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DAILY CURRENT AFFAIRS

FOR UPSC CIVIL SERVICE EXAMINATION

DATE: 04/07/2026 (SATURDAY)



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1. Rescue Mission for NASA's Swift Observatory: Key Insights

- **Mission Overview & Salvage Operation:** Northrop Grumman launched Katalyst Space Technologies' "Link" spacecraft from the Marshall Islands via a Pegasus rocket (air-launched from a modified airplane). The three-armed spacecraft aims to capture and boost NASA's 1.4-metric-tonne Swift Observatory (Neil Gehrels Swift Observatory), which is prematurely decaying in orbit.
- **The Problem of Orbital Decay:** Launched in 2004 to track cosmic explosions like gamma-ray bursts, Swift is currently circling at an altitude of 360 km. Recent intense solar storms increased atmospheric drag, causing the telescope to sink faster than anticipated. Without a slow thruster boost of 240 km by October, it faces destructive atmospheric re-entry.
- **Precedent for Future Space Sustainability:** This \$30 million commercial rescue project marks a crucial shift toward active debris removal (ADR) and in-orbit servicing (IOS). NASA indicated that similar salvage operations might be deployed for the aging Hubble Space Telescope to extend its operational lifetime.
- **Technological & Space Environmental Challenges:** Spacecraft in Low Earth Orbit (LEO) are highly vulnerable to solar cycles. Solar outbursts heat and expand the upper atmosphere, exponentially increasing drag on satellites. The mission highlights the necessity of "soft-capturing" instruments via robotics to prevent structural damage or further fragmentations.
- **International Legal Frameworks:** Orbital salvaging and space debris management intersect with international space law. The Liability Convention 1972 holds launching states liable for space objects, while the Outer Space Treaty 1967 dictates that states retain jurisdiction over their objects. Commercial servicing requires strict adherence to Inter-Agency Space Debris Coordination Committee (IADC) guidelines.



Key Definitions

- **Orbital Decay:** The gradual decrease in the distance between two orbiting bodies, typically caused by atmospheric drag generating friction against the spacecraft's forward motion.
- **Gamma-Ray Bursts (GRBs):** Immensely energetic explosions observed in distant galaxies, representing the brightest electromagnetic events known in the universe, often linked to supernovae or black hole formations.

Conclusion The Swift rescue mission underscores a critical evolution in space asset management, transitioning from a "launch-and-abandon" model to active in-orbit sustainability. Mitigating solar-induced orbital decay via commercial partnerships safeguards invaluable scientific infrastructure while addressing the growing global challenge of space debris.

UPSC Relevance

- **GS Paper III (Science & Technology):** Space technology, awareness in the fields of IT and Space, indigenization of technology, and issues relating to intellectual property rights.
- **Prelims Links:** Low Earth Orbit (LEO) dynamics, Solar Storms/Coronal Mass Ejections (CMEs) and their impact on satellites, Space Debris Mitigation Guidelines, and major space observatories (Swift, Hubble).



2. Record June Heatwave in France: Critical Climate and Public Health Lessons

- **Surge in Extreme Weather Mortality:** Public Health France reported a 29% surge in weekly mortality during the peak of the June heatwave (June 22–28), recording 8,973 deaths across all age groups. This marks an excess of 2,025 deaths compared to the preceding week, highlighting the rapid, lethal onset of extreme thermal stress.
- **Compounding Urban and Infrastructural Strain:** The heatwave shattered both daytime and nighttime temperature records across France and wider Europe. In Paris, the surge in fatalities overwhelmed municipal infrastructure, leaving mortuaries and funeral services facing severe capacity deficits and storage shortages.
- **The Wet-Bulb and Nighttime Temperature Risk Factor:** The crisis underscores a dangerous meteorological trend where high nighttime temperatures prevent human bodies and urban environments from cooling down. This compounding effect drastically accelerates heat exhaustion, systemic organ failure, and cardiovascular stress.
- **Global Climate Vulnerability & Policy Gaps:** This European crisis mirrors the intensifying heatwave hazards faced by tropical nations like India. It underscores that traditional climate-resilient infrastructure in developed nations is increasingly inadequate against the escalating frequency and intensity of anthropogenic climate change.
- **Disaster Mitigation Frameworks:** Managing severe heatwaves requires transitioning from reactive medical responses to proactive local governance. Key interventions include institutionalizing city-level Heat Action Plans (HAPs), establishing urban cooling centers, altering labor hours for outdoor workers, and modifying building codes to reduce urban heat island effects. **Key Definitions**
- **Heatwave:** A period of abnormally uncomfortable hot weather, qualitatively defined by temperature thresholds relative to historical averages for a specific region over consecutive days.
- **Urban Heat Island (UHI) Effect:** A phenomenon where urban regions experience significantly higher temperatures than surrounding rural areas due to human activities, dense infrastructure, concrete surfaces, and concentrated waste heat. **Constitutional & Legal Provisions**
- **Article 21 of the Indian Constitution:** The Supreme Court of India has expanded the Right to Life to encompass the right to a clean, safe, and healthy environment, which implicitly obligates the state to mitigate anthropogenic climate risks and protect citizens from preventable weather-induced fatalities.
- **Disaster Management Act, 2005:** Under this statutory framework, the National Disaster Management Authority (NDMA) issues comprehensive guidelines for managing heatwaves, mandating states to formulate local mitigation protocols, early warning systems, and inter-agency emergency response mechanisms.



Conclusion The lethal heatwave in France serves as a stark warning that climate change is no longer a distant threat but an active public health emergency. Addressing this requires integrating climate adaptation strategies directly into urban planning, statutory public health frameworks, and international environmental cooperation to safeguard human life against escalating thermal extremes.

UPSC Relevance

- **GS Paper III (Environment & Disaster Management):** Climate change impacts, environmental degradation, disaster mitigation strategies, and NDMA protocols regarding extreme weather events.
- **GS Paper II (Governance & Polity):** Right to Health, Article 21 applications, and institutional efficacy in handling public health crises.



- **Prelims Links:** Mechanisms of heatwaves, criteria for heatwave declaration by the IMD, urban heat island dynamics, and international climate pacts (Paris Agreement targets).

3. Strategic Pivot in Tiger Conservation: Restoring India's Struggling Reserves

- **Paradigm Shift in Conservation:** Marking the 18th anniversary of tiger reintroductions at Sariska Tiger Reserve (Rajasthan), the Centre released two new assessments detailing a roadmap to shift the focus from a purely numerical "big cat count" to ecological restoration in reserves with critically low or zero tiger populations.
- **Skewed Regional Distribution:** Although India's total tiger population steadily expanded from 1,411 in 2006 to 3,682 in 2022 across 58 reserves, the growth is heavily concentrated. Just 10 to 12 reserves account for 36% of the national population, whereas 12 reserves house fewer than three tigers. Notably, Kawal (Telangana), Kamlang (Arunachal Pradesh), and Dampa (Mizoram) currently record zero tigers.
- **The Source-Sink Dynamic Challenge:** Environmental authorities have flagged a growing asymmetry between robust "source populations" (high-density habitats with ample prey, like Corbett, Bandipur, and Kaziranga) and vulnerable "sink populations" (habitats lacking breeding connectivity or stable prey bases). The roadmap mandates consolidating 13 source sites while targeting priority interventions in 25 struggling recipient reserves.
- **Consequences of Carrying Capacity Pressures:** High-density source reserves are reaching peak carrying capacities, driving a 6% annual population growth to disperse into human-dominated buffer zones and mixed-use land. This creates an escalation in human-wildlife conflict, livestock dependency, linear infrastructure mortality (railways and highways), and increased vulnerability to poaching.
- **Metapopulation and Landscape Connectivity:** Long-term recovery relies on establishing well-connected forest landscapes and secure corridors across territorial divisions. Facilitating natural tiger colonization ensures essential genetic exchange, reduces isolation-induced extinction risks, and establishes sustainable metapopulations.

Why the government wants to focus on restoring struggling tiger reserves



Key Definitions

- **Source Population:** A high-quality habitat patch where a species' birth rate exceeds its death rate, producing surplus individuals that naturally disperse to other areas.
- **Sink Population:** A lower-quality habitat patch where a species' local death rate exceeds its birth rate, relying entirely on immigration from source areas to avoid local extinction.
- **Metapopulation:** A regional group of spatially separated populations of the same species that interact and exchange individuals through migration or corridor movement.

Constitutional & Legal Provisions

- **Article 48A (DPSP):** Instructs the State to protect and improve the environment, and to safeguard the forests and wildlife of the country.
- **Article 51A(g) (Fundamental Duties):** Mandates every citizen to protect and improve the natural environment, including forests, lakes, rivers, and wildlife.
- **Wildlife (Protection) Act, 1972:** Provides the statutory basis for establishing Tiger Reserves and empowers the National Tiger Conservation Authority (NTCA) to oversee reintroduction protocols, landscape-level management plans, and core-buffer delineations.



Conclusion India's globally lauded success under Project Tiger must evolve beyond aggregate population metrics. Ensuring long-term demographic and genetic stability demands a systemic transition toward localized habitat restoration, prey replenishment, and the legal protection of trans-boundary corridors to bridge the gap between thriving source sites and vacant sink landscapes.

UPSC Relevance

- **GS Paper III (Environment & Biodiversity):** Conservation, environmental degradation, wildlife corridors, human-wildlife conflict mitigation, and institutional assessments by the NTCA.
- **Prelims Links:** Location of listed reserves (Sariska, Mukundara, Satkosia, Kawal, Kamlang, Dampa), ecological definitions (carrying capacity, source-sink dynamics), and statutory bodies under the Wildlife (Protection) Act.

4. Judicial Overreach vs Statutory Regulation: The Cow Slaughter Ban Conflict in Tamil Nadu

- **The Judicial Flashpoint:** The Tamil Nadu government has approached the Supreme Court to challenge a Madras High Court order that directed a blanket ban on the slaughter of cows and calves on the eve of Bakrid or any other day. The state contends that the High Court exceeded its jurisdiction by converting a specific plea against public slaughter into an absolute prohibition.
- **Statutory Superiority and Legislative Intent:** The state government argues that an absolute ban directly contravenes the Tamil Nadu Animal Preservation Act, 1958. This state legislation explicitly establishes a regulatory framework—rather than an outright prohibition—permitting the slaughter of specific bovine animals under strict conditional permits.
- **Conditional Exemptions under State Law:** Under Section 4 of the 1958 Act, the slaughter of certain bovines is legally permissible provided a competent authority issues a certificate confirming the animal is over ten years of age and permanently unfit for work or breeding. The state emphasizes that the High Court's ruling completely invalidates this statutory mechanism.
- **Separation of Powers and Executive Domain:** The appeal underscores a fundamental constitutional principle: judicial instructions or orders cannot override, alter, or run counter to valid statutory laws enacted by the legislature. Defining the boundary between public regulation and absolute prohibition falls squarely within the domain of the legislative and executive branches.
- **Socio-Economic and Livelihood Implications:** The state's petition highlights that an unanticipated, blanket judicial prohibition inflicts severe economic distress on licensed traders, butchers, and numerous allied agricultural and leather sectors that rely on regulated bovine economies.



Key Definitions

- **Judicial Overreach:** An instance where the judiciary encroaches upon the domain of the legislature or executive, effectively creating laws or driving policy instead of merely interpreting existing legal statutes.
- **Bovine:** Relating to or affecting cattle, including cows, oxen, bulls, and buffaloes, which are central to both agrarian economies and specific statutory regulatory frameworks in India.



Constitutional & Legal Provisions

- **Article 48 (DPSP):** Directs the State to organize agriculture and animal husbandry on modern, scientific lines, and specifically notes steps for preserving, improving breeds, and prohibiting the slaughter of cows, calves, and other milch and draught cattle.
- **Article 19(1)(g):** Guarantees citizens the fundamental right to practice any profession or carry on any occupation, trade, or business, subject to reasonable restrictions under Article 19(6).
- **Prevention of Cruelty to Animals Act, 1960:** A central legislation that regulates slaughterhouse conditions and minimizes unnecessary pain to animals, recognizing regulation over outright prohibition.

Conclusion

The legal tussle underscores the delicate balance required between implementing Directive Principles, upholding fundamental livelihoods, and maintaining the separation of powers. While animal welfare remains a valid state interest, judicial interventions must align with existing state legislations to ensure regulatory coherence without disrupting economic structures.

UPSC Relevance

- **GS Paper II (Polity & Governance):** Separation of powers between organs of the state, judicial overreach vs judicial activism, and center-state legislative dynamics.
- **GS Paper III (Economy & Environment):** Economics of livestock, animal husbandry, and statutory bodies like the Animal Welfare Board of India.
- **Prelims Links:** Article 48 applications, absolute vs regulated bans, provisions of the Prevention of Cruelty to Animals Act, 1960, and Seventh Schedule lists on agriculture and livestock.

5. Eminent Domain vs Religious Properties: Allahabad HC on Places of Worship Act

- **The Judicial Pronouncement:** The Allahabad High Court dismissed a writ petition challenging the acquisition of six mosques in Varanasi's Dalmandi Street for the Kashi Vishwanath Dham Corridor expansion. The court ruled that the Places of Worship (Special Provisions) Act, 1991 does not bar the government from acquiring religious properties for public purposes.
- **Sovereign Power of Eminent Domain:** The division bench clarified that the State retains its sovereign power to acquire any property, including religious land, under the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013 (LARR Act, 2013), provided the acquisition is for a larger public purpose.
- **Scope of the 1991 Act:** The High Court held that the legislative intent of the Places of Worship Act, 1991 is centered on preserving the religious character of a place of worship as it existed on August 15, 1947, and preventing its conversion into a different denomination. It does not immunize the physical structure from state acquisition laws.
- **Public Purpose vs Religious Freedom:** The ruling reaffirms that while fundamental rights guarantee religious freedoms, they are subject to public order, morality, health, and the state's power to develop public infrastructure. Civil infrastructure projects like corridor expansions fall within the ambit of public purpose.
- **Precedent on Religious Infrastructure Acquisition:** This judgment aligns with existing jurisprudence across various high courts and the Supreme Court, which holds that the acquisition of religious places for public welfare, road widening, or safety does not amount to a violation of core religious practices.



Key Definitions

- **Eminent Domain:** A legal doctrine granting the state the inherent sovereign power to acquire private property for public use, provided just compensation is paid to the property owner.
- **Public Purpose:** An activity or project that serves the general public interest, such as infrastructure development, public health, safety, or community welfare, as defined under statutory land acquisition laws.

Constitutional & Legal Provisions

- **Article 25 & 26:** Guarantee the freedom of conscience, the right to freely profess, practice, and propagate religion, and the freedom to manage religious affairs. However, these rights are explicitly subject to public order, morality, and health.
- **Places of Worship (Special Provisions) Act, 1991:** Section 3 of the Act prohibits the conversion of any place of worship of any religious denomination into one of a different denomination or section.
- **LARR Act, 2013:** Replaced the Land Acquisition Act of 1894, outlining statutory frameworks for land acquisition, fair compensation, and rehabilitation across India.

Conclusion

The Allahabad High Court judgment provides critical legal clarity by separating the preservation of religious character from the state's infrastructural prerogatives. By upholding the doctrine of eminent domain over physical structures for public utility, the ruling balances individual religious liberties with the broader requirements of urban development and public welfare.

UPSC Relevance

- **GS Paper II (Polity & Governance):** Fundamental Rights (Articles 25-28), statutory interpretations of the Places of Worship Act, 1991, and the extent of judicial review over executive acquisitions.
- **GS Paper III (Infrastructure & Economy):** Land acquisition challenges, execution of public infrastructure projects, and the statutory application of the LARR Act, 2013.
- **Prelims Links:** Provisions of the Places of Worship Act, 1991, features of the LARR Act, 2013, and exceptions to the Right to Freedom of Religion.

6. Democratic Decentralization in Ladakh: Centre Concedes Bureaucratic Control to Elected Body

- **Administrative Breakthrough:** Following widespread protests and shutdowns led by regional alliances, the Ministry of Home Affairs (MHA) revised the official minutes of its high-level meeting with Ladakh's representatives. The Centre formally agreed to grant the proposed elected executive body explicit administrative oversight over the region's bureaucracy.
- **Control Over Bureaucracy:** The revised framework mandates that the proposed Union Territory-level elected body will exercise "control and supervision" over civil servants handling subjects within its jurisdiction. This includes the statutory power to write the Annual Performance Appraisal Report (APAR) for these officials, establishing clear bureaucratic accountability.
- **Fulfillment of Regional Demands:** This provision addresses a core grievance championed by the Apex Body, Leh (ABL) and the Kargil Democratic Alliance (KDA). Regional leaders had previously





alleged that omissions in initial official records undermined the Centre's structural commitments to local political empowerment.

- **Asymmetric Federalism in Union Territories:** The governance model represents a significant shift in India's administrative design for Union Territories without a full legislative assembly. By separating bureaucratic control from a traditional Lieutenant Governor-centric framework, it attempts to balance direct central oversight with democratic aspirations.
- **Precedent for Border Area Governance:** Granting institutional teeth to local representatives in a strategically sensitive frontier territory highlights an evolving internal security strategy. It recognizes that long-term border security and geopolitical stability are deeply tied to local political integration and public trust.

Key Definitions

- **Annual Performance Appraisal Report (APAR):** A statutory evaluation mechanism used in civil services to assess the performance, integrity, and efficiency of a government officer over a financial year, influencing promotions and postings.
- **Asymmetric Federalism:** A federal structure where different constituent units of a nation possess unequal administrative, legislative, or financial powers, tailored to preserve distinct regional identities or historical contexts.

Constitutional & Legal Provisions

- **Article 239 and 239AA:** Article 239 outlines the general administration of Union Territories by the President through an administrator. Article 239AA provides special provisions for Delhi, which has faced extensive litigation regarding control over services—a legal parallel relevant to Ladakh's new bureaucratic structure.
- **Sixth Schedule:** Though local bodies continue to demand full Sixth Schedule status under Article 244(2) to safeguard tribal identity, land, and employment, the current executive arrangement provides an interim administrative compromise.

Conclusion

The Centre's decision to grant Ladakh's proposed elected body control over its civil servants marks a vital milestone in accommodating regional democratic aspirations. By institutionalizing bureaucratic accountability through mechanisms like the APAR, this framework bridges the gap between bureaucratic efficiency and local representative governance in a highly sensitive border frontier.

UPSC Relevance

- **GS Paper II (Polity & Governance):** Federal structure of India, administration of Union Territories, issues and challenges pertaining to the federal structure, and democratic decentralization.
- **GS Paper III (Internal Security):** Border area management and its link to local governance stability.
- **Prelims Links:** Powers of the Lieutenant Governor vs Elected Bodies in UTs, structural features of Article 239, functions of the MHA in UT administration, and the scope of the Sixth Schedule.



7. Modernization of Armed Forces: DAC Clears Defence Acquisitions Worth Rs 52,000 Crore

- **Capital Procurement Push:** The Defence Acquisition Council (DAC), chaired by Defence Minister Rajnath Singh, accorded Acceptance of Necessity (AoN) for a suite of capital acquisition proposals worth approximately Rs 52,000 crore. This emphasizes a major step toward addressing critical operational gaps across the Army, Navy, and Air Force.
- **Focus on Multi-Domain Operations:** The cleared proposals shift focus toward high-technology systems tailored for modern, asymmetric, and electronic warfare. Notable systems include the 'Akash Tarang' Anti-UAV Electronic Warfare System, Medium Range Surface-to-Air Missile (MRSAM) systems, and Very Short Range Air Defence Systems (VSHORADS) equipped with multi-spectral sensing.
- **Enhancing Aerial Surveillance and Lethality:** For the Indian Air Force, the DAC cleared the procurement of Fixed-Wing Based High Altitude Pseudo Satellites (FW-HAPS) to facilitate persistent intelligence, surveillance, reconnaissance (ISR), and remote sensing. For tactical engagement, the induction of cost-effective, jet-based Kamikaze Drones was approved to enhance electronic warfare survivability.
- **Indigenization of Naval Systems:** The approval includes Multi-Influence Ground Mines (MIGM) to deny freedom of maneuver to adversaries, alongside Naval Shipborne Unmanned Aerial Systems (NSUAS) for maritime situational awareness. A dedicated Land-Based Testing Facility (LBTF) will also be established to test electric propulsion systems for future Indian Naval assets.
- **Mechanized Infantry and Armor Protection:** To counter mechanized threats, the council cleared Man Portable Anti-Tank Guided Missiles (MPATGM) and advanced Active Protection Systems (APS) for tanks, significantly improving the combat survivability and battlefield resilience of the Army's forward formations.



Key Definitions

- **Acceptance of Necessity (AoN):** The initial, foundational milestone in India's defence procurement process, where the ministry formally recognizes a capability gap and validates the requirement to initiate a tender.
- **High Altitude Pseudo Satellite (HAPS):** Advanced uncrewed aerial platforms operating in the stratosphere that provide persistent, satellite-like communication and surveillance capabilities over a targeted region for extended periods.

Institutional & Legal Framework

- **Defence Acquisition Council (DAC):** The highest decision-making body in the Ministry of Defence for capital acquisitions, established following recommendations on reforming the national security system post-Kargil.
- **Defence Acquisition Procedure (DAP):** The governing regulatory policy framework that streamlines procurement, balances budget realities, promotes self-reliance through 'Atmanirbhar Bharat', and defines categories like 'Buy (Indian-IDD)'.

Conclusion

The massive scale of these approvals reflects India's proactive strategy to transition from legacy military hardware toward integrated, electronic, and automated combat readiness. While granting AoNs is an entry-



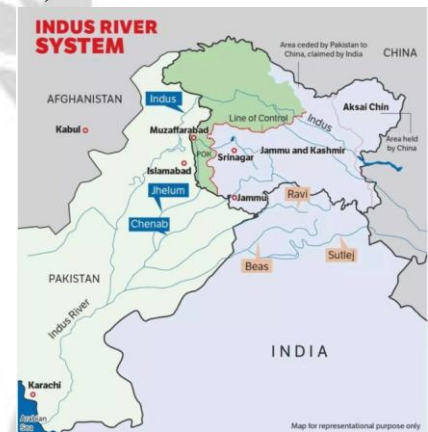
level phase, matching these intents with streamlined contracting and domestic manufacturing timelines is crucial to successfully achieving military modernization and strategic autonomy.

UPSC Relevance

- **GS Paper III (Security & Defence):** Indigenization of technology, structure and mandates of defence forces, asymmetric warfare threats, and electronic security infrastructure.
- **Prelims Links:** Role and chairmanship of the DAC, functions of HAPS vs conventional satellites, composition of VSHORADS and MPATGM systems, and stages of the defence procurement pipeline.

8. Geopolitical Realignment of Hydro-Diplomacy: India's Consistent Position on the Indus Waters Treaty

- **Strategic Stance of the MEA:** The Ministry of External Affairs (MEA) reiterated that India's position on the Indus Waters Treaty (IWT) remains firm and consistent. The ministry emphasized that the bilateral treaty effectively stands in abeyance as a direct consequence of Pakistan's continued state sponsorship of cross-border terrorism.
- **Linkage Between Security and Diplomacy:** The statement reinforces India's long-standing strategic doctrine that "terror and talks cannot go together." By explicitly tying the functional execution of a transboundary water treaty to cross-border security conditions, India signals a departure from treating hydro-agreements as isolated, apolitical technical compacts.
- **Demands for Structural Modification:** The current friction builds upon India's formal notice to Pakistan seeking a comprehensive modification of the 60-year-old treaty. India demands updates to incorporate modern dispute resolution mechanisms, address climate-induced hydrological changes, and account for altered water-use dynamics that did not exist in 1960.
- **Dispute Escalation Over Hydropower Projects:** The diplomatic deadlock is intensified by Pakistan's objections to India's run-of-the-river hydroelectric projects, specifically the Kishanganga (330 MW on the Jhelum tributary) and Ratle (850 MW on the Chenab). Pakistan's parallel activation of a Neutral Expert and the Permanent Court of Arbitration violates the treaty's graded dispute-settlement hierarchy.
- **Geopolitical Leverage in South Asia:** India's shift toward a more assertive hydro-diplomacy posture exerts significant strategic leverage over lower-riparian Pakistan. It highlights New Delhi's intent to utilize its upper-riparian geography to safeguard core national security interests while remaining within the broader ambit of international customary water laws.



Key Definitions

- **Abeyance:** A state of temporary disuse, suspension, or inactivity, where statutory or treaty obligations are paused pending the resolution of specific external conditions or disputes.
- **Upper/Lower Riparian:** A riparian state is a nation situated along the banks of a natural watercourse. An upper-riparian state is located closer to the river's source (India), while a lower-riparian state is located downstream (Pakistan).



Constitutional, Legal & International Provisions

- **Article 253 of the Indian Constitution:** Empowers Parliament to make laws for the whole or any part of India for implementing any treaty, agreement, or convention with any other country or international body.
- **The Indus Waters Treaty (1960):** Signed by PM Jawaharlal Nehru and President Ayub Khan, brokered by the World Bank. It allocates the three Eastern Rivers (Ravi, Beas, Sutlej) to India and the three Western Rivers (Indus, Jhelum, Chenab) largely to Pakistan, subject to limited non-consumptive agricultural and power use by India.
- **Vienna Convention on the Law of Treaties (VCLT):** Under international law, Article 62 (Fundamental Change of Circumstances) allows states to seek treaty modifications if the foundational conditions under which the treaty was signed alter fundamentally over time.

Conclusion

India's assertion on the Indus Waters Treaty marks a critical transition from passive adherence to calibrated hydro-diplomacy. By conditioning the smooth operation of water-sharing mechanisms on the cessation of cross-border terrorism, New Delhi integrates environmental resource management with national security, demanding a modernized framework that reflects contemporary geopolitical realities.

UPSC Relevance

- **GS Paper II (International Relations):** India and its neighborhood relations, bilateral treaties, transboundary water disputes, and institutional challenges in South Asian hydro-diplomacy.
- **GS Paper III (Internal Security):** Cross-border terrorism, state-sponsored asymmetric warfare, and tactical leverage mechanisms.
- **Prelims Links:** Geographical mapping of the Indus river system, structural provisions of the IWT (1960), location of the Kishanganga and Ratle projects, and World Bank's arbitration role.

9. Geopolitical Friction in the Indo-Pacific: China's Critique of the India-Japan Joint Vision

- **The Diplomatic Flashpoint:** Following Japanese Prime Minister Sanae Takaichi's three-day official visit to India, Beijing strongly criticized the joint statement issued by Prime Minister Narendra Modi and his Japanese counterpart. China's Ministry of Foreign Affairs asserted that the "Free and Open Indo-Pacific" (FOIP) framework goes against the shared aspirations of regional countries and will never win genuine recognition.
- **India-Japan Strategic Convergence:** In their joint statement, India and Japan expressed deep concerns regarding the destabilizing situation in the South China Sea and East China Sea. Without naming China directly, both nations reiterated strong opposition to unilateral actions, militarization of disputed features, and coercive attempts to alter the maritime status quo by force.
- **Beijing's Counter-Narrative:** China accused New Delhi and Tokyo of creating "small blocs" and stoking regional confrontation under the pretext of cooperation. Beijing argued that regional mechanisms should embrace an open, cooperative, and inclusive mindset rather than targeting third parties or forming exclusive security alignments.
- **Securing Critical Supply Chains:** A cornerstone of the bilateral talks included enhancing resilient global industrial and supply chains, with a specific focus on cooperation in critical minerals. This economic alignment is seen as a strategic measure to reduce global manufacturing and technological dependence on China.



- **Expanding Footprint in Africa:** To counter China's growing footprint and infrastructure-driven diplomacy across Africa via the Belt and Road Initiative (BRI), India and Japan discussed formulating a "Strategic Outlook for Expanding Japan-India Cooperation in Africa," targeting sustainable development and local capacity building.

Key Definitions

- **Free and Open Indo-Pacific (FOIP):** A strategic and economic concept advocating for a rule-based maritime order, freedom of navigation, overflight, unhindered lawful commerce, and the peaceful resolution of disputes in the Indo-Pacific region.
- **Militarization:** The act of equipping a territory, island, or maritime feature with military forces, permanent garrisons, fortifications, or advanced weapon systems, shifting its status from civilian to military use.



Constitutional, Legal & International Provisions

- **Article 51 of the Indian Constitution (DPSP):** Instructs the State to promote international peace and security, maintain just and honorable relations between nations, and foster respect for international law and treaty obligations.
- **UNCLOS (1982):** The United Nations Convention on the Law of the Sea provides the legal framework governing maritime zones, exclusive economic zones (EEZs), and freedom of navigation, which serves as the statutory foundation for the FOIP narrative against unilateral maritime assertions.

Conclusion

The diplomatic sparring over the India-Japan joint statement reflects the intensifying systemic rivalry in the Indo-Pacific. While China views mini-lateral engagements as containment mechanisms that challenge its regional hegemony, the strengthening of the India-Japan partnership remains crucial for preserving a balance of power, securing global supply chains, and upholding a rules-based maritime order.

UPSC Relevance

- **GS Paper II (International Relations):** Bilateral, regional, and global groupings involving India and affecting India's interests, India-Japan relations, policies of developed countries on India's sovereignty, and the dynamics of the Indo-Pacific.
- **Prelims Links:** Geographical features of the South China Sea and East China Sea, core mandates of UNCLOS, major bilateral military exercises between India and Japan (e.g., Dharma Guardian, JIMEX), and supply chain resilience initiatives.

10. El Nino Impact on Agriculture: Chhattisgarh Issues Climate-Resilient Advisory for Farmers

- **Mitigating Rainfall Uncertainty:** To counteract potential monsoon disruptions caused by El Nino, the Chhattisgarh government issued a strategic advisory urging farmers to shift away from traditional, water-intensive agricultural methods for the upcoming Kharif season.
- **Promoting Direct Seeded Rice (DSR):** The state has strongly advised cultivating short-to-medium duration crop varieties and adopting the Direct Seeded Rice technique rather than the traditional transplantation method. DSR reduces maturity timelines by 12-15 days, saves 20% water, and lowers input costs by approximately ₹5,000 per acre.



- **Crop Diversification Toward Oilseeds:** Given that Chhattisgarh is a prominent paddy-growing belt heavily reliant on timely monsoons, the advisory recommends partial diversification toward oilseed cultivation, which exhibits higher drought-resilience and lower moisture requirements.
- **On-Field Water Conservation Mandate:** Alongside crop modifications, the state government outlined explicit water-harvesting directives. Farmers are urged to maximize rainwater conservation by clearing fields, establishing bunds on time, and constructing field bunds before seasonal rains intensify.
- **Central-State Policy Coordination:** The advisory follows high-level inter-ministerial evaluations in New Delhi featuring Union Ministers Amit Shah and Shivraj Singh Chouhan, highlighting synchronized federal efforts to preemptively secure India's food security against macro-climatic anomalies.

Key Definitions

- **El Nino:** A climate pattern characterized by the periodic, anomalous warming of central and eastern equatorial Pacific sea surface temperatures, which disrupts global atmospheric circulation and typically weakens the South Asian monsoon.
- **Direct Seeded Rice (DSR):** An agronomic method where pre-germinated seeds are sown directly into the soil using mechanical seed drills, bypassing the traditional resource-heavy steps of nursery raising and puddle transplantation.

Constitutional & Statutory Framework

- **Seventh Schedule (State List - Entry 14):** Agriculture, including agricultural education and research, protection against pests and prevention of plant diseases, falls primarily within the legislative jurisdiction of individual State Governments.
- **National Mission on Sustainable Agriculture (NMSA):** A core programmatic component under India's National Action Plan on Climate Change (NAPCC) aimed at making Indian agriculture more resilient to climate variations through localized adaptation measures.

Conclusion

The proactive advisory issued by Chhattisgarh underscores a necessary shift from reactive drought relief to proactive climate-smart agriculture. Broadening the adoption of water-saving techniques like DSR and optimizing on-field conservation structures are essential strategic interventions to decouple India's rural economy from the volatile patterns of a changing global climate.

UPSC Relevance

- **GS Paper III (Agriculture & Environment):** Major cropping patterns, water-saving irrigation techniques, food security, and the direct impact of climate phenomena like El Nino on domestic yields.
- **GS Paper II (Governance):** Federal administrative collaboration in disaster preparedness and agricultural policy deployment.
- **Prelims Links:** Mechanics of El Nino vs La Nina, structural differences between DSR and traditional transplanting, core components of the NAPCC, and distribution of Kharif crops.



11. Avian Conservation Challenges: Radio Telemetry and the Vulnerability of Released Vultures

- **The Telemetry-Backed Experiment:** A captive-bred white-rumped vulture, designated Z25, was radio-tagged and released into the Tadoba-Andhari Tiger Reserve by the Bombay Natural History Society (BNHS). This initiative highlights the growing integration of real-time satellite and radio tracking technology in monitoring the reintroduction of critically endangered avian species into natural habitats.
- **Behavioral Imprinting Obstacles:** Tracked data revealed a fatal behavioral anomaly: the vulture consistently sought out human-dominated areas for food. Nurtured across facilities like the Kalaburagi Zoological Park and Mudumalai Tiger Reserve, the bird developed an anthropogenic dependency, failing to acclimatize to wild foraging patterns and showcasing the ecological challenges of reintroducing captive-bred raptors.
- **Infrastructure Hazards to Wildlife:** Despite conservationists tracking its erratic southward movement to intervene, the vulture was electrocuted by a high-voltage power transmission line in the Nilgiris. This underscores how linear infrastructure, particularly uninsulated power grids cutting through ecological corridors like the Western Ghats, acts as a primary threat to avian conservation.
- **The Role of Specialized Breeding Hubs:** The specimen was bred at the Jatayu Conservation Breeding Centre in Pinjore, Haryana, a collaborative initiative between the Haryana Forest Department and the BNHS. Such centers are vital for preventing the total extinction of scavenging raptors whose populations collapsed due to diclofenac poisoning.
- **Telemetry as a Management Tool:** While it could not prevent the electrocution, radio telemetry proved to be a potent tool for real-time monitoring. It allowed biologists to identify that the bird was unfit for the wild, highlighting its utility in identifying straying individuals and modifying active wildlife management protocols.



Key Definitions

- **Radio Telemetry:** An advanced tracking technique where a small radio transmitter attached to an animal sends signals to a receiver, allowing researchers to track its precise real-time movements, habitat choices, and behavioral patterns.
- **Behavioral Imprinting:** A rapid and critical learning process early in life whereby an animal establishes a concept of social attachment or behavioral habituation, which can cause captive animals to identify humans as food providers instead of wild peers.

Constitutional & Legal Provisions

- **Article 48A:** Instructs the State to protect and improve the environment, and to safeguard the forests and wildlife of the country.
- **Wildlife (Protection) Act, 1972:** The white-rumped vulture is protected under Schedule I, granting it the highest level of legal protection against hunting, trade, or capture, with stringent penalties for violations.

Conclusion

The tragic loss of the radio-tagged vulture highlights that successful species revival requires more than successful captive breeding. True conservation must bridge the gap between captive behavior mitigation and



landscape-level safety, demanding the urgent insulation of power lines within eco-sensitive zones to prevent infrastructure-induced mortalities of critically endangered scavengers.

UPSC Relevance

- **GS Paper III (Environment & Biodiversity):** Conservation initiatives, threat of linear infrastructure to wildlife, human-animal interface, and functional roles of conservation bodies like BNHS.
- **Prelims Links:** IUCN status of White-rumped, Indian, and Slender-billed vultures (Critically Endangered), locations of Pinjore Breeding Centre, Tadoba, and Mudumalai Tiger Reserves, and operations of radio telemetry in wildlife management.

12. Transboundary Water Diplomacy: India, Bangladesh, and the Teesta River Development Project

- **Strategic Reaffirmation by MEA:** The Ministry of External Affairs (MEA) stated that India's development assistance to Bangladesh operates on a "mutually agreed roadmap." New Delhi will factor in "all related developments" while formulating its overall approach to the Teesta River project, following recent discussions between Dhaka and Beijing.
- **The China Factor and Geopolitical Shifts:** Bangladesh Prime Minister Tarique Rahman's recent visit to China involved talks on the Teesta River Comprehensive Management and Restoration Project (TRCMRP), including a joint decision to initiate a feasibility report. This marks a significant geopolitical element in a traditionally bilateral riparian relationship.
- **De-escalation of Diplomatic Friction:** Indian officials clarified that New Delhi's stance does not signify displeasure over Dhaka's discussions with Beijing. The MEA emphasized that India-Bangladesh bilateral ties stand independently on their own merit and are subjected to regular, high-level structural reviews.
- **The Long-Standing Hydrological Deadlock:** The equitable sharing of Teesta River waters has been under discussion for decades. An agreement was nearly finalized in 2011 during Prime Minister Manmohan Singh's visit to Dhaka, but it was stalled due to strong political objections from the West Bengal state government.
- **Geographical and Economic Vulnerability:** The Teesta is a crucial transboundary river, originating in Sikkim, flowing through West Bengal, and entering Bangladesh where it joins the Brahmaputra (Jamuna). It is the lifeline for northern Bangladesh, making its lean-season water volume critical for regional food security and agricultural yields.



Key Definitions

- **Transboundary River:** A river that crosses at least one political border, either within a nation or an international boundary, requiring cooperative institutional frameworks for water sharing and ecological management.
- **Lean Season:** The period of the year, typically during winters and pre-monsoon months, when a river experiences its lowest naturally occurring water volume and flow rate.

Constitutional, Legal & International Provisions

- **Article 253 of the Indian Constitution:** Grants Parliament the absolute power to make laws for the entire country to implement any international treaty, agreement, or convention, overriding state-level entries if necessary.



- **Seventh Schedule (Entry 17 of State List & Entry 56 of Union List):** Entry 17 places water under state jurisdiction, but it is subject to Entry 56 of the Union List, which empowers the Central Government to regulate and develop inter-state rivers and valleys.
- **Helsinki Rules (1966) & UN Watercourses Convention (1997):** International legal frameworks that advocate for the doctrine of "equitable and reasonable utilization" and the obligation not to cause significant harm to downstream riparian states.

Conclusion

The evolving matrix around the Teesta project highlights the delicate intersection of domestic hydropolitics, international legal obligations, and regional security. For India, maintaining a proactive and cooperative development partnership with Bangladesh is essential to secure its neighborhood-first policy and counter growing external geopolitical footprints in the Bay of Bengal region.

UPSC Relevance

- **GS Paper II (International Relations):** India and its neighborhood relations, bilateral water sharing treaties, impact of third-party involvement (China) in South Asian geopolitics, and constitutional provisions governing international treaties.
- **GS Paper III (Environment & Geography):** Transboundary river systems, drainage patterns of Northeast India, and ecological impacts of large-scale river management projects.
- **Prelims Links:** Origin and tributaries of the Teesta River, Joint Rivers Commission (JRC) framework, location of the Teesta barrage, and constitutional distribution of legislative powers regarding water.

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