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VIDHVATH IAS KAS ACADEMY & STUDY CENTRE

DAILY CURRENT AFFAIRS

FOR UPSC CIVIL SERVICE EXAMINATION

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1. FRLD Allocates $21 Million to Nepal for Climate Recovery

Key Highlights & Summary

- **Pioneering Grant Disbursement:** The UN's Fund for Responding to Loss and Damage (FRLD) approved $21.6 million for Nepal to address damages caused by severe August floods along the Bhotekoshi-Trishuli-Narayani river systems.
- **Historic Milestone:** This marks the first time since its establishment in 2022 that the FRLD has earmarked country-specific funds to remedy climate-induced damages.
- **Resource Mismatch:** The allocated amount is less than 0.5% of Nepal's estimated $5 billion recovery cost, highlighting the gap between global climate pledges and ground reality.
- **Funding Breakdown:** The funding includes $1.6 million in oversight fees for implementing partner agencies monitoring project execution.
- **Disbursement Challenges:** Money will be released only after Nepal navigates bureaucratic project proposals, risking critical delays during relief efforts.
- **Disproportionate Impact:** Least Developed Countries (LDCs) like Nepal contribute negligibly to global greenhouse gas emissions yet bear extreme, escalating climate risks.

Essential Definitions

- **Loss and Damage (L&D):** The unavoidable and irreversible economic and non-economic impacts of climate change that cannot be overcome by mitigation or adaptation measures.
- **Fund for Responding to Loss and Damage (FRLD):** A dedicated multilateral financial mechanism established under the UNFCCC to aid vulnerable developing nations affected by climate disasters.
- **Non-Economic Loss:** Climate-induced loss of lives, cultural heritage, land, biodiversity, and local community displacement that cannot be easily quantified in financial terms.



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Legal and Constitutional Framework

- **UNFCCC Provisions:** Established at COP27 (Sharm el-Sheikh, 2022) and operationalized at COP28 (Dubai, 2023) as an operating entity under the Financial Mechanism of the UNFCCC.
- **Paris Agreement Article 8:** Formally anchors the necessity of averting, minimizing, and addressing loss and damage associated with climate change impacts.
- **No Liability or Compensation Clause:** Paragraph 51 of Decision 1/CP.21 specifies that Article 8 does not provide a basis for legal liability or financial compensation, serving as a diplomatic compromise between developed and developing nations.
- **Constitutional Rights (India & Vulnerable Nations):** Aligns with Article 21 (Right to Life and Healthy Environment) as recognized by the Supreme Court of India in the *M.K. Ranjitsinh* case (2024).

Conclusion

The FRLD's allocation to Nepal marks a milestone for climate justice. However, procedural delays, voluntary donor models, and inadequate funds highlight the urgent need for direct, fast-track, grant-based financing to protect vulnerable communities.

UPSC Relevance

- **GS Paper II:** International Treaties & Agreements, Bilateral & Global Groupings (UNFCCC, COP outcomes).
- **GS Paper III:** Environmental Degradation, Disaster Management, Climate Change Mitigation vs. Adaptation.
- **Key Concepts:** Common But Differentiated Responsibilities and Respective Capabilities (CBDR-RC), Climate Justice, Global South Advocacy.

2. Classical Text *Thirukkural* to Take Centre Stage at Kashi Tamil Sangamam

Key Highlights & Summary

- **Fifth Edition Announced:** The 5th edition of Kashi Tamil Sangamam will be held from November 28 to December 12, focusing on the theme *'Thirukkural Payilvom - Thirukkural Abhyas Karen'* (Let's learn *Thirukkural*).
- **Civilizational Linkages:** Organized under the government's *Ek Bharat Shreshtha Bharat* initiative, the event aims to celebrate and reaffirm the age-old cultural and spiritual bonds between Tamil Nadu and Kashi (Varanasi).
- **Delegation and Itinerary:** Around 1,400 participants from Tamil Nadu across seven diverse categories (students, teachers, artisans, farmers, etc.) will undertake an 8-day journey covering Varanasi, Prayagraj, and Ayodhya.
- **Youth Engagement & Academic Outreach:** A nationwide student engagement initiative involving 1,000 higher education institutions, as well as school sessions by National Book Trust and Rashtriya e-Pustakalaya, will promote *Thirukkural* across disciplines.
- **Organizing Bodies:** The event is organized by the Union Ministry of Education in collaboration with IIT-Madras, Banaras Hindu University (BHU), Central Institute of Classical Tamil (CICT), and the Uttar Pradesh government.
- **Digital & Cultural Integration:** The initiative utilizes technology, interactive school sessions, quizzes, and orientation modules by Tamil Nadu scholars to make classical wisdom accessible across India.



Essential Definitions

- ***Thirukkural*:** A classic Tamil text authored by the poet-saint Thiruvalluvar, comprising 1,330 couplets (kurals) divided into three parts: *Aram* (Virtue/Dharma), *Porul* (Wealth/Artha), and *Inbam* (Love/Kama).
- ***Ek Bharat Shreshtha Bharat*:** A flagship initiative launched by the Government of India in 2015 to enhance interaction and promote mutual understanding between people of different States and UTs through language, culture, and traditions.

- **Sangam Literature:** The ancient Tamil literature produced during the Sangam period (c. 3rd century BCE to 3rd century CE), serving as a foundation of South Indian historical and literary heritage.

Legal and Constitutional Framework

- **Article 29(1) of the Constitution:** Guarantees citizens residing in any part of India having a distinct language, script, or culture the fundamental right to conserve the same.
- **Article 51A(f) (Fundamental Duties):** Mandates that every citizen of India shall value and preserve the rich heritage of the country's composite culture.
- **National Education Policy (NEP) 2020:** Emphasizes the integration of Indian Knowledge Systems (IKS), promotion of classical languages, and multilingual education to foster national integration.

Conclusion

The integration of *Thirukkural* into the Kashi Tamil Sangamam exemplifies the spirit of national unity and cultural continuity. By bridging northern and southern traditions through classical wisdom, the initiative strengthens India's soft power and promotes a cohesive composite culture.

UPSC Relevance

- **GS Paper I:** Indian Culture & Heritage (Classical Literature, Sangam Era, Art forms, and Salient aspects of Diversity of India).
- **GS Paper II:** Government Policies & Interventions for National Integration (*Ek Bharat Shreshtha Bharat*, NEP 2020 Implementation).
- **Key Concepts:** Indian Knowledge Systems (IKS), Cultural Synthesis, Composite Culture, Classical Language & Literature Promotion.

3. ITBP Confirms Ongoing Face-Off with China in Arunachal Pradesh

Key Highlights & Summary

- **Official Confirmation:** Indo-Tibetan Border Police (ITBP) Director-General Shatrujeet Kapur confirmed ongoing border stand-offs between Indian and Chinese troops at multiple locations in Arunachal Pradesh.
- **Specific Flashpoint:** A major confrontation continues at Asaphila near Taksing in Arunachal Pradesh, where People's Liberation Army (PLA) troops pitched tents 6 km to 7 km inside India's perception of the Line of Actual Control (LAC).
- **Escalation Timeline:** This marks the first official confirmation of sustained high-altitude stand-offs along the eastern sector of the LAC that began around late July.
- **Active Deployment:** ITBP commandos and frontline units have been actively engaged in counter-tactical deployments to hold positions along the border.
- **Strategic Vulnerability:** The incident underscores persistent operational challenges and differing perceptions of the border along the Eastern Sector of the Sino-Indian boundary.
- **Platform Announcement:** The statement was made during the *Himveer Samman Samaroah*, an annual felicitation ceremony for ITBP personnel held in Alwar, Rajasthan.

Essential Definitions

- **Line of Actual Control (LAC):** The de facto border demarcation that separates Indian-controlled territory from Chinese-controlled territory, divided into Western (Ladakh), Middle (Himachal Pradesh/Uttarakhand), and Eastern (Arunachal Pradesh/Sikkim) sectors.
- **McMahon Line:** The 890 km boundary line drawn during the 1914 Simla Convention between British India and Tibet, which India recognizes as its legal border in Arunachal Pradesh, but China rejects.
- **Indo-Tibetan Border Police (ITBP):** A specialized Central Armed Police Force (CAPF) raised on October 24, 1962, under the Ministry of Home Affairs, responsible for guarding the 3,488 km India-China border.

Legal and Constitutional Framework

- **Indo-Tibetan Border Police Force Act, 1992:** Parliament enacted this law (Act No. 35 of 1992) to regulate the constitution, superintendence, and command of the ITBP for securing India's northern borders.
- **Seventh Schedule (Union List):** Entry 1 (Defense of India) and Entry 2 (Armed forces/CAPFs) empower the Union Parliament to legislate on border security and force deployment.
- **Border Management Directives:** Operated under the principle of "One Border, One Border Guarding Force," assigning primary responsibility for the Sino-Indian border to the ITBP alongside the Indian Army.

Conclusion

The recurring confrontations in Arunachal Pradesh highlight the fragile status of peace along the LAC. Strengthening border infrastructure, maintaining operational readiness, and resolving overlapping border perceptions through formal diplomatic protocols remain crucial for strategic stability.

UPSC Relevance

- **GS Paper II:** India and its Neighborhood-Relations, Bilateral Treaties, and Dispute Resolution Mechanisms.
- **GS Paper III:** Security Challenges and Their Management in Border Areas, Role of Central Armed Police Forces (CAPFs).
- **Key Concepts:** Difference between LAC and McMahon Line, Border Infrastructure Development, Integrated Border Management.

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4. Autonomy of Prasar Bharati and Public Service Broadcasting in India

Key Highlights & Summary

- **Unfulfilled Promise of Autonomy:** Despite promises to model Prasar Bharati after the British Broadcasting Corporation (BBC), it remains heavily under executive influence and acts as a state organ rather than an independent public service broadcaster.
- **Historical Evolution:** First conceptualized during Nehru’s era, the demand for broadcasting autonomy grew after the 1975 Emergency, leading to the B.G. Verghese Committee recommendations and the eventual passage of the Prasar Bharati Act, 1990.

- **Institutional Crippling:** Key statutory provisions designed to ensure oversight and impartiality, such as the 22-member Parliamentary Committee (Section 13) and the Broadcasting Council (Sections 14 and 15), have never been operationalized.
- **Financial and Personnel Control:** Prasar Bharati lacks financial independence and asset ownership, relying entirely on Ministry funding while operational control continues under Indian Information Service (IIS) officers.
- **Structural Imbalance:** Manpower audits reveal an engineering-heavy workforce (nearly 50%) with less than 20% dedicated to content creation, compared to the BBC's 70% content staff, creating a transmission machine rather than a news-driven broadcaster.
- **Judicial Directives Ignored:** The landmark 1995 Supreme Court judgment declaring airwaves as public property remains unfulfilled due to a persistent lack of political will across successive administrations.



Essential Definitions

- **Public Service Broadcasting:** Broadcasters created to inform, educate, and entertain every citizen independently, free from both commercial pressures and government control.
- **Airwaves as Public Property:** A legal doctrine established by the Judiciary stating that electromagnetic frequencies belong to the public and must be managed by an autonomous authority for public good.
- **Prasar Bharati:** India's statutory autonomous public service broadcaster, established under the Prasar Bharati Act, 1990, comprising All India Radio (Akashvani) and Doordarshan.

Legal and Constitutional Framework

- **Article 19(1)(a) of the Constitution:** Guarantees freedom of speech and expression, which inherently includes the citizen's right to receive objective, fair, and unmanipulated information through public media.
- **Prasar Bharati Act, 1990 (Section 12):** Enshrines the duty to safeguard citizens' rights to be informed freely, truthfully, and objectively without advocating any official ideology or government opinion.
- **Unimplemented Statutory Safeguards:** Section 13 (Parliamentary Oversight Committee), Sections 14–15 (Broadcasting Council for public grievance redressal), and Section 10 (Independent Recruitment Board) remain dormant.
- **Supreme Court Precedent:** *Secretary, Ministry of Information & Broadcasting v. CAB (1995)* held that airwaves cannot be monopolized by the government and directed the creation of an independent autonomous authority.

Conclusion

Prasar Bharati's failure to achieve true structural and editorial independence stems from executive resistance and non-implementation of statutory checks. Restructuring the Board, activating oversight bodies, and securing non-partisan funding are vital steps toward transforming it into a genuine public broadcaster.

UPSC Relevance

- **GS Paper II:** Statutory, Regulatory and Quasi-judicial Bodies; Executive & Judiciary Interactions; Important Aspects of Governance and Transparency.
- **GS Paper III:** Role of Media in Internal Security; Communication Networks and Public Information Infrastructure.
- **Key Concepts:** Freedom of Speech (Article 19(1)(a)), Public Property Doctrine, Chanda Committee (1966), B.G. Verghese Committee (1978), Airwaves Monopoly Judgment.

5. Microfoundations vs. Macro-Structures: Keynesian Analysis of Monetary Policy and Economic Instability

Key Highlights & Summary

- **Microfoundations Paradigm:** Mainstream models by Robert Hall and Michael Woodford base macroeconomics on individual choices, using inter-temporal consumption and interest rate smoothing to guide neutral central bank policies.
- **Keynesian Critique:** John Maynard Keynes argued aggregate economic behavior cannot be understood as the mere sum of individual actions, as individual savings do not automatically convert into business investment.
- **Investment and Income Dynamics:** Keynesian economics asserts that aggregate income, rather than interest rates, equates savings and investment, placing corporate profit expectations at the center of economic growth.
- **Drivers of Instability:** Economic booms and busts are amplified by herd behavior and subjective business expectations under uncertainty, as seen in the 2008 financial crisis and contemporary AI stock market speculation.
- **Structural and Class Analysis:** Heterodox economics highlights that capital ownership is concentrated in a specific class, meaning unregulated market mechanisms often undermine broader social welfare.
- **Alberta Referendum Outcome:** In international developments, Alberta voters decisively rejected a secessionist path, with nearly 75% voting to remain within Canada and ending immediate separatist uncertainty in the oil-rich province.

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Essential Definitions

- **Microfoundations of Macroeconomics:** A mainstream economic approach that models aggregate macroeconomic variables (such as inflation and national income) based on the microeconomic optimizing behavior of individual agents.
- **Heterodox Economics:** Economic analysis schools (including Keynesian, Marxist, and Minskyan frameworks) that analyze structural factors, class dynamics, and institutional power rather than relying solely on individual market equilibrium.
- **Inter-temporal Consumption Smoothing:** The theory that individuals adjust their saving and spending across different life stages based on prevailing interest rates to maintain a stable level of consumption.

Legal and Constitutional Framework

- **Article 39(b) & 39(c) of the Indian Constitution:** Directive Principles of State Policy mandating that ownership and control of material resources be distributed to serve the common good and preventing the concentration of wealth to common detriment.
- **Reserve Bank of India Act, 1934 (Flexible Inflation Targeting):** Sets the legal mandate for monetary policy in India, balancing price stability with the objective of sustainable economic growth.
- **Fiscal Responsibility and Budget Management (FRBM) Act, 2003:** A legal framework governing public expenditure, national debt, and fiscal deficits to ensure macroeconomic stability.

Conclusion

Focusing exclusively on individual microfoundations overlooks how concentrated corporate investment decisions and business expectations drive economic instability. Effective macroeconomic governance requires addressing structural inequalities and regulating investment cycles to ensure long-term stability and social welfare.

UPSC Relevance

- **GS Paper III:** Indian Economy and issues relating to Planning, Mobilization of Resources, Growth, Development, Employment, and Monetary Policy.
- **GS Paper II:** Effect of policies and politics of developed and developing countries on India's interests (Global economic developments and foreign referendums).
- **Key Concepts:** Keynesian Multiplier, Microfoundations vs. Macroeconomics, Business Cycles, Income Distribution, Monetary Policy Transmission.

6. Alberta Referendum and Separatist Dynamics in Canada

Key Highlights & Summary

- **Referendum Verdict:** In the October 19, 2026 non-binding referendum, nearly 75% of voters in Alberta overwhelmingly rejected initiating a formal legal process toward separating from Canada.
- **Economic Drivers:** Separatist sentiments stem from Alberta holding over 80% of Canada’s crude oil production and world-leading oil sands reserves, creating perceptions of federal economic overreach and fiscal disparity.
- **Federal Policy Friction:** Environmental regulations limiting resource extraction, alongside post-pandemic regulatory mandates, fueled conservative discontent against federal leadership.
- **External Influences:** The rise of populist conservative movements across the U.S. border emboldened regional calls for resource autonomy and revenue retention.
- **Multi-Ballot Scope:** Beyond secession, the vote featured questions on federal jurisdiction, immigration oversight, and constitutional amendments regarding judicial appointments.
- **Strategic Outcome:** The decisive vote offers Prime Minister Mark Carney a major political victory, stabilizing national cohesion while addressing underlying federal-provincial friction.

Essential Definitions

- **Sub-national Separatism:** Political movements advocating for political, economic, or territorial autonomy or secession of a province or region from a sovereign nation state.

- **Non-Binding Referendum:** A plebiscite used by governments to gauge public opinion on constitutional or policy matters without imposing a legal mandate to enforce the outcome.
- **Fiscal Federalism:** The allocation of expenditure responsibilities and tax revenues among federal, provincial, and local levels of government.

Legal and Constitutional Framework

- **Clarity Act (2000) & Supreme Court Mandate:** Codified following the 1998 *Reference re Secession of Quebec*, establishing that a province cannot unilaterally secede under Canadian law without a clear majority on a clear question, followed by constitutional negotiations.
- **Constitution Act, 1982 (Section 92A):** Grants provinces exclusive legislative jurisdiction over the exploration, development, conservation, and management of non-renewable natural resources.
- **Article 1 of Indian Constitution:** Defines India as a "Union of States," making the Indian federation indestructible with no constitutional right for states to secede, contrasting with western federal referendum mechanisms.

Conclusion

The Alberta referendum reinforces Canadian national unity while highlighting the persistent tensions inherent in resource-rich sub-national federations. Addressing underlying regional economic grievances remains essential for long-term federal stability.

UPSC Relevance

- **GS Paper II:** Comparative Constitutionalism, Federal Structure, Devolution of Powers, and Sub-national Regionalism.
- **GS Paper I:** Regionalism, Secessionist Movements, and Social Diversity in Global Context.
- **Key Concepts:** Fiscal Federalism, Asymmetric Federalism, Indestructible Union vs. Secessionist Rights, Resource Nationalism.

7. How 'Cyberpunk 2077' Anticipated Our Hypercapitalist Dystopia

Key Highlights & Summary

- **Prescient Science Fiction:** William Gibson's seminal 1984 novel *Neuromancer* and media like *Cyberpunk 2077* mirror contemporary anxieties regarding corporate technological control and late-stage capitalism.
- **Monetization of Behavior:** Modern tech platforms turn public information and human interaction into data mines, harvesting behavioral surpluses for profit through algorithmic engagement.
- **Generative AI Risks:** The proliferation of synthetic AI content, coupled with unchecked industry development, raises grave concerns over user well-being, misinformation, and critical cybersecurity threats.
- **Corporate-Military Convergence:** Advanced surveillance technology and artificial intelligence infrastructures are increasingly deployed for political control, conflict monitoring, and population management.
- **Urban Disparity & Real Estate Crisis:** Fictional depictions of overcrowded housing reflect modern economic realities, marked by soaring real estate costs and a shortfall of 10 million affordable urban homes in India.

- **Existential AI Risks:** Leading AI figures warn that unmonitored self-improving superintelligence poses significant existential threats to human safety and institutional stability.

Essential Definitions

- **Hypercapitalism:** An extreme, unregulated form of capitalism characterized by total market dominance over public interest, continuous monetization of private life, and extreme wealth inequality.
- **Surveillance Capitalism:** An economic framework centered on capturing personal human experience as free raw material to transform into behavioral data for commercial prediction and profit.
- **Technofascism:** The reliance on centralized digital surveillance, artificial intelligence, and corporate tech monopolies to enforce societal control and economic dominance.

Legal and Constitutional Framework

- **Right to Privacy (Article 21):** The Supreme Court of India in *Justice K.S. Puttaswamy (Retd.) v. Union of India (2017)* declared informational privacy and autonomy fundamental rights.
- **Digital Personal Data Protection (DPDP) Act, 2023:** Regulates the processing of digital personal data, imposing legal obligations on data fiduciaries to prevent unauthorized exploitation of user behavior.
- **Information Technology Act, 2000 (Section 66):** Penalizes unauthorized data access and cyber offenses, establishing legal measures to secure critical digital infrastructure.

Conclusion

The convergence of pervasive surveillance, unchecked AI advancement, and severe urban inequality blurs the line between speculative science fiction and present-day policy challenges. Strong regulatory safeguards and ethical governance frameworks are imperative to maintain human autonomy and safeguard constitutional rights against corporate overreach.

UPSC Relevance

- **GS Paper II:** Important Aspects of Governance, Transparency and Accountability, Citizens Charters, Application of Technology in Governance.
- **GS Paper III:** Development and Impact of Artificial Intelligence, Cyber Security, Issues Relating to Growth, Employment, and Infrastructure.
- **Key Concepts:** Surveillance Capitalism, Ethical AI Frameworks, Data Sovereignity, Algorithmic Bias, Digital Public Infrastructure.

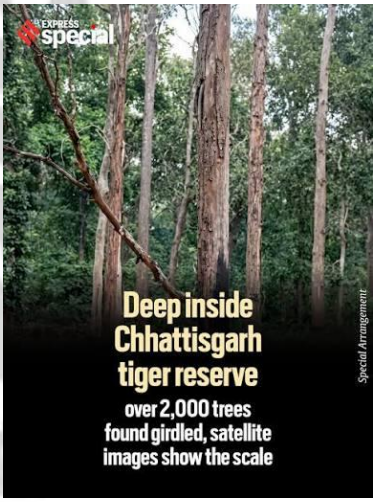
8. Forest Department to Seek Expert Help for 'Surgery' to Save Over 500 Girdled Trees Inside Udanti Sitanadi Tiger Reserve

Key Highlights & Summary

- **Girdling Incident:** Forest authorities discovered that over 500 trees (primarily Sal, Bija, and Tendu) were freshly girdled by illegal encroachers in the Karka area inside the Udanti Sitanadi Tiger Reserve (USTR), Chhattisgarh.

- **Extent of Encroachment:** Satellite imagery from ISRO and DGPS-enabled drone mapping reveal that deliberate tree girdling has led to thousands of trees being cleared between 2016 and 2026 to expand illegal land holdings.
- **Innovative Scientific Recovery:** The forest department is deploying "bridge grafting" tree surgery techniques led by experts from Project Vruksha Foundation to restore nutrient pathways and save dying trees.
- **Ecological Importance:** Protecting USTR is vital due to its dense rich biodiversity and its ecological role as the catchments for the Mahanadi, Udanti, Sitanadi, and Pairi river systems.
- **Integration of Traditional Knowledge:** Authorities are consulting local indigenous tribal communities to combine traditional ecological knowledge with modern botanical recovery protocols.
- **Legal Action Initiated:** Forest offense cases have been registered against accused villagers attempting illegal land clearance under conservation laws.

Essential Definitions



- **Tree Girdling:** A deliberate destructive technique involving the removal of a ring of outer bark, cambium, and phloem around the circumference of a trunk, severing nutrient transport and causing tree death.
- **Bridge Grafting:** A specialized horticultural surgical technique where healthy twigs or branches are grafted across a damaged, girdled trunk section to reconnect vascular tissue and restore nutrient supply.
- **Traditional Ecological Knowledge (TEK):** Cumulative body of knowledge, practice, and belief regarding ecosystem management evolved through adaptive, traditional practices by indigenous and local communities.

Legal and Constitutional Framework

- **Wild Life (Protection) Act, 1972:** Mandates strict protection for notified Tiger Reserves under Section 38V, prohibiting habitat destruction, illegal land clearing, and tree felling within core and buffer areas.
- **Indian Forest Act, 1927 / State Forest Acts:** Penalizes unauthorized tree girdling, felling, encroaching, or clearing forest land under provisions governing Reserved and Protected Forests.
- **Article 48A of the Constitution:** Directs the State to protect and improve the environment and safeguard the forests and wildlife of the nation.
- **Article 51A(g):** Enshrines the Fundamental Duty of every citizen to protect and improve the natural environment, including forests, lakes, rivers, and wildlife.

Conclusion

The innovative application of bridge grafting coupled with indigenous community partnership offers a promising ecological intervention to save damaged forests in USTR. Strengthening satellite monitoring and strictly enforcing anti-encroachment laws remain paramount to deter illegal land conversion within protected tiger habitats.

UPSC Relevance

- **GS Paper III:** Conservation, Environmental Pollution and Degradation, Environmental Impact Assessment, Disaster Management, Wildlife Protection.
- **GS Paper II:** Government Policies and Interventions for Conservation, Role of Indigenous Tribal Communities in Governance.
- **Key Concepts:** Udanti Sitanadi Tiger Reserve (Chhattisgarh), Tree Girdling, Bridge Grafting, Traditional Ecological Knowledge (TEK), Forest Rights vs. Encroachment.

9. Breach of 1.5°C Global Temperature Threshold

Key Highlights & Summary

- **Unavoidable Threshold Breach:** The UNEP Emissions Gap Report confirms that exceeding the 1.5°C pre-industrial warming threshold under the 2015 Paris Agreement is now unavoidable due to decades of insufficient climate action.
- **New Target and Temperature Overshoot:** The best achievable scenario is restricting global temperature rise to 1.8°C and establishing a credible return path to 1.5°C by the end of the century while minimizing overshoot duration.
- **Global GHG Emission Stagnation:** Global greenhouse gas emissions remained nearly flat in 2025 at approximately 58.4 billion tonnes of CO2 equivalent, showing a lack of meaningful global decarbonization.
- **Emitters Trend Analysis:** Annual GHG emissions in the US rose by over 133 million tonnes of CO2 equivalent in 2025, the highest increase globally, while China's emissions grew and India showed a marginal slowdown.
- **Shift in Focus for Climate Strategy:** Climate policy must pivot from preventing a 1.5°C breach to managing temporary temperature overshoot, strengthening climate adaptation, and keeping warming strictly under 2°C.

Essential Definitions

- **Emissions Gap:** The difference between pledged national emissions reductions under Nationally Determined Contributions and reductions required by climate science to achieve Paris Agreement goals.
- **Temperature Overshoot:** A temporary period during which global average temperatures exceed a target threshold before declining through carbon removal and sustained mitigation.
- **Carbon Budget:** The maximum cumulative net amount of CO2 allowed to be emitted globally while maintaining a given probability of limiting warming to a specified limit.

Legal and Constitutional Framework

- **Article 48A (DPSPs):** Mandates that the State shall endeavor to protect and improve the environment and safeguard forests and wildlife.
- **Article 51A(g) (Fundamental Duties):** Imposes a duty on every Indian citizen to protect and improve the natural environment, including forests, lakes, rivers, and wildlife.
- **Article 21 (Right to Life):** Interpreted by the Supreme Court as encompassing the right to a healthy, clean, and pollution-free environment.

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- **International Commitments:** Paris Agreement Article 2 (limiting global warming to well below 2°C and pursuing efforts to limit it to 1.5°C) and India's updated NDCs under the UNFCCC.

Conclusion

The UNEP Emissions Gap Report marks a critical transition point in international climate negotiations, signaling that with the 1.5°C limit out of reach, global efforts must focus on aggressive mitigation to limit warming to 1.8°C, scale up adaptation financing, and implement efficient carbon dioxide removal mechanisms.

UPSC Relevance

- **GS Paper III (Environment & Ecology):** Conservation, environmental pollution and degradation, climate change mitigation, and international environmental agreements.
- **GS Paper II (International Relations):** Impact of global climate governance, institutional reports, and multilateral commitments.

10. Fossil Fuel in the Farm, and Food as Fuel — A Double Bind

Key Highlights & Summary

- **Twin Vulnerabilities:** Indian agriculture faces a dual crisis: "fossilisation" of farming (over-reliance on petroleum-based fertilizers, pesticides, diesel, and machinery) and "fuelisation" of food (diverting food crops like sugarcane and maize toward biofuel blending).
- **Shift from Traditional to Fossil Inputs:** Mechanization has replaced traditional bullocks with over 1.2 crore tractors, while chemical fertilizer usage surged from 69,800 tonnes in 1950–51 to 33.5 million tonnes in 2025–26, dominated by Urea and DAP.
- **Global Geopolitical Spillovers:** Conflicts in West Asia and the Black Sea region have inflated raw material prices—such as LNG, naphtha, and sulphur—drastically raising imported landed costs for nitrogenous and phosphatic fertilizers.
- **Low Nutrient Use Efficiency:** India suffers from severe nutrient loss; only one-third of applied Nitrogen in urea is absorbed by crops, while three-fourths of Phosphorus from DAP gets locked in the soil, leading to environmental leaching.
- **Policy Imperatives for Resilience:** To mitigate energy-cum-climate shocks, India must shift from high-N inputs toward balanced fertilizers (e.g., ammonium sulphate), biostimulants, solar-powered irrigation pumps, and sustainable drip irrigation.

Essential Definitions

- **Fossilisation of Agriculture:** The systemic dependency of agricultural production on fossil fuel inputs, including refined petroleum fuels for machinery, petrochemical feedstocks for synthetic agrochemicals, and natural gas/sulphur for inorganic fertilizers.
- **Fuelisation of Food:** The diversion of agricultural food crops, oilseeds, and feedstocks (such as sugarcane juice, maize, and palm oil) away from human consumption to produce biofuels like ethanol and biodiesel.
- **Nutrient Use Efficiency (NUE):** The proportion of applied nutrients (such as N, P, and K) that is successfully absorbed and utilized by the plant rather than lost to volatilization, surface runoff, or soil fixation.

Legal and Constitutional Framework

- **Article 48A (DPSPs):** Directs the State to protect and improve the environment, safeguarding ecological stability against chemical degradation and soil toxicity.
- **Article 39(b) (DPSPs):** Requires the distribution of material resources of the community to best subserve the common good, ensuring equitable access to food security over industrial energy diversion.
- **Essential Commodities Act, 1955:** Regulates the production, supply, and movement of key agricultural commodities, fertilizers, and bio-feedstocks to prevent artificial shortages and balance food versus fuel needs.
- **National Policy on Biofuels (2018):** Establishes guidelines for ethanol blending targets while setting statutory boundaries on using edible crops for fuel conversion to safeguard national food security.

Conclusion

Navigating the double bind of fossil-fuel dependence and biofuel diversion requires a structural recalibration of India's agricultural policy. Transitioning toward precision nutrient management, bio-based inputs, solarized farm infrastructure, and balanced biofuel mandates will be critical to achieving sustainable food security and climate resilience.

UPSC Relevance

- **GS Paper III (Agriculture & Environment):** Major cropping patterns, supply chain dynamics, issues related to direct and indirect farm subsidies, technology missions, and environmental pollution.
- **GS Paper III (Energy & Economy):** Biofuel policies, renewable energy integration in agriculture, foreign trade dependencies, and macroeconomic vulnerabilities to global fuel price shocks.

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