by UNICEF highlights critical challenges and opportunities shaping the future of childhood globally.



About State of the World's Children Report 2024:

- **Published by:** UNICEF.
- **Theme:** Securing a future where children's rights are realized by addressing demographic transitions, climate crises, and technological advancements.
- **Key Insights:**
 - **Demographic Shifts:** Global child population stabilizes at 2.3 billion by 2050, with Africa hosting the highest proportion.
 - **Climate and Environment:** Over 1 billion children live in high-risk countries; exposure to hazards like floods, droughts, and heatwaves is expected to rise sharply.
 - **Frontier Technologies:** Emerging technologies like AI and renewable energy offer transformative potential but must be

governed responsibly to ensure equitable access and safety.

- **Education:** By 2050, 95.7% of children are projected to complete primary education, with significant improvements in gender equality in education globally.

About UNICEF:

- **Established:** 1946, post-World War II.
- **Mandate:** To protect the rights and futures of children worldwide, regardless of country.
- **Presence:** Active in 190+ countries and territories.
- **Funding:** Fully funded through voluntary contributions from individuals, governments, and private sector partners.
- **Awards:** Nobel Peace Prize (1965), Indira Gandhi Prize (1989), Princess of Asturias Award (2006).
- **Reports Published:** The State of the World's Children, among others.
- **Global Initiatives:**
 - Children's Rights and Business Principles with Save the Children.
 - Data Must Speak Initiative to improve access to education.
- **Headquarters:** New York City.

Insta Links:

1. The-battle-to-end-child-marriage/

14. INTERNATIONAL CRIMINAL COURT

Context:

The International Criminal Court issued arrest warrants for the Israeli Prime Minister and his former defense chief, as well as a Hamas leader, for alleged war crimes and crimes against humanity in the Gaza conflict.

About International Criminal Court (ICC):

- **Establishment:** Created by the Rome Statute in 1998; began operations in 2003.
- **Headquarters:** Located in The Hague, Netherlands.
- **Purpose:** Prosecutes individuals for **genocide, war crimes, crimes against humanity, and crimes of aggression.**
- **Membership:** 123 countries recognize ICC authority; key non-members include the **US, China, Russia, and India.**
- **Structure:**
 - **Judges:** 18 judges elected for non-renewable nine-year terms.
 - **Presidency:** Comprises a President and two Vice-Presidents.
 - **Registry:** Manages administrative and operational support.

• Jurisdiction:

- Covers crimes committed in **member states or by nationals** of member states.
- Operates only when national courts are unable or unwilling to act.
- Jurisdiction applies only to crimes committed after July 1, 2002.

• Relationship with UN:

- **Not a UN body** but cooperates through agreements.
- The UN Security Council can refer cases to the ICC if outside its jurisdiction.

Insta Links:

2. ICC

15. THE GLOBAL ALLIANCE AGAINST HUNGER AND POVERTY

Context:

The Global Alliance Against Hunger and Poverty was launched at the G20 Summit 2024 in Rio de Janeiro under Brazil's presidency.

- It aims to address the urgent global challenges of **hunger and poverty** exacerbated by the COVID-19 pandemic, economic disparities, conflicts, and climate change.

About Global Alliance Against Hunger and Poverty:

- **Launch:** Introduced at Brazil G20 Summit 2024.
- **Objective:** Connect countries in need with partners offering technical expertise or financial support to eradicate hunger and poverty.
- **Membership:** 81 countries (**including India**), 26 international organizations, 9 financial institutions, and 31 NGOs and philanthropic foundations.
- **Function:** Acts as a matchmaking platform for sharing proven policies, facilitating technical assistance, and mobilizing financial aid.
- **Key Initiatives (Sprints 2030):**
 1. School meals programs.
 2. Cash transfer schemes.
 3. Support for smallholder and family farming.
 4. Socio-economic inclusion initiatives.
 5. Maternal and early childhood interventions.
 6. Water access solutions.
- **Funding:** Operational costs (\$2-3 million annually) are covered by member countries and global institutions like FAO, UNICEF, and the World Bank.

Insta Links:

1. Rio-G20-summit

GS-3

Indian Economy

16. CENTRAL VALUE ADDED TAX (CENVAT) CREDIT

Context:

The Supreme Court, in a landmark judgment, has allowed telecom companies to claim Central Value Added Tax (CENVAT) credit for the installation of mobile towers and prefabricated buildings (PFBs).

About Central Value Added Tax (CENVAT):

- **What is CENVAT:**
A tax credit system allowing manufacturers or service providers to claim a set-off on excise duty or service tax paid on inputs or input services used for manufacturing or providing output services.
- **Rules Governing CENVAT:**
Implemented under the **CENVAT Credit Rules, 2004**, it replaced the Modified Value Added Tax (MODVAT). These rules define eligible goods, input services, and conditions for availing credit.
- **Criteria for CENVAT credit:**
 - **Inputs:** Goods used directly or indirectly in the production of final products.
 - **Capital goods:** Machinery or equipment integral to the manufacturing process.
 - **Output services:** Taxable services for which input credits can offset the service tax liability.
 - **Partial processing:** Credits are allowed for partially processed goods.
- **Significance of CENVAT:**
 - **Avoids double taxation:** Prevents repeated taxation on the same value addition.
 - **Simplifies taxation:** Reduces the tax burden on manufacturers and service providers.
 - **Promotes competitiveness:** Encourages businesses to reinvest savings in production and innovation.
 - **Consumer benefit:** Reduces the overall cost of goods and services by eliminating cascading taxes.

Insta Links:

1. 7-years-of-GST-balancing-tech-transformation

17. “JOBS AT YOUR DOORSTEP” REPORT

Context:

Union Minister launched the “Jobs at Your Doorstep” **report by the World Bank**.

- This report focuses on diagnostics for the employment landscape in six Indian states and highlights strategies to align education and skilling with India’s jobs agenda.

About Jobs at Your Doorstep Report:

- **Purpose:** Provides a diagnostic roadmap to align skill education with employment opportunities.
- **Coverage:** Focuses on **six STARS states** – Himachal Pradesh, Kerala, Madhya Pradesh, Maharashtra, Odisha, and Rajasthan.
- **Key Features:**
 - Addresses the skills gap by aligning school trades with district-specific industry needs.
 - Promotes a **bottom-up approach** to skill development, emphasizing local market-driven training.
 - Integrates skilling into school education for grades 9-12, ensuring future workforce readiness.
 - Envisions 50% student access to skill education by 2025 and 100% by 2030 under NEP 2020.
- **STARS Program:** Supported by the World Bank, this scheme strengthens teaching, learning, and results for skill-based education in schools.

About STARS Program: (Strengthening Teaching-Learning and Results for States)

- **Launch and Duration:** Approved in October 2020, effective from 2021 for five years, till FY 2024-25.
- **Implementation:** Managed by the Department of School Education and Literacy under the Ministry of Education, with financial assistance from the World Bank.
- **Target States:** Covers six states—Himachal Pradesh, Maharashtra, Odisha, Rajasthan, Madhya Pradesh, and Kerala—to enhance the quality of school education.
- **Alignment with NEP 2020:** Focuses on improving quality-based learning outcomes in line with the objectives of the National Education Policy 2020.
- **Scope:** Carved out from Samagra Shiksha, emphasizing components directly linked to educational quality enhancement.

Insta links:

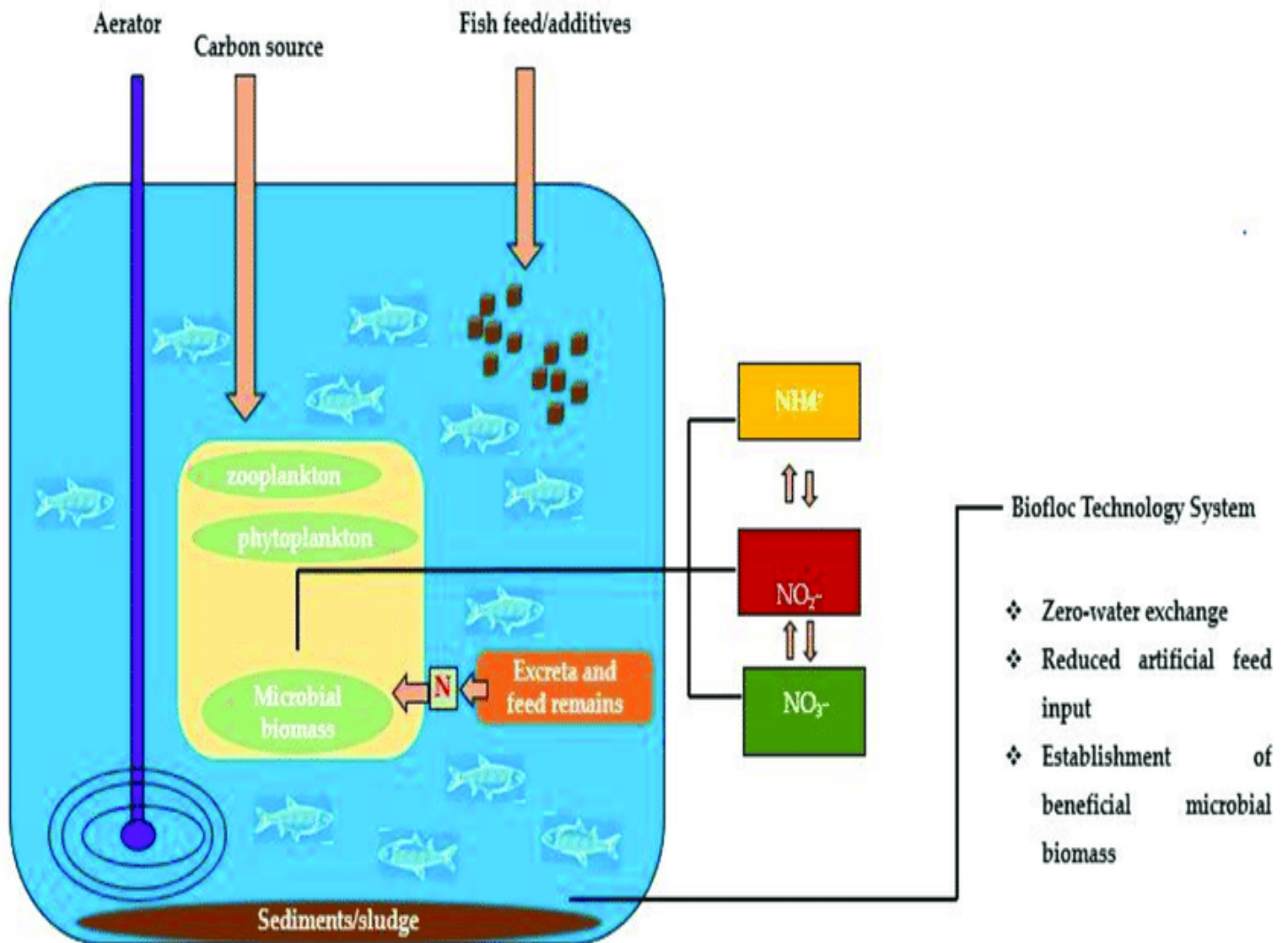
2. Stars-programme

Agriculture

18. BIOFLOC TECHNOLOGY AND RECIRCULATING AQUACULTURE SYSTEMS

Context:

India's aquaculture sector has undergone a significant transformation, becoming a global leader in fish production. Innovations like Biofloc Technology (BFT) and Recirculating Aquaculture Systems (RAS) are at the forefront of modern aquaculture practices.



About Biofloc Technology (BFT):

- **What it is:**
A closed-tank aquaculture method using beneficial bacteria to convert organic waste into microbial biomass for fish consumption.
- **How it works:**
 - Beneficial heterotrophic bacteria convert waste into biomass.
 - Aeration and microbial activity maintain water quality.
 - Reduces reliance on antibiotics and chemicals.

About Recirculating Aquaculture Systems (RAS):

- **What it is:**
A tank-based farming system that recycles water through mechanical and biological filtration.
- **How it works:**
 - Water is filtered to remove waste and pathogens.
 - Provides controlled conditions for temperature, oxygen, and water cleanliness.
 - Ensures biosecurity with reduced need for antibiotics.

Feature	BFT	RAS
Advantages	- Cost-effective feed through recycled waste.	- Controlled environment for optimal fish growth.
	- Reduces chemical and antibiotic use.	- High biosecurity with minimal disease risk.
	- Suitable for small farmers and backyard farming.	- Can be set up in areas without natural water sources.
Limitations	- Promotes freshwater conservation.	- Higher production rates compared to traditional systems.
	- High setup cost (~₹4-5 lakh).	- Expensive initial investment and operational costs.
	- Requires regular monitoring of water quality and microbial growth.	- Constant power supply needed; prone to power outages.
	- Limited success with species like Indian Major Carps in certain regions.	- Requires skilled management and maintenance of advanced systems.

Insta links:

1. FAOs-committee-on-fisheries

19. MARINE FISHERIES CENSUS 2025

Context:

On World Fisheries Day 2024, the Centre launched transformative initiatives in the fisheries sector, including the **Marine Fisheries Census 2025** and the **National Plan of Action on Sharks**

About Marine Fisheries Census:

- **History of Census:**
 - **1948-49:** Initial survey by CMFRI on village-wise fishing data.
 - **1980 Census:** Covered **2132 villages, 333,038 households, and 1442 fish landing centers.**
 - **2005 Census:** Collaboration between CMFRI and DAHDF, covering **3202 villages.**
 - **2010 Census:** Expanded coverage to **3288 villages**, emphasizing socio-economic data.
 - **2016 Census:** Joint effort by CMFRI and DAHDF, encompassing **1.2 million households.**
- **Department Involved:**
 - Conducted by CMFRI and the **Union Ministry of Fisheries**, with support from **3,500 staff** for the 2025 census.
- **Features of 2025 Census:**
 - Fully **digital** process using **mobile apps** and virtual servers for real-time data collection.
 - Covers **1.2 million households** across India’s coastline, including remote locations like **Bitra Island and Campbell Bay.**
 - Collects data on **household sizes, socio-economic status, and fisherfolk engagement.**
 - **80% faster** data processing compared to previous censuses.

National Plan of Action on Sharks (NPOA-SHARKS):

- This is a follow-up of the International Plan of Action for Sharks, a **voluntary instrument** adopted by the **Food and Agriculture Organization** of the United Nations in **1999.**
- **Scope:**
 - Conservation and sustainable management of shark populations based on an **Ecosystem Approach to Fisheries (EAF).**
 - Covers **sharks, skates, rays, and chimaeras** within India’s **EEZ**, territorial waters, and the High Seas by Indian-flagged vessels.
 - Aims to bridge research gaps, understand socio-economic implications, and manage negative impacts of shark fishing.

- **Actions:**

- Avoid promoting direct shark fishing until sufficient scientific data is available.
- Implement **monitoring, control, and surveillance (MCS)** plans promptly.
- Identify shark breeding grounds and seasons; adopt conservation measures like **seasonal bans and area closures**.
- Initiate species cataloging through **genetic coding** and develop species-specific indicators using survey data.
- Conduct **awareness drives** for stakeholders, fishermen, and associations to encourage monitoring and reporting of shark catches.
- Research value addition for sharks and explore eco-tourism opportunities like **reef shark diving**.
- Enforce the **fin-attached policy** and review **shark export policies** to encourage value-added products.
- Introduce **logbook systems**, develop a **national shark identification kit**, and build research capacity in taxonomy and data collection.
- Align with the Wild Life (Protection) Act, 1972, and promote regional cooperation for better shark conservation.

Insta Links:

1. CMFRI

Energy & Infrastructure

20. "WAVES" OTT PLATFORM

Context:

Prasar Bharati, India's public broadcaster, launched its OTT platform "Waves" during the opening ceremony of the International Film Festival of India (IFFI) 2024.

About Waves OTT Platform:

- **Developer:** Prasar Bharati, under the Ministry of Information and Broadcasting.
- **Launch Event:** Inaugurated at IFFI 2024.
- **Tagline:** "Waves – Family Entertainment Ki Nayi Lehar."
- **Languages and Content:** Offers content in 12+ languages, including Hindi, English, Tamil, Konkani, and Assamese. Features infotainment, gaming, education, and shopping.
- **Live Channels:** Streams 65 live TV channels, including "Mann Ki Baat" and Ayodhya's Prabhu Shriram Lalla Aarti.
- **Unique Features:**
 1. **Content Accessibility:** Leverages Bharat-

Net for rural connectivity.

2. **Diverse Content:** Includes films, student projects, music shows, animations, and crime thrillers.
3. **Collaborations:** Partnerships with FTII, Annapurna, ONDC, and CDAC for cybersecurity awareness.
4. **Support for Creators:** Open platform for young content creators and National Creator Awardees.

Insta links:

1. Towards-transparency-in-OTT-regulation

21. SOLAR ENERGY CORPORATION OF INDIA (SECI)

Context:

Recently, SECI has been linked to allegations of bribery involving the Adani Group, highlighting governance challenges in public sector operations.

- SECI has been granted the **Navratna status on 30th August 2024** by the Ministry of Finance.

About Solar Energy Corporation of India (SECI):

- **Establishment:** Founded on **20th September 2011** under the Ministry of New and Renewable Energy (MNRE).
- **Purpose:** Facilitates implementation of the National Solar Mission (NSM) and other renewable energy targets.
- **CPSU for Renewables:** The only **Central Public Sector Undertaking (CPSU)** dedicated to renewable energy.
- **Mission objectives:**
 1. Lead in **large-scale solar installations, plants, and parks**.
 2. Promote solar energy use in remote areas.
 3. Deploy new technologies to harness solar energy.
- **Structure:** Initially a **not-for-profit Section-25 company** under the Companies Act, 1956; later restructured in 2015 into a **Section-3 company** under the Companies Act, 2013.
- **Mandate expansion:** Broadened to cover the entire renewable energy sector, including project development and power trading.
- **Power trading role:** Trades solar power generated under MNRE schemes.

Insta links:

1. Indias-largest-solar-battery-project

Health

22. JEDDAH COMMITMENTS ON AMR

Context:

Building on the momentum from the United Nations General Assembly High-Level Meeting on AMR in September 2024, the Fourth Global High-Level Ministerial Conference on AMR was held in Jeddah, Saudi Arabia.

About Jeddah Commitments:

- **Host:** Kingdom of Saudi Arabia.
- **Theme:** *From Declaration to Implementation – Accelerating Actions Through Multisectoral Partnerships for the Containment of AMR.*
- **Aim:** Translate the UNGA Political Declaration on AMR into actionable global steps.
- **Outcomes:**
 - Adoption of **Jeddah Commitments** focusing on:
 - Strengthening governance, stewardship, and surveillance.
 - Establishing an **Independent Panel for Evidence on Action Against AMR** by 2025.
 - Promoting data sharing via GLASS AMR/AMC, ANIMUSE, and INFARM platforms.
 - Adherence to Codex Alimentarius guidelines for prudent antimicrobial use.
 - Establishment of the One Health **AMR Learning Hub** for capacity building.
 - Creation of a **Regional Antimicrobial Access and Logistics Hub** for sustainable procurement.
 - Increased emphasis on investments in research, innovation, and manufacturing of antimicrobials and diagnostics.
 - Focus on affordable and equitable access to antimicrobials, diagnostics, and vaccines, especially for LMICs.
- **Next Summit:** To be hosted by Nigeria in 2026.

Insta links:

1. Antimicrobial-resistance

Science & Technology

23. 'ONE DAY ONE GENOME' INITIATIVE

Context:

The Department of Biotechnology (DBT) and Biotechnolo-

gy Research and Innovation Council (BRIC) have launched the 'One Day One Genome' initiative to showcase India's microbial diversity.

About One Day One Genome Initiative:

- **Ministry:** Department of Biotechnology (DBT).
- **Launch:** November 9, 2024, by Shri Amitabh Kant at the National Institute of Immunology, New Delhi.
- **Aim:** To highlight India's microbial diversity and showcase its importance in environment, agriculture, and human health.
- **Coordinating Agency:** Biotechnology Research and Innovation Council (BRIC) in collaboration with the National Institute of Biomedical Genomics (NIBMG).
- **Features:**
 - Sequencing one bacterial genome daily to uncover microbial potential.
 - Provides freely accessible, annotated bacterial genome data.
 - Includes graphical summaries, infographics, and genome assembly/annotation details.
 - Supports research in environment management, agricultural development, and human health improvement.
 - Promotes public and scientific engagement to stimulate innovation and community benefits.

Insta links:

1. ODOG Initiative - SECURE

24. TECHNOLOGIES TO RESOLVE STUBBLE BURNING

Context:

Stubble burning, especially in northern India, contributes significantly to air pollution and haze during October and November. Despite government measures, the practice persists due to economic and operational challenges faced by farmers.

Stubble Burning

- Stubble burning is the deliberate setting of fire to crop residue after the harvest, predominantly in Punjab, Haryana, and Uttar Pradesh.
- Farmers burn paddy straw as a quick and economical way to prepare fields for the next crop cycle, especially for wheat sowing.

Reasons for Stubble Burning:

- **Short Crop Cycles:** Limited time between paddy harvest and wheat sowing.
- **Economic Constraints:** High cost of alternative

residue management techniques.

- **Lack of Awareness:** Farmers lack knowledge about sustainable practices.
- **Inadequate Mechanization:** Limited availability of crop residue management machinery.
- **Policy Implementation Gaps:** Ineffective enforcement of regulations and insufficient incentives.

Consequences of Stubble Burning:

- **Air Pollution:** Emission of fine particulate matter (PM2.5, PM10), CO₂, CO, and other pollutants.
- **Health Hazards:** Increased respiratory diseases and reduced visibility.
- **Soil Degradation:** Loss of essential nutrients and organic matter.
- **Climate Impact:** Contributes to greenhouse gas emissions.
- **Economic Costs:** Burden on public health systems and loss of soil fertility.

Technologies to Resolve Stubble Burning:

Large-Scale Technologies:

- **Direct Combustion:** Burns rice straw in controlled environments to generate heat for cooking and industrial purposes.
- **Pyrolysis and Gasification:** Converts rice straw into syngas or bio-oil with high heating value through controlled heating.
- **Biochar Production:** Produces biochar as a soil conditioner to enhance fertility and reduce greenhouse gas emissions.
- **Power Generation:** Uses biomass-based power plants to convert rice straw into electricity, supporting rural energy needs.
- **Pellet Production:** Compresses rice straw into compact, energy-dense pellets suitable for fuel and easy transportation.
- **Biofuels:** Processes rice straw into bioethanol, biogas, and other renewable fuels, reducing reliance on fossil fuels.
- **Paper Production:** Utilizes rice straw's high cellulose content as a sustainable raw material for pulp and paper production.

Small-Scale Technologies:

- **Composting:** Converts rice straw into nutrient-rich organic compost for agricultural use.
- **Mushroom Cultivation:** Uses rice straw as a substrate for cultivating edible mushrooms, offering a cost-effective farming option.
- **Silica Extraction:** Extracts silica particles from rice straw for use in industrial applications like construction and electronics.
- **Fodder for Ruminants:** Enhances the digestibility of rice straw for use as animal feed through physical or chemical treatments.
- **As an Adsorbent:** Applies rice straw to remove heavy metals and toxins from contaminated wa-

ter, improving water quality.

- **Soil Incorporation:** Incorporates rice straw into the soil to improve fertility, moisture retention, and aeration.

Conclusion:

Stubble burning remains a significant environmental challenge in India. Sustainable technologies and alternative uses for crop residue, coupled with robust policies and farmer awareness, can mitigate its adverse effects. A multi-stakeholder approach involving farmers, industries, and governments is essential for long-term solutions.

Insta Links:

1. Commission-for-air-quality-management

PYQ:

1. Mumbai, Delhi and Kolkata are the three mega cities of the country but the air pollution is much more serious problem in Delhi as compared to the other two. Why is this so? (UPSC- 2015)

25. ARTIFICIAL INTELLIGENCE (AI) DATA BANK

Context:

The Ministry of Science and Technology launched India's first Artificial Intelligence (AI) Data Bank at the 7th Edition of the ASSOCHAM AI Leadership Meet 2024.

About India's First Artificial Intelligence (AI) Data Bank:

- **Launched By:** Minister of Science and Technology.
- **Event:** Unveiled during the ASSOCHAM AI Leadership Meet 2024.
- **Purpose:**
 - To provide high-quality, diverse datasets for researchers, startups, and developers.
 - To enable scalable and inclusive AI solutions.
 - To enhance national security through real-time analytics of satellite, drone, and IoT data.
- **Applications:**
 - **National Security:** Strengthens real-time surveillance and cyber defense.
 - **Disaster Management:** Facilitates predictive analytics for risk mitigation.
 - **Public Service Delivery:** Optimizes gov-

ernance and citizen services.

- **Sectoral Impact:** Governance, healthcare, business, education, and space exploration.
- **Ethical Use:** Frameworks to address algorithmic bias, data privacy, and equitable access.
- **Vision:** To ensure AI bridges societal divides, empowers citizens, and drives economic growth.

Insta links:

1. Artificial-intelligence-and-robotics

Environment & Ecology

26. GLOBAL ENERGY EFFICIENCY ALLIANCE

Context:

At COP29 in Azerbaijan, the UAE announced the establishment of the Global Energy Efficiency Alliance, a major step to enhance global energy efficiency and reduce emissions.

About Global Energy Efficiency Alliance:

- **Objective:** Double annual global energy efficiency rates by 2030 and reduce carbon emissions.
- **Vision:** Aligns with the UAE Consensus from COP28 to minimize natural resource consumption.
- **Leadership:** UAE leads by sharing best practices, promoting knowledge transfer, and fostering public-private partnerships.
- **Key Actions:**
 - Encouraging investments in energy efficiency projects.
 - Developing technologies and policies to meet sustainability goals.
 - Promoting standardization across member countries.
- **Focus on Africa:** Highlights financing and technological solutions for African nations to boost energy efficiency.
- **Collaboration:** Invites global governments, organizations, and private sector leaders to unite under the alliance.

Also in news:

- **Why in news?**
 - India has recently joined the International Energy Efficiency Hub (IEEH) following approval from the Union Cabinet led by the Prime Minister.
- **About IEEH:**
 - **Global Platform:** Established in 2020 as a successor to the International Partnership for Energy Efficiency Cooperation (IPEEC), the IEEH fosters global collaboration on energy efficiency.
 - **Membership:** Comprises 16 members, including countries such as the USA, UK, China, Germany, and Japan, along with international organizations and private entities.
 - **Mission:** Promotes knowledge sharing, innovation, and best practices to advance energy efficiency globally.
 - **India's Role:**
 - Represented by Bureau of Energy Efficiency (BEE), the statutory body facilitating participation and alignment with national goals.
 - Enhances India's domestic energy efficiency initiatives through access to global expertise and resources.

Insta links:

1. State-energy-efficiency-index-SEEI-2023

27. ORIENTAL PIED HORNBILL

Context:

In Mayong village, Morigaon district, Assam, a unique community-driven conservation initiative has established an ideal habitat for the oriental pied hornbill, showcasing exemplary efforts in biodiversity conservation.

About Mayong Village Initiative:

- **Community conservation:** Villagers collectively support the nesting and breeding of oriental pied hornbills, ensuring their safety and well-being.
- **Plantation drive:** Fruit-bearing trees like banana and papaya have been planted extensively to provide natural food sources for the hornbills.
- **Sacred connection:** Hornbills are revered as harbingers of peace and prosperity, fostering a harmonious relationship with the community.

About Oriental Pied Hornbill:

- **Scientific name:** Anthracoceros albirostris
 - Two other common names for this spe-

cies are **Sunda pied hornbill** (*convexus*) and **Malaysian pied hornbill**.

- **IUCN Status:** Least concern
- **Habitat:** Found in subtropical or tropical moist lowland forests across the Himalayan foothills, northeast India, and Southeast Asia.
- **Role in Ecosystem:** Known as ‘forest engineers’ for dispersing seeds of tropical trees, contributing to forest health.
- **Diet:** Omnivorous, feeding on fruits, insects, shellfish, small reptiles, mammals, and bird eggs.
- **Characteristics:** Smallest and most common of the Asian hornbills; adaptable and widespread across its range.

Insta links:

1. Pakke-paga-hornbill-festival

28. THAI SACBROOD VIRUS

Context:

Research found that pathogen spillover from managed honey bees to wild pollinators poses a serious threat, with shared habitats facilitating disease transmission and endangering pollinator ecosystems.

About Thai Sacbrood Virus:

- **Impact on Bees:** Devastated 90% of Asiatic honeybee colonies in South India (1991–1992) and reemerged in Telangana in 2021.
- **Symptoms:** Kills larvae, preventing colony growth and reproduction.
- **Geographical Spread:** Reported in India, China, and Vietnam.
- **Host Range:** Less virulent in western honeybees but significantly threatens Asiatic honeybees (*Apis cerana indica*).
 - India hosts more than 700 bee species, including four indigenous honey bees **Asiatic honey bee (*Apis cerana indica*)**, **giant rock bee (*Apis dorsata*)**, **dwarf honey bee (*Apis florea*)**, and **the stingless bee (*sp. Trigona*)**.
 - Western honey bees were introduced in India **in 1983** to increase the country’s honey yield.
- **Transmission:** Unclear pathways; likely through shared habitats or migratory routes of managed bees.

Additional information:

- **Pathogen Spillover:** Occurs when pathogens jump from one species (e.g., managed honeybees) to another (e.g., wild pollinators) due to shared habitats.
- **Pathogen Spillover:** Happens when pathogens from wild species return to infect the original host species (e.g., managed honeybees), often in more virulent forms.

Other Diseases Impacting Butterflies:

- **Ophryocystis elektroscirrha (OE):** A protozoan parasite that infects monarch butterflies, leading to wing deformities and shortened lifespans.
- **Nosema:** A fungal disease that affects butterfly reproduction and energy levels.
- **Baculovirus:** Impacts caterpillar stages, causing high mortality rates.
- **Viral Polyhedrosis:** Targets larvae, disrupting metamorphosis and development.
- **Bacterial Infections:** Pathogens like *Serratia marcescens* can infect butterflies, particularly in captive populations.

Insta links:

1. Swallowtail-butterflies

29. GURU GHASIDAS-TAMOR PINGLA TIGER RESERVE

Context:

The Guru Ghasidas-Tamor Pingla Tiger Reserve in Chhattisgarh has been notified as **India’s 56th tiger reserve**. This milestone reflects India’s ongoing efforts to conserve tigers and their habitats under Project Tiger and the National Wildlife Plan.

About Guru Ghasidas-Tamor Pingla Tiger Reserve:

- **Location:** Spread over 2,829.38 sq. km in Chhattisgarh, encompassing Guru Ghasidas National Park and Tamor Pingla Wildlife Sanctuary.
- **Core and Buffer:** Core/critical habitat spans 2,049.2 sq. km, and the buffer covers 780.15 sq. km.
 - This makes it the **third largest tiger reserve in the country** after Nagarjunasagar-Srisailem Tiger Reserve in Andhra Pradesh and Manas Tiger Reserve in Assam.
- **Landscape Connectivity:** Links with Sanjay Dubri Tiger Reserve (Madhya Pradesh), Bandhavgarh (Madhya Pradesh), and Palamau (Jharkhand).
- **Biodiversity:** Hosts 753 species, including 230 birds, 55 mammals, and a range of insects.
- **Terrain and Climate:** Situated on the Chota Nagpur and Baghelkhand plateaus, characterized by dense forests and tropical climate.
- **Fauna:** Tigers, leopards, wolves, sloth bears, hyenas, and various deer species.
- **Significance:** This will be the **fourth** Tiger Reserve **in Chhattisgarh**, after the Udanti-Sitandhi, Achanakmar and Indravati Reserves.

50	Kamlang	-	Arunachal Pradesh	2017	671.00	112.00	783.00
51	Srivilliputhur Meqamalai	-	Tamil Nadu	2021	641.86	374.70	1016.57
52	Rongarh Vishdharji Tiger Reserve	-	Rajasthan	2022	481.9073	1019.9848	1501.8921
53	Ranipur Tiger Reserve	-	Uttar Pradesh	2022	230.31	299.0512	529.3612
54	Veerangana Durgavati Tiger Reserve	-	Madhya Pradesh	2023	1414.006	925.120	2339.12
55	Dholpur - Karauli Tiger Reserve	-	Rajasthan	2023	599.6406	-	599.6406

Source: NTCA Official website

Procedure for Notification of Tiger Reserves in India:

- **Identification of Area:** The state government identifies a potential area based on ecological significance, tiger population, and habitat quality.
- **Recommendation by NTCA:** The state government submits the proposal to the National Tiger Conservation Authority (NTCA), which assesses the ecological and conservation value of the area.
- **Approval by NTCA:** If NTCA finds the proposal viable, it grants preliminary approval and advises the state government to proceed.
- **State Government Notification:** The state government officially notifies the area as a tiger reserve under Section 38V of the Wildlife Protection Act, 1972.
- **Core and Buffer Zones: The area is divided into:**
 1. **Core Zone:** Critical habitat for tigers, with limited human activity.
 2. **Buffer Zone:** Area surrounding the core to reduce human-tiger conflict.
- **Final Approval:** The state's notification is submitted to the NTCA for final approval, completing the process.
- **Implementation:** The state government, with NTCA's technical and financial support, implements conservation measures in the notified tiger reserve.

Insta links:

1. Monitoring-tigers

30. AFRICAN PENGUIN

Context:

The African Penguin, or Cape Penguin, is now "Endangered" per the IUCN, with under 10,000 breeding pairs, mostly in South Africa. Conservationists warn of possible extinction in the wild by 2035.

About African Penguin:

- **Scientific Name:** *Spheniscus demersus*.
- **Endemic Region:** Southern Africa; primarily South Africa and Namibia.
- **Habitat:** Found within 40 km of the shore; utilizes

coastal habitats for breeding, molting, and resting.

- **Physical Features:** Streamlined body, black stripe with unique black chest spots, pink glands above eyes for temperature regulation.
- **Diet:** Primarily feeds on pelagic schooling fishlike sardines and anchovies.
- **Breeding:** Prefers burrows in guano but adapts well to artificial nests; burrows protect chicks from harsh weather.
- **Conservation Status:** Listed as **Endangered** under the IUCN Red List.
- **Threats:** Food scarcity, climate change, habitat loss, oil spills, predators, diseases, and human disturbances.

Insta Links:

1. Emperor-penguin

31. GREEN WORLD ENVIRONMENT AWARD 2024

Context:

Coal India Limited (CIL), a leading state-owned coal mining corporation, has been conferred the 'Green World Environment Award 2024' in the CSR category.

About Green World Environment Award:

- **Award Significance:** Recognizes organizations for outstanding contributions to environmental sustainability and CSR initiatives globally.
- **Recipient:** Coal India Limited in 2024 for its Thalassaemia Bal Sewa Yojna, which supports curative treatments for Thalassaemia through Bone Marrow Transplants (BMT).
 - **Support:** Thalassaemia Bal Sewa Yojna provide financial assistance of up to ₹10 lakh provided for BMT operations across 17 partner hospitals.
- **Presented by:** The Green Organisation at Kensington Palace, London.

About The Green Organisation:

- **Founded:** 1994.
- **Nature:** An independent, non-political, and non-profit group.
- **Objective:** Recognizing, rewarding, and promoting environmental and CSR best practices worldwide.
- **Initiatives:** Includes global awards like the Green World Awards to encourage sustainability and CSR excellence.

About Coal India Limited (CIL):

- **Establishment:** Formed in November 1975.
- **Largest Producer:** World's single largest coal producer and one of the largest corporate employers in India.

- CIL has **seven producing subsidiaries**.
- **Production status:**
 - Produces around 83% of India's overall coal production in India where approximately 57% of primary commercial energy is coal dependent, CIL alone meets to the tune of 40% of primary commercial energy requirement.

Insta links:

2. Goldman-environmental-prize

32. REDUCING METHANE FROM ORGANIC WASTE DECLARATION

Context:

The COP29 Presidency launched the Reducing Methane from Organic Waste Declaration, with over 30 countries committing to set sectoral targets for reducing methane emissions from organic waste.

About Reducing Methane from Organic Waste Declaration:

- **Launch:** COP29, by the Presidency in collaboration with UNEP-convened Climate and Clean Air Coalition (CCAC).
- **Signatories:** Over 30 countries, including 8 of the top 10 organic waste methane emitters.
- **Goal:** To reduce methane emissions from organic waste and meet targets in future Nationally Determined Contributions (NDCs).
- **Focus Areas:**
 1. **NDC Integration:** Inclusion of waste sector targets in climate action plans.
 2. **Regulation:** Development of policies for better waste management.
 3. **Data:** Improving data collection on waste generation and methane sources.
 4. **Finance:** Mobilizing funds for solid waste management and reduction projects.
 5. **Partnerships:** Promoting cross-country collaboration to share best practices.
- **Alignment with GMP:** Supports the 2021 Global Methane Pledge to reduce methane emissions by 30% below 2020 levels by 2030.
- **Priority Actions:**
 - Preventing organic waste generation.
 - Promoting separate waste collection.
 - Improving management of organic waste in landfills and wastewater facilities.
- **India has not joined** the COP29 Declaration on Reducing Methane from Organic Waste.

Insta Links:

2. Global-methane-tracker-2024-report

33. MEALWORM LARVAE

Context:

Researchers at the International Centre of Insect Physiology and Ecology in Kenya have discovered that the Kenyan lesser mealworm larvae can degrade polystyrene plastic, offering a potential solution to plastic pollution.

About Mealworm Larvae:

- **Species:** The Kenyan lesser mealworm is the larval form of the **Alphitobius darkling** beetle.
- **Habitat:** Found in poultry rearing houses; thrives in warm, food-rich environments.
- **Plastic Consumption:** Capable of **degrading polystyrene** with assistance from gut bacteria like Proteobacteria and Firmicutes.
- **Significance:** Shows potential for scalable solutions to plastic degradation without direct release of insects into the environment.

Plastic-Decomposing Insects:

1. **Yellow Mealworms (*Tenebrio molitor*):** Break down polystyrene with gut bacteria.
2. **Superworms (*Zophobas morio*):** Known to digest synthetic plastics like polystyrene.
3. **Kenyan Lesser Mealworm:** The first African-native species identified to degrade polystyrene.

Insta Links:

1. Plastic-Pollution

34. CLIMATE CHANGE PERFORMANCE INDEX (CCPI), 2025

Context:

The Climate Change Performance Index (CCPI) 2025 evaluates the climate protection performance of 63 countries and the EU, collectively responsible for over 90% of global greenhouse gas emissions.

About Climate Change Performance Index (CCPI), 2025:

- **Origin:** First published in 2005.
- **Published by:** Germanwatch, NewClimate Institute, and Climate Action Network.
- **Aim:** To monitor and compare climate mitigation efforts and enhance transparency in climate policies globally.
- **Indicators Used:**
 1. GHG Emissions
 2. Renewable Energy
 3. Energy Use
 4. Climate Policy
- **Top Ranking Countries:**

- No country received an overall very high rating.
- Denmark holds its 4th-place ranking in this year's CCPI and is again the highest-ranked of all countries surveyed. (No nation made it top 3)

India's Performance in CCPI 2025:

- **Overall Rank:** 10th, among the highest performers.
- Overall, **only 22 of the 64 surveyed CCPI countries** (including the EU) are on track, while 42 are lagging. India and the United Kingdom are two that are on track.
- **Category Ratings:**
 - **GHG Emissions:** High
 - **Energy Use:** High
 - **Climate Policy:** Medium
 - **Renewable Energy:** Low

Key Outcomes



- India ranks 10th in this year's CCPI, remaining among the *highest performers*
- Despite the positive developments in renewables, India remains heavily reliant on coal

- **Strengths:**
 - Rapid renewable energy expansion, particularly in large-scale solar power projects.
 - Introduction of energy efficiency standards and electric vehicle deployment.
 - Low per capita emissions and energy use despite being the most populous country.
- **Challenges:**
 - Heavy reliance on coal with slow phase-out progress.
 - Limited inclusion of sectors like transport, housing, and water in climate targets.

Insta links:

1. Climate-change-and-associated-issues

35. RANTHAMBORE TIGER RESERVE

Context:

The recent conflict between tigers and villagers near the Ranthambore Tiger Reserve in Rajasthan highlights the challenges of human-wildlife coexistence.

- **Overcrowding, habitat overlap, and inadequate management** have led to tragic incidents, emphasizing the need for balanced conservation

strategies and human safety measures.



About Ranthambore Tiger Reserve (RTR):

- **Location:** Situated at the confluence of the Aravallis and Vindhyas, near Sawai Madhopur, Rajasthan.
- **Area:** Covers 1,411 sq. km, making it one of northern India's largest tiger reserves.
- **History:** Former royal hunting grounds of Jaipur's Maharajas; designated a Project Tiger Reserve in 1973.
- **Geography:** Includes steep rocky hills, Padam Talab, Raj Bagh Talab, rivers Chambal and Banas, and the Great Boundary Fault.
- **Flora:** Tropical dry deciduous forests and thorny landscapes dominated by Dhok trees and grasslands.
- **Fauna:** Home to Bengal tigers, leopards, sloth bears, striped hyenas, marsh crocodiles, and over 250 bird species.
- **Tourism Significance:** A popular destination for wildlife enthusiasts, contributing significantly to local livelihoods.

Insta Links:

1. Project-tiger

36. PARIS AGREEMENT

Context:

Argentina, under President Javier Milei's leadership, is re-considering its commitment to the Paris Agreement, citing philosophical disagreements and a re-evaluation of its climate strategies.

About Paris Agreement:

- **Adoption:** Signed in 2015 by 195 countries to address global climate change.
- **Goals:**
 - Limit global temperature rise to well be-

low 2°C, with efforts to cap it at 1.5°C above pre-industrial levels.

- Enhance countries' abilities to adapt to climate impacts.
- Ensure nations commit to updated and ambitious Nationally Determined Contributions (NDCs) every five years.
- **Framework:** Non-binding yet cooperative, focusing on shared but differentiated responsibilities.

Withdrawal process:

- **Eligibility:** A country can withdraw after three years of the treaty's entry into force for that party (since 2016).
- **Notification:** Written communication to the UN's Office of Legal Affairs.
- **Timeline:** Withdrawal becomes effective one year after the notification is received.
- **Participation:** Until withdrawal takes effect, the country remains bound by the treaty.

Argentina's Position and Contribution to Global Warming:

- 24th largest global emitter of GHGs.
- Significant reserves of shale gas and shale oil, contributing to fossil fuel exports.
- A major agricultural producer, influencing methane emissions through livestock.

Insta Links:

2. What-is-the-Paris-agreement?

Internal Security

37. BHARAT NATIONAL CYBER SECURITY EXERCISE

Context:

The Bharat National Cyber Security Exercise (Bharat NCX 2024), aimed at strengthening India's cybersecurity resilience, was inaugurated by the National Security Council Secretariat (NSCS) in collaboration with Rashtriya Raksha University (RRU).

About Bharat National Cyber Security Exercise (Bharat NCX 2024):

- **Ministry/Organization:** Organized by National Security Council Secretariat (NSCS) in collaboration with Rashtriya Raksha University (RRU).
- **Launch Date:** November 18, 2024.
- **Aim:**
 - Enhance India's cybersecurity resilience.
 - Train cybersecurity professionals in advanced defense, incident response, and decision-making.
 - Prepare leadership to handle national-level

el cyber crises.

● **Key Features:**

- **Immersive Training:** Cyber defense and incident response training with live-fire simulations targeting IT and OT systems.
- **Strategic Decision-Making Exercise:** Simulates national-level cyber crises for senior leadership across sectors.
- **CISO's Conclave:** Brings together Chief Information Security Officers to discuss trends, government initiatives, and insights.
- **Startup Exhibition:** Showcases innovative cybersecurity solutions by Indian startups.
- **Collaborative Platforms:** Facilitates interactions between government and industry stakeholders.
- **Comprehensive Debrief:** Consolidates best practices and lessons learned at the end of the event.

Insta Links:

1. Cyber-security

Defence

38. EXERCISE POORVI PRAHAR

Context:

The Indian Armed Forces are conducting Exercise Poorvi Prahar, a tri-services joint operation in Arunachal Pradesh from November 10th to 18th, 2024.

About Exercise Poorvi Prahar:

- **Objective:** To enhance combat effectiveness and synergy across the Indian Army, Navy, and Air Force for integrated joint operations.
- **Location:** Forward areas of Arunachal Pradesh, emphasizing operational readiness in mountainous terrain.
- **Participation:** Cutting-edge military platforms including advanced fighter jets, reconnaissance aircraft, Chinook helicopters, Advanced Light Helicopters (Rudra), and M777 Ultra-Light Howitzers.
- **Technological Integration:** Utilisation of swarm drones, loitering munitions, and advanced situational awareness systems for precision strikes and enhanced flexibility.
- **Strategic Relevance:** Reinforces India's defence posture along the Eastern frontier, reflecting its capability to execute multi-domain operations across land, air, and sea.

Insta Links:

1. Military-Exercises

39. LONG-RANGE HYPERSONIC MISSILE

Context:

India successfully tested its first long-range hypersonic missile, marking a significant milestone in defence technology and joining a select group of nations capable of developing advanced hypersonic weapons.

About India's First Hypersonic Missile:

- **Features**
 - **Mach 6 Speed:** Travels six times the speed of sound, reducing enemy reaction time.
 - **Long Range:** Covers over 1,500 km for deep-strike missions.
 - **Mid-Flight Manoeuvrability:** Combines ballistic missile speed with cruise missile agility to evade defences.
 - **Multi-Payload Capacity:** Can carry conventional or nuclear warheads.
 - **Advanced Tracking:** Precision targeting ensured by cutting-edge multi-domain monitoring systems.
 - **Indigenous Design:** Fully developed by DRDO, showcasing India's self-reliance in advanced defence technology.
- **Capabilities:**
 - **Strategic Deterrence:** Enhances defence readiness and border security.
 - **Multi-Domain Use:** Adaptable for land, air, and naval platforms, including ship-targeting.
 - **Defence Evasion:** Overcomes modern missile defence systems with speed and agility.
 - **Precision Strikes:** Pinpoint targeting of critical enemy assets with minimal collateral damage.
- **Applications:** Multiple uses across Army, Navy, and Air Force; naval version aimed at destroying enemy warships with precision at long ranges.
- **Developmental Background:** Builds upon the Hypersonic Technology Demonstrator Vehicle (HSTDV) project initiated in 2019.
- **Global Context:** Positions India alongside major military powers like China, Russia, and the US in hypersonic weapon technology.

Insta Links:

Cruise-missiles-vs-Ballistic-missiles

40. ATACMS (ARMY TACTICAL MISSILE SYSTEMS)

Context: Ukraine's military used American-made ATACMS (Army Tactical Missile Systems) to strike a Russian ammunition depot in Bryansk, marking a significant devel-

opment in the Ukraine-Russia conflict.

ATACMS: The missile the US has allowed Ukraine to use against Russia



About ATACMS (Army Tactical Missile Systems):

- **Manufacturer:** Produced by Lockheed Martin, developed in the 1980s.
- **Type:** Short-range ballistic missile.
- **Range:** Up to 190 miles (300 km), depending on the model.
- **Warhead:** Carries approximately 375 pounds of explosives.
- **Launch Platforms:** Compatible with HIMARS mobile launchers and older M270 systems provided by the U.S., Britain, and Germany.
- **Purpose:** Designed to target high-value military and paramilitary facilities deep within enemy lines.
- **Flight Characteristics:** Travels higher into the atmosphere than artillery rockets and descends at high speed due to gravity.

Insta Links:

1. Russias-ukraine-war

41. RS-26 RUBEZH

Context:

In a significant escalation of the ongoing war between Russia and Ukraine, Russia reportedly used a new type of intercontinental ballistic missile (ICBM) targeting Dnipro, Ukraine.

About RS-26 Rubezh:

- **Reported Weapon:**
 - The RS-26 Rubezh, a solid-fuelled intercontinental ballistic missile.
 - Capable of carrying **multiple independently targetable re-entry vehicles (MIRVs)**.

- **Specifications:**
 - Range: **5,800 km**, classified under nuclear arms treaties as an ICBM.
 - Payload: Can carry an **800-kg nuclear warhead** or heavier conventional payloads.
- **Global Significance:**
 - First-ever reported use of an ICBM in an active conflict, primarily designed as a deterrent weapon.
 - The MIRV capability signals advanced nuclear escalation potential.

About Intercontinental Ballistic Missile (ICBM):


- **Definition:** Long-range ballistic missile primarily designed for delivering nuclear weapons.
- **Range:** Over **5,500 km**, maximum ranges between **7,000 and 16,000 km**.
- **Speed:** Exceeds **20,000 km/h**.
- **Countries with ICBMs:** Russia, United States, China, France, India, United Kingdom, Israel, North Korea.
- **India's ICBMs:**
 - **Agni V:** Solid-fuelled missile with a range of **7,000–10,000 km**.
 - **Agni VI:** Upcoming iteration with **MIRV capability** (Multiple Independently Targetable Re-entry Vehicles).

Insta links:

1. Hwasong-19
2. Minuteman-iii

MAPPING

INTERNATIONAL

Place	Why in News?
<p>1. NIGERIA NATION</p>	<p>Context: Prime Minister of India has been conferred with the ‘Grand Commander of the Order of the Niger’ Award by Nigeria, signifying strong diplomatic ties between the two nations.</p> <ul style="list-style-type: none"> • Also in news: Nigeria’s Borno state experienced severe flooding due to the collapse of the Alau Dam. <p>NOTE: “Grand Commander of the Order of Niger” is given by Nigeria nation not Niger nation.</p> 

About Nigeria:

- **Capital:** Abuja.
- **Location:** West Coast of Africa.
- **Border Nations:** **Niger**, Chad and Cameroon, Benin and Gulf of Guinea (Atlantic Ocean).
- **Major Plains:** Sokoto Plains (Northwest), Borno Plains (Northeast).
- **Highest Point:** Chappal Waddi.
- **Major Rivers:**
 - **Niger River:** Forms the Niger Delta and drains into the Gulf of Guinea.
 - **Sokoto River:** A significant tributary of the Niger.
- **Major Lake:** Lake Chad shared with Chad, Cameroon, and Niger; this freshwater lake is crucial for regional water resources.

About Alau Dam:

- **Location:** Situated on the **Ngadda River** in Borno State, Nigeria.
- **Purpose:** Built for irrigation, flood control, and water supply to Maiduguri.

Insta Links:

1. [Nigeria](#)

2. EL CAJAS NATIONAL PARK

Context: El Cajas National Park, located in the highlands of Ecuador near Cuenca, has been severely impacted by wildfires exacerbated by a prolonged and severe drought.

- The **Ecuadorian** government has **declared a 60-day national emergency to address the raging forest fires**, which threaten not only the park’s ecological integrity but also its critical water resources.



About El Cajas National Park:

- **Location:** Highlands of Ecuador, 30 km west of Cuenca in Azuay province.
- **Area:** Spans **285.44 km²** with altitudes between **3100m and 4450m**.
- **Declared:** National Park status granted on **November 5, 1996**.
- **Topography:** Features **páramo vegetation**, jagged hills, valleys, and about **270 lakes and lagoons**, with **Luspa** as the largest lake.
- **Rivers:** The **Tomebamba** and **Yanuncay** rivers originate here, contributing to the **Amazon basin**. Western drainage connects to the **Pacific Ocean**.
- **Highest Point:** Cerro Arquitectos (4450m).

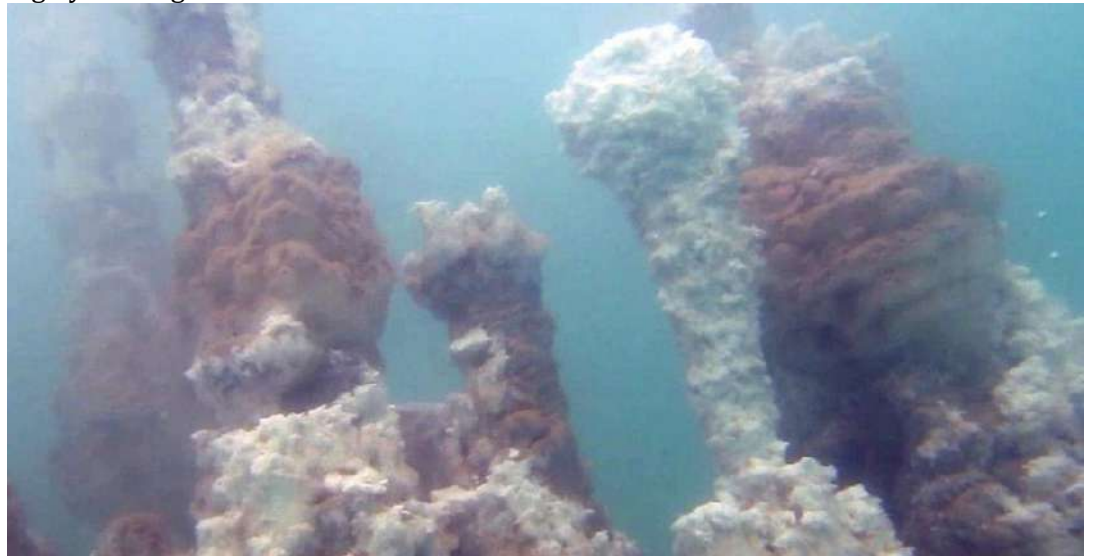
Insta Links:

1. [Ecuador](#)
2. [Places-in-news](#)

3. SALT CHIMNEYS AT DEAD SEA

Context:

Researchers from the Helmholtz Centre for Environmental Research (UFZ) discovered unique salt chimneys on the Dead Sea floor, a rare geological phenomenon formed by highly saline groundwater.



About Salt Chimneys:

- **Formation:** Created by the upward flow of hypersaline brine from aquifers, leading to the crystallization of halite upon contact with Dead Sea water.
- **Characteristics:** Structures range from 1-7 meters in height with diameters of 2-3 meters. They grow rapidly, up to several centimetres per day.
- **Significance:** Serve as early indicators of sinkhole risks, highlighting areas prone to karstification and ground collapse.
- **Applications:** Potential for autonomous mapping to predict regions at risk of sinkhole formation.



About the Dead Sea:

- **Geographical Location:** A saltwater lake between Jordan, Israel, and the West Bank.
 - Found at 430.5 meters below sea level—the lowest land-based elevation on Earth.
- **Salinity:** Contains 34.2% salinity, making it one of the saltiest water bodies globally, supporting only microorganisms and algae.
- **Physical Dimensions:** Covers 605 sq. km, 50 km long, and 15 km wide at its broadest.
- **Hydrology:** Fed by the Jordan River, with no outlet, losing water mainly through evaporation.
- **Environmental Concerns:** Rapidly declining water levels (~1 meter per year) due to evaporation and restricted tributary flow, impacting regional groundwater dynamics.

Insta Links:

- | |
|-----------------------------|
| 1. Dead sea |
|-----------------------------|

4. REYKJANES PENINSULA

Context: The Reykjanes Peninsula in Iceland witnessed a new volcanic eruption on Wednesday, marking the seventh eruption since December 2023.



About Reykjanes Peninsula:

- **Location:** Southwest Iceland; continuation of the submarine Reykjanes Ridge (part of the Mid-Atlantic Ridge).
- **Geography:** Home to volcanic systems like Reykjanes, Svartsengi, Fagradalsfjall, Krýsuvík, Brennisteinsfjöll, and Hengill; characterized by en-echelon fissure systems.
- **Tourism:** Popular attractions include volcano tours, hiking trails, and the Blue Lagoon geothermal spa.
- **Population:** Around 27,829 (2020); largest settlement is Reykjanesbær, created by merging Keflavík, Njarðvík, and Hafnir.
- **Economy:** Strong fishing industry centered in Grindavík.

Insta Links:

- | |
|----------------------------|
| 1. Volcano |
|----------------------------|

5. CAYIRHAN COAL MINE

Context:

Nearly 500 miners have locked themselves in the Cayirhan coal mine near Ankara, Turkiye, protesting the privatization of the mine and associated thermal power plant.



About Cayirhan Mine:

- **Location:** Situated on the outskirts of Ankara, in Ankara Province, Turkiye.
- **Grade of Coal:** Produces lignite, a low-grade coal primarily used for power generation.
- **Significance:**
 - Supplies the adjacent 620 MW Cayirhan coal-fired power station.
 - Integral to Turkiye’s energy production and local employment.
 - Subject of environmental and economic scrutiny due to proposed extensions and concerns over inefficiency and pollution.

Insta Links:

1. [Coal Mine](#)

INDIAN

Place	Why in News?
<p>6. WILLINGDON ISLAND</p>	<p>Context: Willingdon Island, built in the 1920s, has lost prominence since container operations moved to Vallarpadam. Stakeholders seek revival through tourism, commerce, and logistics, preserving its heritage while boosting opportunities.</p>

About Willingdon Island:

- **Historical Significance:** Constructed in the 1920s, named after Viceroy Lord Willingdon, and served as a vital port hub for Cochin.
 - A man-made marvel built in the **1920s by Sir Robert Bristow**, was once the nucleus of port-related activities **in Kochi**.
- It is also home to **the Kochi Naval Base** of the Indian Navy, the Central Institute of Fisheries Technology and the Port of Kochi.
- **Decline:** Operations reduced post-2011 when the container terminal shifted to Vallarpadam under a build-operate-transfer model.
- **Potential:** Ideal for coastal and defence cargo handling, cold storage, godown networks, and container freight stations.
- **Tourism Appeal:** Waterfront location suitable for tourism activities such as cruise operations, luxury yachts, water sports, and wellness retreats.
- **Challenges:** Rigid land lease policies and lack of infrastructural upgrades, including transportation and logistics, hinder development.

Insta Links:

- | |
|----------------------------------------------|
| 1. Renovation-of-cochin-port |
|----------------------------------------------|

7. PANCHACHULI MOUNTAIN RANGE

Context: Uttarakhand’s Pithoragarh faces environmental degradation as tourism and emissions accelerate glacier melt in the Panchachuli range.



About Panchachuli Mountain Range:

- **Group of Peaks:** Comprises five snow-capped peaks, forming a part of the **Kumaon Himalayas** in **Uttarakhand**, India.
- **Altitude Range:** Peaks rise from 6,334 m (20,781 ft) to 6,904 m (22,651 ft), with Panchchuli II being the tallest.
- **Geographical Significance:** Lies at the watershed between the Gori and Dar-maganga valleys, near Munsiyari, and on the Gori Ganga-Lassar Yankti divide.
- **Cultural Legend:** Named after the Pandavas’ “Five Chulis” (cooking hearths) from Indian mythology.
- **First Ascent:** Panchchuli II was first scaled by an Indo-Tibetan Border Police (ITBP) team led by Mahendra Singh on May 26, 1973.
- **Tourism Impact:** Located 138 km from Pithoragarh, the peaks attract trekkers and pilgrims but face environmental degradation due to human activities.

Insta Links:

- | |
|-------------------------------------|
| 2. Dhauladhar-hills |
|-------------------------------------|

8. ASHTAMUDI LAKE

Context:

Kerala's Ashtamudi Lake, a Ramsar site, faces ecological threats from pollution and habitat degradation, with recent fish deaths from algal blooms endangering biodiversity and local livelihoods.

Under threat

Sewage discharged by industries and houseboats have severely polluted the lake



More about news:

- **Issues:**
 - **Pollution:** Sewage discharge, plastic dumping, and illegal waste disposal are rampant.
 - **Encroachments:** Illegal constructions block water flow and degrade habitats.
 - **Microplastics:** High levels of pollution detected in fish, shellfish, and sediments, impacting the aquatic ecosystem.
 - **Water Hyacinth:** Spread of invasive plants limits fishing activities.
- **Algal Bloom Impact:**
 - Overloading of nutrients causes oxygen depletion, suffocating aquatic species.
 - Streptococci and E. coli contamination points to severe sewage pollution.
 - Leads to significant economic losses for fishers and cage farmers.

About Ashtamudi Lake:

- **Location:** Situated in Kollam district, Kerala; named for its eight interconnected arms ("Ashtamudi").
- **Significance:**
 - Second-largest Lake in Kerala.
 - Designated as a Ramsar Wetland of International Importance in 2002
 - Major source of livelihood for local fishers.
- **Hydrology:** Fed by the Kallada River, connects to the Arabian Sea through the Neendakara estuary.
- **Historical Importance:** A key port city during the 14th century; noted in the travel records of Moroccan explorer Ibn Battuta.
- **Biodiversity:** Rich in mangrove species, including endangered ones like *Syzygium travancoricum* and *Calamus rotang*.

Insta links:

1. [Vembanad-and-Ashtamudi-lake](#)