



OPERATION SINDOOR



"The New Face of New India"

» SPECIAL FEATURES

Power Packed News | UPSC Prelims based MCQs | News Analysis

Congratulations **UPSC TOPPER**



Dhyeya Family & Centre Director MR.VIJAY SINGH

with

UPSC Topper Piyush Raj (IAS) & Satyam Singh (Assistant Professor)

Message



An officer with a right mindset is an officer that a nation aspires for. A right mindset doesn't necessarily comprise unlimited jargon of knowledge rather a right amount of knowledge and its appropriate execution. Especially, when it comes to UPSC and State PSCs preparation, the crux is not to accumulate the knowledge but its effective implementation and utilization in tackling any situation. The situation here can be anything from UPSC CSE Prelims to the major issues that need to be addressed. The journey is hard but it is worth.

Perfect 7 has been part of many UPSC and State PSCs aspirants in their journey of becoming well reputed officers serving nationally and internationally. The magazine itself had gone through constant ebb and flows of change and improvements. Now, that the magazine is in its monthly era, I hope it becomes your perfect preparation partner and guides you through this ever learning endeavor of Civil Services Preparation.

With Best wishes.

Vinay Singh
Founder
Dhyeya IAS

Team Perfect 7

Founder	: Vinay Singh
Managing Editor	: Vijay Singh
Editor	: Ashutosh Mishra
Sub-Editor	: Bhanu Pratap
	: Rishika Tiwari
Designing	: Arun Mishra
Cover Design	: Sonal Tiwari

-: Credits :-

PIB, PRS, AIR, ORF, Prasar Bharati, Yojana, kurukshetra, The Hindu, Down to Earth, The Indian Express, India Today, WION, Deccan Herald, The Times of India, Hindustan Times, The Economic Times, BBC, Dainik Jagran, Dainik Bhaskar and Others

-: For any feedback Contact us :-

+91 9369227134

perfect7magazine@gmail.com

PERFECT



In This Issue

1. Indian Society & Art and Culture 06-16

- ✓ Breaking Barriers: The Rise of Women in India's Military
- ✓ India's Progress on the Human Development Index: A Comprehensive Analysis
- ✓ SRS 2021 Report on India's fertility rate
- ✓ Acute Food Insecurity in 2024
- ✓ New Epigraphic Discoveries in Telangana
- ✓ Raghuji Bhosale's 18th-Century Sword
- ✓ Reevaluation of the Keezhadi Excavation Report
- ✓ Second Lancet Commission on Adolescent Health

2. Polity & Governance 17-34

- ✓ Towards a Safe Digital Bharat: Regulating Obscene Content without Silencing Voices
- ✓ President Seeks Supreme Court Opinion on Bill Assent Timelines
- ✓ Bhakra-Nangal Water Dispute between Punjab and Haryana
- ✓ India Reconsiders Safe Harbour for Social Media
- ✓ I4C Brought Under PMLA
- ✓ Supreme Court on Implementing NEP
- ✓ Quashing of POCSO Cases through Settlement
- ✓ Cashless Treatment Scheme for Road Accident Victims
- ✓ Supreme Court Mandates Public Asset disclosure for all Judges
- ✓ New Biodiversity Regulation 2025
- ✓ Digital Access as a Part of the Fundamental Right to Life and Liberty
- ✓ Sharia Courts Have No Legal Standing in Indian Legal System
- ✓ e-Zero FIR System
- ✓ Cybersecurity in Digital Payments
- ✓ Supreme Court Declares Maternity Leave a Fundamental Reproductive Right of Women

3. International Relations... 35-58

- ✓ The 2025 U.S. - Middle East Visit: Economic Diplomacy and Shifting Geopolitical Priorities
- ✓ Pakistan-Turkey Alliance and Its Implications for India
- ✓ India-UK Free Trade Agreement: An Academic and Informative Overview
- ✓ Pakistan's IMF Loan Disbursal
- ✓ Artemis Accords
- ✓ China's Renaming of Places in Arunachal Pradesh
- ✓ France and Poland signed Mutual Defense Treaty
- ✓ World Press Freedom Index 2025
- ✓ Crimea's Strategic Significance and Trump's Peace Proposal
- ✓ SIPRI Report on India's Defence Spending
- ✓ India-Angola Economic Partnership
- ✓ India-U.S. Maritime Deal
- ✓ India-Canada Relations Post-2025 Canadian Elections
- ✓ India's Boycott of Turkey and Azerbaijan
- ✓ China's CPEC Extension to Afghanistan
- ✓ Afghanistan's Local Currency Trade Talks with China and Russia

4. Environment & Ecology ... 59-78

- ✓ Global Warming Forecasts: Earth Poised to Breach 1.5°C Threshold Between 2025–2029
- ✓ Urban Flooding in India: A Growing Challenge
- ✓ Geotubing Technology
- ✓ Geotubing Technology
- ✓ Yala Glacier Declared Dead
- ✓ Tsarap Chu Conservation Reserve
- ✓ A New Tiger Swallowtail Butterfly Species
- ✓ Chromosome-Level Genome Assembly of Indian Yak
- ✓ New Crocodile Species Discovered in Mexico

- ✓ Similipal Tiger Reserve declared a National Park
- ✓ SBI Research Report on India's Forest Growth
- ✓ Ladakh Emerges as a Global Stronghold for Snow Leopards
- ✓ Climate Change and Marine Productivity in the Bay of Bengal
- ✓ Asiatic Lions in Gujarat
- ✓ State of the World's Animal Health Report
- ✓ Schistura Densiclava: A New Cave Fish Species in Meghalaya
- ✓ Madden-Julian Oscillation
- ✓ India Renews \$50 Million Treasury Bill with Maldives
- ✓ Digital Lending Directions, 2025
- ✓ Government Expands Credit Guarantee Scheme for Startups
- ✓ India Becomes the Third-Largest Vehicle Manufacturer in the World
- ✓ CCI Notifies New Cost Framework to Tackle Predatory Pricing
- ✓ India's Exports reach Record \$824.9 Billion in FY 2024-25
- ✓ United States Places India on 'Priority Watch List'
- ✓ Shillong-Silchar Greenfield Corridor project
- ✓ India Overtakes Japan to Become the World's Fourth-Largest Economy
- ✓ Modified Interest Subvention Scheme for FY 2025-26
- ✓ Bank Frauds Surge to Rs. 36,014 Crore in FY25
- ✓ Curbing Dark Patterns in Indian E-Commerce

5. Science & Tech 79-96

- ✓ Fighting the Silent Pandemic: India's Battle against Antimicrobial Resistance
- ✓ India's Growing Semiconductor Ecosystem: Driving Self-Reliance and Global Competitiveness
- ✓ Brain-Computer Interface
- ✓ Lassa Fever Outbreak in Nigeria
- ✓ Neurotrophin Peptidomimetic Drugs
- ✓ Rice Pangenome
- ✓ Metal-Free Piezocatalyst for Efficient Hydrogen Production
- ✓ RNA-Based Technology for Plant Virus Protection
- ✓ Uganda Declares End to Ebola Sudan Virus Outbreak
- ✓ Bharat Forecasting System
- ✓ Google Unveils "AI Matryoshka"
- ✓ Custom Base Editing Therapy
- ✓ India's First Gene-Edited Sheep
- ✓ Malaria Reinfection Creates Special Immune Cells: Study

6. Economy 97-117

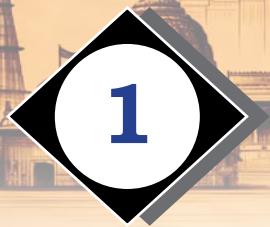
- ✓ India's Agricultural Trade: Trends, Challenges and the FTA Factor
- ✓ India's Maritime Vision: Shaping the Future of Global Trade through Vizhinjam Port
- ✓ Cinema, Creativity, and Soft Power: India's Emerging Role in the Global Orange Economy
- ✓ Vizhinjam International Seaport

7. Internal Security 118-133

- ✓ "Defense Revolution of Self-reliant India: India's Technological Leap in Operation Sindoor"
- ✓ India's Evolving Response to Terrorism: From the Ground to Cyberspace
- ✓ Operation Sindoor
- ✓ Anti-Naxal Operation
- ✓ Bhargavastra Counter-Drone System
- ✓ Air Defence Systems
- ✓ Deal for 26 Rafale-M Jets
- ✓ YouTuber Arrest in Alleged Pakistan Spy Link
- ✓ INS Tamal
- ✓ Dhruv Advanced Light Helicopter (ALH)
- ✓ India's Fifth-Gen Fighter AMCA

Power Packed News 134-146

Current Based MCQs 147-155



Indian Society & Art and Culture

Breaking Barriers: The Rise of Women in India's Military

With the nostalgic strains of Auld Lang Syne echoing across the majestic Sahyadri hills, the National Defence Academy (NDA) witnessed a landmark moment as the 148th course concluded its three-year journey of rigorous military and academic training. Held on the Khetrpal Ground, the ceremonial Passing Out Parade (POP) was not just another annual ritual—it marked a significant milestone in the institution's history with the inclusion of its first-ever batch of female cadets among the graduating cohort.

336 cadets successfully passed out of the Academy, which included 17 female cadets, marking a historic step in gender integration within India's premier tri-services training institution. This passing out parade was more than a ceremonial transition—it was a symbol of institutional evolution, marked by the graduation of the Academy's first cohort of female cadets. Their successful integration into the rigorous training regimen sets a precedent for future batches and reinforces the NDA's role as a cradle of jointmanship and inclusive leadership in the Indian Armed Forces.

Women in the Indian Army: A Long March Toward Equality

- Women first joined the British Indian Army (BIA) during World War I as nurses, due to a shortage of male doctors. Men were deployed to the frontlines while women staffed hospitals.
- Later, the Women's Auxiliary Corps was formed, allowing women to serve in non-

combat roles such as administration, accounting, and communications.

- Subhash Chandra Bose's Azad Hind Fauj created the Rani of Jhansi Regiment, where women participated in active combat alongside the Japanese in Burma.

Post-independence:

- For decades, the entry of women into the Indian Army was restricted by Section 12 of the Army Act, 1950, which barred their inclusion except through specific government notifications. This changed in 1958, when women were granted regular commission in the Indian Army Medical Corps. In 1992, the Centre allowed women to be commissioned in select branches like the Army Postal Service, Judge Advocate General (JAG) Department, Army Education Corps (AEC), and Army Ordnance Corps etc.
- At first, women joined under the Women Special Entry Scheme (WSES), which offered short-term roles. In 2005, WSES was replaced by the Short Service Commission (SSC) with a 14-year tenure. Existing WSES officers were given the option to switch to SSC.
- In 2003, advocate Babita Puniya filed a case in the Delhi High Court asking for Permanent Commission (PC) for women. More officers joined the legal fight in 2006. In 2010, the High Court ruled in their favour. But the Defence Ministry appealed in 2011 and delayed action for nearly a decade.
- On February 17, 2020, the Supreme Court

finally upheld the right of women SSC officers to receive Permanent Commission in all non-combat roles. The court rejected gender stereotypes and said arguments based on physical ability or family roles were unconstitutional.

- The ruling highlighted outstanding women officers like Colonel Sofiya Qureshi, who led an Indian Army team at Exercise Force 18, and earlier served in the UN Peacekeeping Mission in Congo in 2006.
- Women pilots and other female soldiers also played a crucial role in the military action taken by India against terrorism in Pakistan and Pakistan-occupied Kashmir during Operation Sindoor
- As of March 2023, Government of India data shows over 7,000 women serving in the Indian Army, 1,636 in the Indian Air Force (IAF), and 748 in the Navy.

Recent Developments and Judicial Interventions:

- In January 2023, a special selection board reviewed the promotion of 108 female officers from the 1992 to 2006 batches, clearing a backlog to allow them to attain the rank of Colonel and hold command positions.
 - » Direct entry of women officers through the NDA and enlistment in specialized units like the Corps of Military Police and Assam Rifles have begun on a limited scale.
 - » Women have also entered artillery units and completed prestigious staff courses, including the Defence Services Staff Course (DSSC) and Defence Services Technical Staff Course (DSTSC). The first female officer is now serving in extreme conditions at Siachen Glacier.
 - » However, women remain barred from certain core combat arms, such as the Armoured Corps, Infantry/Mechanized Infantry, and Special Forces. Entry into these branches is also limited by vacancy-based recruitment rather than merit-driven competitive selection.

The Supreme Court and Permanent

WOMEN IN COMMANDING AND COMBAT POSITIONS

Indian Defence Forces have taken remarkable steps to become a true gender-neutral and inclusive force. It has commenced the induction of **women** into all branches.

Highlights

- Captain **Shiva Chauhan** became the **first woman officer** to get operationally deployed in Kumar Post, Siachen Glacier in January 2024.
- In December 2023, Captain **Geetika Koul** became the **first woman medical officer** to be deployed at Siachen after completing the training at Siachen Battle School.
- Captain **Fatima Wasim** became the **first woman medical officer** to be deployed on an operational post on the Siachen Glacier in 2023.
- Lt Cdr **Purna Deosthalee** was named as the **first woman officer** to command an Indian Naval Warship.
- Gp Capt **Shaliza Dhami**, a helicopter pilot became the **first woman** from a flying branch to command a combat unit in the IAF in 2023.

Breaking barriers

- In 2019, 24-year-old Sub-Lieutenant Shivangi became the first woman pilot in the Indian Navy to steer a fixed-wing Dornier maritime reconnaissance aircraft in 2019.
- In 2017, six women officers from the Navy made history by circumnavigating the globe in INSV Tarini.
- Flight Lieutenant Parul Bharadwaj, Flying Officer Aman Nidhi and Flight Lieutenant Hina Jaiswal became the first all-women crew to embark on a battle inoculation Training Mission.
- Flight Lieutenant Avani Chaturvedi along with fighter pilots Bhawana Kanth and Mohana Singh – first women combat pilots – are inducted into IAF's fighter squadron.



Commission for Women:

- On December 9, 2024, the Supreme Court of India exercised its constitutional powers under Article 142 to grant permanent commission to a woman Army officer who had been unfairly denied this benefit despite an exemplary service record. This ruling rectified systemic discrimination and reinforced the principle of meritocracy in military service.
 - » **Use of Article 142:** Empowering the Court to pass orders ensuring “complete justice” in the case.
 - » **Permanent Commission:** Allowing women officers to serve until retirement rather than being restricted to limited tenure Short Service Commissions.
 - » **Recognition of Service:** Highlighting the officer's distinguished contributions as a basis for equitable treatment.
 - » **Judicial Emphasis:** Acknowledging

the selfless courage of soldiers and prioritizing service merit over concerns about gender-based accommodations.

The Importance of Women in the Armed Forces:

- **Social Integration:** The presence of women in the military promotes better understanding and communication among diverse groups within the forces. This can translate into improved relations with local populations during deployments, helping to build trust and cooperation in varied cultural environments.
- **Diversity of Perspective:** Women contribute diverse perspectives and problem-solving approaches that enhance creativity and innovation. This diversity improves decision-making processes, leading to more effective mission outcomes. Military operations benefit from a wider range of viewpoints that challenge conventional thinking and foster adaptability.
- **Operational Capabilities:** Modern warfare is increasingly reliant on technology, communication, and intelligence. Women often demonstrate strong skills in these domains, strengthening the armed forces' operational effectiveness. Their expertise in information gathering, cyber operations, and communication roles supports complex and dynamic military objectives.
- **Recruitment opportunities:** Inclusion of women broadens the recruitment pool, enabling the military to attract a wider spectrum of qualified candidates. This diversity helps meet the increasing demand for skilled personnel in specialized roles,

especially in technologically advanced fields..

Challenges Faced by Women in the Armed Forces:

- **Stereotypes and Biases:** Persistent cultural attitudes often question women's capabilities and roles in combat or leadership, limiting their opportunities and acceptance.
- **Limited recognition:** Many women officers experience difficulties in gaining equal respect and recognition compared to their male counterparts, affecting morale and career progression.
- **Risk of Harassment:** Women in the armed forces face risks of sexual misconduct, which undermines their safety and well-being, and calls for stronger protective measures and accountability mechanisms.
- **Biological limitations:** The military environment poses unique challenges for women managing pregnancy and motherhood, including inadequate support systems and policies that do not fully accommodate their needs.
- **Insufficient Regulation:** Existing military regulations often do not comprehensively address the specific requirements and concerns of women officers, resulting in gaps in policy and practice.

Conclusion:

India's journey towards gender equality in the armed forces is gradual but steady. Increasing numbers of women in leadership roles set examples for future generations, with performance and acceptance intertwined in a feedback loop.

India's Progress on the Human Development Index: A Comprehensive Analysis

India has seen significant improvements in human development, as highlighted in the United Nations Development Programme (UNDP) Human Development Report 2025. In 2023, India ranked 130th out of 193 countries,

reflecting a three-point improvement from 133rd in 2022. This advancement in the Human Development Index (HDI) signals positive trends in key areas such as life expectancy, national income, and gender inequality. However,

challenges remain, particularly in terms of inequality and gender development.

Key Metrics of Human Development in India:

- **Human Development Index (HDI):** India's HDI score in 2023 stood at 0.685, positioning the country in the "medium human development" category. Although this score is still below the threshold of 0.700, required for high human development, India's HDI has grown by over 53% since 1990. This remarkable improvement outpaces both the global and South Asian averages, driven primarily by economic growth and targeted social protection initiatives.
- The HDI is composed of three key dimensions: health, education, and income. India's advancements in these areas are noteworthy:
 - » **Life Expectancy:** Life expectancy at birth increased from 58.6 years in 1990 to 72 years in 2023, the highest since the inception of the index. This increase is partly attributed to the effectiveness of national health programs such as the National Rural Health Mission, Ayushman Bharat, and Janani Suraksha Yojana, which have significantly enhanced healthcare access across the country.
 - » **Education:** The expected years of schooling in India remained steady at 13 years in both 2022 and 2023. The mean years of schooling saw a slight improvement, rising from 6.6 years in 2022 to 6.9 years in 2023. These figures reflect the impact of educational reforms like the Right to Education Act and the National Education Policy 2020, though challenges persist regarding the quality of education.
 - » **Income:** India's Gross National Income (GNI) per capita rose from \$8,475 in 2022 to \$9,047 in 2023, continuing a long-term upward trend. This increase is attributed to a combination of strong economic growth, increased

investments, and inclusive programs like MGNREGA and Jan Dhan Yojana, which have contributed to poverty reduction.

- **Gender Inequality Index (GII):** India has also made notable progress in reducing gender inequality. In 2023, it ranked 102nd out of 193 countries on the GII, a significant improvement from 108th in 2022. While this reflects progress, India's performance on the Gender Development Index (GDI) remains concerning, with a score of 0.874 in 2023. This score places India among countries in Group 5, which have relatively high gender gaps. The government's focus on women's empowerment, including the constitutional amendment reserving one-third of legislative seats for women, holds promise for further progress.
- **Multidimensional Poverty Reduction:** Between 2015-16 and 2019-21, approximately 135 million Indians escaped multidimensional poverty. This achievement is attributed to various welfare programs and economic growth, indicating that India's social protection mechanisms have been effective in addressing poverty.

Challenges and Persistent Inequality:

- Despite the progress India has made, the UNDP report highlights several areas of concern:
 - » **Inequality:** India's HDI is significantly reduced by inequality, with the report noting that inequality accounts for a 30.7% loss in HDI, one of the highest in the region. Although progress has been made in health and education, disparities in income and gender remain substantial. Female labor force participation, political representation, and access to resources continue to lag behind male counterparts.
 - » **Gender Disparities:** While India's GII ranking has improved, gender inequalities persist in many aspects of society. The low female labor force participation rate, alongside limited political representation, underscores

the need for targeted policies to address these disparities.

LEADERBOARD

HDI ranking and value (2023)

Rank	Country	HDI value
1	Iceland	0.972
2	Norway	0.970
2	Switzerland	0.970
4	Denmark	0.962
5	Germany	0.959
5	Sweden	0.959
7	Australia	0.958
8	Hong Kong, China (SAR)	0.955
8	Netherlands	0.955
17	United States	0.938
130	India	0.685

HDI: Human Development Index

Source: UNDP Human Development Report 2025

Comparison with Other Nations:

- India shares the 130th rank with Bangladesh, with both countries categorized under "medium human development." Other neighboring nations like Nepal (145th) and Bhutan (125th) also fall under this category, while Pakistan, which ranks 168th, and Afghanistan, ranked 181st, are placed in the "low human development" category. In contrast, China (78th) and Sri Lanka (89th) maintain their positions in the "high human development" category, reflecting a broader disparity in regional development.
- Globally, Iceland topped the HDI rankings with a value of 0.972, followed by Norway and Switzerland. South Sudan, with an HDI value of 0.388, ranked the lowest, highlighting the vast gaps in development levels across the world.

Global Context: The Role of Artificial

Intelligence:

- The 2025 Human Development Report also explores the impact of Artificial Intelligence (AI) on global development. While global human development has stagnated, AI is seen as a potential catalyst for progress. According to the report, 60% of people are optimistic about AI's ability to create new job opportunities.
- However, the report warns that unless new methods of development are explored, the world could face a significant delay in reaching the 2030 target for high human development. Inequality between countries with low HDI and those with very high HDI has been increasing, reversing a long-term trend of convergence.

Conclusion:

India's progress in the Human Development Index reflects significant strides in improving life expectancy, education, and national income. However, challenges related to gender inequality, income disparity, and multidimensional poverty remain. As the country moves closer to achieving high human development, continued investment in social welfare programs and targeted interventions, especially for marginalized groups, will be critical. The global context of stalled human development further underscores the urgency of innovative solutions, including leveraging emerging technologies like Artificial Intelligence, to reinvigorate progress on human development worldwide. India's experience demonstrates that while significant gains have been made, there is still a long road ahead in ensuring that development is inclusive and equitable for all segments of society.

Short Issues

SRS 2021 Report on India's fertility rate

Context:

India's Total Fertility Rate (TFR) has remained unchanged at 2.0 in 2021, mirroring the figure from 2020, according to the Sample Registration System (SRS) report released by the Registrar General of India (RGI) on May 7, 2024.

About TFR:

- The Total Fertility Rate (TFR) is the average number of children a woman is expected to have in her lifetime, assuming she lives to the end of her reproductive years and experiences current age-specific fertility rates throughout her life. It is measured as the number of children per woman.
- TFR is a crucial demographic indicator that helps assess the fertility level of a population and its potential for growth or decline. A TFR of 2.1 is generally considered the replacement level, meaning that on average, each woman will have enough children to replace herself and her partner.
- The current national TFR is slightly below the replacement level of 2.1, the threshold at which a population exactly replaces itself from one generation to the next without migration.

State-Wise Fertility Rates:

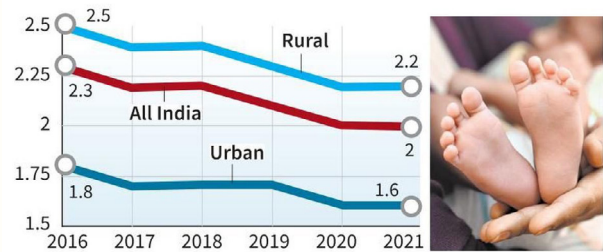
- While the national average reflects near-replacement fertility, state-level data reveals significant disparities:
 - » Bihar recorded the highest TFR at 3.0, well above the national average, reflecting high fertility trends in certain socio-economic settings.
 - » Delhi and West Bengal posted the lowest TFRs at 1.4, indicating a steep decline in fertility and potentially signaling long-term demographic aging if the trend continues.
- Other states that have achieved or dropped below replacement levels include:
 - » Tamil Nadu, Kerala, Maharashtra, Punjab, Andhra Pradesh, and Jammu &

Kashmir, all with TFRs at 1.5.

- » Gujarat and Haryana recorded TFRs at 2.0, aligning with the national average.
- » Assam, at 2.1, has exactly reached the replacement level.

A static trend

The Total Fertility Rate (TFR) for the country has remained at 2.0 in 2021 and 2020. The chart shows the TFR for 2016-2021



Source: SRS Statistical Report 2021

Demographic Shifts:

- **Decline in the Young Population:** The share of children in the 0–14 age group has sharply declined over the decades:
 - » From 41.2% in 1971 to 24.8% in 2021.
 - » This reflects lower birth rates and improvements in family planning and female education.
- **Growth in the Working-Age Population:** The economically active segment of the population aged 15–59 years has expanded:
 - » From 53.4% in 1971 to 66.2% in 2021.
 - » Rising Elderly Population
 - » Kerala leads with the highest proportion of elderly at 14.4%, followed by Tamil Nadu (12.9%) and Himachal Pradesh (12.3%). States with the lowest elderly shares include Bihar (6.9%), Assam (7%), and Delhi (7.1%).

Conclusion:

India's steady TFR at 2.0 marks a demographic milestone, with several states already below the replacement level. The convergence toward lower fertility, rising marriage age, and increasing elderly population indicate that India is undergoing a profound demographic transition. This period presents both opportunities and challenges—from reaping the demographic

dividend to preparing for an aging society. Policymakers will need to craft nuanced, data-driven strategies to manage this shift effectively and ensure inclusive and sustainable growth for the decades ahead.

Acute Food Insecurity in 2024

Context:

The Global Report on Food Crises (GRFC) 2024 has revealed a worsening global hunger situation, with over 295 million people across 53 countries and territories facing acute food insecurity.

Key findings of the Report:

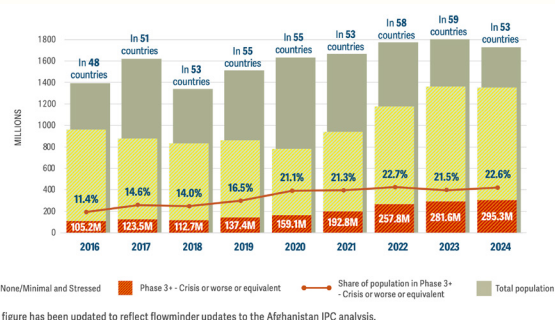
- Over 295 million people across 53 countries and territories are facing serious hunger, an increase of 13.7 million compared to 2023.
- **Prevalence:** Approximately 23 percent of the assessed population; above the 20 percent threshold for the fifth straight year.
- **Catastrophic hunger (IPC/CH Phase 5):** Doubled to 1.9 million people—the highest level since 2016 tracking began.
- **Child malnutrition:** Nearly 38 million children under five were acutely malnourished, with “extremely high” rates in regions including the Gaza Strip, Mali, Sudan and Yemen.
- **Funding Shortfalls and Outlook:** In 2025, funding for food and nutrition emergencies is expected to drop by up to 45% — the biggest cut ever recorded in the history of the GRFC.
 - » Some of the major donors are planning to stop their support suddenly. This puts important aid programs at risk in countries like Afghanistan, the Democratic Republic of the Congo, Ethiopia, Haiti, South Sudan, Sudan, and Yemen.
 - » Because of these funding cuts, nutrition services for at least 14 million children could be disrupted. This may lead to a rise in malnutrition and child deaths.

Primary Drivers of the crises:

- **Conflict:** The dominant factor, affecting

140 million people in 20 countries. Confirmed famine in Sudan and catastrophic hunger hotspots in the Gaza Strip, South Sudan, Haiti and Mali.

- **Forced Displacement:** Nearly 95 million forcibly displaced individuals (IDPs, asylum seekers, refugees) residing in nations already experiencing food crises—Democratic Republic of Congo, Colombia, Sudan and Syria among them.
- **Climate Extremes:** El Niño-induced droughts and floods pushed 96 million people into crisis conditions across 18 countries. Historic high temperatures and widespread flooding precipitated crop failures, especially in southern Africa.
- **Economic Shocks:** Inflation and currency devaluation drove hunger for 59.4 million people in 15 countries—levels nearly double those prior to the COVID 19 pandemic despite a slight year on year decline. Afghanistan, South Sudan, the Syrian Arab Republic and Yemen were hardest hit.



About Global Report on Food Crises (GRFC) 2024:

- The Global Report on Food Crises (GRFC) 2024 is published annually by The Global Network Against Food Crisis (GNAFC) with analysis from the Food Security Information Network.
- GNAFC is an international alliance of the United Nations, the European Union, governmental and non-governmental agencies working together to address food crises.

Strategic Recommendations:

- Evidence driven, impact focused interventions, scaling proven models and prioritizing measurable outcomes.
- Resource pooling across UN agencies, governments and NGOs to maximize efficiency.
- **Localization:** Strengthening local food systems to enhance resilience against shocks.
- Integrated nutrition services that address both immediate needs and long term vulnerabilities.
- **Community engagement:** Placing affected populations at the center of response design and implementation.

Conclusion:

The 2024 Global Report on Food Crises highlights a sharp rise in hunger caused by overlapping problems—conflict, displacement, extreme weather, and economic instability. Working together is essential to create a future without hunger.

New Epigraphic Discoveries in Telangana

Context:

In a significant development for the study of ancient South Indian history, the Epigraphy Branch of the Archaeological Survey of India (ASI) has documented eleven previously unknown inscriptions during an epigraphical survey conducted in the Gundaram Reserve Forest, located approximately 10 km from Peddapalli district headquarters in Telangana. These findings offer valuable insights into the cultural, political, and religious landscape of the Deccan region during the early historic period, particularly under the Satavahana dynasty.

Historical Context of the discovery:

- The inscriptions discovered cover a broad time frame, ranging from the 1st century BCE to the 6th century CE. This was a transformative period in the Indian subcontinent, marked by the consolidation of regional powers, the spread of Buddhism

and Brahmanical traditions, and the development of trade networks across the Deccan plateau.

- The Satavahana dynasty, which ruled a significant part of the Deccan during this time, played a crucial role in shaping the region's socio-political and cultural fabric. The new inscriptions help fill important gaps in the historical narrative of this period.

Key Inscriptions and Their Significance:

- Among the eleven inscriptions, two inscriptions from the Gundaram rock shelter have drawn particular attention for their rich historical content and early epigraphic features.
- **The first inscription**, composed in early Brahmi script, mentions a figure from the Hāritiputra lineage, possibly belonging to the Chutu dynasty, a minor ruling house often considered contemporaneous or subordinate to the Satavahanas.
 - » This individual is credited with excavating a cave for Buddhist monks, indicating patronage of Buddhism in the region.
 - » Notably, he identifies himself as a friend of Kumāra Hakusiri, a Satavahana prince, offering a rare glimpse into political alliances and the interconnectedness of ruling elites during this era.
- **The second inscription** is remarkable for its iconographic features. It begins with depictions of a trident and a damaru—religious symbols often associated with Shaivism—and goes on to state that the land east of the hill belonged to Siri Devarāna.
 - » This is considered the first known instance in South India of such religious imagery being used in early inscriptions, signaling a symbolic association between political authority and religious identity.

Broader Implications:

- These discoveries not only add to the corpus of early Deccan epigraphy but also reflect the complex interplay between religion, politics, and society during the Satavahana period.

- The use of symbols like the trident and damaru hints at the emerging role of religious iconography in legitimizing political power—a trend that would become more pronounced in later Indian history.

Conclusion:

The Gundaram inscriptions underscore the importance of systematic epigraphical surveys in uncovering India's layered past. By documenting these records, the ASI has contributed significantly to understanding the regional histories of Telangana and the evolving dynamics of early historic South India.

Raghuji Bhosale's 18th-Century Sword

Context:

The Maharashtra government recently reclaimed the ceremonial sword of Maratha warrior Raghuji Bhosale I at a Sotheby's auction in London. The acquisition, which cost the state Rs.47.15 lakh including handling, transport, and insurance, marks a significant cultural milestone. The sword is a rare relic of the Maratha Empire's military and artisanal legacy. It is believed to have been either looted by the British after the Battle of Sitabuldi in 1817 or gifted in the aftermath.

About Raghuji Bhosale I:

- Raghuji Bhosale I was the founder of the Nagpur-based Bhosale dynasty and one of the foremost generals under Chhatrapati Shahu Maharaj during the early 18th century. Honored with the title 'Senasaheb Subha', Raghuji was instrumental in expanding Maratha control into eastern and southern India.
- His conquests included strategic campaigns in Bengal (1745 and 1755), parts of Odisha, Chhattisgarh, Sambalpur, and South India, where he defeated the Nawabs of Kurnool and Cuddapah.
- His leadership cemented Maratha dominance in these regions, and his dynasty later ruled the mineral-rich Vidarbha region,

noted for its reserves of iron and copper—materials used extensively in local weapon manufacturing.



Understanding the Sword's Style:

India's martial history includes a range of weapon styles, two of which stand out prominently:

- **Khanda Swords**
 - » **Origin:** Indigenous to India, dating back to the 9th–10th century CE.
 - » **Users:** Popular among Rajputs, Sikhs, and Marathas.
- **Features:**
 - » Straight, double-edged blades for slashing.
 - » Hindu basket hilts and knuckle guards.
 - » Entirely crafted from local iron or steel.
- **Firangi Swords:**
 - » **Fusion Weapons:** Combining European blades (typically from Solingen, Germany) with Indian-designed hilts.
- **The Raghuji Sword:**
 - » **Blade:** Straight, single-edged European blade.
 - » **Hilt:** Local Mulheri-style hilt with intricate gold inlay (koftgiri).
 - » **Grip:** Wrapped in green cloth, indicating ceremonial use.
 - » **Inscription:** "Shrimant Raghoji Bhosale Senasaheb Subha Firang" in gold-inlaid Devanagari script, confirming its attribution to Raghuji Bhosale.

Conclusion:

More than just an artifact, the sword of Raghuji Bhosale symbolizes the courage, diplomacy, and artistry of the Maratha Empire. Its return

is a poignant reminder of India's ongoing efforts to recover and preserve its displaced heritage from colonial times.

Reevaluation of the Keezhadi Excavation Report

Context:

The Archaeological Survey of India (ASI) has called for a revised excavation report on the Keezhadi site near Madurai, Tamil Nadu. The decision aims to ensure improved scientific accuracy and clearer classification of the site's historical periods.

Scientific Dating and Initial Findings:

- The original excavation report, nearly 1,000 pages long, used Accelerator Mass Spectrometry (AMS) for dating charcoal samples.
- AMS is a highly sensitive technique that counts isotopic atoms—particularly carbon-14 (^{14}C)—used to date organic remains up to around 62,000 years old. The AMS results at Keezhadi placed human activity around 200 BCE, confirming its ancient roots.
- The report also identified several cultural phases, with the earliest (Period I) tentatively dated between the 8th and 5th centuries BCE. This hints at a much older urban history for Keezhadi, possibly predating many well-known settlements in the region.

About Radiocarbon Dating:

- Radiocarbon dating (or ^{14}C dating) is a radiometric method that measures the decay of carbon-14 in carbon-bearing materials to determine age. Apart from archaeology, it is widely used in climate research and biomedical applications.
- AMS, used in Keezhadi, detects very low concentrations of isotopes, ranging from $10^{(-12)}$ to $10^{(-16)}$, making it ideal for precision dating in archaeology.

About the Keezhadi Site:

- Keezhadi is a key archaeological site along the Vaigai River basin near Madurai, Tamil

Nadu. Excavations began in 2015 following surveys identifying potential historical richness in the Vaigai valley.

- Despite only 1 out of an estimated 100 acres being excavated, over 4,000 artefacts have been uncovered. These include bricks, pottery, ring wells, beads, graffiti, and advanced water storage systems—indicating a literate, urban society with craft specialization.
- The finds suggest that an ancient Tamil civilization may have developed independently of North India, challenging the traditional north-centric narrative of early Indian urbanism.

The Sangam Period:

- The Keezhadi findings have a strong connection to the Sangam Age (3rd century BCE to 3rd century CE), a pivotal era in South Indian history, known for its prolific Tamil literature. This period saw three Sangams (literary academies), believed to be held under the patronage of the Pandyan kings.
 - » **First Sangam:** Held in Madurai; attended by legendary sages and gods, but no records survive.
 - » **Second Sangam:** Held in Kapadapuram; most works lost except for Tolkappiyam.
 - » **Third Sangam:** Established in Madurai by Mudathirumaran; while much was composed, only select works survive today.
- Key literary outputs from the Sangam Age include Tolkappiyam, Ettutogai, Pattuppattu, Pathinenkilkanakku, and the epics Silappathigaram and Manimegalai. These texts remain foundational for understanding early Tamil culture and society.

Conclusion:

The ASI's request for a revised Keezhadi report underscores broader challenges in Indian archaeology such as, project management, scientific integrity, and timely dissemination of findings. Keezhadi's evidence of an advanced, urban, literate society in early South India

makes it vital to maintain clear and credible archaeological records that enrich and balance India's historical narrative.

Second Lancet Commission on Adolescent Health

Context:

The Second Lancet Commission on Adolescent Health and Wellbeing has released a sweeping new report, charting both progress and persisting challenges in adolescent health on a global scale.

Key findings of the commission:

- **Multi-Burden Countries:** By 2030, 1 billion adolescents will live in countries with a high burden of disease, including HIV/AIDS, early pregnancy, depression, malnutrition, and injury.
- **464 Million Adolescents:** The commission projects that 464 million adolescents globally will be overweight or obese by 2030, a significant increase from 2015.
- **Mental Health:** 42 million years of healthy life will be lost to mental disorders or suicide by 2030, highlighting the need for urgent action.
- **Funding Disparity:** Adolescent health receives only 2.4% of total development assistance for health, despite adolescents accounting for 25.2% of the world population.

Commission's Recommendations:

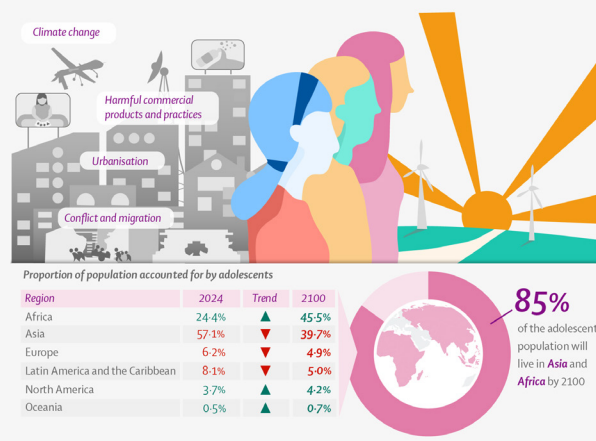
- **Increased Investments:** Governments and organizations need to invest more in adolescent health, focusing on interventions that address specific health issues.
- **Enabling Laws and Policies:** Laws and policies should protect adolescent sexual and reproductive health and rights, reduce the impact of commercial determinants of health, and promote healthy use of social media and online spaces.
- **Multi-Sectoral Approach:** A comprehensive approach involving healthcare, education, and social services is crucial to address the complex needs of adolescents.

- **Coordination:** Ministries of health and education need to coordinate interventions in schools to amplify gains made in adolescent health.

A call to action: the second Lancet Commission on adolescent health and wellbeing

Adolescents (people aged 10–24 years) are the future leaders of our world.

Protecting their health is one of the strongest mechanisms we have to safeguard our collective future, ensure a more just society, and create a healthier and more productive planet.



Significance of the Report:

- **Sheer Numbers:** The global population of 2 billion adolescents constitutes around 24% of the world's population, making adolescent health a critical issue.
- **Conflict-Affected Areas:** An estimated 340 million (18%) adolescents live in conflict-affected areas, highlighting the need for targeted interventions.
- **Data Matters:** Better indicators and improvement in data systems are required to monitor systemic changes in health and wellbeing outcomes.

Conclusion:

The second Lancet Commission on Adolescent Health and Wellbeing highlights the need for urgent action to address the health challenges faced by adolescents worldwide. Increased investments, laws, and a multi-sectoral approach are essential to ensure adolescent wellbeing and pave the way for greater gender equity and better life outcomes

Polity & Governance

Towards a Safe Digital Bharat: Regulating Obscene Content without Silencing Voices

Introduction:

The Supreme Court of India recently acknowledged concerns about the presence of obscene content on OTT platforms and social media. The court directed the Centre to take action, within legal limits, to address this growing issue. A bench comprising Justices B R Gavai and A G Masih heard a Public Interest Litigation (PIL). The petition highlighted the uncontrolled spread of obscene, sexually explicit, and even harmful content online. Solicitor General Tushar Mehta, representing the government, acknowledged the severity of the issue and noted that more regulations were in contemplation to curb obscenity on these platforms. The PIL raised urgent concerns, focusing on the unrestricted access to sexually perverted and pornographic content on platforms like Netflix, Amazon Prime, Ullu Digital, and social media sites such as X Corp (formerly Twitter), Meta (Facebook), and Google. The petitioners argued that this content negatively affects societal values, public safety, and the mental health of individuals, especially children and youth.

Key Concerns Raised in the Petition:

- ❖ **Obscene Content on Digital Platforms:** The petitioners argued that obscene and perverted content is circulating freely across OTT platforms and social media. The types of content discussed included child pornography, paedophilic, incestuous, and bestiality content, as well as soft-core adult

content.

- ❖ **Impact on Society:** The petition highlighted how the unchecked circulation of such material can lead to rising incidents of crimes against women and children. It claimed that the exposure to such explicit material alters young minds' understanding of sexuality, leading to unhealthy perceptions and behaviors.
- ❖ **Failure of Authorities:** Despite complaints and representations made to the authorities, no effective action had been taken. The petitioners expressed concern that the government had not introduced any meaningful regulations to control this problem, despite knowing the serious consequences.

Need for Regulating Obscenity on Digital Platforms

- ❖ **Preserving Social and Cultural Values:** Unchecked obscene content can weaken societal moral standards, fostering disrespect and moral decay.
 - » **Example:** The 2021 "Bulli Bai" app incident, where images of women were auctioned online, demonstrated the misuse of social media to harm women.
- ❖ **Protecting Human Dignity:** Content that reduces individuals to objects for lust violates the core principle of human dignity, which is central to personal autonomy.
- ❖ **Avoiding the Normalization of Obscenity:** Regular exposure to obscene content can desensitize individuals, eroding empathy

and reinforcing harmful stereotypes.

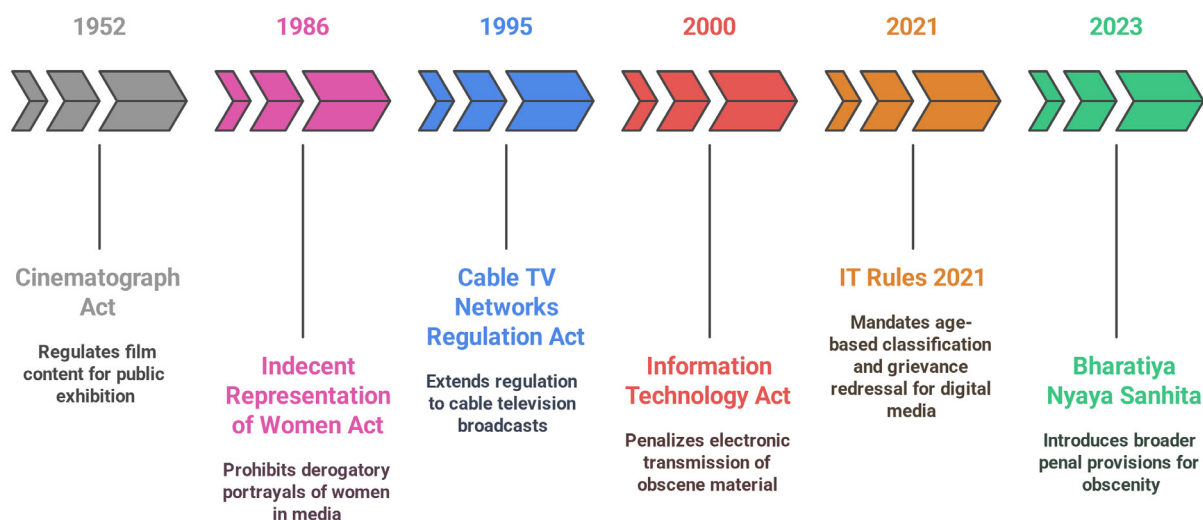
- ❖ **Ethical Responsibility of Platforms:** Digital platforms should ensure content promotes the greatest good and fosters a safe environment for users.
- ❖ **Upholding Constitutional Morality:** The Constitution's moral framework ensures that digital content respects core values like justice and equality. Article 19(2) allows reasonable restrictions on freedom of expression, including public order and decency.

Ethical Issues in Regulating Obscene Digital Content:

The regulation of obscene content on digital platforms brings forth several ethical dilemmas:

- ❖ **Vagueness and Subjectivity:** Deciding what constitutes obscene content is subjective and varies across cultures, regions, and time periods. Language and content once considered inappropriate may now be acceptable in everyday discourse.

Key Legal Milestones in Regulating Obscene Content in India



- ❖ **Paternalism vs. Autonomy:** Excessive regulation may infantilize users, assuming they cannot make informed decisions about what content they wish to consume. While protecting users from harmful content is essential, respecting their autonomy is equally important.
- ❖ **Evolving Social Norms:** Obscenity is a culturally relative concept that changes over time. For instance, ancient Indian art such as the sculptures at Khajuraho and Konark temples feature erotic imagery, which, if created today, would likely face censorship.
- ❖ **Power Dynamics:** The question arises of who determines what is acceptable content. There is a concern that censorship could be used against marginalized communities,

curbing their expression and silencing their voices.

- ❖ **Censorship vs. Reasonable Restrictions:** While some argue that censorship infringes on freedom of expression, there is a need for reasonable restrictions to protect public morals. Overregulation can stifle creativity and limit the diversity of media.

Legal Framework Governing Obscene Content:

India's legal landscape includes multiple laws and rules regulating digital content, though ambiguity persists regarding the definition of 'obscenity':

- ❖ **Information Technology Act, 2000 (Section 67):** Penalizes publishing or

transmitting obscene material in electronic form.

- ❖ **Bharatiya Nyaya Sanhita (BNS), 2023:** Introduces broader penal provisions, but lacks specific definitions of obscenity.
- ❖ **Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021:**
 - » Mandate age-based content classification.
 - » Establish a three-tier grievance redressal mechanism:
 - **Level I:** Publisher's internal grievance officer.
 - **Level II:** Self-regulatory bodies (SRBs).
 - **Level III:** Oversight by the Ministry of Information & Broadcasting (MIB) and the Grievance Appellate Committee (GAC).
- ❖ **Cinematograph Act, 1952 and Cable TV Networks Regulation Act, 1995:** Apply to traditional broadcast media.
- ❖ **Indecent Representation of Women (Prohibition) Act, 1986:** Prohibits portrayals that are derogatory to women.

Judicial Interpretation and Challenges:

- ❖ Judicial interpretations of obscenity have evolved over time. In *Ranjit D. Udeshi v.*

State of Maharashtra (1964), the Supreme Court applied the Hicklin test, judging material by its tendency to deprave and corrupt.

- ❖ However, in the 2014 *Aveek Sarkar v. State of West Bengal* case, the Court adopted the community standards test, which evaluates obscenity based on social and moral norms. This shift highlights the challenge of applying consistent standards across India's diverse population.
- ❖ Moreover, the increasing trend of multiple FIRs for the same offense has raised concerns about harassment and the infringement of the accused's right to a fair defense.

Conclusion:

The regulation of obscenity on digital platforms is a complex issue due to its subjective nature, evolving social norms, and the need for a balance between creativity and societal responsibility. Creating a responsible digital media environment requires clear legal guidelines, self-regulation, public awareness, and global cooperation. Upholding values like justice, dignity, transparency, and accountability will help platforms strike the right balance between creative freedom and social responsibility.

Short Issues

President Seeks Supreme Court Opinion on Bill Assent Timelines

Context:

President Droupadi Murmu has sought the opinion of the Supreme Court on whether the judiciary can prescribe timelines for the President and State Governors in granting or withholding assent to state Bills. This unprecedented reference, made under Article 143(1) of the Constitution, comes in the wake of a landmark Supreme Court judgment on April

8, 2025, which fixed a three-month deadline for Presidential action on Bills reserved by Governors.

The Constitutional Background:

- Under Article 200, a Governor can:
 - » Grant assent to a Bill,
 - » Withhold assent, or
 - » Reserve it for the consideration of the President.
- Once a Bill is reserved, Article 201 empowers the President to either grant or withhold assent, or to return the Bill to the state legislature with recommendations.

- However, neither article specifies any timelines for these decisions. In the absence of clear constitutional directives, the delay in processing state legislation has become a contentious issue, prompting judicial intervention.

About Supreme Court recent ruling:

- In April 2025, the Supreme Court ruled that:
 - » Governors must act on Bills within a reasonable time.
 - » The President should decide within three months on Bills reserved by Governors.
 - » In case of delay, reasons must be recorded and conveyed to the concerned state.

Questions on Judicial Scope and Procedures

Further questions posed to the Supreme Court concern:

- **Judicial Review:**

Justiciability of decisions on bills before they become law

- **Supreme Court's Powers (Article 142):**

Its scope, including issuing directions potentially contrary to existing law

- **Constitutional & Procedural Matters:**

Requirement for a five-judge bench for constitutional interpretation (Article 145 (3))

SC's jurisdiction in Union-State disputes (Article 131)



- » Is there any constitutional basis for judicially imposed timelines on these authorities?
- » Does Article 361, which protects the President and Governors from legal proceedings, bar courts from scrutinizing their actions?
- » Can the Supreme Court use Article 142 (power to do complete justice) to override or substitute decisions made by the President or a Governor?
- » What options are available to a Governor when a Bill is presented?
- » Is the Governor bound by the advice of the Council of Ministers when exercising powers under Article 200?

About Supreme Court's Advisory Role:

- Article 143 of the Indian Constitution empowered the Supreme Court with advisory jurisdiction. As per this, even the President can seek Supreme Court's advice over any issue of law or public importance.
- The Supreme Court's opinion is not legally binding on the President; it serves as an advisory opinion.
- This is only the 13th time that the President of India has invoked Article 143 since 1950, reflecting the gravity of the constitutional questions involved.

Conclusion:

The outcome of this reference will likely shape the future of legislative federalism in India. It will determine the extent of judicial oversight over constitutional functionaries and address growing inter-governmental tensions. It will further influence how Governors and the President handle politically sensitive state legislation.

The Presidential Reference:

- Invoking Article 143(1), President Murmu has posed 14 key constitutional questions to the Supreme Court. Key question include:
 - » Can courts review the discretionary decisions of the President under Article 201 and the Governor under Article 200?

Bhakra-Nangal Water Dispute between Punjab and Haryana

Context:

On May 9, the Punjab and Haryana High Court indicated it may issue a contempt notice to the Punjab government for obstructing the release

of 4,500 cusecs of water to Haryana. This came after a protest at the BBMB rest house, where water release officials were physically prevented from carrying out court-mandated duties.

- The court had earlier ordered Punjab not to interfere in BBMB's functioning. The protest, led by political workers and attended by senior state leadership, was termed "unbelievable" by the court, as it defied direct judicial orders.

Background of the Bhakra-Nangal Project:

- The Bhakra-Nangal Project is one of India's earliest and most significant post-Independence river valley development schemes. Located on the Sutlej River, it consists of the Bhakra Dam (in Himachal Pradesh) and the Nangal Dam (in Punjab).
- The project is managed by the Bhakra Beas Management Board (BBMB), which oversees the distribution of water among Punjab, Haryana, Rajasthan, Himachal Pradesh, and Delhi.
- At the beginning of every accounting year, the BBMB allocates water to these states. For the current cycle, the allocation is:
 - » Punjab: 5.512 million acre-feet (MAF)
 - » Haryana: 2.987 MAF
 - » Rajasthan: 3.318 MAF
- Punjab claims that Haryana has already withdrawn 3.110 MAF, which amounts to 104% of its allocated share.

Structural Causes of the Water Crisis in Punjab and Haryana:

- **Depletion of water resources:** As per Central Ground Water Board data, groundwater extraction exceeds recharge rates by 66% in Punjab, 51% in Rajasthan, and 34% in Haryana, creating long-term aquifer stress. Additionally, major reservoirs like Bhakra, Ranjit Sagar, etc., have reported unusually low levels due to reduced snowmelt from the western Himalayas, highlighting the impact of climate variability.
- **Human induced causes:** Widespread cultivation of water-intensive crops such as paddy, coupled with subsidized electricity and free water supply in states like Punjab

and Haryana, encourages unregulated pumping of groundwater. Rapid urban expansion in cities like Gurugram, Chandigarh, and Ludhiana has increased municipal and industrial water demands, straining already limited resources.

- **Indus Waters Treaty Constraints:** Signed in 1960, the treaty limits India's use of western rivers (Indus, Chenab, Jhelum), reducing water availability for northwestern Indian states.

Legal and Constitutional Framework:

- Entry 56 of Union List empowers the Union to regulate interstate rivers.
- Entry 17 of State List gives states control over water resources within their territories.
- Article 262 of the Constitution provides that Parliament may legislate to resolve water disputes and exclude court jurisdiction.

Two key legislations operationalize Article 262:

- **River Boards Act, 1956:** Allows for central regulation via river boards (none formed yet).
- **Inter-State Water Disputes Act, 1956:** Enables creation of tribunals. The 2002 amendment introduced timelines—one year for tribunal formation, three years for decisions.

Conclusion:

The Bhakra-Nangal dispute underlines critical challenges in interstate water governance, including compliance with legal frameworks, transparent administration, and equitable resource sharing. As climate variability intensifies, such disputes may grow unless addressed through scientific assessments, intergovernmental dialogue, and judicial oversight. Respect for institutional mechanisms and cooperative approaches are essential to prevent further deterioration of inter-state relations and ensure water security for all stakeholders.

India Reconsiders Safe Harbour for Social Media

Context:

The Union Ministry of Information and Broadcasting has informed the Parliamentary Standing Committee on Communication and Information Technology that it is reconsidering the concept of safe harbour for social media platforms. This move aims to combat the spread of "fake news" online.

Rationale behind Reconsideration:

- **Combating Fake News:** The government aims to tackle the spread of misinformation online by re-examining safe harbour provisions.
- **Regulating Social Media:** The move is part of a broader effort to regulate social media platforms and ensure they take responsibility for content hosted on their platforms.
- **Prevent Violation of Laws:** The government has accused foreign social media platforms of flouting Indian laws and acting too slowly on takedown notices.

About Safe Harbour:

- Safe harbour is a legal doctrine that protects online platforms—such as social media networks, forums, and messaging services—from being held liable for the content users post on their sites.
- In India, under Section 79 of the Information Technology Act, 2000 grants intermediaries immunity from liability, provided they adhere to certain due diligence requirements.

Intermediary Liability:

- Intermediary liability refers to the legal responsibility borne by online platforms for the content they facilitate or distribute. Under Indian law, intermediaries lose this protection if they fail to act after being notified of unlawful content. This notification must typically come in the form of a court order or a directive from a government agency.
- The Information Technology (Intermediary Guidelines and Digital Media Ethics Code)

Rules, 2021, further tightened compliance. Key requirements include:

- » Appointment of a Chief Compliance Officer, Nodal Contact Person, and Grievance Officer.
- » Mandatory removal of content within a specified timeframe once notified.
- » Publication of periodic compliance reports detailing user grievances and actions taken.

Conclusion:

India's re-evaluation of safe harbour provisions comes at a pivotal moment in the evolution of digital governance. As misinformation grows more sophisticated and pervasive, the challenge lies in crafting laws that protect both free expression and public safety. The eventual contours of proposed Digital India Act—and its treatment of safe harbour—will likely set the tone for India's digital future and influence regulatory trends across the global south.

I4C Brought Under PMLA

Context:

In a landmark development to enhance India's cybercrime enforcement capabilities, the Indian government has recently brought the Indian Cyber Crime Coordination Centre (I4C) under the Prevention of Money Laundering Act (PMLA), 2002. The move is aimed at enhancing the coordination between cybercrime and financial investigation agencies and tackling the growing nexus between digital crime and money laundering.

Key Highlights of the Move:

- **Empowering I4C:** With this inclusion under Section 66 of the PMLA, I4C is now authorized to share and receive critical intelligence with the Enforcement Directorate (ED) and other law enforcement bodies. This empowerment allows for quicker response and more effective tracking of cybercrime activities with financial implications.
- » Section 66 (Disclosure of information) of PMLA Act, 2002 enables the Director

(Directorate of Enforcement) or any other authority specified by him to share the information with the concerned agency for necessary action.

- **Uncovering Money Trails:** Cybercriminals often exploit digital platforms to launder illicit funds. By bringing I4C under the PMLA, the government aims to trace these money trails, disrupt financial networks linked to cyberfrauds, and unearth the masterminds operating behind the scenes.
- **Boosting Inter-Agency Coordination:** This integration enhances collaboration between I4C and agencies like the ED, ensuring more coordinated investigations into cases where cybercrimes are linked to financial fraud and laundering. The initiative is expected to close existing gaps between cyber and financial probes.
- **Strengthening Cybercrime Enforcement:** Access to money laundering data will allow I4C to approach cybercrime enforcement with greater depth and precision. The move is likely to result in more convictions and the dismantling of sophisticated online fraud networks operating at national and international levels.

About Indian Cyber Crime Coordination Centre (I4C):

- The Indian Cyber Crime Coordination Centre (I4C) is an initiative of the Ministry of Home Affairs, launched in 2018 with a sanctioned budget of Rs.415.86 crore (US\$49 million). It was formally inaugurated in January 2020 in New Delhi by Union Home Minister Amit Shah.
- I4C acts as the nodal agency for addressing cybercrime in India and consists of several key components:
 - » National Cybercrime Reporting Portal (cybercrime.gov.in) for public reporting of cyber incidents.
 - » National Cybercrime Forensic Laboratory (NCFL) for digital evidence analysis.
 - » National Cybercrime Training Centre (NCTC) for training law enforcement

personnel across India.

Key Milestones:

- **2020:** Played a role in recommending the ban of 59 Chinese mobile apps over national security concerns.
- **2023:** Partnered with Google's DigiKavach to safeguard users from online financial fraud.

Conclusion:

As cyber threats become more sophisticated and financially motivated, this decision marks a timely and strategic intervention by the government. By aligning cybercrime enforcement with anti-money laundering mechanisms, India is positioning itself to better tackle the increasingly complex landscape of digital crime.

Supreme Court on Implementing NEP

Context:

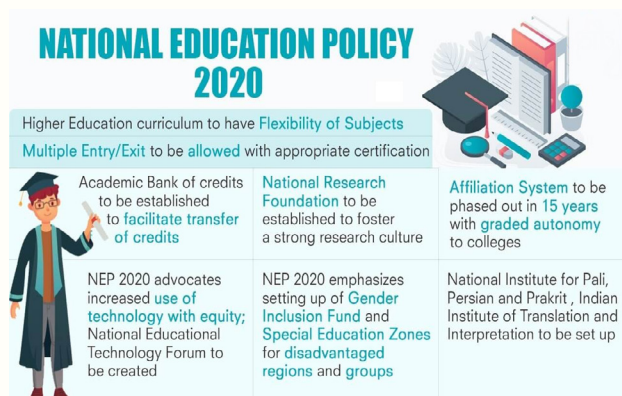
The Supreme Court recently stated that while it can intervene if a state's action or inaction related to the National Education Policy (NEP) violates any fundamental rights, it cannot issue directions under Article 32 of the Constitution compelling any state to adopt the policy.

Background:

- Lawyer G.S. Mani had filed a petition in the Supreme Court, which asked for the implementation of the three-language formula under the National Education Policy (NEP) 2020 in Tamil Nadu, Kerala, and West Bengal. The petition was rejected by the honourable Supreme Court stating:
 - » States are not legally bound to implement NEP 2020.
 - » The judiciary cannot override state discretion unless fundamental rights are jeopardized.
 - » The federal fabric of India requires that national policies respect regional and linguistic diversity.

Implications: Autonomy vs Uniformity:

- The Supreme Court's position reiterates the constitutional separation of powers and the division of responsibilities between the Union and State governments. Education is a subject in the Concurrent List, meaning both the Centre and states can make laws on it. However, policy implementation remains voluntary, not mandatory.



About NEP 2020:

- National Education Policy 2020 was announced on 29.07.2020. It proposes various reforms in school education as well as higher education including technical education.
- **Salient Features of NEP, 2020:**
 - » Ensuring Universal Access at All Levels of schooling from pre-primary school to Grade 12;
 - » Ensuring quality early childhood care and education for all children between 3-6 years;
 - » New Curricular and Pedagogical Structure (5+3+3+4);
 - » Establishing National Mission on Foundational Literacy and Numeracy;
 - » Emphasis on promoting multilingualism and Indian languages; The medium of instruction until at least Grade 5, but preferably till Grade 8 and beyond, will be the home language/mother tongue/local language/regional language.
 - » Setting up of a new National Assessment Centre, PARAKH (Performance Assessment, Review, and Analysis of Knowledge for Holistic Development);

- » Equitable and inclusive education - Special emphasis given on Socially and Economically Disadvantaged Groups (SEDGs);
- » Increasing Gross Enrolment Ratio in higher education to 50%;
- » NTA to offer Common Entrance Exam for Admission to HEIs;
- » Establishment of Academic Bank of Credit;
- » Setting up of National Research Foundation (NRF);
- » Expansion of open and distance learning to increase Gross Enrolment Ratio (GER).

Conclusion:

The Supreme Court's stance on the NEP underscores the complexities of governance in a pluralistic and federal democracy like India. While the NEP aspires to modernize and standardize education across the country, its success depends on inclusive dialogue, flexibility in implementation, and state cooperation. The ruling acts as a crucial reminder that in a democracy, policy reform must be pursued through consensus and cooperation, not compulsion. As India moves forward with educational reform, the emphasis must be on ensuring that innovation does not come at the cost of inclusion, and progress does not override plurality.

Quashing of POCSO Cases through Settlement

Context:

The Kerala High Court has ruled that not all cases under the Protection of Children from Sexual Offences (POCSO) Act must proceed to trial when the involved parties have arrived at a genuine settlement. This judgment, delivered by Justice C. Jayachandran, comes amid growing legal debates around the quashing of non-compoundable offences, particularly those involving minors and sexual offences.

Kerala High Court's Observation:

- Justice C. Jayachandran, while quashing two separate cases registered under the POCSO Act, underscored the role of genuine settlement in determining the continuation of criminal proceedings. Both cases involved a marriage between the accused and the survivor, with the couples reportedly leading stable family lives.
 - The court reasoned that if a severe charge like attempt to murder under Section 307 of the Indian Penal Code (IPC) can be quashed upon a genuine settlement, then a comparatively less serious offence under the POCSO Act may also be terminated under similar circumstances.
 - The court emphasized that while sexual offences such as rape (Section 376 IPC) and penetrative sexual assault under the POCSO Act are traditionally considered offences against society—thus, non-compoundable—it is possible for extreme mitigating circumstances to justify quashing.
 - In such instances, the decision must depend on the factual matrix of each case, rather than a rigid application of legal terminology.
- Code, 1973 (now mirrored in Section 359 of the Bharatiya Nagarik Suraksha Sanhita – BNSS).
 - Compoundable Offences are those where the victim and accused can amicably resolve the matter with court permission. Examples include:
 - » Simple Hurt (Section 323 IPC)
 - » Criminal Breach of Trust (Section 406 IPC)
 - » Defamation (Section 500 IPC)
 - Non-Compoundable Offences are considered graver in nature and generally cannot be resolved through compromise as they are deemed offences against the state or society at large. Examples include:
 - » Murder (Section 302 IPC)
 - » Grievous Hurt (Section 326 IPC)
 - » Rape (Section 376 IPC)
 - » Kidnapping (Section 363 IPC)
 - » Role of Judicial Discretion and Higher Courts
 - Despite the statutory bar on compounding non-compoundable offences, courts in India—particularly the High Courts and the Supreme Court—possess discretionary powers to quash criminal proceedings in exceptional cases.
 - The Supreme Court, under Article 142 of the Constitution and Section 482 of the CrPC, has held that courts may allow compromise for non-compoundable offences based on factors such as:
 - » Nature and gravity of the offence
 - » Background of the case
 - » Extent of settlement or compromise between the parties

Who's a child? | While most laws fix 18 as the age when one ceases to be a child, there are exceptions:

- The Majority Act, 1875 sets the age of majority at 18
- 61st Constitutional Amendment Act fixes the minimum voting age at 18
- POCSO Act, 2012 and Juvenile Justice Act, 2015 define a child as someone under the age of 18
- Child Labour Amendment Act, 2016 says a child is someone under the age of 14 and an adolescent is aged between 14 and 18



▪ Right to Education Act, 2009 says a child is someone between the ages of six and 14

Compoundable vs. Non-Compoundable Offences:

- Under Indian criminal jurisprudence, offences are categorized into compoundable and non-compoundable offences as per Section 320 of the Criminal Procedure
- The Kerala High Court's decision holds significant implications for several reasons:
 - » It highlights the importance of rehabilitation and the restoration of familial harmony following a settlement.
 - » It affirms the role of judicial discretion in quashing proceedings under the POCSO Act, particularly when mitigating factors are present.
 - » It promotes a balanced, fact-driven

approach to justice, moving beyond a rigid application of statutory prohibitions.

Cashless Treatment Scheme for Road Accident Victims

Context:

On May 5, 2025, the Ministry of Road Transport and Highways (MoRTH) officially notified the Cashless Treatment of Road Accident Victims Scheme, 2025, aimed at providing immediate and free medical care to road accident victims during the crucial “golden hour”. Introduced under Section 162(2) of the Motor Vehicles Act, 1988, the scheme enables access to lifesaving treatment without financial burden.

Key Features of the Scheme:

- Under the scheme, any person injured in a road accident involving a motor vehicle on any public road is entitled to cashless treatment of up to Rs.1.5 lakh for seven days from the date of the accident.
- Treatment is available at designated hospitals, including those empanelled under the Ayushman Bharat Pradhan Mantri Jan Arogya Yojana.
- This benefit extends to all victims, even those without insurance. If initial treatment begins at a non-designated hospital, only stabilisation procedures are covered as per guidelines.
- The scheme focuses on the golden hour—the first hour after a traumatic injury—during which prompt treatment significantly increases survival chances. The term is defined under Section 2(12A) of the Act.

Implementation and Monitoring:

- The State Road Safety Council is the nodal agency for state-level implementation. It will coordinate with the National Health Authority (NHA) to onboard hospitals, manage victim treatment, and facilitate payments.
- After discharge, the hospital must raise a claim on a centralised portal. The State

Health Agency will verify and approve or reject the claim (fully or partially), with reasons recorded on the portal. Payment is made from the Motor Vehicle Accident Fund within 10 days of approval.

- At the central level, a Steering Committee—chaired by the Secretary, MoRTH, and co-chaired by the CEO, NHA—will monitor implementation. Members include officials from the Ministries of Home, Health, and the General Insurance Council.
- The committee will meet at least twice a year and may seek information from state councils and implementing agencies.

Significance and Road Safety Context:

- India records one of the world’s highest road accident rates. In 2023, over 4.80 lakh accidents led to 1.72 lakh deaths, up from 1.68 lakh deaths in 2022. This rising trend underlines the urgency of timely trauma care.
- The scheme supports India’s pledge to the United Nations Decade of Action for Road Safety (2021–2030), targeting a 50% reduction in road deaths by 2030.

Other Government Initiatives:

- **Motor Vehicles (Amendment) Act, 2019:** Imposes strict penalties and uses tech for enforcement.
- **e-DAR Project:** Establishes a central accident data repository.
- **Road Safety Audits:** Now mandatory for all National Highway projects.
- **Good Samaritan Scheme:** Rewards citizens who assist accident victims within the golden hour.

Conclusion:

The Cashless Treatment Scheme is a vital policy intervention to reduce road fatalities by ensuring immediate care without cost concerns. Its effective implementation could mark a turning point in India’s road safety strategy.

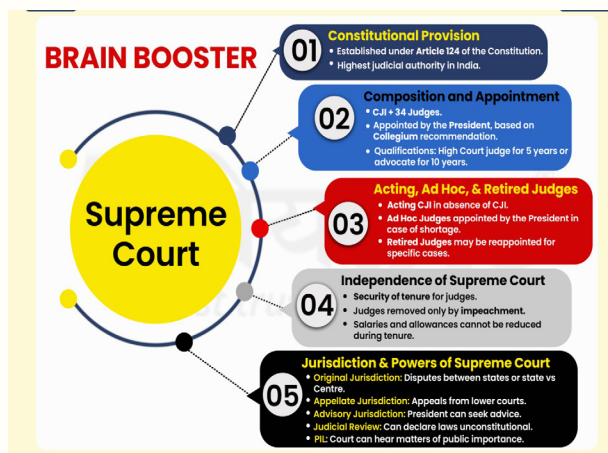
Supreme Court Mandates Public Asset disclosure for all Judges

Context:

In a major step to promote transparency and build public trust, the Supreme Court of India has ordered that all its judges must now publicly declare their assets. This decision was taken unanimously by all sitting judges (Full Court) on April 1, 2025.

Background:

- This new rule is a major shift from earlier practices:
 - » **1997:** The Supreme Court adopted a rule where judges had to declare their assets privately to the Chief Justice of India (CJI). This included assets of their spouses and dependents.
 - » **2009:** The Court allowed judges to voluntarily disclose their assets online, but not all judges followed this rule.
- Now, with the April 2025 directive, declaring assets is mandatory for all judges, showing the Court's strong stand on accountability.
- As of May 6, 2025, 21 out of 33 sitting judges have uploaded their asset details on the Supreme Court's official website.



About 1997 “Restatement of Values of Judicial Life”:

- It is a code of ethics adopted by the Supreme

Court outlining standards of conduct for judges of the SC and High Courts. Key principles include:

- » Avoiding actions that may erode public faith in the judiciary.
- » Recusing from cases involving family or friends. Not expressing views on political matters.
- » Refusing gifts/hospitality except from close family and friends.
- » Avoiding business or trade engagements.
- » Not seeking financial benefits connected to office unless clearly authorized.

About Supreme Court:

- Articles 124 to 147 under Part V of the Constitution of India deal with the Supreme Court's composition, jurisdiction, powers, independence, procedures, and other related matters
- **Composition:**
 - » Initially 8 judges; currently 34 judges including the Chief Justice of India (CJI).
 - » Parliament can alter the number of judges under Article 124.
- **Appointment of Judges:**
 - » Appointed by the President, after consultation with CJI and senior judges.
 - » Guided by Collegium System (from Second and Third Judges Cases).
 - » Judges serve until the age of 65 years.
- **Qualifications (Article 124(3)):**
 - » Must be an Indian citizen.
 - » Served as HC judge for 5 years or practiced as HC lawyer for 10 years, or
 - » Be a distinguished jurist in President's opinion.
- **Types of Judges:**
 - » **Acting CJI (Art. 126):** When CJI is absent.
 - » **Ad hoc Judges (Art. 127):** Appointed temporarily from HCs.
 - » **Retired Judges (Art. 128):** Reappointed with President's consent.
- **Removal of Judges:**
 - » **Grounds:** Misbehaviour or incapacity.
 - » Follows process under Judges Inquiry Act, 1968.
 - » Requires special majority in both Houses

of Parliament and President's assent.

Jurisdiction & Powers:

- **Original Jurisdiction (Art. 131):** Disputes between Centre and States.
- **Appellate Jurisdiction (Arts. 132–136):** Appeals on constitutional/criminal/civil matters.
- **Advisory Jurisdiction (Art. 143):** President can seek opinion.
- **Writ Jurisdiction (Art. 32):** Enforce Fundamental Rights.
- **Court of Record (Art. 129):** Contempt powers.
- **Judicial Review:** Can invalidate unconstitutional laws/actions.

Conclusion:

The Supreme Court's move to make judges' asset declarations public is a significant stride toward greater transparency and public accountability. As more judges comply with the directive, the initiative is likely to further bridge the gap between the judiciary and the public it serves, reinforcing the trust that forms the cornerstone of democratic institutions.

New Biodiversity Regulation 2025

Context:

On April 29, 2025, the Central Government notified the Biological Diversity (Access to Biological Resources and Knowledge Associated thereto and Fair and Equitable Sharing of Benefits) Regulation, 2025, replacing the 2014 guidelines. Issued by the National Biodiversity Authority (NBA), it governs benefit-sharing from the use of biological resources, including digital sequence information (DSI).

Key Provisions of the 2025 Regulation:

- **Turnover-Based Benefit Sharing Structure:** The regulation introduces a graded slab based on annual turnover:
 - » Up to Rs.5 crore: Exempt from benefit-sharing.
 - » Rs.5 crore – Rs.50 crore: 0.2% of annual gross ex-factory sale price (excluding taxes).

- » Rs.50 crore – Rs.250 crore: 0.4%.
- » Above Rs.250 crore: 0.6%.

- All users with turnover over Rs.1 crore must submit annual statements on the biological resources used.

- **Exemptions for Cultivated Medicinal Plants:**

- » The new framework exempts cultivated medicinal plants from benefit-sharing, aligning with the Biological Diversity (Amendment) Act, 2023, which supports cultivation and eases regulations for Ayurveda, Siddha, and Unani practitioners.
- » For products with both cultivated and uncultivated plants, exemption applies only if recognized by MoEFCC, in consultation with the Ministry of AYUSH.

- **High-Value and Threatened Resources:** Special provisions apply to:

- » Red sanders
- » Sandalwood
- » Agarwood
- » Species listed under Section 38 of the Biological Diversity Act, 2002.
- » For these, benefit-sharing is no less than 5% of sale/auction proceeds and may exceed 20% in cases of commercial exploitation.

- **Benefit Sharing for Researchers and IPR Applicants:**

- » Researchers using biological resources or traditional knowledge.
- » Entities filing for IPRs based on Indian biological material.

- **Benefit Distribution Mechanism:**

- » 10–15% of benefits retained by NBA for administration and monitoring.
- » Remaining shared with local communities that conserve biodiversity and possess traditional knowledge.

Implications for Industry:

- Major herbal and traditional medicine companies will be affected:
 - » Dabur India: Rs.1,28,864 crore (2024)
 - » Patanjali Ayurved: Rs.31,961.62 crore
 - » Baidyanath: Rs.713 crore

- These firms fall under the top slab but may receive exemptions depending on product composition and government classification.

Alignment with Global Frameworks:

- The global focus on ABS and DSI peaked at COP16 of the Convention on Biological Diversity (Cali, Colombia, 2024), where a multilateral benefit-sharing mechanism for DSI was adopted. It mandates pharmaceutical, agriculture, biotech, and cosmetics industries to share benefits with biodiversity-conserving communities holding traditional knowledge.

Conclusion:

The 2025 Regulation redefines benefit-sharing in India, balancing biodiversity-based industrial growth, traditional knowledge protection, and community rights. With DSI now clearly included, the law marks progress, but continuous monitoring and inclusive dialogue remain essential for resolving exemption ambiguities and ensuring compliance.

Digital Access as a Part of the Fundamental Right to Life and Liberty

Context:

In a landmark ruling, the Supreme Court of India, in the case *Amar Jain v. Union of India & Ors* (2025), has declared that inclusive access to digital governance and welfare systems is an essential component of the fundamental right to life and liberty under Article 21 of the Constitution.

- The apex court directed substantial reforms in the digital Know Your Customer (KYC) process to ensure accessibility for persons with disabilities (PwDs), including those with vision impairments and facial disfigurements.
- The case was initiated through public interest petitions filed by individuals who faced systemic barriers in completing mandatory digital KYC procedures due to their disabilities.

About Supreme Court Ruling:

- **Revising Digital KYC for Inclusivity:** The Court instructed the Reserve Bank of India (RBI) and regulated entities to revise digital KYC protocols to comply with the Rights of Persons with Disabilities (RPwD) Act, 2016. Specific instructions were issued to:
 - » Involve visually impaired individuals during the design and testing of KYC platforms.
 - » Avoid sole reliance on facial recognition, which disadvantages users with facial disfigurements.
 - » Ensure public and private sector entities adopt inclusive KYC mechanisms.
- **Institutional Framework for Compliance:** To ensure long-term impact, the SC ordered the appointment of nodal officers across departments, mandated periodic accessibility audits, and required that digital platforms be co-designed with inputs from disabled users.
- **Addressing the Wider Digital Divide:** The Court also acknowledged the structural digital exclusion faced by rural residents, elderly citizens, and the economically weaker sections. It reaffirmed that under Articles 14, 15, 21, and 38, digital access is not a luxury, but a constitutional obligation necessary for dignified and equal participation in society.

Key judgement related to Digital Rights:

- **Faheema Shirin RK v. State of Kerala (2019):** Recognized internet access as intrinsic to the right to life and education.
- **Anuradha Bhasin v. Union of India (2020):** Affirmed that internet-based freedoms under Article 19 must not be arbitrarily restricted.
- **Significance of Inclusive Digital Access:**
 - » Enhances access to government welfare schemes and subsidies.
 - » Bridges the rural–urban digital divide.
 - » Facilitates online education and skilling for marginalized communities.
 - » Promotes financial inclusion via digital banking and fintech platforms.

- » Enables full participation of persons with disabilities in the development process.

About KYC:

- KYC (Know Your Customer) is a mandatory process used by banks, financial institutions, and other service providers to verify the identity of their customers before allowing them to open accounts or invest in financial products.
- Digital KYC is the process of verifying a customer's identity through electronic methods such as:
 - » Uploading scanned identity/address proof.
 - » Biometric authentication (like fingerprint or facial recognition).
 - » Aadhaar e-authentication or OTP-based verification.

Conclusion:

The Supreme Court's judgment in *Amar Jain v. Union of India* reaffirms that digital inclusion is not merely a policy matter but a constitutional imperative. To fulfill its commitments under the UN Convention on the Rights of Persons with Disabilities (CRPD), India must move from symbolic inclusivity to systemic reform, ensuring that technology empowers every citizen, regardless of ability.

Sharia Courts Have No Legal Standing in Indian Legal System

Context:

In a landmark judgment that reiterates the primacy of the Indian legal system over religious adjudication forums, the Supreme Court of India has ruled that Sharia courts and similar institutions have no legal recognition and their decisions are not enforceable in a court of law. The verdict came during the hearing of a plea filed by Shahjahan, a Muslim woman challenging a lower court's decision regarding her right to maintenance under Section 125 of the Criminal Procedure Code (CrPC).

Key observance by Court:

- A bench comprising Justices Sudhanshu Dhulia and Ahsanuddin Amanullah observed that declarations or decisions made by bodies such as Sharia Courts do not possess binding force and are not enforceable against unwilling parties. According to the bench, such bodies do not hold any constitutional or legal status.
- The Supreme Court clarified that these institutions—regardless of the nomenclature used, including Sharia Courts, Court of Kazi, or Darul Kaza—are not permitted to adopt coercive measures to implement their rulings.
- This observation aligns with the precedent set in *Vishwa Lochan Madan v. Union of India* (2014), where the Court held that parallel systems of justice, such as Sharia Courts, cannot operate as judicial forums within the framework of Indian law.
- The Court reiterated that while individuals or communities may consult religious authorities, the decisions made by such bodies are valid only when both parties accept them voluntarily.

About sharia courts:

- Sharia courts are judicial bodies that interpret and apply Sharia (Islamic law) to resolve disputes, usually among Muslims. Sharia itself is derived from the Qur'an, Hadith (sayings and actions of the Prophet Muhammad), and other Islamic texts.
- The specifics of how Sharia is interpreted and applied can vary widely depending on the school of thought (e.g., Hanafi, Maliki, Shafi'i, Hanbali) and the country.

Implications for Legal and Religious Systems in India:

- The ruling reinforces the position that religious tribunals do not have binding authority within India's secular legal framework.
- While individuals are free to seek guidance from religious bodies, the decisions of such bodies cannot override statutory law or

infringe upon an individual's legal rights.

- In addition, the judgment reflects the Supreme Court's focus on safeguarding the rights of women and children, particularly in matters involving financial hardship and familial abandonment.

Conclusion:

The Supreme Court's clear stance on Sharia courts reiterates the primacy of constitutional law in a secular democracy like India. It ensures that parallel justice systems, which may not uphold fundamental rights, cannot undermine the authority of the judiciary or circumvent the protections guaranteed under Indian law.

e-Zero FIR System

Context:

Recently, Union Home Minister Amit Shah has announced the launch of the e-Zero FIR system, a transformative initiative spearheaded by the Indian Cybercrime Coordination Centre (I4C) under the Ministry of Home Affairs (MHA).

What is the e-Zero FIR System?

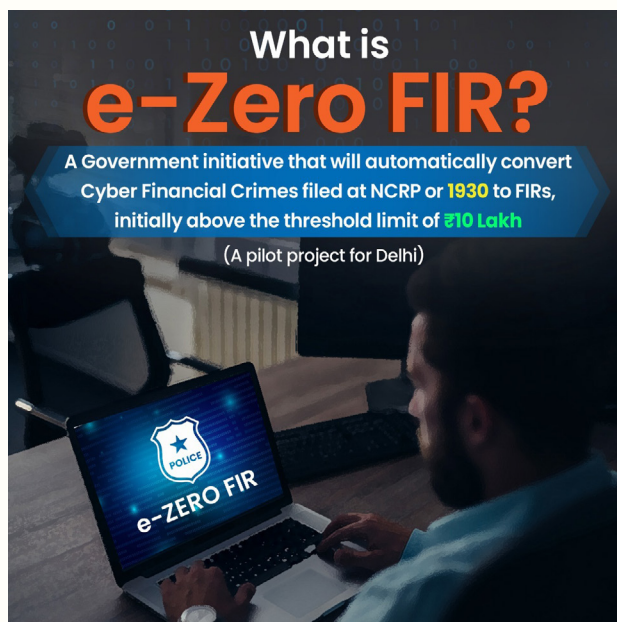
- The e-Zero FIR system allows for automated FIR registration, bypassing traditional jurisdictional constraints. Under this system:
 - » This system is designed to automatically convert cyber financial crime complaints exceeding Rs.10 lakh—reported through the 1930 helpline or the National Cybercrime Reporting Portal (NCRP)—into First Information Reports (FIRs).
 - » The e-Crime Police Station in Delhi registers these Zero FIRs, which are then forwarded to the concerned jurisdictional cybercrime units.

Key Features:

- **Jurisdiction-Free Filing:** A complaint can be filed at any police station, regardless of where the incident occurred.
- **Immediate Action:** Prevents delay in registration, especially in urgent or sensitive matters.
- **Forwarding Process:** Once filed, the Zero

FIR is transferred to the relevant police station for formal investigation.

- **Origin:** Proposed by the Justice Verma Committee post the 2012 Nirbhaya case to enhance victim-centric policing.



Legal Framework Underpinning the System:

- Under Section 173 of the BNSS, police are mandated to register Zero FIRs, further cementing this initiative's legal validity. Victims also receive free FIR copies, ensuring greater transparency and empowerment.

Delhi Pilot & National Rollout:

- Currently implemented as a pilot project in Delhi, the initiative will soon see pan-India expansion, empowering state and union territory police forces to adopt the e-Zero FIR process. The e-Crime Police Station in Delhi has already been notified for handling these registrations.

Cybercrime in India:

- Cybercrime refers to criminal activities carried out using digital devices or the internet. In India, these crimes are governed primarily by the Indian Penal Code (IPC) and the Information Technology Act, 2000.
- **Types of Cybercrime:**
 - » **Hacking:** Unauthorized access to

computer systems.

- » **Phishing:** Fraudulent attempts to acquire sensitive data.
- » **Ransomware:** Malware that locks data and demands payment for access.
- » **Online Financial Fraud:** Includes credit card fraud, fake banking websites, etc.
- From January to June, 2024 Rs 11,269 crore was lost to financial fraud.

About Indian Cyber Crime Coordination Centre (I4C):

- Launched in 2020 by the Ministry of Home Affairs, the I4C is a comprehensive framework designed to address all types of cybercrime in India—including cyber fraud, cyberstalking, financial scams, and crimes against women and children—through coordinated and centralized efforts.
- **Objectives of I4C:**
 - » **Central Nodal Agency:** Acts as the central point of coordination for tackling cybercrime across India.
 - » **Efficient Complaint Handling:** Facilitates the easy filing of complaints and helps in tracking cybercrime trends and patterns.
 - » **Early Warning System:** Supports law enforcement by functioning as a proactive cybercrime detection and prevention system.

Conclusion:

The launch of the e-Zero FIR system marks a critical inflection point in India's digital governance and cybersecurity infrastructure. By combining legislative innovation, digital integration, and a victim-first approach, this initiative reinforces the nation's resolve to tackle cybercrime head-on and ensure justice in the digital age.

Cybersecurity in Digital Payments

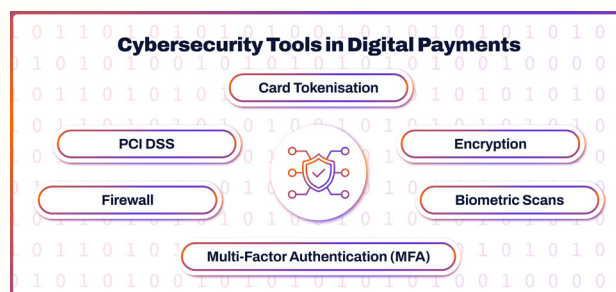
Context:

In response to the rising incidents of cyber fraud in India's rapidly expanding digital

payments ecosystem, the Department of Telecommunications (DoT) has unveiled the Financial Fraud Risk Indicator (FRI). This initiative, a part of the broader Digital Intelligence Platform (DIP), aims to enhance real-time fraud detection and mitigation by enabling proactive collaboration between telecom authorities and financial institutions.

About the Financial Fraud Risk Indicator:

- The Financial Fraud Risk Indicator (FRI) is a risk-based metric that classifies mobile numbers based on their association with financial fraud. This classification system uses categories such as Medium, High, and Very High risk.
- The categorization is based on,
 - » Inputs from the National Cybercrime Reporting Portal (NCRP)
 - » DoT's Chakshu platform
 - » Banks and financial institutions
 - » Helps in prioritizing response and blocking fraudulent transactions.
- The FRI's core function is to inform digital payment platforms, banks, and Non-Banking Financial Companies (NBFCs) about the potential risk posed by a mobile number before transactions are processed.



Operational Mechanism:

- **Immediate Classification:** The number is analyzed for fraud patterns and assigned a risk score (Medium, High, or Very High).
- **Stakeholder Notification:** This classification is shared in real-time with financial institutions, UPI service providers, and telecom operators via DIP.
- **Validation and Response:** Stakeholders use this intelligence to conduct additional

validation checks, delay transactions, or block them entirely in high-risk cases.

- **The Mobile Number Revocation List (MNRL)**, which includes numbers disconnected due to involvement in cybercrime or verification failures, is also regularly shared with stakeholders.

Industry Implementation and Collaboration:

- » **PhonePe:** Integrated FRI within its PhonePe Protect feature to block or delay transactions involving “Very High” risk numbers and warn users in case of “Medium” risk.
- » **Other UPI Platforms (e.g., Paytm and Google Pay):** Begun incorporating DIP alerts, triggering transaction delays, user alerts, and confirmation prompts for flagged numbers.
- » **Banks and NBFCs:** Are now able to take swift action to mitigate fraud by leveraging FRI intelligence.
- These collective efforts account for over 90% of India’s UPI transactions, indicating broad sectoral adoption and significant systemic coverage.

Significance and Future Outlook:

- The implementation of FRI represents a proactive shift in India’s cyber fraud prevention strategy:
 - » It introduces a predictive, risk-based model that can act before a transaction is completed.
 - » It enhances inter-agency collaboration, linking telecom surveillance with financial enforcement.
 - » It reduces response time and promotes real-time intervention.
- As adoption deepens, the DoT envisions the standardization of FRI integration across all digital financial platforms, strengthening the resilience of India’s fintech ecosystem.

Conclusion:

The Financial Fraud Risk Indicator is a landmark initiative in safeguarding India’s digital economy. By integrating cyber intelligence with financial

transaction frameworks, it marks a shift from reactive to proactive fraud prevention. As the digital payments landscape evolves, tools like the FRI will be crucial in maintaining public trust and ensuring transactional security at scale.

Supreme Court Declares Maternity Leave a Fundamental Reproductive Right of Women

Context:

The Supreme Court has made a landmark observation on maternity leave, emphasizing its integral connection to maternity benefits and reproductive rights. In a significant ruling, the court set aside a Madras High Court order that denied maternity leave to a government teacher awaiting the birth of her third child.

Key Highlights of the Judgment:

- **Reproductive Rights and Personal Liberty:** The Supreme Court asserted that maternity leave is integral to maternity benefits, which in turn form a core aspect of reproductive rights. These rights are safeguarded under Article 21 of the Indian Constitution, which guarantees the right to life and personal liberty. The court referenced its earlier ruling in *Suchita Srivastava v. Chandigarh Administration* (2009) to reiterate that a woman’s right to make reproductive choices is a part of her dignity and autonomy.
- **Human Rights Dimension:** The Court aligned its reasoning with international human rights standards, noting that reproductive rights are part of the Universal Declaration of Human Rights (UDHR). These encompass health, privacy, dignity, and gender equality, thereby placing India’s obligations within a global context.
- **Social Justice and Gender Equity:** Recognizing the dual role of women as caregivers and workers, the judgment emphasized that maternity leave laws serve the larger purpose of social justice. Denying

such rights not only harms individual women but undermines broader efforts towards workplace equality and gender-sensitive governance.

- **Balancing Policy and Rights:** While acknowledging that population control is a legitimate state objective, the Court clarified that it cannot override fundamental rights. Instead, there must be a rational balance that ensures policies promote justice and equity without infringing upon constitutionally guaranteed freedoms.

Making It Easy For Mothers

The Maternity Benefit (Amendment) Act, 2017 amends the Maternity Benefit Act, 1961 to provide the following

26 weeks

maternity leave for the first two children

12 weeks maternity leave for children beyond the first two

12 weeks leave for mothers adopting a child below the age of three months



The Act makes it mandatory for employers in establishment with 30 women or 50 employees, whichever is less, to provide creche facilities either in office or in any place within 500-meters.

Working mothers will be permitted to make four visits

during working hours to the creche

The employer may permit a woman to work from home if it is possible to do so

Every establishment will have to make these benefits available from the time of appointment

Implications of the Ruling:

- **Grant of Maternity Leave:** The Supreme Court directed the state to grant maternity leave to the teacher under FR 101(a) of the Tamil Nadu rules.
- **Release of Maternity Benefits:** The court ordered the state to release the maternity benefits within two months, ensuring timely support for the teacher.

About Maternity Benefit Act, 1961:

- The Maternity Benefit Act of 1961, amended in 2017, provides crucial support to women employees in India, ensuring their job security and financial stability during maternity.
 - » **Applicability:** The Act covers factories, mines, plantations, government offices, and private establishments with 10 or more employees.
 - » **Paid Maternity Leave:** Women with fewer than two surviving children are entitled to 26 weeks of paid leave. Those with two or more children are entitled to 12 weeks.
 - » **ESI Act Coverage:** Women covered under the Employees' State Insurance Act, 1948, also receive maternity benefits through that framework.

Conclusion:

The Supreme Court's ruling is a landmark affirmation of women's reproductive autonomy, bridging constitutional guarantees with international human rights norms. It ensures that maternity leave is treated not as a concession, but as a legal and moral right, critical to the dignity, health, and equality of working women.



International Relations

The 2025 U.S. - Middle East Visit: Economic Diplomacy and Shifting Geopolitical Priorities

In May 2025, U.S. President Donald Trump completed a four-day visit to the Middle East, covering Saudi Arabia, Qatar, and the United Arab Emirates (UAE). The main focus of this trip was to strengthen economic ties rather than engage in traditional diplomacy. The White House announced that the visit resulted in investment agreements worth over \$2 trillion, involving key sectors such as defence, aviation, artificial intelligence, infrastructure, and energy.

This visit marked a shift in U.S. foreign policy, with President Trump adopting a business-first approach that prioritises economic partnerships over long-standing political alliances. By focusing on trade and investment, the tour reflects Trump's strategy of using economic influence as a tool for international engagement. However, this shift also raises questions about the future of U.S. relationships with traditional allies like Israel and India, and how these changes might affect regional dynamics in the Middle East.

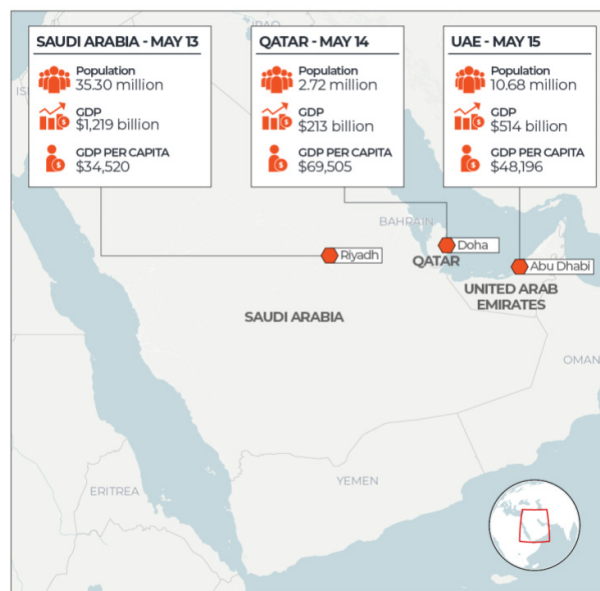
Overview of Trade Agreements:

- ❖ As per the estimates of the White House following were the agreements reached:
 - » **Saudi Arabia:** \$600 billion investment commitment, focused on defence and technology.
 - » **Qatar:** \$243.5 billion in commercial and defence deals; part of a broader \$1.2 trillion economic agreement.
 - » **UAE:** \$200 billion in deals, advancing a 10-year \$1.2 trillion investment pledge

made earlier.

Trump visits Saudi Arabia, Qatar, UAE

US President Donald Trump's first official state visit will be to the Middle East, where economic opportunities and regional security are topping the agenda.



Major Investment Sectors:

- ❖ **Aviation:**
 - » **UAE:** Etihad Airways committed \$14.5 billion to purchase 28 Boeing aircraft powered by GE Aerospace engines.
 - » **Qatar:** Qatar Airways signed Boeing's largest-ever widebody aircraft deal, purchasing 160 jets with options for 50 more, totalling \$96 billion.
 - » **Controversy:** Qatar gifted Trump a \$400 million Boeing 747-8, sparking

bipartisan criticism.

❖ 2. Defence and Security:

- » **Saudi Arabia:** Signed a \$142 billion defence deal, claimed to be the largest in history, involving advanced U.S. weaponry.

» **Qatar:**

- \$97 billion in contracts awarded to U.S. firm Parsons
- \$10 billion investment in a U.S. military facility
- \$42 billion in weapon purchases from American firms

❖ Artificial Intelligence and Data Infrastructure:

- » **Saudi Arabia:** DataVolt pledged \$20 billion for AI data centres and energy infrastructure in the U.S.
- » **US-Saudi tech partnerships:** Companies like Google, Oracle, Salesforce, and Uber committed \$80 billion in joint investments.
- » **UAE:** Announced the largest AI data centre outside the U.S. in Abu Dhabi, with 5GW data processing capacity.

❖ Science and Technology:

- » **Qatar:**
 - \$1 billion investment in quantum tech with Quantinuum
 - \$1 billion for counter-drone systems from Raytheon RTX
 - \$2 billion with General Atomics for drone acquisitions

❖ Aluminium and Energy:

- » **UAE:** Emirates Global Aluminium to invest \$4 billion in a primary aluminium smelter in Oklahoma.
- » Joint ventures involving ExxonMobil, Occidental Petroleum, and others aim to expand oil and gas output with the Abu Dhabi National Oil Company, amounting to \$60 billion.

❖ Infrastructure:

- » U.S. firms such as Hill International, Parsons, Jacobs, and AECOM secured Saudi contracts for large-scale projects

including:

- King Salman International Airport
- King Salman Park
- The Vault
- » Qiddiya City These projects collectively involved \$2 billion in U.S. investments.



Diplomatic Reconfigurations: Israel, Syria, and Iran:

❖ **Omission of Israel: A Significant Departure:**

- Notably, Trump's itinerary excluded Israel, a break from previous U.S. presidential visits to the region. This decision reflects:
- » Tensions with Israeli Prime Minister Benjamin Netanyahu, particularly over Israel's military operations in Gaza.
 - » Shifts in U.S. domestic opinion regarding Israeli policies towards Palestinians.
 - » A reorientation of U.S. regional priorities towards Gulf-centric economic ties.

❖ **Re-engagement with Syria:**

- A landmark development during the visit was Trump's meeting with Ahmed al-Sharaa, the newly established Syrian President and a former Al-Qaeda leader. Trump:
- » Lifted all U.S. sanctions on Syria, marking a significant diplomatic departure.
 - » Encouraged Syria's participation in the Abraham Accords, a normalization framework initially launched during his

first term.

- » While this could, theoretically, benefit Israel through expanded regional recognition, the lack of Israeli input in the process has raised concerns in Tel Aviv.

❖ **Overtures to Iran:**

- » Trump also expressed openness to dialogue with Iran, potentially to re-enter nuclear deal negotiations in exchange for sanctions relief. This aligns with a broader trend towards pragmatic engagement over ideological isolation.

Ethical Controversies and Business Entanglements:

The US President's visit has reignited debates surrounding the intersection of presidential duties and personal business interests:

- ❖ **Real estate ventures:** The Trump Organization is simultaneously marketing major projects, including an 80-story Trump Tower in Dubai and a golf resort in Qatar.
- ❖ **Cryptocurrency partnerships:** The Trump family-backed World Liberty Financial announced collaborations with sovereign investors in Abu Dhabi.
- ❖ **Gift controversy:** Trump's acceptance of a \$400 million Boeing 747-8 luxury jet from Qatar has drawn bipartisan criticism. Analysts cite:
 - » Potential violations of the U.S. Constitution's emoluments clauses.
 - » Possible national security risks tied to foreign gifts.
 - » Concerns over the blurring of public service and private gain.
- ❖ These developments raise pressing questions about the ethical boundaries of presidential conduct, especially when policy decisions appear to benefit associated commercial ventures.

Implications for U.S.-India Relations:

The United States' West Asia outreach carries strategic consequences for Indo-U.S. ties, particularly in multilateral and trilateral economic frameworks:

- ❖ The Abraham Accords and follow-on

initiatives like I2U2 (India-Israel-UAE-USA) offer India new opportunities for:

- » Infrastructure investment.
- » Technology collaboration.
- » Energy security via Gulf partnerships.
- ❖ Trump's references to his role in de-escalating India-Pakistan tensions—especially through trade-related pressure—have been met with skepticism in New Delhi. India maintains a consistent stance that the Kashmir dispute is strictly bilateral and resists third-party mediation.
- ❖ Saudi Arabia's parallel mediation efforts also necessitate cautious diplomacy from India to avoid compromising its long-standing foreign policy principles while engaging economically with the region.

Conclusion:

President Trump's 2025 West Asia tour represents more than a symbolic replay of past diplomacy—it is a manifestation of a transactional, business-forward doctrine in U.S. foreign policy. By prioritizing economic cooperation over traditional alliances, engaging with controversial leaders, and blurring the lines between public policy and private enterprise, the visit reflects a significant transformation in how the United States engages with the Middle East. While some of these changes may enhance U.S. influence through economic means, they also risk undermining institutional credibility and alienating historical allies, notably Israel and potentially India. The long-term efficacy of this strategy remains to be seen, particularly as geopolitical realignments, ethical concerns, and public opinion continue to evolve.

Pakistan-Turkey Alliance and Its Implications for India

The recent attempted drone attack by Pakistan on India's western front, allegedly using Turkish-made drones, has reignited concerns over the deepening military and geopolitical ties between Islamabad and Ankara. This incident underscores the multifaceted relationship between the two countries—rooted in shared ideology, historical cooperation, and mutual strategic interests—and highlights the implications for India's national security and regional posture.

Turkey-Pakistan Military Nexus: A Historical and Ideological Alliance:

- ❖ The Pakistan-Turkey relationship is anchored in a shared Islamic identity and a history of military and diplomatic cooperation. During the Cold War, both countries were part of the Central Treaty Organization (CENTO) and the Regional Cooperation for Development (RCD), facilitating bilateral and trilateral ties in security and economic spheres.
- ❖ This bond strengthened significantly under the leadership of Recep Tayyip Erdogan, whose political Islamism has aligned ideologically with Pakistan's strategic worldview. Erdogan has visited Pakistan at least 10 times since 2003, co-chairing strategic summits like the Pakistan-Türkiye High-Level Strategic Cooperation Council, which underscores institutional depth in the relationship.

Rising Defence Cooperation and Arms Trade:

- ❖ In recent years, defence ties between Turkey and Pakistan have become a cornerstone of their partnership. Turkish arms exports surged by 103% between 2015–2019 and 2020–2024, as per the Stockholm International Peace Research Institute (SIPRI). By 2020, Turkey became Pakistan's

second-largest arms supplier after China.

Key developments in the Turkey-Pakistan defence axis include:

- ❖ **Joint Exercises and Technology Transfers:** Pakistan and Turkey have significantly expanded defence cooperation through institutional mechanisms, joint military exercises, and major arms deals.
 - » Pakistan has acquired Bayraktar TB-2 drones, Kamanekes cruise missiles, and Asisguard Songar armed drones from Turkey.
 - » A \$1 billion deal in 2018 secured four new-class corvettes from STM Defence Technologies, while Turkish firms are also upgrading Pakistan's Agosta 90B submarines, bypassing the original French manufacturer.
- ❖ **Collaborative Platforms:** Pakistan's National Aerospace Science and Technology Park (NASTP), inaugurated in August 2023, has entered a research and development collaboration with Turkish drone manufacturer Baykar.
- ❖ **Procurement Records:** According to the Stockholm International Peace Research Institute (SIPRI), Pakistan acquired three Bayraktar TB-2 armed drones from Turkey in 2022.
- ❖ **Fighter Jet Collaboration:** The Pakistan Air Force (PAF) continues to receive upgrades and deliveries of F-16 jets from Turkish Aerospace Industries.

The Geopolitical Implications for India:

- ❖ Turkey's unequivocal support for Pakistan on the Kashmir issue has long irked India. Ankara's positions have frequently mirrored Islamabad's narrative in international forums. For instance, in February 2025, Erdogan reaffirmed Turkey's solidarity with the "Kashmiri brothers," prompting a

diplomatic protest from New Delhi.

❖ India has responded to the Pakistan-Turkey axis with calibrated counter-alignments:

» **Support to Cyprus and Greece:** India's engagement with the Greece-backed Republic of Cyprus contrasts sharply with Turkey's support for the breakaway Turkish Republic of Northern Cyprus. Greece, in turn, supports India's position on Kashmir.

» **Strategic Partnership with Armenia:** India has emerged as Armenia's largest arms supplier, overtaking Russia. This move aligns India against the Pakistan-Turkey-Azerbaijan triad, especially following Pakistan's \$1.6 billion fighter jet deal with Baku.

» **Middle East Engagement:** India's deepening relations with Saudi Arabia and the UAE, both traditional Pakistani allies, have created new regional equations. These Gulf states have distanced themselves from Pakistan's stance on Kashmir, unlike Turkey.

» **Exclusion of Turkey from IMEC:** The India-Middle East-Europe Economic Corridor (IMEC) strategically bypasses Turkey, weakening its traditional role as a bridge between Asia and Europe. This has prompted Ankara to propose an alternate "Iraq Development Road" project.

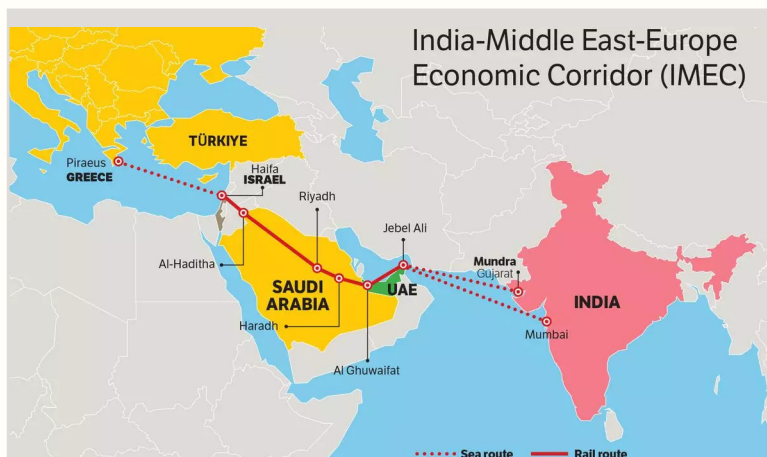
Recent Incident: Drone Warfare and Strategic Ramifications:

❖ India recently repelled a coordinated drone attack by Pakistan targeting 36 sites, using over 300 Turkish-origin drones. Forensic analysis has preliminarily identified these drones as Asisguard Songar models, signaling covert procurement or transfer mechanisms.

❖ The proximity of a Turkish Ada-class anti-submarine corvette to Karachi port (May 2)

and a C-130 Hercules military transport aircraft's arrival in Pakistan (April 27) further raise questions about Turkey's material support to Pakistan's military capabilities.

❖ Though Turkey denies these were arms transfers, the pattern fits within the broader context of Turkish military enablement of Pakistan.



The Songar Drone System:

❖ The Songar drone is Turkey's first domestically produced armed drone, designed to support low-intensity conflicts. It is operational within the Turkish Armed Forces (TAF) and has now emerged as part of Pakistan's growing defence toolkit.

❖ **Key features of the Songar drone include:**

» **Dimensions and Payload:** Rotor width of 145 cm, height of 70 cm, and a maximum take-off weight (MTOW) of 45 kg.

» **Ammunition:** Equipped with a NATO-standard 5.56x45mm machine gun, with a capacity of 200 rounds. The firing mechanism supports both single-shot and 15-round burst modes.

» **Navigation and Communication:** Operates on GPS and GLONASS navigation systems. It supports real-time video transmission, video recording, and post-mission analysis.

» **Cameras and Sensors:** Integrated with two cameras, including a 10x zoom pilot camera and a gun-mounted camera.

Infrared night sensors allow night-time operations within a 10 km range.

- » **Operational Range:** Has a maximum communication range of 3 km and an altitude ceiling of 2,800 m above mean sea level, with operational accuracy within 15 cm at a 200 m range.

The Broader Strategic Shift:

- ❖ India and Pakistan are increasingly aligned with divergent international blocs. The United States, once a close partner to Pakistan, has pivoted decisively toward India through its Indo-Pacific Strategy, where Pakistan finds no mention. Conversely, India features prominently as a regional pillar in U.S. strategic frameworks.
- ❖ Simultaneously, Turkey's growing militarism and antagonistic stance toward India—unmoved even by Indian humanitarian aid during the 2023 Turkish earthquake—

highlight the enduring influence of its alignment with Pakistan.

Conclusion:

The deepening Turkey-Pakistan strategic partnership, characterized by robust military cooperation, shared ideological alignment, and geopolitical coordination, poses a long-term challenge to India's regional interests and security architecture. India's evolving responses—through Eastern Mediterranean partnerships, defence diplomacy with Armenia, and strategic economic corridors—reflect a calibrated counterstrategy. Going forward, India's engagement must remain nimble, multi-vector, and anchored in strengthening ties with both regional and global partners who share its vision for a stable, rules-based international order.

India–UK Free Trade Agreement: An Academic and Informative Overview

India and the United Kingdom have concluded negotiations on a long-pending Free Trade Agreement (FTA), marking a pivotal moment in their bilateral economic relations. The final agreement, which follows over three years of negotiations and thirteen rounds of deliberations, is set to be officially ratified during an upcoming meeting between the Prime Ministers of both nations. The deal is being projected as a catalyst for trade, investment, job creation, and innovation across sectors.

Understanding Free Trade Agreements (FTAs):

- ❖ A Free Trade Agreement is a binding accord between two or more countries to reduce or eliminate tariffs, import quotas, and preferences on most goods and services traded. Unlike Preferential Trade Agreements (PTAs), which provide limited tariff reductions on selected goods, FTAs cover a broader range of trade categories

and offer near-complete tariff liberalisation.

❖ **Core Objectives of FTAs Include:**

- » **Reduction in Customs Duties:** Typically aimed at eliminating tariffs on 90–95% of traded goods.
- » **Removal of Non-Tariff Barriers:** Seeks to simplify or eliminate regulatory hurdles, standards, and bureaucratic delays that inhibit trade.
- » **Facilitation of Services and Investment:** Eases norms for services trade and fosters an investment-friendly regulatory environment.

Significance of the FTA:

- ❖ The agreement holds considerable strategic and economic value for both countries. It is particularly notable in the context of ongoing global trade uncertainties and rising protectionist tendencies. For India, the FTA comes at a time when its trade surplus with the U.K. provides a favorable platform

for exports. In 2024, India was the U.K.'s 11th-largest trading partner, contributing to 2.4% of its overall trade. The British government has projected that bilateral trade could rise by \$34.05 billion following the implementation of the agreement.

- ❖ From the U.K.'s perspective, the FTA represents one of the most substantial post-Brexit trade deals, following previous failed attempts by Conservative leaders Boris Johnson and Liz Truss. The agreement materialized under the Labour government led by Keir Starmer after a breakthrough meeting with Indian Prime Minister Narendra Modi during the G20 Summit.

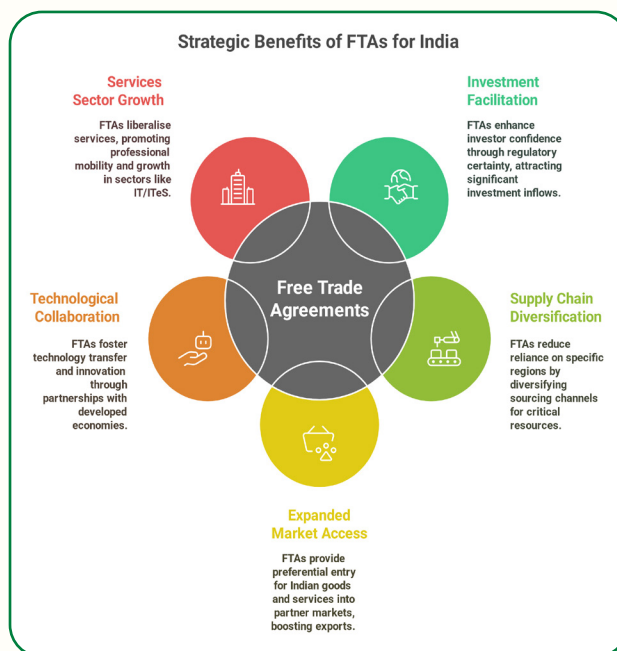
Key Provisions of the Trade Deal:

While the complete text of the agreement remains undisclosed, official statements have outlined several pivotal features:

- ❖ **Tariff Reductions:**
 - » India will reduce tariffs on 90% of products, with 85% becoming fully tariff-free within ten years.
 - » The U.K. will eliminate tariffs on 99% of imported goods from India.
 - » Indian exporters are likely to benefit in sectors such as textiles, leather, footwear, auto components, engineering goods, gems and jewellery.
- ❖ **Alcohol and Automotive Sectors:**
 - » Tariffs on whiskey and gin will be reduced from 150% to 75%, further declining to 40% within a decade.
 - » Automotive tariffs, previously over 100%, will be reduced to 10%, though these changes are subject to quota restrictions.
- ❖ **Services and Professional Mobility:**
 - » The agreement includes a significant provision under the Double Contribution Convention, allowing Indian workers temporarily posted in the U.K. and their employers to be exempt from paying social security contributions for up to three years. This clause is expected to enhance the mobility of professionals in IT, financial, professional, and educational services.

Economic and Sectoral Impact:

- ❖ The apparel sector, represented by the Apparel Export Promotion Council (AEPC), has expressed optimism regarding a significant surge in exports. India currently faces competition from countries like Bangladesh and Vietnam, which already enjoy duty-free access to U.K. markets. Tariff elimination will enhance India's competitiveness, particularly since imports from the U.K. in this sector are minimal.
- ❖ The Gems and Jewellery sector also anticipates a rise in trade volumes. According to the Gems and Jewellery Export Promotion Council (GJEPC), exports in this sector are projected to grow by \$2.5 billion within the next two years.
- ❖ Other major export categories from India to the U.K., as per the Ministry of Commerce's TradeStat database, include:
 - » Pharmaceuticals
 - » Knit and non-knit apparel
 - » Electrical machinery and equipment



Challenges:

- ❖ **Carbon Border Adjustment Mechanism (CBAM):** CBAM could impose levies on Indian exports like steel and aluminium based on

their carbon emissions, while British goods may enter India without similar constraints. The FTA reportedly does not address this asymmetry, potentially placing Indian manufacturers at a disadvantage.

- ❖ **Investor-State Dispute Settlement (ISDS):** Despite substantial foreign direct investment flows—\$23.3 billion from the U.K. to India and \$17.5 billion in the reverse—the agreement lacks a dedicated investor protection mechanism. This raises concerns about dispute resolution and legal recourse for businesses on both sides.

Public Procurement Access:

- ❖ Another crucial clause grants U.K. firms access to India's public procurement market, allowing them to bid for government contracts on favorable terms. While this opens up competitive opportunities, it also raises apprehensions about increased import reliance and the erosion of domestic industrial sovereignty.

Strategic Significance of FTAs for India:

- ❖ **Investment Facilitation:** FTAs offer regulatory certainty that enhances investor confidence. The recently concluded India-EFTA agreement promises an investment inflow of USD 100 billion over 15 years, aiding initiatives like Make in India and employment generation.
- ❖ **Supply Chain Diversification:** By diversifying sourcing channels, FTAs reduce over-reliance on specific geographies. Agreements with countries like Australia (under the ECTA) provide access to critical

minerals vital for electric vehicle and green technology sectors.

- ❖ **Expanded Market Access:** FTAs allow Indian goods and services preferential entry into partner markets. For instance, the India-UAE CEPA led to an 11.8% surge in exports, particularly in textiles, engineering goods, and jewellery.
- ❖ **Technological Collaboration:** Collaborations with developed economies under FTAs create avenues for technology transfer. The India-Japan CEPA and India-EFTA agreements illustrate this through initiatives in advanced manufacturing and digital innovation.
- ❖ **Services Sector Growth:** FTAs support liberalisation of services, facilitating mobility of professionals, mutual recognition of qualifications, and simplified visa regimes. Provisions in India's FTAs with Australia and the UAE have notably boosted IT/ITeS exports and created opportunities for Indian professionals.

Conclusion:

The India-U.K. FTA is a landmark development with the potential to reshape economic engagement between the two democracies. While the agreement unlocks opportunities for trade, investment, and professional mobility, it also necessitates a calibrated approach to mitigate risks for vulnerable sectors. Industrial policy alignment, environmental safeguards, and balanced market access will be critical to ensuring that the agreement fosters inclusive and sustainable growth.

Short Issues

Pakistan's IMF Loan Disbursal

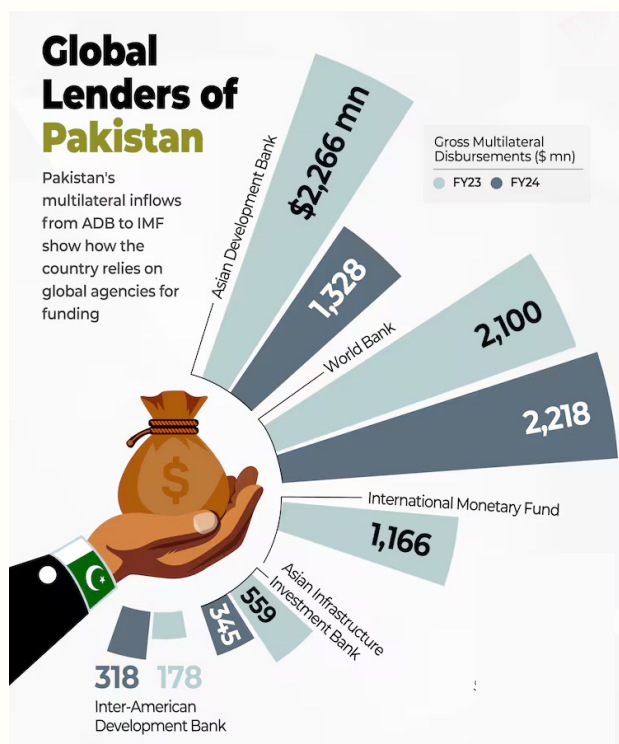
Context:

On May 9, 2025, the International Monetary Fund (IMF) Executive Board approved an immediate disbursement of \$1 billion (around

Rs 8,500 crore) to Pakistan. This is part of the 37-month Extended Fund Facility (EFF), approved on September 25, 2024. The total EFF package is \$7 billion, and with this tranche, Pakistan has received \$2.1 billion so far.

What is the EFF?

- The Extended Fund Facility is a loan program that helps countries with serious medium-term balance of payments problems caused by structural weaknesses. These problems can include poor infrastructure, low investment in education, weak banking systems, and excessive borrowing by the government.
- At the same time, inflation has escalated dramatically: from 10.7% in 2020 to 23.4% in 2024, with a peak of 29.1% in 2023. Over five years, the price level for the average consumer more than doubled.
- The main reasons behind Pakistan's economic struggles are:
 - » Mismanagement by successive governments
 - » Rapid population growth
 - » Low savings rate
 - » Poor investment in infrastructure
 - » Low participation of women in the workforce



- Unlike grants or aid, EFF loans must be repaid. The term "extended" refers to the longer time countries are given to repay the loan and implement reforms. The IMF uses the EFF to support countries making long-term changes needed for economic stability and growth.

Why Pakistan is Eligible?

- Pakistan has experienced prolonged economic decline despite its aspirations of regional military dominance. Since the 1980s, successive governments have failed to sustain economic growth. Pakistan's GDP has remained stagnant over the past decade, registering \$338 billion in 2023—lower than its 2017 figure.

IMF's Billion-Dollar Bailouts for Pakistan

Pakistan has drawn \$28.2 bn since 1958, and is now eyeing another \$1.3 bn despite \$8.3 bn still outstanding

Amount from 1958-2024

- Total agreed: \$44.6 bn
- Actually disbursed: \$28.2 bn



The Latest Disbursement and Reform Measures:

- The IMF's decision to release the latest tranche follows a formal review of Pakistan's policy reforms. The IMF acknowledged "significant progress" in stabilising the economy and rebuilding market confidence

amid global economic uncertainties.

- Key factors influencing the IMF's positive assessment include:
 - » A marked reduction in government borrowing
 - » Historic disinflation, with inflation falling to 0.3% in April 2025
 - » Improved foreign exchange reserves
 - » Reforms like the Agricultural Income Tax and consistent implementation of the FY2025 budget.

India's Objection:

- India strongly opposed the IMF's decision because of Pakistan's recent military actions and history of misusing funds. While countries cannot vote against such decisions, India abstained and warned that Pakistan might misuse the money for financing cross-border terrorism.

Conclusion:

The IMF's support highlights Pakistan's urgent need for economic reform and external help. While the funding offers short-term relief, long-term progress depends on how effectively Pakistan carries out structural reforms and ensures accountability, especially given regional tensions with India.

Artemis Accords

Context:

Norway has officially signed the Artemis Accords, joining a growing coalition of nations committed to the peaceful, transparent, and responsible exploration of space. The signing ceremony was held at the Norwegian Space Agency (NOSA) headquarters in Oslo.

About Artemis Accords:

- The Artemis Accords are a non-binding multilateral agreement initiated by the United States through NASA and the U.S. Department of State, aiming to establish a framework for peaceful, transparent, and cooperative civil space exploration. These Accords build upon the 1967 Outer Space Treaty, reaffirming and expanding its

principles in the modern context of lunar and planetary exploration.

Key Principles:

- **Peaceful Purposes:** Activities in outer space must align with international law and be conducted exclusively for peaceful purposes.
- **Transparency:** Signatories commit to openly sharing policies, plans, and scientific data.
- **Interoperability:** Encouragement of technical compatibility among space systems to promote safety and cooperation.
- **Emergency Assistance:** Obligation to assist astronauts in distress, in line with existing international agreements.
- **Preservation of Space Heritage:** Commitment to protecting historic sites and artifacts in outer space.
- **Resource Utilization:** Support for the sustainable extraction and use of space resources in accordance with the Outer Space Treaty.
- **Orbital Debris Mitigation:** Promotion of best practices for space debris management and post-mission disposal.

Significance:

- Promotes international collaboration in space exploration.
- Ensures safety, predictability, and sustainability in space operations.
- Encourages the peaceful and equitable use of outer space for the benefit of all humankind.

Current Status:

- 55 nations have signed the Artemis Accords.
- Notably, India is a signatory, though it is not participating in the NASA-led Artemis Program.

About Outer Space Treaty (OST) – 1967:

- The Outer Space Treaty, formally titled the "Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies," is the cornerstone of international space law. It was signed

in January 1967 and entered into force in October 1967.

▪ **Key Principles of OST:**

- » **Peaceful Use:** Outer space shall be used exclusively for peaceful purposes. The use of space for military activities is limited, and aggressive actions are prohibited.
- » **No Weapons of Mass Destruction:** The placement of nuclear weapons or other weapons of mass destruction in Earth orbit, on celestial bodies, or in outer space is strictly prohibited.
- » **Freedom of Exploration:** Outer space is free for exploration and use by all nations, regardless of economic or scientific development. Activities must benefit all humankind.
- » **Non-Appropriation:** No nation may claim sovereignty over the Moon or any other celestial body. Outer space is not subject to national appropriation by any means.
- » **Responsibility and Liability:** States are responsible for national space activities, whether conducted by government or private entities, and are liable for damage caused by their space objects.
- » **Avoid Harmful Contamination:** Countries must avoid harmful contamination of space and celestial bodies, and similarly avoid introducing extraterrestrial matter that could adversely affect Earth.

Conclusion:

Norway's signing of the Artemis Accords marks a significant step in international cooperation for peaceful and responsible space exploration.

China's Renaming of Places in Arunachal Pradesh

Context:

China has once again attempted to assert territorial claims over Arunachal Pradesh by releasing a fifth list of renamed locations, referring to the region as “Zangnan” or southern Tibet. It claims approximately 90,000 sq km of

Indian-administered territory. India has firmly rejected these renaming attempts, calling them politically motivated and illegitimate.

Strategic Motives Behind China's Renaming Tactics:

- Renaming places is part of China's broader strategy to legitimize its territorial claims both at home and on the global stage. This includes:
 - » **Diplomatic pressure:** Objecting to Indian leaders' visits to Arunachal Pradesh.
 - » **Visa denial:** Refusing visas to Indian athletes from Arunachal Pradesh.
 - » **Cartographic aggression:** Publishing maps that show Arunachal as Chinese territory.
 - » **Global parallels:** Similar tactics have been used in the South China Sea.
- Chinese officials compare this to India renaming cities like Bombay to Mumbai, but that analogy is flawed—India renamed cities within its own uncontested territory, whereas China is targeting a disputed region.



India-China Border Dispute:

- The 3,488 km-long border remains undemarcated in many areas. The Line of Actual Control (LAC), established after the 1962 war, serves as the working boundary, but lacks clarity in several stretches. India-China Border is divided into following divisions:
 - » **Western Sector:** Ladakh
 - » **Middle Sector:** Himachal Pradesh, Uttarakhand

- » **Eastern Sector:** Arunachal Pradesh, Sikkim

Key Areas of Dispute:

- **Aksai Chin (Western Sector):** Controlled by China, claimed by India (Ladakh). It holds military and strategic significance due to its proximity to the China-Pakistan Economic Corridor (CPEC).
- **Arunachal Pradesh (Eastern Sector):** Administered by India as a northeastern state, fully claimed by China as “South Tibet.”

India's Response:

- **Strengthening Regional Cooperation:**
 - » **With Nepal:** In 2024, India and Nepal signed a power pact for exporting 10,000 MW over 10 years and inaugurated three cross-border transmission lines: Raxaul-Parwanipur, Kushaha-Kataiya, and New Nautanwa-Mainahiya, strengthening regional energy ties.
 - » **With Bhutan:** Supporting Gelephu mindfulness city, 2500 Km zero-carbon, co-operative project.
- **Necklace of Diamonds Strategy:**
 - » A strategic counter to China's “String of Pearls.”
 - » Focuses on building naval bases, boosting military presence, and enhancing regional diplomacy to limit China's influence in the Indian Ocean and Indo-Pacific.
- **Infrastructure Development:**
 - » BRO has completed a total of 111 infrastructure projects in 2024 at an overall cost of Rs 3,751 crore. This includes 36 projects worth Rs 1,508 crore, such as the state-of-the-art Sela Tunnel in Arunachal Pradesh.
- **Global Strategic Alliances**
 - » **QUAD (India, USA, Japan, Australia):** Promotes maritime security and trade.
 - » **I2U2 (India, Israel, USA, UAE):** Enhances India's position in West Asia.
 - » **IMEC:** Counters China's BRI; improves trade links through the Middle East.
 - » **INSTC (India, Iran, Russia):** A 7,200 km

trade route through Chabahar Port, offering a strategic alternative to CPEC.

Conclusion:

China's renaming of places in Arunachal Pradesh is a deliberate tactic to assert false claims over Indian Territory. India has strongly pushed back through a combination of diplomatic resistance, military readiness, infrastructure upgrades, regional cooperation, and global alliances—demonstrating a robust and comprehensive approach to defending its sovereignty and regional interests.

France and Poland signed Mutual Defense Treaty

Context:

France and Poland have signed a treaty of friendship and enhanced cooperation that includes a mutual defense clause, amid ongoing tensions in Eastern Europe stemming from the Russia-Ukraine conflict.

Key Provisions of the Treaty:

- **Mutual Defense Commitment:** Both countries pledge to support each other militarily in the case of external aggression.
- **Reinforcement of NATO and EU:** French President Emmanuel Macron clarified that the treaty does not substitute NATO or EU security assurances but instead complements and reinforces them.

Strategic Significance for Europe:

The treaty marks a significant milestone in European defense integration, reflecting growing concerns over Russia's assertiveness following its 2022 invasion of Ukraine.

- **Security Recalibration:** It strengthens regional deterrence capabilities, especially for Poland, which borders Belarus and Ukraine, both central to the current geopolitical flashpoints.
- **Signal of Unity:** The move sends a powerful message of European solidarity, reinforcing the EU's defense posture independent of, but aligned with, NATO.

India's Interest and Strategic Perspective:

Though geographically distant, India has a strong interest in the evolving European security landscape, particularly for the following reasons:

- **Impact on Global Security Architecture:** India has consistently emphasized the importance of a rules-based international order. The France-Poland treaty, reinforcing bilateral defense commitments within a multilateral framework (NATO and EU), aligns with India's advocacy for collective security arrangements that deter aggression.
- **Strategic Partnerships:** India maintains robust strategic partnerships with both France and Poland:
 - » France is a long-standing defense partner, with cooperation spanning the Rafale fighter jets, Scorpene submarines, space technology, and civil nuclear energy.
 - » Poland has emerged as a growing defense and trade partner, with collaboration in areas like military modernization, industrial cooperation, and technology transfers.



About France:

- France, officially the French Republic, is a major European country primarily located in Western Europe, with numerous overseas territories in the Americas, Atlantic, Indian, and Pacific Oceans. France shares borders with several countries, including Germany, Italy, Spain, and Belgium, and stretches from the Atlantic Ocean to the Rhine River and from the Mediterranean Sea to the

English Channel.

- France is a nuclear power, a permanent UN Security Council member, and an influential voice in global politics through organizations like the EU, NATO, G7, and G20.

About Poland:

- Poland, officially the Republic of Poland, is a Central European nation bordered by Germany, Czech Republic, Slovakia, Ukraine, Belarus, Lithuania, and Russia, with a northern coastline along the Baltic Sea.
- Poland is a member of numerous global organizations including the UN, EU, NATO, OECD, and Schengen Area, and hosts 17 UNESCO World Heritage Sites.

Conclusion:

The France-Poland defense treaty is more than a bilateral agreement—it is a strategic realignment that underscores Europe's readiness to shoulder greater responsibility for its security. For India, a nation that balances strategic autonomy with proactive diplomacy, this development offers fresh opportunities for cooperation, dialogue, and deeper engagement with an increasingly assertive and cohesive Europe.

World Press Freedom Index 2025

Context:

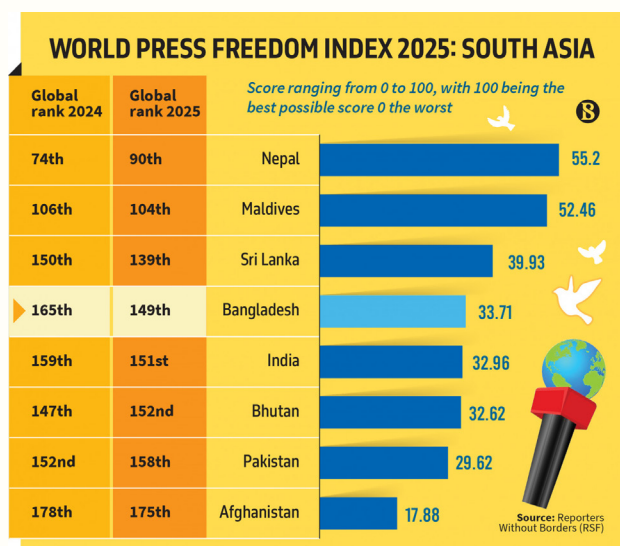
The World Press Freedom Index 2025 was recently published by Reporters Without Borders (RSF) which reveals a stark deterioration in global press freedom. For the first time in its history, the global press freedom situation is classified as a "difficult situation," reflecting escalating economic, political, and legal threats to journalistic independence.

Key highlights:

- **Economic Instability and Media Survival:** Out of the 180 countries assessed, 160 face severe economic challenges threatening

the survival of independent media outlets. Financial pressures are no longer confined to developing nations; even established democracies are affected.

- » The United States, for example, fell to 57th position (down two places). More dramatic declines occurred in Tunisia (129th, down 11 places) and Argentina (87th, down 21 places).
- » These challenges are enhanced by political instability, as observed in Palestine (163rd) and Israel (112th, down 11 ranks), where conflict has further restricted press operations.



- **Media Ownership Concentration and Self-Censorship:** The concentration of media ownership is eroding editorial independence across both authoritarian and democratic regimes.
 - » Forty-six countries, including Australia (29th), Canada (21st), Czechia (10th), and France (25th, down 4 places), are grappling with limited media plurality.
 - » In more extreme cases, like Russia (171st, down 9 places), the state owns and controls most media outlets, leaving no room for independent journalism.
- **Legal Restrictions and Political Interference:** Legislation designed to restrict “foreign influence” is being misused to suppress independent media. Georgia (114th, down 11 places) has enacted such

measures, while countries in the Middle East and Central Asia, like Jordan (147th, down 15 places), face mounting repression under vaguely defined national security laws.

- **Widespread Editorial Interference:** According to RSF, editorial interference is present in more than half of the countries evaluated (92 out of 180).
 - » Media owners frequently intervene in editorial decisions in countries such as Rwanda (146th), the United Arab Emirates (164th), and Vietnam (173rd), significantly impairing journalistic freedom and ethical reporting.

Major Rankings in 2025:

- India ranked 151st with a total score of 32.96, a modest improvement from 159th in 2024. However, this slight advancement is overshadowed by persistent challenges including threats against journalists, politically motivated censorship, and an uneven flow of information across regions.
- **Top Performing Nations:** The highest-ranked countries are predominantly Nordic and Western European nations. Norway (92.31) retains the top spot, followed by Estonia, the Netherlands, Sweden, and Finland. These nations benefit from strong democratic institutions, robust legal safeguards, and diversified media ecosystems.
- **Bottom Performers:** The lowest-ranked countries reflect a deep entrenchment of censorship and authoritarian control. Eritrea (11.32) ranks last, followed by North Korea, China, Syria, and Iran. In these states, journalists face arbitrary arrests, intimidation, and pervasive state propaganda.

Conclusion:

The 2025 RSF Index underscores the growing vulnerabilities of global journalism. From economic fragility to political coercion and legislative crackdowns, the threats to press freedom are both structural and systemic. Upholding democratic values requires not just

protecting journalists but also investing in resilient, independent media systems capable of withstanding both market and political pressures.

Crimea's Strategic Significance and Trump's Peace Proposal

Context:

The U.S. President Donald Trump has sparked debate by proposing a peace deal that would involve the United States formally recognizing Crimea as part of Russia. This proposal, intended to help end the ongoing war in Ukraine, would reverse decades of American foreign policy, which has opposed changing borders by force. It has also raised concerns around the world about weakening international rules and the possible impact on other sensitive regions.

Significance of Crimea to Russia:

- **Maritime Access and Naval Power**
 - » **Gateway to the Mediterranean:** Through the Black Sea, Crimea provides Russia with its only direct maritime route to the Mediterranean via the Bosphorus and Dardanelles straits.
 - » **Strategic Naval Hub:** The port city of Sevastopol is home to Russia's Black Sea Fleet. Unlike Russia's other Black Sea ports, Sevastopol offers deep waters suitable for major naval deployments year-round.
- **Warm-Water Ports:**
 - » Russian foreign policy since Tsarist times has prioritized the acquisition of warm-water ports that remain ice-free during winter. Crimea fulfills this enduring strategic objective, first articulated in the 18th century and reaffirmed throughout Soviet and post-Soviet history.
- **Water Security through the North Crimean Canal**
 - » Crimea's arid climate means it relies heavily on the North Crimean Canal,

which channels water from Ukraine's Dnieper River. After the 2014 annexation, Ukraine blocked the canal, cutting off 85% of Crimea's water supply. Russia's military strategy in 2022 included the occupation of Kherson and the destruction of the canal dam to restore water flow.



Trump's Proposal and Geopolitical Implications

- **Reversing U.S. Foreign Policy:**
 - » Since 2014, the U.S. has consistently refused to recognize Russia's annexation of Crimea.
 - » A formal reversal would legitimize territorial conquest by force, undermining international law and potentially encouraging similar actions elsewhere.
- **Global Ramifications:**
 - » **Ukraine's Response:** Ukrainian President Volodymyr Zelenskyy has clearly rejected any agreement that involves giving up Ukrainian territory.
 - » **Authoritarian Precedent:** Analysts warn that recognizing Crimea as part of Russia could encourage China to take stronger actions toward Taiwan or increase military activities in the South China Sea.

About Crimea Peninsula:

Feature	Details
Location	Eastern Europe, bordered by the Black Sea and the Sea of Azov

Connectivity	Connected to Ukraine via the Isthmus of Perekop and to Russia through the Crimean Bridge over the Kerch Strait
Geopolitical Neighbours	Maritime proximity to Romania (west) and Turkey (south)
Key Terrain	Crimean Mountains (Ai-Petri peak), small rivers like Salhir and Alma, Arabat Spit separating Syvash lagoons from Sea of Azov

Conclusion:

Crimea is a central issue in the Russia-Ukraine war — not just as a piece of land, but as a symbol of sovereignty, military strength, and global political influence. Trump's proposal could offer a possible way to end a long and difficult conflict, but it would also challenge international rules and affect Ukraine's territorial rights. Whether the world chooses peace through compromise or continues the conflict to defend principles, Crimea will remain a key focus in this ongoing 21st-century struggle.

SIPRI Report on India's Defence Spending

Context:

According to the latest report by the Stockholm International Peace Research Institute (SIPRI), global military spending surged to a record \$2,718 billion in 2024, marking a 9.4% increase in real terms—the steepest year-on-year growth since the end of the Cold War. The top five spenders—the United States, China, Russia, Germany, and India—accounted for 60% of total global expenditure, jointly spending \$1,635 billion.

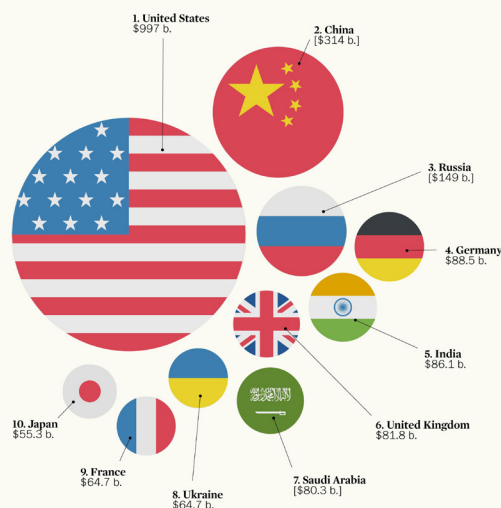
India's Position in Global Military Expenditure:

- India is the world's fifth-largest military spender after the United States (\$997 billion), China (\$314 billion), Russia (\$149 billion), and Germany (\$88 billion). India's defence spending was listed at \$86 billion

in 2024, placing it a fraction ahead of the United Kingdom (\$82 billion) and Saudi Arabia (\$80 billion). In sharp contrast, Pakistan is at number 29 with a defence budget of \$10 billion, which is almost nine times more than that of its western neighbour.

- In spite of this significant outlay, India spends just 1.9% of its GDP on defence, which most experts contend is inadequate considering the twin-front threat it faces from two nuclear neighbours—Pakistan and China. Defence experts suggest at least 2.5% of GDP to create credible deterrence and stay strategically prepared.

The 10 largest military spenders in 2024



Strategic Context and Border Tensions:

- India is in a difficult position. It has two active borders with nuclear powers:
- With Pakistan, the ceasefire along the Line of Control (LoC) has become weak, especially after recent terror attacks like the Pahalgam massacre.
- With China, over 100,000 troops are still deployed along the Line of Actual Control (LAC), even though there has been some disengagement in eastern Ladakh.

Structural Limitations in India's Defence Spending:

- A major concern with India's ₹6.8 lakh crore

(\$80 billion) defence budget for FY 2025–26 is its allocation structure—only 22% is designated for capital procurements, which fund new weapon systems and platforms. The bulk is spent on salaries, operational expenses, and pensions for over 3.4 million ex-servicemen and defence civilians, limiting military modernisation.

- Additionally, India's weak defence-industrial base keeps it the world's second-largest arms importer, and the lack of coherent long-term strategic planning hampers alignment of military capabilities with its geopolitical goals.
- This has led to operational shortages in critical areas such as:
 - » Fighter aircraft
 - » Submarines
 - » Helicopters
 - » Air defence systems
 - » Anti-tank guided missiles
 - » Night-fighting equipment

China and Pakistan current capabilities:

- While India struggles with systemic inefficiencies, China is rapidly modernizing its military. In 2024, it increased its defence budget by 7% to \$314 billion—its 30th consecutive annual rise. Analysts believe China's actual military spending likely exceeds official figures.
- Key highlights of China's 2024 military modernization include:
 - » Deployment of new stealth combat aircraft
 - » Development of advanced UAVs and uncrewed underwater vehicles
 - » Rapid expansion of its nuclear arsenal
 - » Formation of aerospace and cyberspace forces
 - » Strengthened capabilities in counter-space and cyberwarfare
- While Pakistan's military budget remains modest in comparison, it continues to pose asymmetric and proxy threats, particularly in Kashmir and across the LoC, making it a persistent security challenge for India.

Conclusion:

India's defence challenges are not merely budgetary but also structural and strategic. While it remains a top global spender, the return on investment is diluted by skewed expenditure priorities and institutional inefficiencies. In light of a hostile neighbourhood, nuclear brinkmanship, and rapid technological evolution in warfare, India must urgently:

- » Enhance capital allocations
- » Boost indigenous defence manufacturing
- » Implement long-term capability-building roadmaps
- » Increase defence-GDP ratio to at least 2.5%
- Only through such comprehensive reforms can India hope to transform its numerical advantage into strategic effectiveness, ensuring readiness against an increasingly unpredictable and militarized global order.

India-Angola Economic Partnership

Context:

Angola President Joao Manuel Goncalves Lourenco, during his official visit to India, extended a significant invitation to Indian businesses, urging them to explore investment and export opportunities in the African nation. Addressing the India-Angola Business Forum in New Delhi, President Lourenco outlined Angola's strategic advantages and sectors ripe for bilateral cooperation, including agriculture, pharmaceuticals, and renewable energy.

Angola's Strategic Access to Regional Markets:

- Angola is geostrategically significant, as it is a vital gateway to the African continent. The nation enjoys privileged access to regional markets through two major trade frameworks:
 - » Southern African Development Community (SADC)
 - » African Continental Free Trade Area (AfCFTA)

Key Sectors for Collaboration:

- **Agriculture:** Angola offers abundant arable land and seeks Indian expertise in agri-tech, irrigation, and food processing. Investment in agriculture can address both domestic food security and regional export potential.
- **Pharmaceuticals:** India's leadership in affordable and quality pharmaceutical production can complement Angola's need for healthcare access and drug manufacturing. Angola sees this sector as a key pillar for health security and economic diversification.
- **Renewable Energy:** With growing emphasis on sustainable development, Angola is actively pursuing green energy solutions. Partnerships with Indian clean-tech firms in solar, hydro, and wind energy could drive Angola's energy transition.

Trade & Economic Cooperation

#IndiaAngola



India is the **2nd** largest trading partner of Angola with about **10%** of Angola's external trade

Angola is currently the **8th** largest source for crude oil and **4th** largest source for LNG for India in FY25



About India-Angola Business Forum:

- The India-Angola Business Forum is a collaborative initiative aimed at enhancing bilateral trade, investment, and cultural exchanges between India and Angola.
- This platform facilitates discussions on various sectors, including agriculture, mining, energy, healthcare, and information technology, to foster mutual economic growth and cooperation.
- **Trade and Economic Ties:**
 - » India and Angola have strengthened their economic ties in recent years, with bilateral trade growing significantly.
- **Bilateral Trade Growth**
 - » Trade between India and Angola increased from \$2.14 billion in 2020-21 to \$4.22 billion in 2022-23.
 - » In 2023-24, bilateral trade stood at \$4.19 billion, with Indian exports reaching a record \$698 million.
- **Key Exports from India to Angola**
 - » Pharmaceuticals
 - » Machinery
 - » Vehicles
 - » Food products
- **Key Imports from Angola to India:**
 - » Crude oil (accounts for 90% of bilateral trade)
 - » Diamonds
 - » Petroleum products

India's Position in Angola's Trade:

- India is Angola's third-largest trading partner, accounting for about 10% of its external trade. India is the second-largest oil importer of Angola, after China.
- The growing trade relations between India and Angola reflect the strengthening economic ties between the two countries. The India-Angola Business and Cultural Council, established to promote bilateral trade and cultural exchanges, plays a significant role in fostering economic cooperation.

Conclusion:

President Lourenço's call to Indian businesses signals Angola's openness to foreign investment and its ambition to become a key player in Africa's export economy. As global supply chains diversify and emerging markets rise in prominence, this India-Angola collaboration has the potential to reshape South-South economic cooperation and unlock new growth trajectories for both nations.

India-U.S. Maritime Deal

Context:

U.S. State Department has approved a potential Foreign Military Sale (FMS) to India, worth \$131 million, under the Indo-Pacific Maritime Domain Awareness (IPMDA) initiative. The deal signifies growing convergence between New Delhi and Washington in maintaining a stable and secure Indo-Pacific.

Key Features of the India-U.S. Maritime Deal:

- **The sale includes:**
 - » SeaVision software and its enhancements
 - » Technical Assistance Field Team (TAFT) training
 - » Remote analytics support
 - » Access to software documentation
 - » Logistics and program support
- The principal contractor is Hawkeye 360, a U.S.-based space data analytics firm.

Importance of this sale:

The deal aims to:

- Support U.S. foreign policy and national security goals
- Strengthen U.S.-India strategic defense ties
- Enhance India's maritime domain awareness and ability to respond to regional threats
- Promote regional stability in the Indo-Pacific and South Asia

About Foreign Military Sales (FMS):

- FMS is a government-to-government defense export program managed by the U.S. Defense Security Cooperation Agency (DSCA).
- Ensures accountability, transparency, and alignment with U.S. foreign policy goals.
- Enables partner nations to procure U.S. military equipment, services, and training under standardized agreements.

About the IPMDA Initiative:

- Launched in 2022 at the Quad Summit in Tokyo (India, U.S., Australia, Japan).
- Aims to enhance maritime transparency and security using advanced surveillance

tools.

- **Focus areas:**
 - » Tracking dark shipping (vessels disabling AIS transponders)
 - » Providing a real-time maritime picture to Quad and partner nations
 - » Integrating efforts across:
 - Pacific Islands
 - Southeast Asia
 - Indian Ocean Region (IOR)

Significance of IPMDA for the Region:

- Boosts maritime domain awareness (MDA) of regional partners
- Strengthens detection of:
 - » Illegal, unreported, and unregulated (IUU) fishing
 - » Human and arms trafficking
 - » Unauthorized military presence
- Offers a non-escalatory, technology-driven solution to counter aggressive Chinese maritime activities in regional EEZs

Strategic Importance of IPMDA for India:

- Enhances India's role as a net security provider in the IOR
- Aligns with India's SAGAR (Security and Growth for All in the Region) doctrine
- Supports India's Blue Economy aspirations
- Reinforces a free, open, and rules-based maritime order

About India-U.S. Defense Deals:

- India and the U.S. are set to sign a new 10-year Framework Agreement to advance the U.S.-India Major Defense Partnership, focusing on deeper military cooperation, joint development, and operational alignment.
- India has already integrated several key U.S. defense systems, including:
 - » C-130J Super Hercules (tactical transport aircraft)
 - » P-8I Poseidon (maritime surveillance aircraft)
 - » AH-64E Apache (attack helicopters)
 - » MQ-9B drones (long-endurance unmanned aerial vehicles)

Conclusion:

The India-U.S. maritime surveillance deal under IPMDA marks a new chapter in Indo-Pacific cooperation. It reflects a shared vision of regional stability through strategic alignment, technological collaboration, and enhanced defense interoperability. As India emerges as a key player in the Indo-Pacific, such partnerships will be pivotal in shaping the region's security architecture.

India-Canada Relations Post-2025 Canadian Elections

Context:

The Liberal Party has been recently re-elected in Canada with Mark Carney as the new Prime Minister. This marks a potential turning point in India-Canada relations with India extending a formal congratulatory message, signaling a rare positive engagement after over two years of diplomatic tensions.

Context of Strained Bilateral Relations:

- India-Canada relations have been strained since mid-2023 after Canada alleged Indian involvement in the killing of Khalistani separatist Hardeep Singh Nijjar. This led to the expulsion of senior diplomats and suspension of CEPA talks. Tensions were heightened by Canada's perceived tolerance of pro-Khalistan activities, including from the former NDP leader, which India saw as undermining its sovereignty.
- The new Canadian Prime Minister, previously Governor of the Bank of Canada and the Bank of England, has emphasized pragmatic diplomacy and trade diversification, including closer ties with India. His delayed condemnation of the Pahalgam terror attack was noted positively in India, while the NDP leader's resignation following electoral losses removed a key hurdle to improved ties.

The Role of Public Perception and Diaspora Influence:

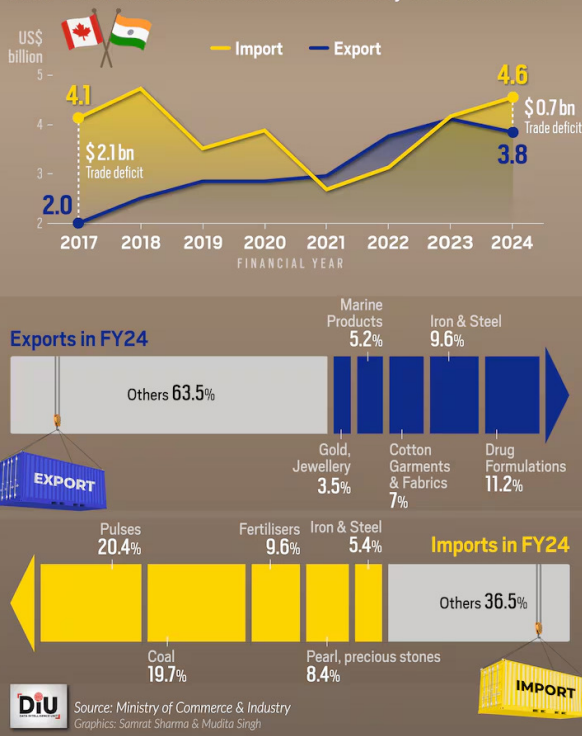
- The Indian diaspora in Canada, numbering around 1.8 million, continues to serve as a

socio-cultural and economic bridge between the two nations. However, its influence has been tested by recent diplomatic disruptions.

- Public perception in both countries has deteriorated. A December 2024 Angus Reid Institute survey showed that only 24% of Canadians considered India a "friendly" nation, compared to 52% in 2023.
- In India, a CNN-IBN poll found that 33% of respondents viewed Canada favorably, while another 33% expressed neutrality. Additionally, declining student mobility from India to Canada highlights reduced people-to-people exchanges.

India Narrows Trade Gap with Canada as Exports Rise

India's trade deficit with Canada narrowed by 67% since FY17



Strategic and Economic Outlook:

- Under the current leadership, there is renewed hope for the resumption of CEPA negotiations. With a background in global financial institutions, the new Canadian government is expected to prioritize trade

and climate cooperation—areas where convergence with India is possible.

- Canada's upcoming hosting of the G7 Summit in Alberta presents a potential opportunity for renewed India-Canada interaction, particularly if India is invited as a special guest.
- The Indian Opposition, including Congress MP Jairam Ramesh, has welcomed the leadership change, recalling the Prime Minister's prior commitments to global climate action and multilateral cooperation.

India-Canada Bilateral Relations:

- **Bilateral Trade (2023):** Approx. \$12 billion, with the trade balance favouring India.
- **India's Ranking:** 10th-largest trading partner for Canada in 2022.
- **Share in Canada's Global Trade:** Only 1.95%, indicating untapped potential.
- **Key Indian Exports:** Pharmaceuticals, gems and jewellery, textiles, and machinery.
- **Key Canadian Exports:** Pulses, timber, pulp and paper, and mining products.
- **FDI:** Canada is the 18th largest investor in India, investing about \$3.3 billion between April 2000 and March 2023 (source: Invest India).
- **CEPA Negotiations:** Ongoing technical negotiations for a Comprehensive Economic Partnership Agreement, covering trade, services, investment, and facilitation.

Conclusion:

The 2025 elections in Canada offer a chance to recalibrate bilateral relations with India. While shared democratic values, economic interests, and diaspora linkages remain strong foundations, restoring mutual trust will require sustained diplomatic efforts, issue-specific compartmentalisation, and long-term strategic planning.

India's Boycott of Turkey and Azerbaijan

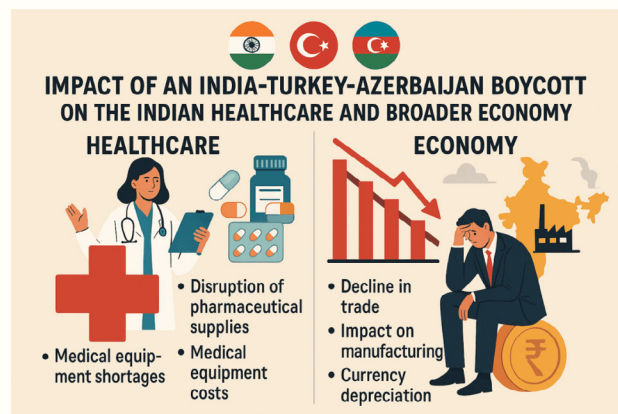
Context:

Following Turkey and Azerbaijan's explicit

support for Pakistan after India's military strikes during Operation Sindoor, a significant backlash emerged within India, marked by calls for boycotts of travel, trade, and educational exchanges with these countries.

Geopolitical Context:

- Turkey and Azerbaijan have a strong relationship with Pakistan that goes back many years. Turkey has supported Pakistan on the Kashmir issue and helped Azerbaijan during its conflict with Armenia, especially in the 2020 Nagorno-Karabakh war. In return, Pakistan has backed Turkey in disputes like the one over Cyprus.
- Their close ties also include military cooperation. Since the 1990s, Turkey has been selling weapons to Pakistan, including artillery and armored vehicles. On the other hand, India mainly exports weapons to Armenia and has no official arms deals with Turkey or Azerbaijan.
- Recently, tensions rose even more when Pakistan used Turkish-made Songar drones during border clashes with India. This move has added to the growing strain between India and Turkey.



Economic and Trade Relations:

- **Trade Volume and Composition:** India's imports from Turkey and Azerbaijan constitute less than 1% of its total crude oil imports, indicating limited economic dependency. Turkey's machinery exports to India—including nuclear reactors and boilers—also form a marginal share (~1%)

of India's import basket, with China and Germany dominating this sector.

» Azerbaijan, however, is more reliant on India for crude oil exports, with India being the third-largest buyer as of 2023. Despite this, an official trade ban by India would likely inflict greater economic losses on Azerbaijan than Turkey.

- **Trade Boycotts and Industry Response:** Indian trader associations and companies have proactively moved to boycott Turkish and Azerbaijani goods and services. Actions include suspending travel bookings, ending partnerships with Turkish airlines, and halting imports of Turkish apples. Political parties and trade groups have advocated for broader bans on Turkish imports and contracts, reflecting rising nationalist sentiments.

Tourism and Educational Exchanges:

- Turkey hosted approximately 330,000 Indian visitors in 2024, a sharp rise from around 120,000 in 2014.
- Azerbaijan saw an even more dramatic increase, with Indian arrivals jumping from under 5,000 in 2014 to nearly 244,000 in 2024.
- Indians' share of tourists in Azerbaijan rose from 6% in 2023 to 10% in 2024.
- Similarly, the number of Indian students studying in Turkey and Azerbaijan surged sevenfold from under 100 in 2017 to 777 by early 2024.
- The boycott movement threatens these growing people-to-people ties. Travel platforms report a 50% or more drop in bookings, and some Indian tour operators have paused all packages to these countries.

Strategic and Diplomatic Implications:

- India risks alienating countries in Central Asia and the broader Turkic world by severing ties with Turkey and Azerbaijan.
- The boycott signals a hardening stance on India's foreign relations, emphasizing nationalism and retaliatory diplomacy.
- Disruptions in educational and cultural

exchanges may reduce India's soft power influence in the region.

- Turkey and Azerbaijan may pivot more decisively toward Pakistan and China, further complicating India's strategic calculus.

Conclusion:

India's boycott of Turkey and Azerbaijan is more than a reactive nationalist sentiment; it reflects deepening geopolitical fissures in South Asia and beyond. Economically, India stands to lose little directly, but the diplomatic costs and long-term strategic consequences require careful consideration.

China's CPEC Extension to Afghanistan

Context:

China recently hosted an "informal" trilateral dialogue with high-level participation from Pakistan and Afghanistan. The meeting, led by Chinese Foreign Minister Wang Yi, Pakistani Deputy PM Ishaq Dar, and Afghan Acting Foreign Minister Amir Khan Muttaqi, concluded with an agreement to extend the China-Pakistan Economic Corridor (CPEC) to Afghanistan.

- Beyond infrastructure, the dialogue emphasized on growing security cooperation, trade expansion, and political normalization between Islamabad and Kabul—with Beijing as both broker and benefactor.

CPEC Expansion: Strategic Context and Objectives:

- The China-Pakistan Economic Corridor, a \$62 billion infrastructure and connectivity initiative, links China's Xinjiang province to Pakistan's Gwadar Port through an extensive network of highways, railways, and energy projects. Launched in 2015, CPEC is a flagship component of the BRI.

Extension to Afghanistan:

- By extending CPEC into Afghanistan, China aims to:
 - » Establish an overland economic artery

linking Central and South Asia.

- » Stabilize Afghanistan through economic integration.
- » Secure its western front via diplomatic and economic leverage.
- » Counterbalance India's regional connectivity initiatives such as the Chabahar Port project.



Geopolitical Implications for India:

- **Sovereignty Concerns:** India staunchly opposes CPEC as it traverses Pakistan-occupied Kashmir (PoK), territory claimed by India. Any third-party engagement in this corridor is seen by New Delhi as a violation of its sovereignty and territorial integrity.
- **Strategic Encirclement:** CPEC's expansion risks strategically encircling India, enhancing China's influence in South Asia and providing Pakistan with an economic corridor that may facilitate greater military mobility.
- **Regional Rivalry Intensification:** India's engagement with the Taliban has increased since 2021, focusing on development and humanitarian aid. However, China's backing of Pakistan-Afghanistan ties may marginalize India's diplomatic foothold in Kabul and limit its reach into Central Asia.

- **Security Concerns:** Historically, Afghanistan has hosted anti-India militant groups like Jaish-e-Mohammed and Lashkar-e-Taiba. There is concern that increased coordination between China, Pakistan, and Afghanistan could create space for strategic or covert operations detrimental to India's interests.

India's Strategic Dilemma and Future Options:

- India finds itself at a critical juncture. Although, India has made inroads with the Taliban leadership, the growing trilateral alignment poses a long-term strategic challenge as:
 - » India's Chabahar-centric connectivity vision is under pressure.
 - » Its options in Central Asia may narrow unless new alliances or infrastructure partnerships are forged.
 - » It may need to escalate engagement with Kabul or reposition its influence using multilateral frameworks (e.g., SCO, INSTC).

Conclusion:

The trilateral cooperation between China, Pakistan, and Afghanistan, symbolized by CPEC's extension marks a tectonic shift in South Asia's geopolitical balance. It challenges India's strategic space, complicates its regional diplomacy, and necessitates a recalibration of New Delhi's policy toward Afghanistan, regional trade, and great power competition. As China positions itself as both broker and benefactor, the coming years will test India's agility in safeguarding its strategic interests.

Afghanistan's Local Currency Trade Talks with China and Russia

Context:

The Taliban administration is in advanced discussions with Russia and China to settle trade transactions in local currencies. This

move aligns with efforts by all three countries to reduce dependence on the U.S. dollar amid sanctions and geopolitical tensions.

More about the News:

- Afghanistan's financial sector has been largely cut off from global banking systems due to sanctions on Taliban leaders after their 2021 takeover. U.S. aid cuts have further reduced dollar inflows, much of which previously entered as cash for humanitarian aid.
- At the same time, Russia and China are promoting trade in national currencies to circumvent Western sanctions and mitigate dollar-related vulnerabilities. In line with this strategy:
- Russia has publicly questioned the value of foreign currency reserves, citing political risks like asset freezes.
- Afghanistan sees these shifts as an opportunity to overcome its isolation and reduce dollar dependency.

Current Trade Volumes and Growth Outlook:

- **Afghanistan–Russia Trade:**
 - » Annual bilateral trade currently stands at around \$300 million, with both sides expecting growth as infrastructure and investment improve.
 - » Likely future imports from Russia include:
 - Petroleum products – vital for Afghanistan's energy security
 - Plastics – essential for industrial and consumer sectors
 - » Notably, Afghanistan's first major trade agreement post-Taliban was signed in 2022 with Russia, involving imports of gas, oil, and wheat.
- **Afghanistan–China Trade:**
 - » Trade with China is more robust, estimated at \$1 billion annually. Afghanistan has proposed a similar local currency settlement mechanism with China.
 - » To support this, a joint working group has been set up, comprising:

- Afghanistan's Ministry of Commerce
- Chinese Embassy in Kabul, which coordinates China's regional economic initiatives

India's Strategic Crossroads:

- While China and Russia expand their economic and diplomatic footprint in Afghanistan, India has yet to articulate a coherent strategy. With China hosting regular trilateral meetings with the Taliban and Pakistan, and Russia reviving Soviet-era projects, India risks being sidelined unless it responds proactively.

Key Issues for India:

- **Limited Engagement:** India's diplomatic and economic ties with Afghanistan remain minimal. The Ministry of External Affairs (MEA) should facilitate Indian private sector participation in mining, infrastructure, health, and housing projects.
- **Regional Constraints:** With India's relations with both Russia and China cooling, Iran remains its only consistent partner. New Delhi has rightly sought to reinvigorate ties, highlighted by recent high-level meetings on Chabahar Port and the International North-South Transport Corridor (INSTC).
- **Geopolitical Drift:** The evolving political landscape in South Asia—Pakistan's outreach to Afghanistan, shifts in Bangladesh, and renewed U.S.-Pakistan engagement—further limit India's manoeuvrability unless it recalibrates its approach.

Conclusion:

Afghanistan's push to use local currencies in trade with Russia and China reflects a broader geopolitical shift away from dollar-dominated systems. While Kabul aims to stabilise its economy under sanctions, its neighbours see economic engagement as a strategic imperative. India must urgently rethink its Afghan policy—focusing on regional partnerships, economic investment, and nuanced diplomacy—if it hopes to remain relevant in Central Asia's changing landscape.



Environment & Ecology



Global Warming Forecasts: Earth Poised to Breach 1.5°C Threshold Between 2025–2029

The Earth is rapidly approaching a critical climate milestone. According to the latest report by the World Meteorological Organization (WMO), a specialized agency of the United Nations, there is now a 70% chance that the global average temperature between 2025 and 2029 will exceed the 1.5°C warming threshold established under the 2015 Paris Agreement. This probability underscores mounting concerns among climate scientists that global efforts to limit warming are falling short.

The 1.5°C Target: A Climate Tipping Point:

❖ The 1.5°C benchmark refers to a temperature increase above pre-industrial levels (1850–1900). It was adopted as a key target in the Paris Climate Accord to avoid the most severe consequences of climate change. The rationale is grounded in scientific assessments showing that the risks of extreme weather, sea level rise, and biodiversity loss become significantly more pronounced beyond this point. However, recent trends and rising carbon dioxide (CO₂) emissions have led many experts to question the attainability of this goal.

Key Highlights of the report:

- ❖ According to WMO's modelling ensemble, the global average near-surface temperature is likely to range between 1.2°C and 1.9°C above pre-industrial levels for each year between 2025 and 2029.
- ❖ There is an 86% chance that the 1.5°C

threshold—central to the Paris Agreement—will be temporarily breached in at least one year during this period. The five-year average itself has a 70% chance of crossing that mark.

WMO SOUNDS CLIMATE ALARM: 1.5°C THRESHOLD IN DANGER



The **World Meteorological Organization (WMO)** has warned of a **70% probability** that global temperatures will **exceed the 1.5°C limit** set by the **Paris Agreement** between **2025 and 2029**.



- ❖ Importantly, the Paris climate goal refers to sustained long-term warming rather than short-term spikes. But these temporary exceedances are becoming more frequent and severe, reflecting the steady march of anthropogenic climate change.
- ❖ There is now a non-zero (1%) probability that global warming could cross 2°C in at least one year before 2029. While still unlikely, this would mark a grave climate tipping point if realized.

Recent Trends:

- ❖ The report designates 2024 officially as the

warmest year in recorded history, with the global mean temperature reaching 1.55°C above pre-industrial levels. Warming was widespread across continents, especially in North America, Europe, North Africa, and the tropics.

- ❖ The period 2020–2024 featured strong La Niña conditions, which typically suppress global temperatures slightly—making the 2024 record all the more alarming.

Regional Climate Outlooks: Uneven Warming, Shifting Rainfall:

- ❖ The report warns that almost every region on Earth is likely to experience above-average temperatures during 2025–2029. Northern Hemisphere land areas are projected to warm faster, and the Arctic is expected to see winter anomalies exceeding +2.4°C, nearly four times the global average.
- ❖ In terms of rainfall, patterns show both floods and droughts becoming more regionally entrenched:
 - » The African Sahel, northern Europe, Alaska, and northern Siberia are expected to be wetter than average during boreal summer months.
 - » The Amazon Basin is likely to experience prolonged dry conditions, deepening ecological stress in the world's largest rainforest.
 - » South Asia is predicted to remain in a phase of anomalously wet monsoons, though individual years may vary. The model suggests an 82% chance of above-average rainfall across the 2025–2029 monsoon seasons.
- ❖ Precipitation predictions are less certain than temperature projections, but the broad trends align with established patterns under a warming climate—more rain at high latitudes and more dryness in tropical and subtropical belts.

Oceanic Conditions and Climate Variability:

- ❖ The El Niño–Southern Oscillation (ENSO) is predicted to remain in a neutral to weakly negative phase, with no dominant El Niño or La Niña expected over the five-year span.

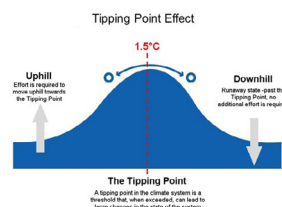
- ❖ The Atlantic Multidecadal Variability (AMV) is projected to stay positive, reinforcing warming in the North Atlantic and possibly influencing African and European rainfall.
- ❖ Meanwhile, the Pacific Decadal Variability (PDV) is forecast to remain in a negative phase, consistent with trends observed since the 1990s.

Sea Ice: Arctic Decline Accelerates

- ❖ March (maximum ice extent) and September (minimum extent) sea ice levels are both expected to drop significantly between 2025 and 2029.
- ❖ Losses are expected in key regions including the Barents Sea, Bering Sea, and Sea of Okhotsk.
- ❖ September forecasts show widespread decline across all normally ice-covered regions, with high confidence in most zones.
- ❖ In Antarctica, sea ice trends remain harder to model, but predictions suggest a continued reduction in September ice extent, particularly along the Ross Sea.

WHY IT MATTERS:

- 1.5°C is not just a number — it's the tipping point to prevent **irreversible climate damage**.
- Breaching it means more **heatwaves, droughts, floods, and rising seas**.
- The Arctic may warm **3.5x faster** than the global average.



Earth System Indicators: Mixed Signals, Low Confidence in Some Areas

- ❖ The report also touches on key climate system components:
 - » The Atlantic Meridional Overturning Circulation (AMOC)—vital for heat transport—may weaken slightly,

although observational data are insufficient to validate the forecast with confidence.

- » The Antarctic Oscillation (SAM) and Arctic Oscillation (AO) are projected to remain positive, potentially reshaping jet streams and mid-latitude storm tracks.

Broader Impacts and Warnings:

- ❖ The decade from 2014 to 2024 has been the warmest on record, with Ko Barrett, WMO Deputy Secretary-General, warning of a “growing negative impact” on ecosystems, economies, and daily life. These include:
 - » Increased frequency and intensity of heatwaves, floods, and droughts.
 - » Heightened stress on global food and water systems.
 - » Accelerated loss of biodiversity and degradation of ecosystems.
 - » Greater economic costs related to climate adaptation and disaster response.

About World Meteorological Organization:

- ❖ The World Meteorological Organization (WMO) is a specialized agency of the United Nations (UN) responsible for weather, climate, water, and related environmental issues. It is located in Geneva, Switzerland
- ❖ Originated from the International Meteorological Organization (IMO), founded in 1873.

- ❖ Established in 1950, WMO became the UN’s specialized agency for meteorology (weather and climate), operational hydrology, and related geophysical sciences..

Governance:

- » **World Meteorological Congress:** The top decision-making body, made up of all members. It meets at least once every four years to set policies and regulations.
- » **Executive Council:** A 36-member body that meets yearly to carry out the Congress’s policies.
- » **Secretariat:** Led by a Secretary-General (appointed for four years), it handles the organization’s administration.
- » **It has 193 Members:** 187 countries and 6 territories, each running their own national meteorological services.

Conclusion:

The probability of Earth exceeding the 1.5°C warming limit—once a worst-case scenario—is fast becoming a near-certainty. While individual years breaching this threshold may not constitute a permanent violation of the Paris goal, the persistent upward trend strongly suggests that current mitigation efforts are inadequate. The scientific community now calls for an urgent re-evaluation of global climate policies, faster decarbonization, and significantly enhanced commitments under future UNFCCC climate negotiations.

Urban Flooding in India: A Growing Challenge

Urban flooding has emerged as a serious concern for many Indian cities in recent years. With changing climate patterns, several parts of the country are now experiencing more frequent and intense rainfall events. In the 2025 monsoon season, many states received over 20% more rainfall than normal. While the rise in heavy rain is linked to climate change, the extent of flooding in urban areas is also shaped by local human activities. Poor land-use planning, rapid construction, shrinking green

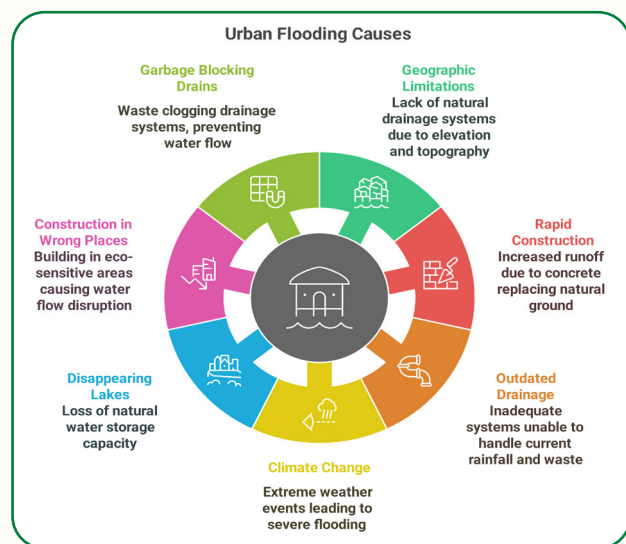
spaces, and outdated or inadequate drainage systems have made many cities more prone to waterlogging and flood-related damage.

Bengaluru is one such city facing increasing flood risks. Despite being located at a higher elevation and historically having an extensive network of lakes and drains, it has seen repeated urban flooding in recent years. The pre-monsoon rains in May 2025 highlighted these vulnerabilities once again. In just 12 hours, the city received about 130 mm of rainfall,

which overwhelmed existing infrastructure, flooded homes and roads, and caused serious disruptions. This incident underscores the need to rethink urban development strategies and strengthen disaster preparedness to cope with the growing threat of urban flooding.

About Urban Flooding:

❖ Urban flooding happens when rainwater overwhelms a city's drainage system, leading to waterlogging in streets, homes, and public spaces. Unlike floods in rural areas, which often happen near rivers or lakes, urban flooding is caused by too many concrete surfaces—like roads and buildings—that prevent rainwater from soaking into the ground. This causes the water to flow quickly over the surface, collecting in low-lying areas and blocking daily life. It can damage property, disrupt transport, and even create serious health risks.



Reasons Behind Urban Flooding:

❖ **Geographic Limitations:** Urban flooding stems from a combination of topographical and hydrological factors. Bengaluru, perched at an elevation of around 900 meters, lacks a major river system to drain excess water.

❖ **Rapid Urban Construction:** Rapid construction in cities has replaced natural

ground with concrete. Since concrete can't absorb water, rain quickly turns into surface runoff. In places like Mumbai, the built-up area has almost doubled in the past few decades, making flooding more likely with even moderate rainfall. Some city zones now generate nearly 30 times more runoff than natural landscapes.

❖ **Outdated Drainage Systems:** Many cities still use drainage systems that were built several decades ago. These old systems weren't designed for today's population or rainfall levels. They often get blocked by garbage and debris. Delhi, for example, still follows a drainage plan made in 1976—even though its population has more than quadrupled since then.

❖ **Climate Change:** Climate change is causing more extreme and unpredictable weather. Cities like Chennai have seen record-breaking rainfall—over 1,200 mm in a single month in 2015, leading to severe floods. Across central India, heavy rain events have tripled since the 1950s, and scientists expect this trend to continue.

❖ **Disappearing Lakes and Wetlands:** Natural water bodies like lakes and ponds used to store excess rainwater. But many of them have been filled in for construction. In 1800, Bengaluru had 1,452 water bodies capable of storing 35 TMC of water. Today, only about 190 lakes remain, many of which have been encroached upon.

❖ **Construction in the Wrong Places:** Building in eco-sensitive areas—like hillsides or riverbanks—has disturbed the natural flow of water. This can trigger landslides and worsen flooding. Areas like ST Bed Layout and Manyata Tech Park in Bengaluru are built on ecologically sensitive lakebeds or valley zones. In cities like Shimla and Dehradun, fast construction in hilly areas has made these regions more dangerous during storms. The 2013 floods in Kedarnath showed the high cost of building without considering the environment.

❖ **Garbage Blocking the Drains:** Solid waste and construction debris clog drains, especially

during heavy rains. Improper garbage disposal is a big issue. Plastic waste and debris clog drains, stopping water from flowing out. Indian cities produce more than 1.5 lakh tonnes of waste every day, but only a fraction of it is properly treated. As drains fill with trash, even a short spell of rain can cause flooding.

Impacts of Urban Flooding:

- ❖ **Loss of Life and Property:** Recent floods in Bengaluru led to fatalities and large-scale property damage.
- ❖ **Economic Disruptions:** Shutdowns in tech corridors, like Bengaluru's Outer Ring Road, impact national exports.
- ❖ **Public Health Crisis:** Stagnant water spreads vector-borne diseases and waterborne infections.
- ❖ **Infrastructure Damage:** Roads, metros, and power lines are rendered inoperative, compounding the crisis.

Solutions and Best Practices:

- ❖ **Institutional and Governance Reforms:** States must enhance coordination between climate change and disaster management agencies. NDMA's National Disaster Management Framework emphasizes preparedness, recovery, and reconstruction. Cities should establish interdepartmental Disaster Management Authorities with professional leadership.
- ❖ **Urban Planning and Resilience:** Cities need to prepare contour maps and conduct detailed stormwater surveys. Implementing comprehensive stormwater management systems—such as the Brihanmumbai Stormwater Disposal System—is essential. Preventing new encroachments and removing existing obstructions to drainage networks must be prioritized. Additionally, banning plastics and regulating solid waste disposal are critical to improving urban water flow.
- ❖ **Central Government's Role:** The central government should support city financial health through infrastructure funding and incentivize smaller cities to reduce migration

pressure on megacities.

- ❖ **Climate Action Plans (CAPs):** Every city must draft and implement a CAP based on its specific vulnerabilities. Annual municipal budgets should allocate dedicated funds to CAP projects. Cities like Mumbai have already begun integrating urban floods into their broader climate strategies.
- ❖ **Nature-Based and Technological Solutions:** Green infrastructure such as green roofs, permeable pavements, and urban wetlands must be promoted. Rooftop rainwater harvesting should be adopted on a large scale to reduce runoff. Infiltration beds can be installed on rooftops to compensate for lost soil permeability. Designating open areas as detention ponds for temporary water storage and building underground reservoirs—like Hong Kong's Tai Hang Stormwater Storage Tank with a 100,000 m³ capacity—can further improve resilience. IoT-based monitoring systems using smart sensors can detect rising water levels and trigger timely alerts.
- ❖ **Global Innovations:** International models offer valuable lessons. Singapore's SWAN uses real-time water level sensors and predictive flood alerts. The Netherlands' Room for the River initiative creates controlled flooding zones and expands river capacity. China's Sponge Cities concept transforms urban surfaces to absorb and store rainfall. New Orleans has pioneered FLOAT Houses—floating homes that can adapt to rising waters.

Conclusion:

Urban flooding in India is a governance and planning crisis exacerbated by climate change. To avert future catastrophes, India must adopt a dual strategy: limit demographic pressure on large cities through national policies and invest in resilient infrastructure and governance reforms. Only by integrating climate resilience into the fabric of urban planning can Indian cities hope to manage the growing threat of urban floods effectively.

Short Issues

Geotubing Technology

Context:

A recent study conducted by the National Institute of Ocean Technology (NIOT) and the Kerala State Coastal Area Development Corporation (KSCADC) has found that geotubing technology is highly effective in controlling coastal erosion. The study was conducted at Poonthura coast in Thiruvananthapuram, Kerala, where a unique offshore breakwater system using geotube technology was installed.

About Geotubing Technology:

- Geotubing involves the use of large, durable fabric tubes filled with sand or slurry, placed strategically along or off the coast. These structures serve as underwater barriers that absorb and dissipate the energy of incoming waves, significantly reducing their erosive impact on the shoreline.
- As wave energy diminishes, sediment carried by the sea is deposited, leading to the accumulation of sand and the formation of a broader, more stable beach.
- Unlike conventional hard structures such as concrete seawalls and rock armors, geotubes are cost-effective, flexible, and environmentally adaptive, making them especially suitable for dynamic coastal environments.

Implications for India's Coastline:

- According to estimates, 33.6% of India's coastline is vulnerable to varying degrees of erosion. In this context, the success of the geotubing project is significant. It not only demonstrates a viable engineering solution but also reflects the growing shift towards nature-based and sustainable coastal management practices.

Government Initiatives and Mitigation Measures for Coastal Erosion in India:

- India, with a coastline stretching over 7,500 kilometers, faces increasing threats from coastal erosion, sea-level rise, and climate-induced changes. In response, both central

and state governments have launched a series of policy-driven and scientific initiatives aimed at coastal protection, sustainable development, and community resilience.

Integrated Coastal Zone Management Project (ICZMP):

- **Objective:** To protect and sustainably manage coastal and marine ecosystems while supporting the livelihoods of coastal communities.
- **Implementation:** Supported by the World Bank, the project is operational in Gujarat, Odisha, and West Bengal under Phase I, with future expansions planned for other states.



Coastal Regulation Zone (CRZ) Notification, 2019:

- **Issued by:** The Ministry of Environment, Forest and Climate Change (MoEFCC).
- **Aim:** To balance coastal conservation with developmental needs and livelihood security.
- **Major Provisions:**
 - » Establishment of No Development Zones (NDZs) in ecologically sensitive areas.
 - » Regulation of construction and industrial activities along the coast.
 - » Encouragement of erosion control measures using sustainable technologies.
 - » Inclusion of tools like the Shoreline Management Plan (SMP) and Coastal Zone Management Plan (CZMP) for long-

term planning.

Conclusion:

The geotubing project can serve as a model for erosion-prone coastal regions across India and beyond. By blending innovative engineering with environmental sensitivity, geotubing technology offers a new frontier in coastal resilience, one where the natural dynamics of the ocean are harnessed rather than resisted.

Yala Glacier Declared Dead

Context:

Glaciologists and local communities have mourned the loss of Nepal's Yala glacier, which has shrunk by 66% since the 1970s, making it one of Nepal's first glaciers to be declared dead. Located in the Langtang Valley, the glacier has retreated 784 meters since the 1970s and was once a crucial site for glaciological training and cryosphere research in the Hindu Kush Himalayas (HKH).

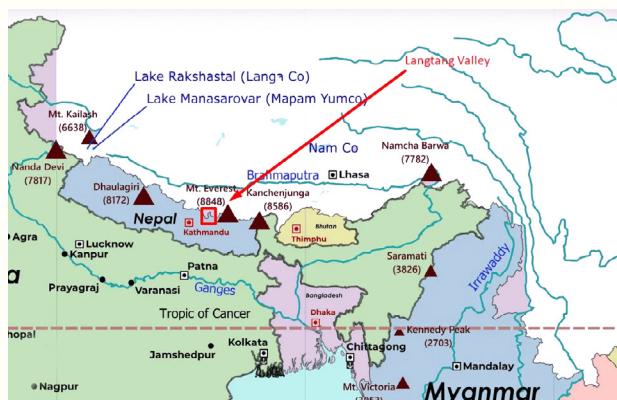
Glacier Funeral: A Symbolic Ceremony:

- A glacier funeral was held on May 12, 2025, to mark the rapid disappearance of the Yala glacier due to climate change. This event follows in the footsteps of similar ceremonies held for other glaciers, including:
 - » **Okjokull Glacier, Iceland (2019):** The world's first glacier funeral.
 - » **Pizol Glacier, Switzerland (2019):** A glacier declared dead due to rapid melting.
 - » **Clark Glacier, US (2020):** Another glacier lost to climate change.
 - » **Ayolaco Glacier, Mexico (2021):** A glacier that disappeared due to rising temperatures.

Consequences of Glacial Loss:

- The loss of glaciers like Yala has severe consequences for the environment and human societies. Some of the key impacts include:
 - » **Accelerated Global Warming:** Reduced glaciers lead to less albedo effect, increasing heat absorption and exacerbating global warming.

- » **Sea Level Rise:** Melting glaciers contribute to sea level rise, with nearly 2 cm of global sea level rise attributed to glacier melting since 2001.
- » **Disrupted Water Cycles:** Glaciers store nearly three-quarters of Earth's freshwater, and their rapid melting threatens water security and endangers biodiversity.
- » **Natural Disasters:** Glacier loss increases the risk of Glacial Lake Outburst Floods (GLOFs) and avalanches, posing a threat to local communities and ecosystems.



Impact on Local Communities:

- The loss of the Yala glacier also has significant implications for local communities, including:
 - » **Water Security:** Changes in glacier melt patterns affect water availability, threatening the livelihoods of people dependent on these water sources.
 - » **Ecological Stability:** Glacier loss disrupts ecosystems, leading to changes in biodiversity and potentially devastating consequences for local wildlife.
 - » **Cultural Significance:** Glaciers like Yala hold cultural and spiritual value, and their loss is a poignant reminder of the impact of climate change on human societies.

Initiatives for Glacial Conservation:

- **Global Initiatives:**
 - » UN's International Year of Glaciers' Preservation (2025) and World Day for

Glaciers (March 21).

- » UNESCO's Intergovernmental Hydrological Programme.
- » IUCN's Himalayan Adaptation Network.
- » WWF's Living Himalayas Initiative.

▪ **Indian Efforts:**

- » National Mission for Sustaining the Himalayan Ecosystem.
- » Network Programme on the Himalayan Cryosphere.
- » Himansh Research Station, monitoring glacial dynamics in the Indian Himalayas.
- » INCOIS GLOF Alerts, offering real-time monitoring of glacial lake risks.

Conclusion:

The declaration of the Yala Glacier as "dead" serves as a stark reminder of the far-reaching consequences of climate change. As one of Nepal's most studied glaciers, Yala's rapid disappearance highlights the urgent need for global action to mitigate the impacts of global warming.

Tsarap Chu Conservation Reserve

Context:

On May 7, 2025, the Government of Himachal Pradesh officially declared the Tsarap Chu Conservation Reserve under Section 36A(1) of the Wildlife (Protection) Act, 1972. Located in the cold desert of Spiti Valley, this newly designated reserve is now the largest conservation reserve in India, emphasizing the state's commitment to biodiversity and ecological protection.

About Tsarap Chu Conservation Reserve:

- The Tsarap Chu Conservation Reserve is known for its high density of snow leopards (*Panthera uncia*), often referred to as the "ghost of the mountains" due to their elusive nature. These apex predators inhabit snowy and rocky terrains at altitudes between 3,000 to 5,000 metres, and their presence is an indicator of a healthy ecosystem.
- In addition to the snow leopard, the reserve

is home to several key species such as the Tibetan wolf, bharal (blue sheep), Himalayan ibex, kiang (Tibetan wild ass), and the Tibetan argali (wild sheep). Avian diversity includes Rose Finch, Tibetan Raven, and Yellow-billed Chough, enhancing the area's ornithological significance.

- Tsarap Chu is now the fifth conservation reserve in the state, joining Darlaghat, Naina Devi, Potter Hill, and Shilli. Its large size and location make it very important for protecting wildlife and nature.
- It is surrounded by:
 - » Ladakh in the north,
 - » Kibber Wildlife Sanctuary to the east,
 - » Kabjima Nala to the south, and
 - » Chandratat Wildlife Sanctuary to the west.
- The Unam River and Charap Nala meet inside this area. Tsarap Chu also connects the Kibber and Chandratat sanctuaries, forming an important route for wild animals to move safely between habitats.



About the Snow Leopard:

- The snow leopard (*Panthera uncia*) is a vulnerable big cat native to the high mountains of Central and South Asia, found across 12 countries, including India, China, and Mongolia.
- In India, it inhabits cold, rugged regions of Jammu & Kashmir, Himachal Pradesh, Uttarakhand, Sikkim, and Arunachal

Pradesh. As a top predator, it plays a vital role in maintaining ecosystem health and signals the impact of climate change in mountain habitats.

- However, threats like poaching, habitat loss, and human-wildlife conflict have put its survival at risk. The global population is estimated to be between 4,000 and 6,500 individuals.

Conclusion:

The creation of the Tsarap Chu Conservation Reserve marks a significant step toward protecting high-altitude ecosystems, promoting community participation, and preserving biodiversity in one of India's most fragile and remote landscapes.

A New Tiger Swallowtail Butterfly Species

Context:

Scientists working in eastern North America have announced a previously unrecognized butterfly, known as *Papilio solstitius*, is the newest member of the iconic tiger swallowtail group. This discovery sheds light on the ongoing evolutionary dynamics within the *Papilio glaucus* species group and highlights the ecological and phenological uniqueness of the new species.

About *Papilio solstitius*:

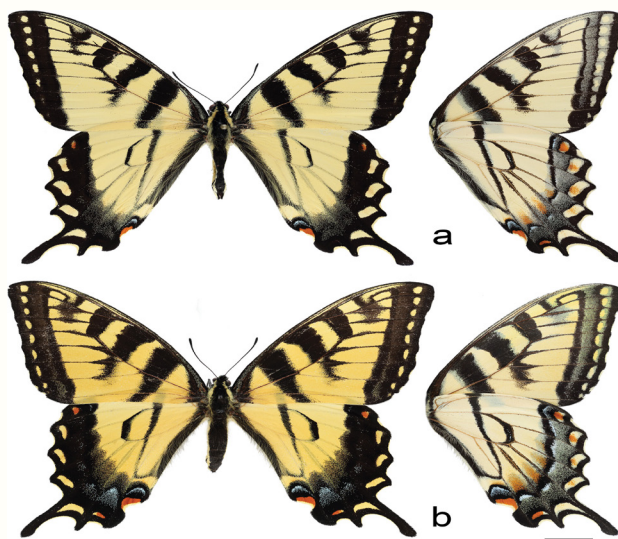
- *Papilio solstitius* is the latest member of the tiger swallowtail group. It looks very similar to its cousins—*Papilio glaucus*, *Papilio canadensis*, and *Papilio appalachiensis*—but it has a few key differences that make it unique.
- While other tiger swallowtails usually appear in the spring, *Papilio solstitius* doesn't show up until late June or early July. Its name—"solstitius" refers to the summer solstice.

About Swallowtail Butterfly:

- Swallowtail butterflies belong to the Papilionidae family, which includes some of the largest butterflies in the world, such

as the birdwing butterflies of the genus *Ornithoptera*.

- They are named for the tail-like extensions on their hindwings, which resemble the tails of swallows. However, not all swallowtail species have these tails—some are completely tailless.
- There are 573 known species of swallowtail butterflies across the world, and India is home to 77 of them. It is the state butterfly of Arunachal Pradesh.
- Among the many beautiful species of swallowtails, a few stand out for their unique appearance and cultural importance. These include:
 - » Blue-striped mime (*Papilio slateri*)
 - » Bhutan glory (*Bhutanitis lidderdalii*)
 - » Kaiser-i-Hind (*Teinopalpus imperialis*)
- These butterflies are not just a part of our natural heritage but also serve as indicators of healthy ecosystems.
- *Papilio solstitius* is commonly found in forested areas, especially those that support host plants such as ash and cherry trees, which its caterpillars rely on for food.



Implications for Research:

- Scientists believe the identification of *Papilio solstitius* opens new paths for research in several areas:
 - » Climate change effects on insect emergence and distribution

- » Hybrid zones and gene flow between related species
- » Adaptation to local environments and host plants
- » Hidden biodiversity in familiar ecosystems

Conclusion:

The discovery of *Papilio solstitius* shows that even in well-explored parts of the world, new species can still be found. It highlights the importance of detailed observation, seasonal monitoring, and the role of both professionals and the public in advancing scientific knowledge. As environmental conditions continue to shift, this butterfly may also serve as a valuable indicator of how species respond to changes in climate and habitat.

Chromosome-Level Genome Assembly of Indian Yak

Context:

In a landmark development for bovine genetic research, Indian scientists have successfully completed the first-ever chromosome-level genome assembly of the Indian yak (*Bos grunniens*). This was collaborative effort among four institutions under the Indian Council of Agricultural Research (ICAR) which promises transformative implications for yak breeding, conservation, and genomic studies. The genome has been made publicly available to facilitate wider research and collaboration.

Scientific and Conservation Significance:

- **Selective Breeding:** Identification of genetic markers for disease resistance, cold tolerance, and milk yield will enable more efficient and targeted breeding practices.
- **Conservation of Genetic Diversity:** The data will help preserve genetically diverse yak populations, a crucial goal as these animals face challenges such as climate change, habitat loss, and disease threats.
- **Understanding Environmental Adaptation:** The genome offers insights into the yak's adaptation to extreme high-

altitude conditions, which may inform studies on other bovine and mountain-dwelling species.

- **Comparative Genomics:** The genome provides a foundation for allele mining across bovine species, potentially identifying genes beneficial for resisting environmental and biological stressors.

About the Himalayan Yak:

- The Himalayan yak, also called *Bos grunniens*, is a long-haired animal that lives in high mountains and is often called the "ship of the Himalayas" because it helps people with transport and daily needs.
- It lives in high altitude places, above 14,000 feet, mainly on the Tibetan Plateau and in parts of India like Arunachal Pradesh, Sikkim, Uttarakhand, Himachal Pradesh, Jammu & Kashmir, and Ladakh.
- Yaks are built for cold weather and can survive temperatures as low as -40°C . They have a thick coat to stay warm and a large rumen (part of the stomach) that helps them digest rough grass. People usually raise yaks in a nomadic way, moving them from one place to another.

Socioeconomic Importance:

- The Indian yak is vital to the livelihoods of high-altitude communities in Ladakh, Sikkim, Arunachal Pradesh, and Himachal Pradesh, providing essential resources such as milk, meat, and transport. However, the species faces increasing threats from shrinking grazing areas, climatic shifts, and genetic erosion.
- A detailed genome will support efforts to ensure the long-term sustainability of yak populations and help improve the livelihoods of communities that depend on them. It also strengthens India's position in livestock genetic research and contributes to the broader goal of biodiversity conservation in the Himalayan ecosystem.

Conclusion:

The chromosome-level genome assembly of the Indian yak marks a significant achievement in

the field of animal genomics. It offers powerful tools for advancing breeding strategies, conserving genetic diversity, and understanding high-altitude adaptation. The publicly available genome stands as a resource of enduring value for both scientific inquiry and sustainable livestock development.

New Crocodile Species Discovered in Mexico

Context:

A significant scientific breakthrough has led to the identification of two previously unrecognized crocodile species inhabiting remote regions off the Yucatán Peninsula in Mexico at Cozumel Island and coral atoll of Banco Chinchorro.

- These areas were earlier believed to host local populations of the widespread American crocodile (*Crocodylus acutus*), thought to range from Baja California to Venezuela and across the Caribbean and Central America. However, genetic and anatomical analysis has confirmed that these island populations are distinct species, altering the long-held classification of American crocodiles.

Research Methodology and Genetic Findings:

- A collaborative team of scientists from Canada, Mexico, and Panama conducted the study. Through DNA sequencing and morphological analysis, researchers captured crocodiles, collected blood and scale samples, and safely released them. The genetic data revealed clear differentiation between the island populations and their mainland counterparts, indicating distinct evolutionary lineages.
- This surprising discovery raises the number of known New World crocodile species from four to six. Previously recognized species include:
 - » American crocodile
 - » Morelet's crocodile
 - » Cuban crocodile
 - » Orinoco crocodile

- The new species are yet to be named but are expected to reflect their island-specific origins.

Population Status and Ecological Vulnerability:

- Despite current population stability, each newly identified species has fewer than 1,000 breeding individuals, and both are geographically isolated, making them ecologically fragile. Major threats include:
 - » Habitat loss due to tourism and land development
 - » Environmental degradation of coastal and marine ecosystems
 - » Climate change impacts, including rising sea levels
 - » Genetic risks from limited breeding populations
- Cozumel alone witnessed over 1.5 million cruise ship tourists in the first quarter of 2025, increasing pressure on both land and marine habitats such as coral reefs.

Significance of Coastal and Island Ecosystems:

- Island and coastal regions often support endemic biodiversity but are vulnerable to rapid environmental change.
- Banco Chinchorro, a coral atoll, is designated a biosphere reserve.
- Cozumel is a major tourist destination experiencing infrastructure expansion.
- These areas require conservation strategies tailored to their ecological sensitivity and socio-economic realities.

Conservation and Future Directions:

- This discovery underscores the crucial role of scientific research in biodiversity assessment and environmental conservation. With global biodiversity declining faster than new species can be identified, such findings are a race against time.
- Proactive efforts to identify, classify, and conserve species are vital—not only for the survival of individual species but also for maintaining the ecological balance and integrity of the planet's most fragile

ecosystems.

Similipal Tiger Reserve declared a National Park

Context:

The Odisha government has officially notified the Similipal Tiger Reserve (STR) as a national park, covering 845.70 square kilometers. This marks the 107th national park in India and the second in Odisha, following Bhitarkanika.

About Similipal Tiger Reserve:

- Located in Odisha's Mayurbhanj district, Similipal is home to 40 royal Bengal tigers, 25% of Odisha's elephant population, and over 360 bird species. The reserve also hosts 104 species of orchids, many endemic, alongside leopards, sambar deer, and mugger crocodiles.
- Its forests, a mix of sal trees, moist deciduous and semi-evergreen types, create a thriving habitat for wildlife and forest-dependent communities.
- Similipal is renowned for being home to the world's only wild melanistic tigers, which possess higher-than-normal levels of melanin, giving their coats a darker appearance.
- These tigers are genetically distinct and contribute to the area's global ecological significance.

Impact of the National Park Status:

- National Parks in India are protected by the Wildlife Protection Act of 1972, which sets the rules for creating and managing these areas. The aim is to control human activities in national parks and reduce disturbances to wildlife.
- The declaration of Similipal as a national park is a significant move to reinforce Odisha's ecological legacy and commitment to sustainable development.
- The national park now covers 845.70 square kilometers, while the rest of the 2,750 square kilometer reserve will be designated as a wildlife sanctuary.

- This ensures stricter conservation measures in the national park, with no human activities allowed. The park will include all flora, fauna, and objects of historical and geographic significance.
- Similipal's new status integrates its roles as a wildlife sanctuary, Project Tiger site, UNESCO Biosphere Reserve, and elephant reserve, enhancing its protection and recognition.

Conservation Measures and Future Plans:

- The Odisha government has launched the Greater Similipal Landscape Programme, featuring camera towers, AI-powered trail guard cameras, and V-SAT communication networks for enhanced surveillance.
- A dedicated security force, including trained police and ex-servicemen, will safeguard the park. In a significant conservation effort, two female tigers from Tadoba Andheri Tiger Reserve, Maharashtra, have been introduced to diversify Similipal's tiger gene pool, aiming for a population of 100 by 2036.
- The "Ama Similipal Yojana" has also been launched, focusing on skill training, eco-tourism, cultural tourism, and infrastructure improvements to balance conservation with sustainable development and create economic opportunities.

Conclusion:

The elevation of Similipal to national park status represents a significant achievement in India's conservation efforts. With its rich biodiversity and unique wildlife, Similipal plays a critical role in India's ecological preservation strategy. The integration of advanced conservation measures, tiger population growth, and community development ensures a sustainable future for the reserve.

SBI Research Report on India's Forest Growth

Context:

According to the SBI Research Report, India has emerged as one of the top 10 countries globally

that have recorded a notable increase in forest area in recent years.

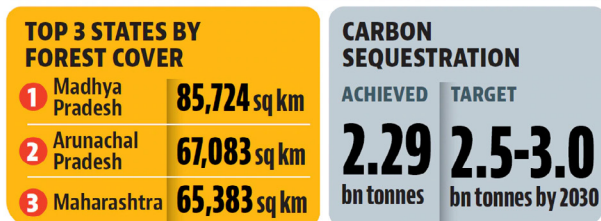
Key Findings of the Report:

- **Forest Area Trends:** India's forest cover was stable from 1991 to 2011. Since then, it has seen a rise, attributed to urban greening, sustainable land-use, and afforestation efforts.
- **Urbanization and Forest Cover:** The report identifies a U-shaped relationship:
 - » Early urbanization leads to deforestation.
 - » Advanced urbanization (beyond 40%) results in forest gain due to green policies and planning.
- India's urban population rose from 31.1% (2011) to a projected 35–37% (2024), nearing the tipping point where urbanization positively affects forest cover.

Government Initiatives:

- To capitalize on this trend, India has launched several national programs aimed at integrating green infrastructure with urban development, including:
 - » Smart Cities Mission
 - » Atal Mission for Rejuvenation and Urban Transformation (AMRUT)
- These programs aim to enhance urban ecological resilience by promoting urban forests, green belts, parks, and sustainable land use.

India's forest report 2023:



Forest Area in Indian Mega Cities:

- India's mega cities have 511.81 sq km of

forest area (10.26% of their total area).

- » Delhi leads, followed by Mumbai and Bengaluru.
- » Forest gains: Ahmedabad, Bengaluru
- » Forest losses: Chennai, Hyderabad

Economic Significance:

- India is estimated to have 35 billion trees, yet the Gross Value Added (GVA) per tree is just Rs.100. The forestry sector contributes about 1.3–1.6% to India's GVA, supporting critical industries such as:
 - » Furniture manufacturing
 - » Construction
 - » Paper and pulp industry
- This signals an opportunity for value enhancement through better forest management and innovation in forest-based industries.

About India State of Forest Report 2023:

- **Key Findings:**
 - » Total Forest & Tree Cover: 8,27,357 sq km (25.17% of India's geographical area)
 - » Forest Cover: 7,15,343 sq km (21.76%)
 - » Tree Cover: 1,12,014 sq km (3.41%)
- **Increase Since 2021:**
 - » Total rise: 1,445 sq km
 - » Forest cover up by 156 sq km
 - » Tree cover up by 1,289 sq km
- **Top Performing States**
 - » Chhattisgarh (+684 sq km), Uttar Pradesh (+559), Odisha (+559), Rajasthan (+394)
 - » Mizoram led forest cover growth with +242 sq km
- **States with Largest Cover**
 - » Madhya Pradesh (85,724 sq km), Arunachal Pradesh (67,083), Maharashtra (65,383)
 - » Lakshadweep has the highest forest cover percentage (91.33%)

Other Highlights (changes since 2021 to 2023)

- **Mangrove cover:** 4,992 sq km
- **Carbon Stock:** Increased by 81.5 million tonnes, now totaling 7,285.5 million tonnes, aiding India's NDC carbon sink goal
- **Bamboo Area:** Grew by 5,227 sq km, now

1,54,670 sq km

- **Timber Potential:** Estimated 91.51 million cubic meters annually from trees outside forests

Way Forward:

- The SBI report outlines several strategies to enhance forest sustainability:
 - » Expanding biodiversity hotspots
 - » Encouraging private sector involvement in afforestation
 - » Leveraging CSR and carbon credit markets for conservation funding
 - » Using satellite technology and digital databases to prevent forest encroachment
 - » Strengthening institutional capacity for monitoring and enforcement
- These steps align with India's commitment to its climate goals under international frameworks such as the Paris Agreement and its Nationally Determined Contributions (NDCs).

Ladakh Emerges as a Global Stronghold for Snow Leopards

Context:

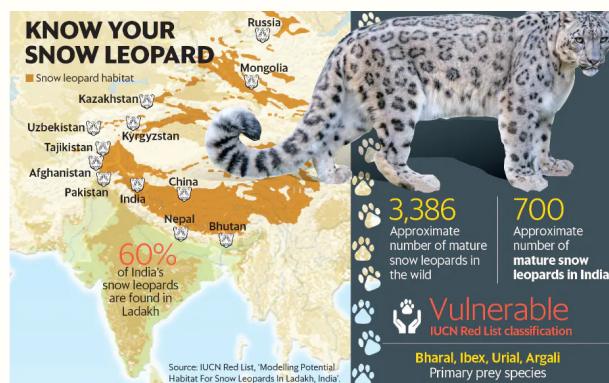
A recent study conducted by the Department of Wildlife Protection of the Union Territory of Ladakh has estimated the presence of 477 snow leopards in the region, accounting for nearly 68% of India's total snow leopard population. The findings, published in the journal PLOS One, make Ladakh one of the regions with the highest densities of snow leopards in the world.

Study Highlights:

- **Population and Distribution:** The research assessed snow leopard populations over a vast expanse of 59,000 square kilometres, concluding that the species occupies over 47,500 square kilometres of Ladakh's territory. This distribution includes ecologically significant areas such as:
 - » Hemis National Park
 - » Kargil region
 - » Leh district

Factors Supporting High Population Density:

- Multiple ecological and socio-cultural factors contribute to Ladakh's ability to support such a high density of snow leopards:
 - » **Ecological Resources:** The region is endowed with resource-rich alpine grasslands, a moderate climate, and an abundant prey base, all of which favour the sustenance of a stable snow leopard population.
 - » **Co-existence with Humans:** Remarkably, 61% of Ladakh's snow leopards were observed to inhabit areas in proximity to human populations. This high rate of human-wildlife coexistence is uncommon and reflects effective community engagement and conflict mitigation practices.
 - » **Cultural and Economic Factors:** Local communities in Ladakh have shown a strong cultural reverence for wildlife, which reduces human-animal conflict. In addition, snow leopard-based ecotourism provides economic incentives for conservation. Conflict management strategies and awareness programmes have also played a key role in maintaining this harmony.



About Snow Leopards (*Panthera uncia*):

- Snow leopards are a flagship species of the high-altitude ecosystems of South and Central Asia. Their range spans 12 countries, including India, China, Nepal, Pakistan, Bhutan, and Mongolia.

- Snow leopards inhabit steep, rugged mountainous terrains at altitudes ranging from 3,000 to 5,000 metres, marked by cliffs, rocky outcrops, and deep ravines. They are solitary and crepuscular, primarily active during dawn and dusk.
- In India, snow leopards are primarily found in:
 - » **Western Himalayas:** Jammu & Kashmir, Ladakh, Himachal Pradesh, Uttarakhand, and Sikkim
 - » **Eastern Himalayas:** Arunachal Pradesh

Conservation Status and Legal Protection:

- Snow leopards are currently facing various threats, including habitat degradation, poaching, and retaliatory killings due to livestock predation. In response, they have been accorded the highest levels of protection under national and international frameworks:
 - » IUCN Red List: Vulnerable
 - » CITES: Appendix I
 - » Convention on Migratory Species (CMS): Appendix I
 - » India's Wildlife (Protection) Act, 1972: Schedule I

Conclusion:

This population assessment represents a major milestone in India's conservation efforts. It offers a scientific baseline for future monitoring and underlines the effectiveness of community-based conservation models. The study also reinforces the importance of Ladakh's landscape in global snow leopard conservation, making it a strategic priority for biodiversity and ecosystem resilience.

Climate Change and Marine Productivity in the Bay of Bengal

Context:

A new peer-reviewed study published in Nature Geoscience recently highlighted a critical threat to marine productivity in the Bay of Bengal, linking it directly to climate-induced variability

in India's summer monsoon. The research warns that intensified monsoon extremes may irreversibly disrupt oceanic nutrient cycles, undermining food security and economic stability across South Asia.

Monsoon Variability and Marine Productivity:

- The study analyzed 22,000 years of ocean and monsoon data by examining the fossilized shells of foraminifera, microscopic plankton whose calcium carbonate shells preserve environmental signatures. This paleoceanographic approach revealed that both excessively strong and abnormally weak monsoons disrupt ocean mixing, impeding the vertical movement of nutrients that support phytoplankton growth.
- During weak monsoons (e.g., Heinrich Stadial 1, 17,500–15,500 years ago), wind-driven nutrient circulation diminishes, limiting the upwelling of deep-ocean nutrients.
- During strong monsoons (e.g., early Holocene, 10,500–9,500 years ago), excessive freshwater runoff creates a stratified freshwater layer or "cap" on the ocean surface. This barrier prevents nutrient-rich deeper waters from reaching surface plankton.
- In both scenarios, marine productivity plummeted by up to 50%, directly affecting the base of the marine food chain and consequently threatening fish populations.
- Contemporary oceanographic data and climate models corroborate the historical findings. According to the study, future climate scenarios project increased surface water temperatures and more extreme monsoon fluctuations, both of which replicate conditions that previously led to ecological collapses.

The Significance of the Bay of Bengal:

- The Bay of Bengal, although it comprises less than 1% of the global ocean surface, contributes nearly 8% of the world's fishery production, supporting approximately 150 million people who rely on it for protein

intake and livelihood. One of its most crucial offerings is the hilsa fish, a dietary staple in the region and an economic mainstay for artisanal fisheries.

- This emerging climate threat compounds the existing challenge of overfishing, particularly in artisanal fisheries, which account for 80% of Bangladesh's marine catch. Many of these fisheries already operate below sustainable levels, heightening their vulnerability to climate-induced productivity shocks. The hilsa fishery, in particular, is susceptible to such ecological changes and may face collapse under repeated productivity declines.

Policy and Research Implications:

- Refine regional climate models to more accurately project monsoon variability and its marine impacts.
- Implement sustainable fishery management policies, including caps on overfishing, to build resilience in marine ecosystems.
- Integrate climate adaptation strategies into coastal development plans to support communities dependent on marine resources.

Conclusion:

This study presents a compelling case for immediate, interdisciplinary action to address the dual threats of climate change and overexploitation in the Bay of Bengal. The region's pivotal role in global fisheries and regional food security demands coordinated efforts to safeguard marine ecosystems, reinforce sustainable practices, and mitigate the effects of global warming.

Asiatic Lions in Gujarat

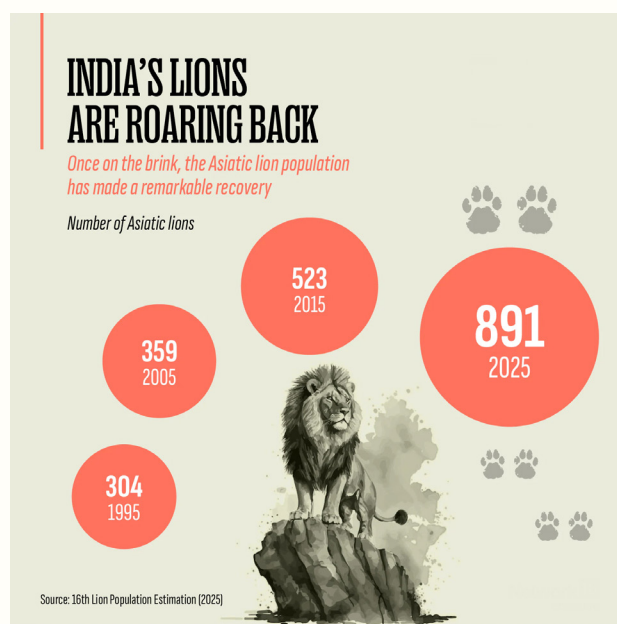
Context:

The population of Asiatic lions (*Panthera leo persica*) in Gujarat has grown significantly, rising by 32% between 2020 and 2025, according to the Gujarat Forest Department's latest report released on May 21, 2025. The total count now stands at 891 individuals,

with a notable 27% increase in adult females, totaling 330—an important indicator for future population growth.

Geographic Distribution and Conservation Zones:

- The Gir National Park and Paniya Wildlife Sanctuary remain the primary conservation hubs, housing 394 lions. The 2025 survey highlights:
 - » A majority of the lion population now resides outside core protected areas, spreading into satellite regions and human-dominated landscapes.
 - » Notable satellite populations have been recorded in Barda Wildlife Sanctuary, Jetpur, Babra-Jasdan, and newly documented corridor zones with 22 individuals. In total, 497 lions now inhabit nine satellite zones, reflecting an increasingly dispersed population.
 - » Mityala Wildlife Sanctuary, in particular, has witnessed a doubling of its lion population—from 16 in 2020 to 32 in 2025.



Range Expansion and Habitat Utilization:

- The territorial spread of lions has grown by 36.4% from 2015 to 2020, reaching 30,000

sq. km. By 2025, it further expanded to 35,000 sq. km, marking a 16.67% increase in just five years. This trend illustrates successful natural dispersal and the efficacy of ongoing conservation efforts, albeit with complex ecological and social consequences.

Challenges:

- The expansion into non-protected areas has brought lions into closer contact with human settlements, raising concerns over rising human-wildlife conflict.
- A 2024 study in Conservation Biology found an annual 10% increase in the number of villages reporting livestock predation, and a 15% annual rise in livestock killed per village.
- Despite this, 61% of local communities expressed tolerance toward lions—highlighting a fragile but enduring human-carnivore coexistence.

About Project Lion:

- Project Lion, launched in 2020, is a long-term conservation initiative focused on securing the future of Asiatic lions in Gujarat's Gir landscape. It aims to enhance habitat quality, reduce human-wildlife conflict, and improve ecosystem health.
- The Gujarat Forest Department leads the project, using advanced technologies like radio-collaring, camera traps, and GPS tracking for lion monitoring.
- An automated sensor grid with magnetic, movement, and infrared sensors supports surveillance, while GIS-based real-time monitoring enables data-driven management.
- Regular lion censuses further inform conservation strategies, ensuring the protection and sustainable management of India's only wild lion population.

Conclusion:

The growth of the Asiatic lion population is a testament to Gujarat's robust conservation framework. However, it also underscores the urgent need for strategic expansion, conflict mitigation, and decentralization of lion habitats.

Balancing ecological sustainability with community welfare remains the key challenge for India's flagship carnivore conservation program.

State of the World's Animal Health Report

Context:

The World Organisation for Animal Health (WOAH) has released its first-ever State of the World's Animal Health Report on May 23, 2025, highlighting a sharp rise in infectious animal diseases. Nearly 47% of these diseases can spread to humans (zoonotic), posing serious risks to food security, public health, and ecosystems.

Key Highlights of the Report:

- The report places strong emphasis on vaccination as a key tool for managing infectious diseases, reducing antimicrobial resistance (AMR), and securing global food systems.
- **Surge in Infectious Animal Diseases:**
 - » Infectious animal diseases are spreading to new regions and species.
 - » Nearly 47% of reported diseases are zoonotic, meaning they can spread from animals to humans.
- **Climate Change and Trade as Drivers:** Changing climate, increased international trade, and pathogen evolution are intensifying disease outbreaks.
- **Animal Health Is Global Health:** The report stresses the One Health approach, linking animal, human, and environmental health.
- **Antimicrobial Resistance (AMR) Threat:** AMR is a growing global challenge, projected to threaten food security for 2 billion people by 2050, with a \$100 trillion economic cost if unchecked.
- **Unequal Access to Vaccines:** Despite the success of vaccines, access remains uneven, especially in low-resource settings.

Important Data & Statistics:

- **Zoonotic Diseases**

- » Nearly 47% of animal diseases reported between 2005 and 2023 are zoonotic.
- **African swine fever (ASF)**
 - » First-ever incursion into Sri Lanka in 2024 (1,800 km leap).
 - » 16 countries reported 6,807 outbreaks in 2024.
 - 1,532 in domestic pigs.
 - 5,275 in wild boars.
 - » Resulted in 195,191 reported cases and 222,174 pig deaths.
 - » Vietnam piloted the first commercial ASF vaccine.
- **Avian Influenza (HPAI)**
 - » Avian Influenza (HPAI), or bird flu, has killed or led to the culling of over 630 million birds in the past 20 years.
 - » In 2024, for the first time:
 - More outbreaks were reported in non-poultry species (2,570) than in poultry (943)
 - Mammal outbreaks doubled from 459 in 2023 to 1,022 in 2024
 - » This increase in infections in animals like cattle, cats, and dogs raises concerns about the virus adapting to humans.
 - » **France's Vaccination Success:** In 2023, France became the first EU country to vaccinate ducks nationwide. As a result, it had only 10 outbreaks, compared to the 700 outbreaks predicted without vaccination.
- **Foot and Mouth Disease (FMD)**
 - » Reported in 18 countries.
 - » Germany saw its first case since 1988; the EU's first since 2011.
 - » New virus types detected in South Africa, Iraq, and Kuwait.
- **Lumpy Skin Disease**
 - » 319 outbreaks in 11 countries, including first-time detection in Algeria, Libya, Tunisia, and Japan.
- **New World Screwworm**
 - » 8,363 outbreaks in 7 countries.
 - » First detection in Mexico (Dec 2024).
 - » 60% of cases in Nicaragua.
- **Peste des Petits Ruminants (PPR)**
 - » Re-emerged in Europe (Greece, Romania, Bulgaria, Hungary) in 2024-25.
- » Once limited to the Global South.
- **Bluetongue Virus**
 - » 3,626 outbreaks in 24 countries.
 - » Affects ruminants; spread by midges.
- **Rabies**
 - » Causes 59,000 human deaths per year.
 - » Guinea vaccinated 92,000 dogs and cats in 2023.
 - » Bhutan achieved 90% vaccination of free-roaming dogs.
- **Antimicrobial Resistance (AMR)**
 - » Could cost \$100 trillion by 2050.
 - » Affects food security of 2 billion people.
 - » WOA's ANIMUSE platform tracks antimicrobial use in animals.

Conclusion:

The report shows how animal diseases are becoming a global threat, spreading faster and infecting more species—including humans. Preventing the next pandemic will require global teamwork, equitable vaccine access, and a stronger One Health approach that connects animal, human, and environmental health.

Schistura Densiclava: A New Cave Fish Species in Meghalaya

Context:

A new species of cave-dwelling fish, *Schistura densiclava*, has been discovered in Krem Mawjymbuin, a limestone cave in Meghalaya. The discovery was recently published in the *Journal of Fish Biology*, a peer-reviewed international journal.

About *Schistura densiclava*:

- *Schistura densiclava* is a bottom-dwelling loach belonging to the Nemacheilidae family. It was found in a cool, fast-flowing stream roughly 60 metres inside the cave, where water temperature remains at 18°C and oxygen levels are low.
 - » The fish has a pale yellow-green body with 14–20 black or greyish bars.
 - » A thick dark stripe near the dorsal fin gives the species its name – densiclava

(Latin for “dense stripe”).

- » The species shows sexual dimorphism: males are slimmer with puffer cheeks and irregular patterns, while females are bulkier with consistent markings.
- » It retains pigmentation and eyesight, a trait unusual for cave-dwelling species.

Habitat and Ecology:

- The species was discovered in Krem Mawjymbuin, one of Meghalaya’s most inaccessible cave systems. The cave lies in a karst landscape, formed by the gradual dissolution of limestone and dolomite, making it ideal for such cave biodiversity.
 - » The cave ecosystem remains undisturbed due to seasonal inaccessibility and dense forest cover.
 - » *S. densiclava* was found exclusively in the cave’s interior, suggesting a high level of habitat specialisation, although it is not a full troglobite.

About Troglophile Species:

- Unlike fully cave-adapted (troglobitic) species such as *Schistura papulifera* or *Neolissochilus pnar*, *S. densiclava* is classified as a troglophile:
 - » Troglophiles are species that can live and reproduce in both subterranean (cave) and surface (epigean) environments.
 - » The fish’s ability to retain vision and colour shows it is not yet fully adapted to cave life, though its exclusive presence inside the cave suggests a possible evolutionary transition.

Biodiversity Significance:

- This is the sixth cave-dwelling fish species recorded from Meghalaya and adds to the broader inventory of endemic aquatic species found in the region. Meghalaya now represents a biodiversity hotspot for cave fauna, with over 1,700 documented caves, many of which remain unexplored.
 - » The discovery of *S. densiclava* reaffirms the ecological value of karst cave systems in Northeast India.
 - » Genetic analysis confirmed that it is a

distinct and previously undescribed species, likely endemic to this cave system.

Conservation and Cultural Context:

- Krem Mawjymbuin gained public attention in 2024 due to restrictions placed on religious worship inside the cave by local authorities. It is a limestone cave located about 15 km from Mawsynram, near Sohra (Cherrapunji) in East Khasi Hills district, Meghalaya.
 - » The minimal human activity in the cave has helped maintain a pristine environment.
 - » Such measures highlight the need for balancing ecological preservation with cultural practices, especially in ecologically fragile zones.

Conclusion:

The discovery of *Schistura densiclava* offers a rare glimpse into the hidden biodiversity of Meghalaya’s caves. As more cave systems are explored, such findings can deepen our understanding of evolution, species adaptation, and the need for sensitive conservation strategies. It also underscores the importance of protecting under-researched ecosystems through science-driven and community-sensitive approaches.

Madden-Julian Oscillation

Context:

The southwest monsoon arrived in Kerala, eight days earlier than usual. According to the India Meteorological Department (IMD), this early onset was influenced by several weather factors — with the Madden-Julian Oscillation (MJO) playing a key role.

About Madden-Julian Oscillation:

- The Madden-Julian Oscillation is a system of changing winds, clouds, and rainfall that moves eastward along the equator. It was discovered in 1971 by scientists Roland Madden and Paul Julian.
- The MJO travels around the world in 30 to

60 days, sometimes taking up to 90 days. It moves at a speed of 4 to 8 meters per second.

- The MJO has two main phases:
 - » **Active Phase:** More clouds, rainfall, and storms.
 - » **Suppressed Phase:** Drier weather with less rainfall.
- These phases keep alternating and impact tropical regions, especially the area between 30° North and 30° South, which includes India.

Significance of MJO for the Monsoon:

- The MJO affects rainfall patterns and storm formation. During its active phase over the Indian Ocean, it can:
 - » Trigger early or strong monsoon onset.
 - » Increase cyclonic activity.
 - » Enhance rainfall.
- For example, in June 2015, the MJO brought nearly 20 days of good rainfall across India.
- In May 2024, the MJO became active over the Indian Ocean. By May 22, 2024, it had entered Phase 4 — a stage known to increase rainfall over India. Its amplitude was greater than 1, which indicates strong activity. This helped form pre-monsoon storms and pushed the monsoon forward faster than usual.

Madden-Julian Oscillation (MJO)

A key player in shaping **Indian Monsoon**

What is MJO?

An eastward-moving pulse of clouds, rainfall & winds near the equator. Recurs every 30–60 days.

Phases of MJO:

- Enhanced Phase → Rising air → More clouds & rainfall.
- Suppressed Phase → Sinking air → Dry & sunny weather.

Phases of MJO:

- MJO over **Indian Ocean** = **Good rainfall**
- MJO stuck over **Pacific Ocean** + El Niño = **Weak Monsoon**
- ⦿ Shorter MJO Cycle (≈30 days) = Frequent rain boosts.
- ⦿ Longer Cycle (>40 days) = Less rainfall, possible dry spells.
- ⦿ Unlike El Niño & IOD (stationary), **MJO travels** — crucial for monsoon timing & strength!

- The MJO's relationship with El Niño — the abnormal warming of sea-surface waters in the equatorial Pacific — is complex. Strong MJO activity often co-occurs with El Niño years, although this is not a consistent or causal relationship. Interestingly, strong El Niño years are usually associated with poor monsoon performance over India due to weakened cross-equatorial flow and suppressed convection.
- Despite this general trend, the presence of an active MJO in an El Niño year can temporarily offset El Niño's suppressive influence, particularly during the early stages of the monsoon.

Implications for Forecasting and Policy:

- The 2024 experience underscores the growing importance of intra-seasonal oscillations like the MJO in shaping monsoon dynamics.
- For India, where agricultural productivity, water resource planning, and disaster preparedness are all heavily monsoon-dependent, improved monitoring and prediction of the MJO can enhance seasonal and sub-seasonal forecasts.
 - » An active MJO in the Indian Ocean phase can substantially advance monsoon onset.
 - » Real-time tracking of MJO phase and amplitude is critical for early warning systems.
 - » Incorporating MJO signals into models can improve the spatial and temporal accuracy of rainfall forecasts.

Conclusion:

The early monsoon shows how powerful the MJO can be. It acted as a counter to the usual dry conditions seen in El Niño years. Better understanding of such weather systems can help India prepare for both good and bad monsoon seasons.

Interaction with El Niño Conditions:



Science & Technology



Fighting the Silent Pandemic: India's Battle against Antimicrobial Resistance

Antimicrobial Resistance (AMR) has emerged as a global public health crisis, undermining decades of progress in infectious disease control. Characterized by the ability of microorganisms to resist the effects of antimicrobial agents, AMR has already contributed to over a million deaths globally, with India bearing a significant portion of this burden. Despite efforts at both national and global levels, India faces unique challenges stemming from healthcare infrastructure gaps, irrational use of antibiotics, and regulatory inefficiencies.

What is AMR?

- ❖ Antimicrobial resistance occurs when pathogens such as bacteria, viruses, fungi, and parasites develop the ability to withstand drugs—particularly antibiotics—that once effectively eliminated them. AMR is already contributing significantly to global mortality. According to the Institute for Health Metrics and Evaluation (IHME) at the University of Washington, 1.27 million deaths globally in 2019 were directly caused by bacterial AMR. In India alone, 2,97,000 deaths were linked to AMR, making it one of the worst-affected countries.
- ❖ A 2022 study published in The Lancet projected that by 2050, AMR could cause:
 - » 1.91 million direct deaths annually worldwide.
 - » 8.22 million deaths associated with resistant infections.

The Global Health and Economic Threat:

- ❖ According to the World Health Organization (WHO), AMR is among the top 10 global public health threats. Without urgent action, we may reach a point where routine surgeries, cancer treatments, and even small cuts or infections become dangerous again.
- ❖ **The economic toll could be devastating:**
 - » The World Bank estimates AMR could cost an additional \$1 trillion in healthcare expenses by 2050.
 - » Between now and 2030, global GDP losses could reach \$1–3.4 trillion per year, hitting low- and middle-income countries the hardest.
 - » The World Organisation for Animal Health (WOAH) warns that AMR could endanger the food security of two billion people and cause up to \$100 trillion in losses by 2050.

Key Drivers of AMR in India:

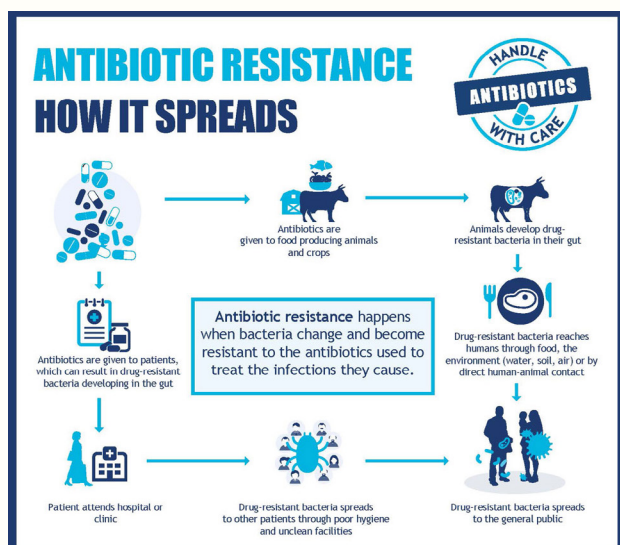
The rise of AMR in India is driven by both medical and non-medical factors:

- ❖ **Overuse and Misuse of Antibiotics:** Only 30% of all antibiotics produced globally are used for humans. The remaining 70% are used in livestock, poultry, aquaculture, and agriculture, often as growth promoters. Even new antibiotics face premature resistance due to irrational usage.
 - » Experts have flagged emerging resistance

to ceftazidime-avibactam, a potent newer molecule, because of overuse and lack of stewardship.

- ❖ **Over-the-Counter Sales:** Despite laws requiring prescriptions for antibiotics, enforcement is weak. Pharmacies routinely sell antibiotics without medical oversight.
- ❖ **Self-Medication and Misdiagnosis:** People often consume antibiotics for viral infections (e.g., flu), against which these drugs are ineffective. Diagnostic delays or errors lead to indiscriminate use of broad-spectrum antibiotics.
- ❖ **Weak Regulatory Oversight:** Limited control over antibiotic marketing and distribution and insufficient surveillance of resistant pathogens, especially in rural or informal healthcare settings also impact the rise of AMR.
- ❖ **Hospital-Acquired Infections:** Inadequate hygiene protocols in hospitals lead to resistant infections, especially in ICUs and post-operative wards.

A notable intervention was India's ban on colistin as a growth promoter in poultry — a move that has helped reduce the emergence of colistin-resistant strains.



Trends in Antimicrobial Use in Animals:

- ❖ **Decline in Antimicrobial Use (2020–2022)**
 - » Global antimicrobial use in animals fell by 5% during this period.

» The most significant reductions were observed in:

- Europe: 23% decline
- Africa: 20% decline

» These declines indicate growing awareness and improved regulatory control in certain regions, though global disparities persist.

❖ Use in Aquaculture and Terrestrial Animals:

- » Fluoroquinolones accounted for 15.8% of all antimicrobials used in aquaculture.
- » This is particularly concerning given fluoroquinolones are considered critically important antibiotics in human medicine, raising the risk of cross-resistance from aquatic to human pathogens.

Growth Promotion Practices:

- ❖ ~20% of WOA member countries reported the use of antimicrobials as growth promoters, despite WHO and WOAH recommendations against the practice.
- ❖ Of these, 7% used highest-priority critically important antimicrobials (HP-CIAs) such as:
 - » Colistin
 - » Enrofloxacin
 - » Fosfomycin
- ❖ The use of HP-CIAs in livestock not only compromises human medicine but also accelerates the global AMR crisis.

Why Antibiotic Innovation has Slowed?

- ❖ Despite the urgent need, few pharmaceutical companies invest in antibiotic development. The reasons are structural and financial:
 - » **Low Profit Margins:** Unlike drugs for chronic conditions, antibiotics are taken for short durations and often reserved as a last resort.
 - » **Antibiotic Innovation Gap:** Most large pharma firms have exited this space, leaving innovation to small and mid-sized firms like Wockhardt, Orchid Pharma, and Bugworks.
 - » **Regulatory Challenges:** Lengthy approval timelines and lack of regulatory

incentives discourage investment.

- » **Affordability Concerns:** Wockhardt plans to use tiered pricing, offering drugs at up to 80% lower cost in India compared to Western markets to improve accessibility.

India's key initiatives to combat Antimicrobial Resistance (AMR):

- ❖ **National Programme on AMR Containment (2012–17):**
 - » Established lab-based AMR surveillance
 - » Promoted rational antimicrobial use and infection control
- ❖ **National Action Plan on AMR (2017):**
 - » Adopted a One Health approach involving human, animal, and environmental health sectors
- ❖ **ICMR's AMR Surveillance and Research Network (AMRSN, 2013):**
 - » Tracks resistance patterns across India
 - » Provides data for policy and clinical decision-making
- ❖ **Research and International Collaboration:**
 - » Focused on new drug development and capacity building
- ❖ **AI in the Fight Against AMR**
 - » **AMRSense:** An AI-powered tool that uses hospital data to predict antibiotic resistance trends
 - » **AMROrbis Scorecard:** Visual tool to help hospitals track resistance patterns

which compares local resistance rates with global averages and flags high-risk areas for timely intervention

Conclusion:

AMR is not a distant or future threat; it is a current and accelerating crisis. It affects individuals and families, healthcare systems, economies, and global development. Scientific innovations offer hope — but only if they are protected by strong stewardship, regulatory reform, and public education.

- ❖ The fight against AMR requires a multi-sectoral, coordinated approach:
 - » Regulate and monitor antibiotic usage across all sectors.
 - » Strengthen diagnostic and laboratory systems.
 - » Invest in public health infrastructure and training.
 - » Promote innovation while ensuring affordability and access.

Additionally, Experts widely agree that public awareness is one of the weakest links in the fight against AMR. Misconceptions — such as the belief that antibiotics can treat any infection — are common. Without behavioral change, even the best policies and drugs may fail. We need to be multiple steps ahead of pathogens. Otherwise, we are fighting a battle we are going to lose.

India's Growing Semiconductor Ecosystem: Driving Self-Reliance and Global Competitiveness

Context:

India's semiconductor sector is experiencing rapid growth, fueled by strategic government initiatives, increased investments, and robust industry-academia collaboration. Several state governments are actively working to attract semiconductor design firms and establish world-class research and manufacturing centers. Currently, around 270 academic institutions and 70 startups are engaged in

cutting-edge semiconductor design work. Notably, 20 student-led innovations have already been taped out at the Semi-Conductor Laboratory (SCL) in Mohali, reflecting the rising depth of indigenous talent.

In a major development, the Union Cabinet, chaired by Prime Minister Narendra Modi, has recently approved the establishment of a sixth semiconductor unit under the India Semiconductor Mission (ISM). This upcoming facility will be a joint venture between Hindustan

Computers Limited (HCL) and Foxconn, two industry leaders in electronics manufacturing and hardware development.

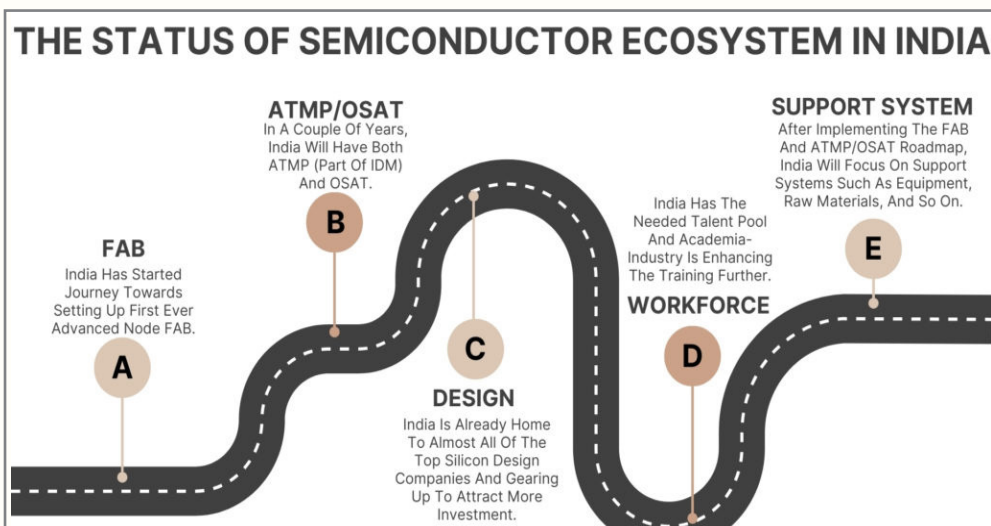
- ❖ The plant will be located near Jewar airport in the Yamuna Expressway Industrial Development Authority (YEIDA) region of Uttar Pradesh. It is designed to manufacture 20,000 semiconductor wafers per month, with a projected chip output of 36 million units monthly. These display driver chips will be used in a wide range of products, including mobile phones, laptops, personal computers, automobiles, and other electronic displays.

- ❖ The project, expected to attract an investment of Rs. 3,700 crore (US\$ 433.40 million), supports the broader vision of Atmanirbhar Bharat (Self-Reliant India) by strengthening India's domestic chip-making capabilities and reducing reliance on imports.

Overview of the Indian Semiconductor Industry:

- ❖ India's semiconductor market was valued at \$38 billion in 2023 and is projected to reach \$109 billion by 2030, driven by the explosive growth of electronics, IoT, automotive, and telecom sectors. To capture this opportunity and reduce external dependence, the government launched the India Semiconductor Mission (ISM) in 2021, with a substantial outlay of Rs. 76,000 crore under the Semicon India Program.
- ❖ This mission aims to create a sustainable semiconductor and display ecosystem,

making India a global hub for electronics manufacturing and chip design. The ISM works in coordination with government ministries, industry stakeholders, and academic institutions, with guidance from global semiconductor experts, to ensure efficient resource deployment and project execution.



- ❖ The Semicon India Program supports not only wafer fabrication units (fabs) but also Outsourced Semiconductor Assembly and Testing (OSAT) units, compound semiconductor facilities, packaging technology, display fabs, and sensor ecosystems—effectively building a complete value chain for semiconductor manufacturing.

Why Diversifying Semiconductor Supply Chains Is Crucial:

- ❖ The global semiconductor supply chain is heavily concentrated, making it vulnerable to disruption. Key concerns include:
 - » **Geopolitical Tensions:** The Russia-Ukraine war disrupted the supply of neon gas. Since Ukraine is one of the key suppliers of neon gas and it is a critical input for chip production.
 - » **Trade Restrictions:** The US and EU have limited the export of advanced semiconductor equipment to China. In

retaliation, China has imposed export controls on materials like gallium and germanium, further stressing global supply lines. Additionally, Washington has banned its companies and allies from supporting China in developing chips smaller than 16nm, which may further trigger supply shortages.

- » **Geographic Over-concentration:** Over 60% of the world's semiconductors are manufactured in Taiwan, with Taiwan and South Korea producing 100% of advanced chips below 10 nanometers.

The Strategic Need for an Indigenous Semiconductor Industry in India:

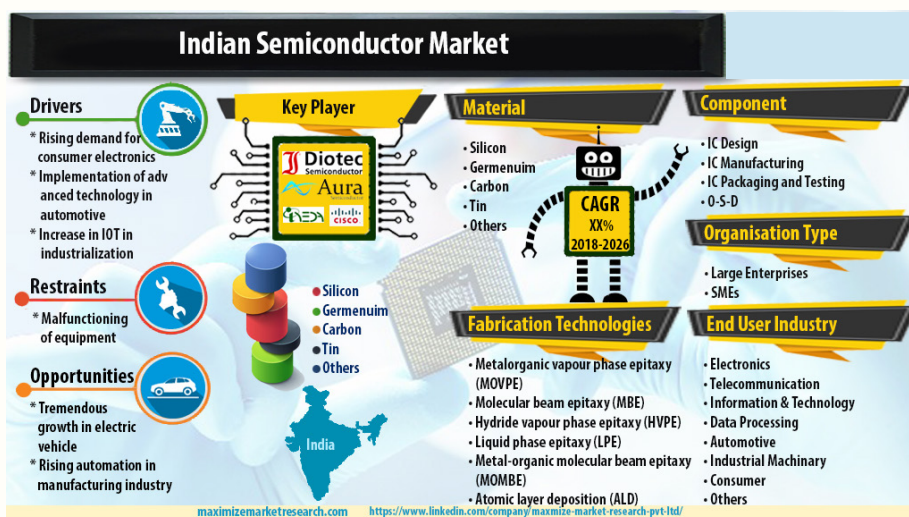
- ❖ **To Meet Soaring Demand:** With 500 million new internet users expected over the next decade, demand for smartphones, laptops, cloud infrastructure and connectivity will rise sharply.
 - » India's domestic chip demand could exceed \$60 billion by 2026.
- ❖ **To Create Employment:** Indigenous chip manufacturing will strengthen the domestic electronics supply chain and generate significant employment opportunities.
- ❖ **To Increase Revenue and Reduce Import Dependence:** Local manufacturing will reduce import bills and increase export capacity, leading to better trade balances and higher local tax revenues.
 - » Currently, India imports almost all its semiconductors to meet demand expected to touch \$100 billion by 2025.
- ❖ **To Enhance National Security:** Locally manufactured chips can be designated as "trusted sources", ensuring greater security in sensitive equipment like CCTV systems

and 5G networks.

- ❖ **To Gain Geopolitical Leverage:** Semiconductor independence enhances India's strategic autonomy and reduces reliance on Chinese imports, a key concern in light of events such as the Galwan Valley border clash.

Conclusion:

India's push toward semiconductor self-sufficiency is a well-timed and strategic response to global supply chain vulnerabilities, rising domestic demand, and the digital transformation sweeping across all sectors. The India Semiconductor Mission, supported by massive government funding and international partnerships, lays the foundation for India to become a global leader not just in chip



manufacturing but also in design, testing, and packaging. This initiative aligns seamlessly with the vision of Atmanirbhar Bharat, empowering India to compete globally, create jobs, enhance national security, and assert its geopolitical influence in the high-tech arena of the future. With a projected market of \$109 billion by 2030, India's proactive approach today will determine its standing in tomorrow's digital world.

Short Issues

Brain-Computer Interface

Context:

Researchers at the University of California, San Francisco (UCSF), have achieved a major breakthrough in assistive technology for people with paralysis. They have created a brain-computer interface (BCI) that allows a paralysed man to control a robotic arm using only his thoughts.

- This system worked continuously for seven months, with very little need for recalibration. The results of this study were published in a recent volume of the peer-reviewed journal *Cell*.

About Brain-Computer Interface (BCI):

- A Brain-Computer Interface is a system that interprets functional intent—our desires to move, control, or interact—directly from brain activity. In simple terms, it allows a person to operate devices or applications using their mind, bypassing the need for muscle movement.
- BCIs are especially useful for people with physical disabilities, as they provide a new way to interact with the environment when muscle control is lost. The system replaces the execution of physical actions with thought-based commands.

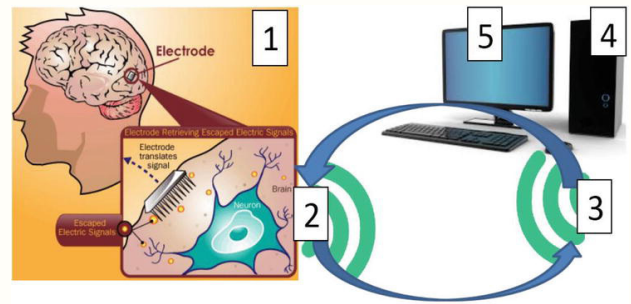
Core Components of a BCI:

- **Signal Detection:** A device detects and records brain signals.
- **Signal Processing:** A computer analyses these signals to understand the intended action.
- **Device Control:** The interpreted signals are used to control an external device or application.
- **Feedback Loop:** The user receives feedback—visual, auditory, or tactile—about how well their thoughts were translated into action.

About Telepathy:

- An emerging innovation in this space is the “Telepathy” system, a type of BCI that uses

ultra-thin threads implanted in the brain to transmit signals. The aim is to allow users to control a phone or computer simply by thinking. Such technology seeks to restore lost functions caused by a breakdown in communication between the brain and the body.



How UCSF's BCI System Works:

- In this study, researchers worked with an individual who was paralysed and unable to speak or move due to a stroke. Tiny sensors were implanted on the surface of his brain to pick up activity in the movement-related areas. These sensors did not send any signals into the brain; instead, they simply recorded the intent to move when the participant imagined specific physical actions.
- The participant was asked to visualise moving different body parts, such as fingers or thumbs. The sensors recorded high-dimensional data reflecting how the brain represented each imagined movement.
- Researchers observed that while the structure of these patterns stayed the same, their position in the data space shifted slightly day to day. This variation often caused BCI systems to become unstable over time. By using a machine learning algorithm to adapt to these daily shifts, the UCSF team created a system that stayed functional for months with minimal recalibration.

Applications of BCI Technology:

- **Support for Physical Disabilities and Ageing:** BCIs enable fine control over prosthetic

limbs and assist older individuals in maintaining cognitive and motor functions.

- **Medical Treatments:** BCIs can help treat Parkinson's disease, epilepsy, and spinal injuries, and aid in communication for speech-impaired patients.
- **Brain Research and Emotional Detection:** They provide insights into brain activity and have been used to detect emotions and awareness in minimally conscious patients.

Conclusion:

The UCSF breakthrough marks a major step toward making assistive BCI technology more stable, effective, and long-lasting. By addressing signal variability, this innovation brings us closer to enabling paralysed individuals to control their surroundings through thought alone.

Lassa Fever Outbreak in Nigeria

Context:

Recent Lassa fever outbreak in Nigeria has resulted in 138 deaths, with 717 confirmed cases reported across 18 states. The case fatality rate stands at 19.2%, slightly higher than the 18% recorded during the same period in 2024.

About Lassa Fever:

- Lassa fever is an acute viral hemorrhagic illness caused by the Lassa virus, first discovered in 1969 in the town of Lassa in northeastern Nigeria. It is endemic in several West African countries, including Nigeria, Sierra Leone, Guinea, and Liberia.

Key Facts about the Disease:

- **Reservoir:** The primary carrier is the multimammate rat (*Mastomys natalensis*), which is widespread in the region.
- **Mortality:** While the overall death rate is approximately 1%, it is significantly higher among hospitalized patients and pregnant women, especially during the third trimester.

- **Symptoms:** About 80% of infected individuals show no symptoms. Symptomatic cases can present with fever, sore throat, vomiting, chest pain, and in severe cases, internal bleeding and organ failure.

Demographics and Transmission:

- **Age Group:** Predominantly affects young adults aged 21–30 years, with the median age of infection being 30 years.
- **Gender Ratio:** Slightly more males are affected than females, with a male-to-female ratio of 1:0.8.

Modes of Transmission:

- **Primary Vector:** Lassa virus is spread to humans through ingestion or inhalation of food particles or household items contaminated by the urine or feces of infected multimammate rats.
- **Human-to-Human Transmission:** Rare, but can occur through direct contact with the bodily fluids of an infected person or contaminated medical equipment. This makes infection control in healthcare settings critically important.



Challenges and public health concerns:

- The persistent recurrence of Lassa fever outbreaks in Nigeria raises broader public health concerns. Challenges include:
 - » Poor sanitation and rodent control in many rural and peri-urban areas
 - » Inadequate healthcare infrastructure in affected regions

- » Lack of public awareness in high-risk communities
- » Limited access to rapid diagnostics and treatment, especially in remote areas

Conclusion:

Lassa fever remains a serious public health threat in Nigeria and West Africa, prompt and sustained action is crucial. This includes enhanced surveillance, community engagement, and strengthening the capacity of health systems to manage and prevent future outbreaks. Effective rodent control, public education, and early treatment are pivotal in curbing the spread of this endemic disease.

Neurotrophin Peptidomimetic Drugs

Context:

A team of scientists at the Indian Association for the Cultivation of Science (IASST), an autonomous institute of the Department of Science and Technology (DST), has been exploring peptidomimetics, synthetic compounds designed to mimic neurotrophins, as a potential solution to these limitations.

About the research:

- Led by Prof. Ashis K. Mukherjee, the IASST researchers have conducted extensive studies on neurotrophin peptidomimetics. Their research, published in the Journal Drug Discovery Today focused on understanding the signaling pathways involved in neuronal growth and survival, the potential pharmacological targets of peptidomimetics, and their therapeutic applications for NDs.

About Neurodegenerative diseases :

- Neurodegenerative diseases are a group of disorders characterized by the progressive loss of structure or function of neurons (nerve cells) in the brain and nervous system. Common examples include:
 - » Alzheimer's disease
 - » Parkinson's disease

- » Huntington's disease
- » Amyotrophic lateral sclerosis (ALS)

About neurotrophins:

- Neurotrophins are a family of proteins essential for:
 - » Promoting neuronal growth
 - » Supporting neuronal survival
 - » Facilitating synaptic plasticity (key for memory and learning)
- Despite their therapeutic potential, natural neurotrophins are unstable, degrade quickly in the body, and have poor brain penetration—limiting their clinical use.

About peptidomimetics:

- Peptidomimetics are synthetic molecules designed to mimic the structure and biological function of natural peptides or proteins, such as neurotrophins. They are engineered to overcome key limitations of natural peptides, including:
 - » Poor oral bioavailability
 - » Short half-life
 - » Degradation by enzymes
- These synthetic compounds:
 - » Bind to neurotrophin receptors on neurons
 - » Activate signaling pathways that promote cell survival, growth, and repair
 - » Mimic the action of natural neurotrophins without the drawbacks of instability or immune reactions

Advantage of using neurotrophin peptidomimetics in treating NDs

- Key advantages include:
 - » Improved stability in the bloodstream
 - » Enhanced brain permeability
 - » Longer duration of action
 - » Reduced immunogenicity (less likely to trigger immune responses)
 - » Target specificity, lowering the risk of off-target side effects

What has the research found so far?

- » The peptidomimetics show promising effects on neuronal survival and regeneration.
- » The team has identified potential

signaling pathways and pharmacological targets.

- » There is potential to repurpose existing peptidomimetic drugs for use in NDs and other conditions like cancer.

Future implication:

If successful, neurotrophin peptidomimetics could:

- Become a mainstream therapeutic strategy for neurodegenerative diseases
- Be custom-designed for specific diseases or patient populations
- Offer new hope for slowing or halting disease progression

Rice Pangenome

Context:

Researchers—primarily from the Chinese Academy of Sciences—have created the first-ever rice pangenome, an advanced reference genome that includes genetic data from 144 wild and cultivated rice varieties across Asia.

Understanding the Rice Pangenome:

- The rice pangenome is different from a traditional reference genome. A reference genome typically identifies the core genes of a species, but a pangenome includes both the common genes and the unique genes found in different varieties of rice.
- This allows scientists to gain a broader understanding of genetic diversity. In this study, researchers mapped out 3.87 billion base pairs of new genetic sequences not found in the current reference genome (*O. sativa* ssp. *japonica*).

Key Findings from the Pangenome Study:

- The study found 69,531 genes, which include 28,907 core genes shared by all rice varieties and 13,728 genes specific to wild rice.
- Approximately 20% of the genes identified were exclusive to wild rice species, offering valuable resources for improving rice's environmental adaptation, phenotypic plasticity, and regeneration potential.

- The research also confirmed that Asian cultivated rice evolved from a wild rice variety called *Or-IIIa*, a variant of *O. rufipogon*, which is the ancestor of *japonica* rice. The domestication of *indica* rice occurred when ancient *japonica* spread across Asia and crossed with local wild rice populations.

Importance of Rice in Global Food Security:

- Rice (*Oryza sativa* L.) is a crucial staple for nearly two-thirds of the world's population, particularly in countries like India. It is the primary crop grown during the monsoon season (June to September) in India, which produced a record 220 million tonnes in 2024-25 across 51,000 hectares, with an average yield of 4.2 tonnes per hectare.
- However, rising global temperatures due to climate change pose a serious threat to rice production, reducing yields and increasing risks like arsenic uptake.
- Since 1901, India's average temperature has risen by 0.7°C, and 2024 was the hottest year on record, with the minimum temperature 0.9°C higher than the long-term average.
- To address these challenges, the Indian Council of Agricultural Research (ICAR) has developed two genome-edited rice varieties, *Samba Mahsuri* and *MTU 1010*, which promise better drought resistance and higher yields.

Benefits of the Rice Pangenome:

- The pangenome study bridges the genetic gap between wild and cultivated rice, providing a foundation for improving rice varieties.
- By integrating genes from wild rice, scientists can develop new varieties that are more resilient to climate change, diseases, and environmental stress.
- The ability to introduce traits like drought resistance and disease tolerance will be crucial in maintaining rice production in the face of global warming.

Conclusion:

The creation of the rice pangenome is a

breakthrough in understanding the genetic diversity of rice. By using this information, scientists can develop rice varieties that are more productive, resistant to diseases, and adaptable to changing climates. These innovations are essential for ensuring the future sustainability of rice production, which is vital for food security worldwide. The research not only improves our knowledge of rice genetics but also opens new possibilities for breeding climate-resilient rice varieties to meet future challenges.

Metal-Free Piezocatalyst for Efficient Hydrogen Production

Context:

Indian researchers have developed a cost-effective, metal-free catalyst capable of efficiently producing hydrogen fuel by harnessing mechanical energy. This innovation represents a significant advancement in green hydrogen technology, offering a promising alternative to fossil fuels and contributing to global efforts toward sustainable energy solutions.

Research Overview:

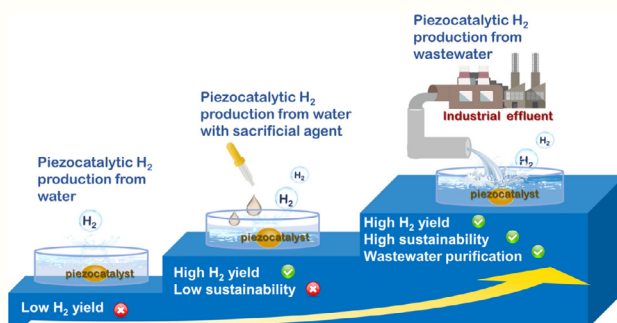
- This research introduces a donor-acceptor based covalent organic framework (COF) that functions as an efficient piezocatalyst for water splitting, a process that separates hydrogen from water molecules. Unlike conventional catalysts that rely on metal-based ferroelectric materials, the new COF system is entirely organic and metal-free.
- The COF is composed of tris(4-aminophenyl) amine (TAPA) as the donor molecule and pyromellitic dianhydride (PDA) as the acceptor. These materials form imide linkages, which give rise to ferroelectric (FiE) ordering, a structural feature that enhances the catalyst's efficiency in water splitting.

Key Features of the COF System:

- The novel COF system stands out due to its sponge-like porous architecture, which facilitates water diffusion and charge carrier access. The FiE ordering within the

framework generates local electric fields at the pore surfaces, enabling high-density charge accumulation. This contributes to the high yield of hydrogen fuel during the water-splitting reaction.

- Additionally, the COF operates based on a piezocatalytic mechanism. The COF's electronic structure, characterized by coupled energy bands and dipolar ordering, creates lattice instability. This instability allows for dynamic interaction with mechanical stimuli such as pressure or vibrations. When subjected to mechanical force, the material generates electron-hole pairs, catalyzing the water-splitting reaction with exceptional efficiency.



Implications for Hydrogen Production:

- Metal Elimination:** Unlike conventional methods that depend on expensive and harmful metals, this COF system eliminates the need for metals, reducing costs and environmental impact.
- Sustainability and Cost-efficiency:** By utilizing organic, abundant materials, this approach provides a more cost-effective and sustainable solution to hydrogen production.
- Utilizing Ambient Mechanical Energy:** The COF system harnesses ambient mechanical energy, such as vibrations or pressure, for clean energy generation, offering a more efficient method compared to traditional energy inputs.
- Alignment with India's Green Hydrogen Mission:** This breakthrough supports India's National Green Hydrogen Mission, advancing large-scale green hydrogen

production and reinforcing India's position as a global leader in hydrogen energy.

- **Global Impact on Renewable Energy:** The metal-free piezocatalyst contributes to the transition to clean, renewable energy, reducing reliance on fossil fuels and supporting global sustainability efforts.

Conclusion:

The development of a metal-free piezocatalyst for hydrogen production represents a groundbreaking achievement in green hydrogen technology. By eliminating the need for metals and utilizing ambient mechanical energy, this COF system provides a scalable, sustainable, and efficient approach to hydrogen production. This innovation holds the potential to significantly contribute to global efforts in renewable energy, driving progress in the hydrogen economy.

RNA-Based Technology for Plant Virus Protection

Context:

Researchers at Martin Luther University Halle-Wittenberg in Germany have recently developed an RNA-based antiviral agent offering strong protection against cucumber mosaic virus (CMV), a destructive plant virus.

- In India, CMV causes 25-30% yield losses in banana plantations, and infection rates can reach up to 70% in cucumbers and melons, resulting in stunted growth and unviable fruits.

HIGS and SIGS:

- The study utilized RNA silencing, a natural defense mechanism in plants. When a virus infects a plant, it introduces double-stranded RNA (dsRNA), which triggers the plant's immune response. The plant activates enzymes that cut the dsRNA into small fragments called small interfering RNAs (siRNAs), which then guide the plant to destroy the viral RNA.
- However, the process is not foolproof. The virus often mutates rapidly, evading the plant's defenses. To strengthen immunity,

researchers are exploring RNA-based approaches like Host-Induced Gene Silencing (HIGS) and Spray-Induced Gene Silencing (SIGS).

- HIGS involves genetically modifying plants to produce virus-fighting dsRNA, providing continuous protection. However, regulatory challenges and potential viral resistance limit its use.
- SIGS, on the other hand, involves spraying RNA onto plants to trigger their immune response without modifying their DNA. While SIGS is cost-effective and eco-friendly, its effectiveness is limited by inefficient siRNA production.]



RNA Based Technology

A New Era in Crop Protection

Plant Viruses = \$30 Billion+ Annual Crop Losses

CMV (Cucumber Mosaic Virus) affects 1,200+ plant species, including cucumbers & bananas.

Enhancing RNA Silencing for Stronger Protection:

- Every year, plant viruses destroy nearly 40% of global crops, causing losses over \$220 billion, with viruses contributing to more than \$30 billion of this. Unlike bacteria or fungi, viruses are harder to control. Scientists have turned to RNA-based technology to boost plant defenses, mimicking the immune system's response to viruses. The new dsRNA approach offers three key advantages:
 - » precision, directing the immune system to vulnerable viral regions,
 - » stronger defense by targeting multiple

viral genome regions, and

- » The ability to redesign dsRNA to target new viral strains within a month.

Cucumber Mosaic Virus (CMV):

- Cucumber Mosaic Virus (CMV) is a common plant virus that results in considerable economic damage worldwide, especially to crops such as cucumbers, melons, and tomatoes.
- It is mainly spread by aphids, though it can also be transmitted through contaminated tools or plant sap.
- CMV causes symptoms including mosaic-like patterns on leaves, stunted growth, and a decrease in crop yields.

Conclusion:

Researchers are working on making RNA-based treatments practical for real-world use, developing spray-based solutions for field trials. While the technology showed promise against CMV, it can also be applied to other plant viruses like tomato yellow leaf curl virus and tobacco mosaic virus. Challenges remain in RNA stability outdoors, cost, scalability, and regulatory approval. Nevertheless, this breakthrough holds great potential for revolutionizing plant virus protection.

Uganda Declares End to Ebola Sudan Virus Outbreak

Context:

Uganda has declared an end to the Ebola Sudan Virus Disease (SVD) outbreak after completing a 42-day mandatory countdown without any new confirmed cases reported. The declaration came in less than three months after the virus was detected in the capital, Kampala.

About Sudan Virus Disease:

- Sudan Ebolavirus is a species of Ebolavirus that causes hemorrhagic fever. It is a deadly disease with occasional outbreaks that occur mostly on the African continent.
- Ebolavirus disease most commonly affects people and nonhuman primates (such

as monkeys, gorillas, and chimpanzees). Infection with Sudan Ebolavirus is called Sudan Virus Disease (SVD).



About Ebola:

- Ebola is a serious, life-threatening type of viral hemorrhagic fever a viral infection that damages the blood vessels. Ebola symptoms start off like the flu (influenza). But they can progress to:
 - » Severe bleeding
 - » Neurological disorders
 - » Severe vomiting

Types of Ebola:

- There are four different Ebola strains that affect people. Experts name the viruses that cause Ebola after the location in which they were first identified. They differ in their ability to cause symptoms and their severity.
 - » **Bundibugyo ebolavirus (Bundibugyo virus):** This causes Bundibugyo virus disease (BDBV). Its less likely to cause death than other types.
 - » **Sudan ebolavirus (Sudan virus):** This causes Sudan virus disease (SVD). It's more likely to be deadly.
 - » **Tai Forest ebolavirus (Tai Forest virus):** This causes Tai Forest virus disease (TAFV). This is the rarest cause of Ebola.
 - » **Zaire ebolavirus (Ebola virus):** This causes Ebola virus disease (EVD). EVD is the most common cause of Ebola outbreaks and deaths.

Ebola outbreak causes:

- Ebola outbreaks develop in countries of West, Central and East Africa. Ebola viruses start in:
 - » Antelope
 - » Fruit bats
 - » Nonhuman primates (apes and monkeys)

Symptoms of Sudan Virus Disease:

- The symptoms of SVD often begin suddenly and may include fever, fatigue, muscle pain, headache, and sore throat. These initial signs are commonly followed by vomiting, diarrhea, skin rash, and impaired kidney and liver function. In some cases, the disease may also lead to both internal and external bleeding.

Transmission of Sudan Virus Disease:

- SVD spreads through direct contact with the body fluids of a person who is sick with or has died from the virus. This includes:
 - » Contact through broken skin or mucous membranes (eyes, nose, or mouth).
 - » Exposure to blood or bodily fluids such as urine, saliva, sweat, feces, vomit, breast milk, amniotic fluid, or semen.
 - » Contact with contaminated objects like clothing, bedding, needles, and medical equipment.
 - » Sexual transmission via semen from a man who has recovered from SVD.

Conclusion:

The end of the Ebola Sudan virus outbreak in Uganda is a significant public health victory and a testament to the strength of coordinated national and international response efforts. However, this success must serve as a foundation for continued vigilance and investment in health security.

Bharat Forecasting System

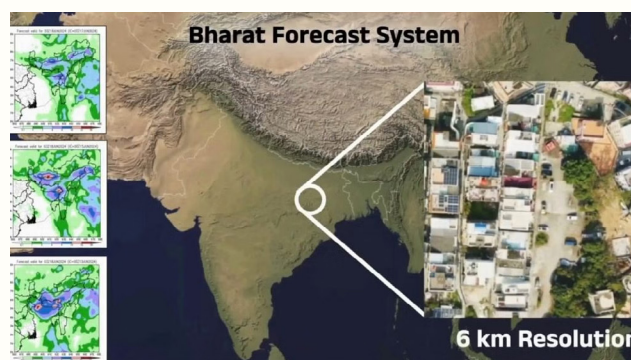
Context:

India has launched the Bharat Forecasting System (BFS), the world's highest-resolution operational weather forecasting model, marking

a significant step forward in meteorological science. With a resolution of 6 kilometres, the system aims to provide more localised and accurate forecasts for small-scale weather events, aiding sectors like agriculture, disaster management, and public safety.

About the Bharat Forecasting System:

- The Bharat Forecasting System is a numerical weather prediction model developed to provide granular weather forecasts. It covers the tropical region between 30° South and 30° North latitudes, which includes the entire Indian mainland.
- **Key Features:**
 - » Resolution: 6 km x 6 km grid
 - » Coverage: Tropical region (including all of India)
 - » Technology Support: Runs on the new 'Arka' supercomputer
 - » Output: More accurate short-, medium-, and nowcasts (up to 2-hour forecasts)
- This is a substantial upgrade from earlier models that operated at a 12 km resolution, which offered coarser predictions with less spatial accuracy.



About Supercomputer Arka:

- The Bharat Forecasting System is powered by 'Arka', a high-performance computing system installed at the Indian Institute of Tropical Meteorology (IITM).
 - » Processing Speed: 11.77 petaflops
 - » Data Storage: 33 petabytes
 - » Performance: Processes complex forecast models 2.5x faster than the older supercomputer, Pratyush

- » Forecast Time: Reduced from 10 hours to 4 hours

Data Sources and Infrastructure:

- The model integrates data from a network of 40 Doppler Weather Radars across India. These radars help capture real-time data on rainfall, cloud movement, wind speed, and other critical parameters. The radar network is expected to expand to 100 radars, enabling nowcasting (2-hour forecasts) for most parts of the country.

Significance of the System:

- **Disaster Risk Reduction:** The BFS will help predict:
 - » Cyclones
 - » Thunderstorms
 - » Heavy rainfall
 - » Flash floods
 - » Heatwaves and cold waves
- **Agricultural Planning:** Accurate weather forecasting supports:
 - » Crop planning and sowing decisions
 - » Irrigation scheduling
 - » Protection from frost, heat stress, and unseasonal rain
- **Economic Stability and Inflation Management:** Weather conditions directly affect agricultural output and, in turn, food prices. The Economic Survey 2024 notes that:
 - » Extreme weather damaged more crops in 2024 than in the previous two years.
 - » Heatwave frequency rose sharply: 18% of days between 2022–2024 experienced heatwaves, up from 5% in 2020–21.
 - » Food inflation has remained a concern, partly due to climate variability.
- **Policy and Governance Applications:** The BFS enhances the government's ability to:
 - » Issue panchayat-level weather alerts
 - » Strengthen climate-resilient infrastructure planning
 - » Improve water resource and reservoir management
 - » Support rural development and disaster resilience

Comparison with Global Systems:

- The BFS operates at a 6 km resolution, compared to:
 - » 9–14 km in the US, UK, and EU forecast models.
- This makes the BFS the most precise operational weather model in the world, especially tailored for tropical conditions.

Conclusion:

The Bharat Forecasting System is a major scientific and technological milestone for India. As climate risks grow, tools like the BFS will be essential for safeguarding livelihoods and ensuring sustainable development.

Google Unveils “AI Matryoshka”

Context:

Google has recently unveiled a transformative vision for the future of artificial intelligence with its AI-first restructuring strategy, named "AI Matryoshka", at its annual I/O Developers Conference 2025 which took place on 20 to 21 May.

What is AI Matryoshka?

- Google's AI Matryoshka is a multi-layered AI ecosystem that's revolutionizing how users, developers, and enterprises interact with technology. This strategy leverages powerful foundational models like Gemini 2.5 Pro & Flash, enabling advanced reasoning and efficiency gains.
- **Key Features and Technologies**
 - » **Layered Architecture:** AI is integrated uniformly across Google's platforms, creating an interconnected and agentic experience.
 - » **Central Intelligence:** Google's core AI acts as the central brain, powering every layer from APIs to user applications.

Key Features:

- **Gemini 2.5 Models:** These models are designed for complex reasoning and coding tasks, with the Pro version achieving top scores in USAMO. The Flash version is

optimized for efficiency, offering 20-30% better performance and supporting multi-speaker TTS in 24 languages.

- **Ironwood TPUs:** Google's 7th-gen Tensor Processing Units (TPUs) deliver 5 exaFLOPS of computing power, enabling large-scale deep learning and AI model training.
- **Data & Media Models:** Imagen 4, Veo 3, and Lyria 2 are AI models that generate high-quality images, videos, and music. SynthID tools watermark and verify content to protect copyright and ensure authenticity.
- **Gemini API & Vertex AI:** These tools support the Model Context Protocol (MCP) for agent interactions and provide thinking budgets for better resource management.
- **User Integration:** AI Mode in Search offers deep, cited search results, while the Gemini App enables private data analysis, raising important considerations about user privacy.

Implications and Potential Applications:

- **Content Creation:** AI-generated content can revolutionize industries like media, entertainment, and advertising.
- **Search and Information Retrieval:** AI-powered search results can provide more accurate and relevant information, enhancing user experience.
- **Productivity and Efficiency:** AI-driven tools can automate tasks, improve productivity, and enable businesses to make data-driven decisions.

Challenges:

- **Data Privacy:** Ensuring the protection of user data and maintaining transparency in AI-driven decision-making.
- **Intellectual Property:** Managing copyright and ownership issues related to AI-generated content.
- **Bias and Fairness:** Mitigating potential biases in AI models and ensuring fairness in decision-making processes.

Conclusion:

AI Matryoshka marks a paradigm shift in how artificial intelligence is built, deployed, and

experienced. As Google continues to evolve its AI strategy, it's crucial to balance innovation with responsible AI practices, ensuring that user data and intellectual property are protected.

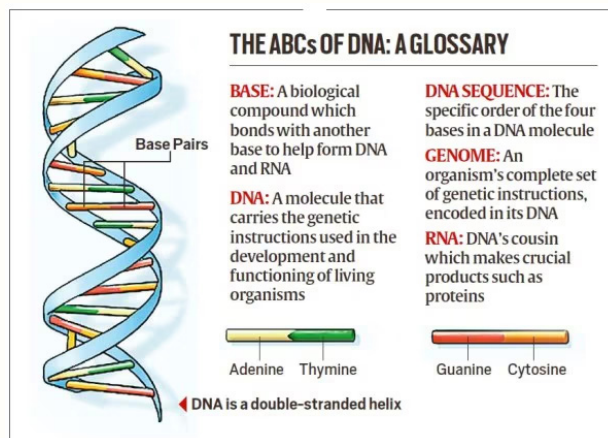
Custom Base Editing Therapy

Context:

In a landmark case, nine-month-old Kyle "KJ" Muldoon Jr. became the first known human to be successfully treated CPS1 Deficiency using custom base editing therapy—a next-generation, highly precise form of gene editing.

About CPS1 Deficiency:

- CPS1 deficiency is a rare genetic disorder caused by a mutation in the CPS1 gene, which encodes the enzyme carbamoyl phosphate synthetase 1. This enzyme plays a crucial role in the urea cycle, the body's process for eliminating excess nitrogen.
- Without this enzyme functioning properly, nitrogen accumulates in the body in the form of ammonia, leading to a dangerous condition known as hyperammonemia. If untreated, this buildup can cause brain damage, coma, and even death—making early diagnosis and intervention critical.



About the Breakthrough:

- To address KJ's CPS1 deficiency, researchers turned to an innovative gene editing technique called base editing. This method is derived from the better-known

CRISPR-Cas9 system but offers greater precision and reduced risk of unintended consequences.

- Instead of cutting the DNA—like CRISPR-Cas9—base editing modifies a single DNA base (the “letters” of the genetic code) without breaking both strands of the DNA helix.

How Base Editing Works:

- The CRISPR-Cas9 system functions like molecular scissors, making double-strand breaks in DNA at targeted locations. After cutting, scientists rely on the cell’s natural repair mechanisms to introduce the desired genetic changes—often an unpredictable process.
- Base editing, on the other hand, functions like a molecular pencil and eraser:
 - » A Cas9 enzyme is fused with a base-modifying enzyme.
 - » A guide RNA directs the complex to a specific location in the DNA.
 - » The base editor then alters a single DNA base—for example, changing a cytosine (C) to a thymine (T)—without breaking the DNA strand or inserting foreign material.

Advantages of Base Editing:

- Base editing offers several significant benefits over conventional gene editing techniques:
 - » **High Precision:** It targets and corrects individual bases with remarkable accuracy.
 - » **Reduced Off-Target Effects:** Lower risk of unintended mutations in other parts of the genome.
 - » **Minimal Cellular Stress:** Avoids double-strand DNA breaks, reducing potential damage to cells.
 - » **Efficient Delivery:** Requires fewer components, making it easier to package into viral vectors or nanoparticle systems used for treatment.

Conclusion:

The successful treatment of KJ Muldoon Jr.

represents a historic milestone in the field of gene editing and a beacon of hope for those suffering from rare genetic diseases. It showcases the incredible power of base editing to not only correct genetic errors but to potentially cure life-threatening conditions with precision and safety.

India’s First Gene-Edited Sheep

Context:

Researchers at Sher-e-Kashmir University of Agricultural Sciences and Technology (SKUAST), Srinagar, have recently developed India’s first gene-edited sheep, marking a significant advancement in livestock genetics after four years of research.

Key Achievements:

- The gene-editing focused on the myostatin gene, which regulates muscle growth in sheep.
- The gene-edited sheep of the local ‘merino’ breed weighed almost the same as a normal lamb at birth, but within three months, it became at least 100 grams heavier than a non-edited lamb.
- This modification increased muscle mass by about 30%, a trait naturally missing in Indian sheep breeds but present in some European breeds like the Texel.
- The gene-editing was performed using CRISPR-Cas9 technology, a precise tool recognized globally and awarded the Nobel Prize in Chemistry in 2020.
- The edited sheep does not contain any foreign DNA, distinguishing it from transgenic organisms and potentially easing regulatory approval under India’s evolving biotech policies.

Gene editing and CRISPR Technology:

- Gene editing, also known as genome editing, is a group of technologies that allow scientists to precisely change an organism’s DNA. These technologies enable the addition, removal, or alteration of genetic material at

specific locations within the genome.



About CRISPR:

- CRISPR stands for Clustered Regularly Interspaced Short Palindromic Repeats. It is a gene-editing tool inspired by a natural defense mechanism found in certain bacteria. These bacteria use CRISPR-associated proteins, such as Cas9, to cut up and destroy viral DNA.
- **Key Components:**
 - » **Cas9 Protein:** Acts like molecular scissors that cut DNA at a specific site.
 - » **Guide RNA (gRNA):** A custom-designed RNA sequence that tells Cas9 exactly where to cut in the DNA.

How It Works:

- The guide RNA identifies a specific segment of DNA—usually faulty or unwanted.
- Cas9 cuts the DNA at this targeted location.
- Scientists can then:
 - » Delete the gene,
 - » Correct it, or
 - » Replace it with a new sequence.
- This process is often compared to "cut-copy-paste" or "find-replace" operations used in computers. Importantly, CRISPR does not introduce foreign DNA. Instead, it works by modifying the organism's existing genes, making the result non-transgenic and potentially more acceptable to regulators and consumers.

Potential Applications:

- Gene-editing in livestock offers several benefits, including:
 - » Creating disease-resistant animals by targeting genes linked to illness.
 - » Enhancing reproductive traits such as twinning in births.

- » Improving important productivity traits efficiently without traditional crossbreeding, thus accelerating genetic improvement.
- » This development follows earlier success in producing a gene-edited buffalo embryo at the National Dairy Research Institute, signaling a new era in Indian livestock biotechnology.

Conclusion:

India's gene-edited sheep reflects the transformative potential of CRISPR in animal farming. It paves the way for smarter, faster, and safer genetic improvements—offering long-term benefits to both agriculture and food security.

Malaria Reinfection Creates Special Immune Cells: Study

Context:

Recently, scientists have discovered that a unique subset of immune cells—type-1 regulatory T (TR1) cells—plays a dominant and enduring role in the immune response to malaria reinfection.

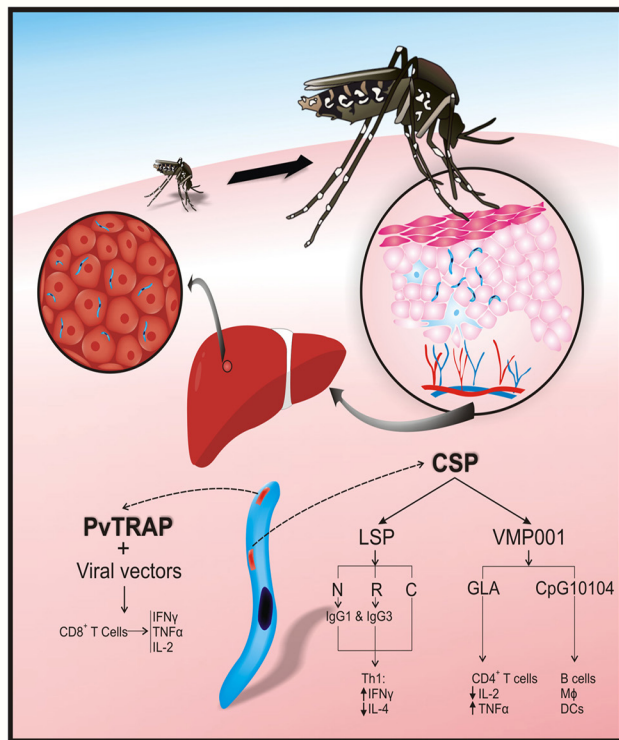
- Published in Science Immunology, the study reveals that these specialized cells don't just respond effectively during malaria infection but also possess long-term memory, making them key candidates for next-generation vaccines and therapies.

TR1 Cells in the Spotlight:

- The immune system is a complex, multi-layered defense network. It uses both innate immunity, which provides rapid but non-specific responses, and adaptive immunity, which tailors precise attacks against specific invaders and remembers them for future encounters.
- Within the adaptive immune system, T cells play a crucial role—especially a subset known as CD4+ helper T cells, which assist other immune cells in fighting off pathogens. Traditionally, TH1 cells were thought to be the primary responders in malaria.

However, this study turns that assumption on its head.

- Researchers found that TR1 cells, which make up just 3% of resting CD4⁺ cells, accounted for a staggering 90% of the malaria-specific helper cell response—an unprecedented discovery.



Key Findings:

- **TR1 Cells Dominate the Anti-Malaria Response:** The study conclusively showed that TR1 cells—not TH1 cells—are the major players in fighting malaria. This challenges decades of immunological assumptions and shifts the focus of malaria research.
- **Long-Term Memory and Clonal Fidelity:** TR1 cells were observed to maintain their specificity and structure even after multiple reinfections. They increased in number with each new infection, retained their function over hundreds of days, and responded robustly to recurring exposure.
- **Precision Response to Pf Parasite:** The TR1 cells mounted a focused, antigen-specific reaction against malaria rather than a generalized immune response. This was

confirmed by observing that only TR1 cells consistently responded to Pf-infected red blood cells, not other T cell types.

- **Epigenetic Regulation and Subtypes:** Gene-expression analysis revealed that TR1 cells can be divided into naïve-like, effector, and memory TR1 cells. Their expansion and contraction patterns confirmed their distinct roles and memory capabilities.
- **TH1 Cells Are Not the Primary Responders:** Interestingly, TH1 cells, previously thought to lead the response, expanded only after the first infection and did not react to reinfections. This suggests their expansion was not specific to malaria, further reinforcing TR1's unique role.

Implications for Malaria and Beyond:

- **Vaccine Development:** The study opens the door to designing vaccines that stimulate TR1 cell responses, potentially offering longer-lasting and more effective protection than current options like Mosquirix, which has shown limited efficacy.
- **Host-Directed Therapies:** TR1 cells may also allow the body to tolerate the parasite without becoming severely ill. This introduces the idea of host-directed therapies—enhancing the immune system's regulation instead of targeting the pathogen directly.
- **Broader Immunological Impact:** The TR1-centric findings could extend beyond malaria. They offer a new lens for studying chronic infections, autoimmune diseases, and even cancer, where understanding immune regulation is crucial.

Conclusion:

The discovery of TR1 cells as the main immune responders to malaria reinfection represents a paradigm shift in immunology. By highlighting their long-term memory and antigen specificity, this research sets the stage for revolutionary changes in how we approach vaccine development, disease management, and immune system modulation.

India's Agricultural Trade: Trends, Challenges and the FTA Factor

India's agricultural trade has seen mixed developments in recent years. While the country remains a top exporter of several farm products like rice, spices, marine items, and coffee, it is also increasingly dependent on imports—especially edible oils, pulses, cotton, and fruits. Although exports are growing, imports are rising much faster, reducing India's trade surplus in agriculture. This changing pattern is being driven by a mix of factors, including domestic production challenges, global market shifts, and India's evolving trade policies. Ongoing free trade agreement (FTA) talks with the United States, European Union, and United Kingdom could further influence the future of India's farm trade.

Recent Trends in Export and Import Performance:

- ❖ In 2024–25, India's agricultural exports grew by 6.4%, reaching \$51.9 billion, up from \$48.8 billion in 2023–24.
- ❖ Meanwhile, total merchandise exports rose by just 0.1% in the same period.
- ❖ On the other hand, agricultural imports jumped by 17.2%, touching \$38.5 billion, compared to \$32.9 billion the previous year.
- ❖ As a result, India's agricultural trade surplus dropped to \$13.4 billion—less than half the \$27.7 billion recorded in 2013–14.

Long-Term Trends (2013–14 to 2024–25):

- ❖ Over the last decade, agri-exports have increased modestly—from \$43.3 billion to \$51.9 billion (about a 20% growth).
- ❖ In contrast, agricultural imports more than doubled—from \$15.5 billion to \$38.5 billion,

marking a 148% rise.

- ❖ This growing gap points to deeper structural issues in Indian agriculture, such as productivity stagnation and rising reliance on imports for key items.

Key Export Items and Trends:

- ❖ **Marine Products:** These remain India's top agri-export but dropped from \$8.1 billion in 2022–23 to \$7.4 billion.
- ❖ **Rice:** Basmati and non-basmati rice exports hit a record \$12.5 billion in 2024–25.
 - » Basmati is mainly exported to West Asia.
 - » Non-basmati goes mostly to African countries.
- ❖ **Spices, Tobacco, Coffee, Fruits & Vegetables:** All reached record export levels last year.
 - » Coffee exports rose due to poor harvests in Brazil and Vietnam.
 - » Tobacco exports benefited from weak crops in Brazil and Zimbabwe.
- ❖ **However, some export items faced challenges:**
 - » **Wheat and Sugar:** Once major exports, now face bans or restrictions due to domestic supply concerns.
 - » **Cotton:** India has become a net importer as exports fell sharply.
 - » **Buffalo Meat:** While exports have recovered to over \$4 billion, they are still below earlier highs.

Key Import Items and Drivers:

- ❖ **Vegetable Oils:** India continues to rely heavily on imports due to low oilseed yields.
- ❖ **Pulses:** Imports hit a record \$5.5 billion

in 2024–25, mainly due to low domestic output.

- ❖ **Cotton and Rubber:** Imports are rising due to declining domestic production.
 - » Cotton output fell from 398 lakh bales in 2013–14 to 291 lakh bales in 2024–25.
 - » Rubber production is also down, while demand keeps growing.

Other Major Imports:

- ❖ **Fruits and Dry Fruits:** Almonds, apples, dates, and walnuts are consistently imported.
- ❖ **Spices:** India still imports pepper and cardamom, despite being a top spice exporter.
- ❖ **Alcoholic Beverages:** Wine and spirits imports are on the rise.

Enhancing India's Agri-Exports:

- ❖ As of March 2025, data shows that agricultural exports rose by 6.5% to \$37.5 billion (April–December 2024), while imports rose by 18.7% to \$29.3 billion. This widened the trade gap in agriculture.

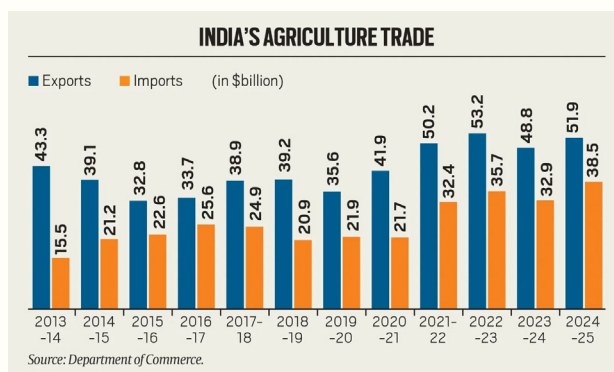
Key Shifts:

- ❖ **Cotton:** Once the world's second-largest exporter, India's cotton exports fell from \$4.3 billion (2011–12) to \$1.1 billion (2023–24).
- ❖ **Shrinking Surplus:** The agri trade surplus, once \$27.7 billion in 2013–14, fell to \$16 billion in 2023–24.
- ❖ **Global Price Trends:** Between 2013–14 and 2019–20, falling global prices hurt India's export earnings. Prices rebounded after COVID-19 and the Russia-Ukraine war, pushing exports up to \$53.2 billion in 2022–23.

Export and Import Destinations

- ❖ **Exports:**
- ❖ In 2023, India exported \$48 billion worth of agri-products.
 - » **Asia:** 58% share, including \$3 billion each to China and UAE, and \$2.6 billion to Vietnam.
 - » **Africa:** Accounted for 15% of total exports.

- » **US:** 13.4% share, with key exports including rice, sesame seeds, and fresh fruits.
- » **Europe:** 12.6% share, importing mostly tobacco, fruits, and ornamental plants.
- ❖ **Imports:**
 - » **Global South:** 48% of agri-imports came from Brazil, China, Mexico, Argentina, and Indonesia.
 - » **Developed Countries:** Top suppliers were the US, the Netherlands, and Germany.



Challenges in India's Agricultural Exports:

- ❖ **Uneven Playing Field:** Western countries offer heavy subsidies to their farmers and place high tariffs on Indian goods.
 - » The US gives about \$61,286 per farmer annually.
 - » India, in contrast, offers only \$282—making Indian farm products less competitive.
- ❖ **MSP Policy Disputes at WTO:**
 - » Countries like the US and Canada have challenged India's MSP (Minimum Support Price), saying it breaches WTO rules.
 - » Although India can use the WTO's "Development Box" to provide uncapped input subsidies, developed countries want tighter rules—posing a threat to small farmers.
- ❖ **Export Restrictions:**
 - » India often imposes export bans or duties to control inflation (e.g., onions).
 - » Such measures hurt India's image as a reliable exporter and discourage

investments in food processing and supply chains.

- ❖ **Non-Tariff Barriers (NTBs):** Developed countries often impose strict sanitary and phytosanitary (SPS) rules and technical barriers (TBT).
- ❖ **For instance:**
 - » Europe banned some basmati rice and tea over pesticide concerns.
 - » Japan banned Indian cut flowers over pest concerns—even though those pests already exist there.

The FTA Factor: Opportunity or Risk?

- ❖ India is negotiating trade agreements with the US, EU, and UK. These countries want more access to India's market, including lower tariffs and fewer non-tariff restrictions. They are pushing for duty cuts on products like wine, cheese, fruits, and genetically modified (GM) crops such as maize and soybeans.
- ❖ **Possible Benefits:** Indian exports of rice, tea, coffee, and spices could gain new

markets.

- ❖ **Possible Risks:** Indian farmers may struggle to compete with subsidized foreign products.
 - » Example: Lower tariffs on US dry fruits and wine could increase imports and hurt Indian growers and beverage producers.
- ❖ The US is also pressing India to relax its restrictions on GM crops—raising concerns about food safety and public trust.

Conclusion:

India's agricultural trade is at a turning point. While export growth continues in several sectors, rising imports and policy hurdles are shrinking the trade surplus. With FTAs on the horizon, balancing opportunities and risks will be key to protecting farmers while tapping global markets. A stable and predictable export policy, investment in productivity, and stronger regulatory systems will shape India's future as a competitive farm exporter.

India's Maritime Vision: Shaping the Future of Global Trade through Vizhinjam Port

India's maritime sector is on the cusp of a revolutionary transformation, driven by strategic initiatives aimed at enhancing infrastructure, increasing global competitiveness, and establishing India as a leader in global maritime trade. The heart of this transformation lies in the government's ambitious plans, embodied in frameworks like Sagarmala, Maritime India Vision 2030, and the development of high-tech infrastructure at critical ports such as Vizhinjam Port. As India looks to leverage its strategic position in the Indian Ocean and become a hub for global shipping, the success of the Vizhinjam Port is central to this overarching vision.

Strategic Location and Global Significance:

- ❖ Vizhinjam's location is strategically advantageous for India, given its proximity

to global shipping lanes. Situated just 10 nautical miles off the major international shipping routes that connect Europe, Asia, Africa, and the Americas, it offers a competitive edge over other ports in the region. This proximity allows Vizhinjam to serve as a transshipment hub for large vessels, reducing the dependency on foreign ports for container transshipment.

- ❖ India currently faces a significant challenge, as approximately 75% of its transshipment cargo is handled at foreign ports like Colombo, Singapore, and Klang. The operationalization of Vizhinjam is expected to reduce this dependency, thereby boosting India's share in global maritime trade.

Key Operational Milestones and Achievements:

- ❖ The completion of the first phase of the port marks a significant achievement for India's maritime infrastructure. The port is designed to handle 20,000 TEUs (twenty-foot equivalent units) at a time, with a natural depth of 20 meters, allowing it to accommodate some of the largest ships in the world. Some of the key milestones in the port's operational timeline include:

- » **First Container Handling (2024):** The first container handling operations began in July 2024, with full commercial operations starting in December 2024.
- » **Handling Record Shipments:** By March 2025, Vizhinjam Port had already handled 6 lakh TEUs, surpassing expectations for its initial year of operation. This has made Vizhinjam the fastest-growing port in India.
- » **World-Class Infrastructure:** With state-of-the-art cranes and handling equipment, the port is poised to handle Ultra Large Container Vessels (ULCVs) with ease. In September 2024, the port welcomed the largest container vessel to ever dock in South Asia, MSC Claude Girardet, which carried 24,116 TEUs.
- » **MSC Inclusion:** The Mediterranean Shipping Company (MSC) has already included Vizhinjam in its Jade Service (Europe-Asia) and Dragon Service (Asia-Mediterranean), signaling the port's global significance.
- » **First Semi-Automated Port:** The port features India's first semi-automated container terminal, equipped with cutting-edge technology for enhanced operational efficiency.

Technological and Workforce Advancements:

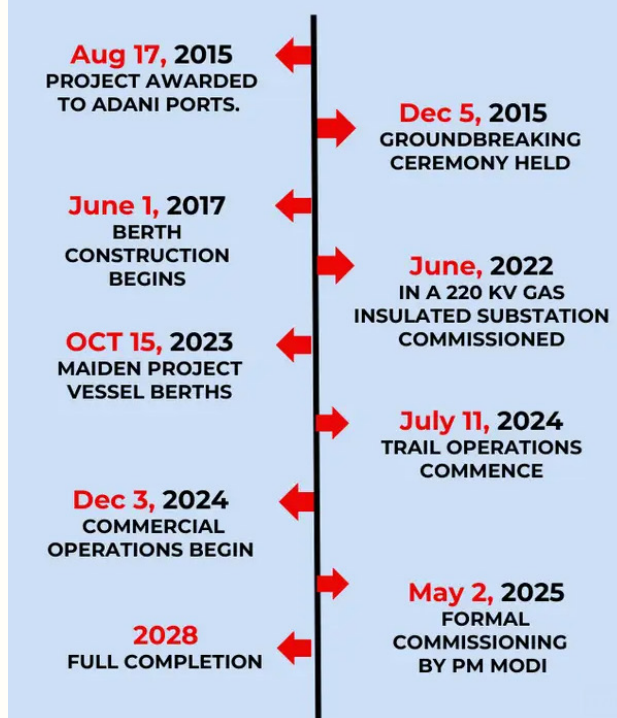
- ❖ **Automation:** The port has implemented automated cranes and container handling systems, enhancing operational speed and reducing human error.
- ❖ **Green Technologies:** In line with global sustainability trends, Vizhinjam is exploring green technologies, such as shore power facilities for ships, and is in the process of transitioning its harbor tug fleet to eco-

friendly alternatives.

- ❖ **Skilled Workforce Development:** The Kerala government, in partnership with Adani Ports, has established training facilities like the Community Skill Park to equip local communities with the necessary skills for port operations. This initiative has enabled the employment of a skilled female workforce, who now operate semi-automated cranes at the port.



TIMELINE OF THE PROJECT



Challenges:

- ❖ **Infrastructure Bottlenecks:** While the port itself is ready for operations, surrounding infrastructure—such as roads, railways,

and integrated customs facilities—must be developed further to facilitate smooth operations.

- ❖ **Environmental Concerns:** The environmental impact of dredging and construction activities has raised concerns among local communities and environmentalists. The Kerala government has committed to addressing these issues through sustainable development practices and green technologies.
- ❖ **Competition from Other Ports:** Vizhinjam must compete with well-established regional ports like Colombo and Singapore. To succeed, the port needs to offer competitive pricing, efficient services, and incentives to attract global shipping lines.

The Maritime India Vision 2030:

- ❖ In 2020, the Ministry of Ports, Shipping, and Waterways (MoPSW) released the Maritime India Vision 2030 (MIV 2030), a comprehensive blueprint for revolutionizing the country's maritime infrastructure, boosting economic growth, and strengthening India's presence in global shipping. MIV 2030 outlines several key objectives:
 - » **Port Modernization and Expansion:** The vision emphasizes upgrading existing ports and creating new ones to handle larger vessels and higher volumes of cargo. It envisions India's ports becoming world-class, equipped with cutting-edge technology and sustainable practices.
 - » **Logistics Efficiency:** One of the major goals is to reduce logistics costs, which are currently around 13-15% of GDP, higher than the global average of 7-8%. By improving port infrastructure, connectivity, and efficiency, MIV 2030 aims to reduce this figure and enhance India's competitiveness in global trade.
 - » **Boosting Maritime Exports:** The vision highlights the need to increase maritime exports through improved containerized cargo handling, reduction of turnaround times for vessels, and fostering trade agreements with global partners.
- » **Green Shipping and Sustainability:** Sustainability is central to India's maritime vision. MIV 2030 stresses the adoption of clean technologies, shore power for vessels, and green port practices to minimize the sector's environmental impact.
- » **Development of Coastal Economic Zones:** Under the Sagarmala initiative, a focus on developing Coastal Economic Zones (CEZs) is key to generating jobs and boosting industrial development, linked to port operations.

The Sagarmala Project: Linking Ports with Growth

- ❖ Integral to MIV 2030 is the Sagarmala Programme, launched in 2015, which aims to enhance India's port infrastructure, improve logistical efficiency, and promote port-led industrialization. The Sagarmala initiative focuses on:
 - » **Port Connectivity:** The programme envisions connecting ports with hinterland industries, improving rail, road, and coastal shipping infrastructure.
 - » **Enhancing Port Efficiency:** The aim is to modernize and upgrade ports through state-of-the-art facilities, automation, and world-class cargo handling systems.
 - » **Promotion of Coastal Shipping:** To reduce road congestion and cut carbon emissions, Sagarmala aims to promote coastal shipping, making it a viable alternative to road and rail transport.
 - » **Development of Port-Based Industries:** This includes the establishment of shipbuilding, ship repair, and marine equipment industries to drive growth in related sectors.
- ❖ The Sagarmala initiative forms the backbone of India's maritime strategy, helping the country tap into its maritime potential and ensuring that ports like Vizhinjam can thrive as centers of global trade.

Conclusion:

The completion of Vizhinjam Port marks a

transformative moment in India's maritime evolution. Its strategic location, world-class infrastructure, and the support of both state and central government position it as a cornerstone of India's long-term economic and geopolitical strategy. As the port continues to grow and expand its operations, it will

play a vital role in reshaping India's global trade footprint, fostering regional economic development, and establishing India as a key player in international maritime commerce.

Cinema, Creativity, and Soft Power: India's Emerging Role in the Global Orange Economy

India's creative economy—often referred to as the Orange Economy—is emerging as a powerful lever of soft power, national branding, and socio-economic growth. Encompassing diverse sectors such as cinema, music, art, fashion, design, literature, architecture, handicrafts, digital content, and even gaming, the Orange Economy represents the intersection of culture, creativity, and commerce. Its potential lies not just in its economic contribution but also in shaping narratives, forging international influence, and strengthening India's cultural diplomacy.

At the World Audio Visual and Entertainment Summit (WAVES) held in Mumbai, Prime Minister Narendra Modi addressed global creators with the message: "Create in India, Create for the World." The statement reflected India's ambition to strengthen its position in the global orange economy—a sector driven by creativity, intellectual property, and cultural innovation. During his address, the Prime Minister referred to India's longstanding tradition of cultural inclusivity, citing historical examples such as the integration of the Parsi and Jewish communities. He described India as an emerging orange economy, in line with a broader global recognition of the creative sector's role not just in artistic expression, but also in economic growth, international collaboration, and cultural diplomacy.

Understanding the Orange Economy:

- ❖ Coined in Latin America and now adopted globally, the term "Orange Economy" refers

to industries rooted in creativity, talent, and intellectual property. According to a UNESCO report, the creative economy contributes over 3% to global GDP and accounts for more than 30 million jobs worldwide. In India, this sector is estimated to contribute around \$160 billion (approximately 7% of GDP) and is growing at over 10% annually, with vast untapped potential.

- ❖ India's advantage lies in its diverse cultural heritage, digital agility, youth demographic, and a thriving informal sector rich in indigenous and folk arts. From the design startups of Bengaluru and fashion hubs in Delhi to animation studios in Pune and traditional artisans in Kutch, the creative economy integrates both traditional knowledge systems and modern innovation.

Cinema: The Flagbearer of India's Soft Power

- ❖ Among the most visible elements of India's Orange Economy is cinema, often considered its most influential cultural export. India produces over 2000 films annually in more than 20 languages, making it the largest film-producing country in the world. Indian cinema—be it Bollywood, Tollywood, Kollywood, or regional films—serves not only as entertainment but as a global ambassador of Indian values, narratives, and aesthetics.
- ❖ Oscar-winning songs (Naatu Naatu), Cannes recognitions, and the global popularity of films like RRR, Dangal, and

Lagaan underscore how Indian cinema captivates international audiences. Streaming platforms such as Netflix and Amazon Prime have further accelerated the global circulation of Indian narratives. The rise of regional cinema in international markets signals a shift from monocultural representations to a multi-lingual, diverse Indian identity. Yet cinema is only the tip of the creative iceberg.

Beyond the Screen: India's Broader Creative Landscape:

India's Orange Economy includes a range of sectors that reflect its historical richness and contemporary ingenuity:

- ❖ **Music & Performing Arts:** From classical traditions to indie fusion, India's music ecosystem is exploding globally. YouTube, Spotify, and Coke Studio Bharat are democratizing Indian music's reach.
- ❖ **Design & Architecture:** Indian designers are blending traditional techniques with sustainable innovation. Jaipur is now a UNESCO Creative City of Crafts & Folk Art; Ahmedabad is a World Heritage City for architecture.
- ❖ **Fashion:** The textile and fashion sector—rooted in handloom and khadi—is now at the forefront of conscious fashion globally. Designers like Rahul Mishra and Anita Dongre have taken Indian aesthetics to global runways.
- ❖ **Gaming & Animation:** India's gaming industry is projected to reach \$8.6 billion by 2027. Indigenous characters, mythologies, and AR/VR are creating new storytelling frontiers.
- ❖ **Literature & Publishing:** With Booker wins (Arundhati Roy, Aravind Adiga, Geetanjali Shree), India's literary voice continues to influence global thought. Indian languages, once limited to regional readerships, are now translated and celebrated globally.
- ❖ **Digital Influencer Culture:** Social media creators, illustrators, and YouTubers represent a new wave of micro-entrepreneurs in India's Orange Economy, particularly

among Gen Z.

The Role of the Diaspora and Global Engagement:

- ❖ India's 32-million-strong diaspora is a major amplifier of its creative exports. Indian cultural events, literature festivals, film screenings, and art exhibitions abroad keep Indian traditions alive while inviting cross-cultural dialogues. In the UK, US, UAE, and Canada, Indian creatives—be it Mira Nair in cinema or Rupī Kaur in poetry—have shaped global cultural trends.
- ❖ Moreover, collaborations with global artists and platforms have increased. Indian designers are working with global luxury brands; Indian music is part of international ads and playlists; Indian architectural firms are building overseas. This transnational creative movement enhances India's global influence not through political pressure, but cultural appeal.

Gaps in Policy and Opportunities for Growth:

- ❖ While India's creative economy is vibrant, it lacks a cohesive national strategy akin to South Korea's Hallyu (Korean Wave) model or the UK's Creative Industries Policy. Fragmentation, informal workforce, lack of IP enforcement, and limited export support continue to hinder scale and sustainability.
- ❖ **Some key areas for intervention include:**
 - » **Creative Infrastructure:** Establishing creative hubs, studios, co-working spaces, and digital incubation centres.
 - » **Policy Incentives:** Tax breaks, export incentives, and grants for cultural entrepreneurs and creative startups.
 - » **Skilling & Education:** Integrating arts and digital creativity into mainstream education and vocational training.
 - » **International Co-productions:** Bilateral cultural agreements, co-produced films, and exchange programs.
 - » **Data & Measurement:** Better tracking of the creative sector's economic contribution to inform policy.
- ❖ The Ministry of Culture and NITI Aayog have

begun exploring frameworks to support creative industries. Additionally, initiatives like the Mekong-Ganga Cooperation, India-Africa cultural exchanges, and G20 cultural agendas offer diplomatic avenues to showcase and monetize India's Orange Economy.

The Strategic Value of Creative Soft Power:

- ❖ In the 21st century, soft power rivals hard power in shaping influence. The ability to tell compelling stories, project national identity, and evoke emotional resonance is crucial to international relations. India's Orange Economy provides precisely this edge—rooted not in dominance but in connection.
- ❖ By investing in creative capacities, India is not only empowering millions of youth

economically but also repositioning itself in global imagination—as a land of innovation, soul, diversity, and resilience.

Conclusion:

India's Orange Economy is not just a cultural asset but a strategic imperative. It holds the potential to create jobs, empower communities, strengthen exports, and reinforce India's place in the global narrative. Cinema will continue to dazzle and inspire, but beyond the screen lies a vast, pulsating creative economy waiting to be harnessed. If India can blend its civilizational heritage with future-facing innovation, the Orange Economy may well be its most potent soft power in decades to come.

Short Issues

Vizhinjam International Seaport

Context:

Prime Minister Narendra Modi recently inaugurated the Vizhinjam International Seaport in Kerala. Touted as India's first deepwater container transshipment port, Vizhinjam marks a pivotal milestone in positioning the southern coastal state on the global maritime map.

Strategic Importance of Vizhinjam Port:

- Located in Vizhinjam, a coastal town in the Thiruvananthapuram District of Kerala, the port's geographic location is one of its greatest strengths.
- Just 10 nautical miles from the critical east-west international shipping route connecting Europe, the Persian Gulf, and East Asia, Vizhinjam offers unmatched access to one of the busiest maritime corridors in the world.
- This makes it a vital link in reducing India's dependency on foreign ports for cargo transshipment and strengthening its role in

global trade.

About Development Model:

- The Vizhinjam port has been developed under the Landlord Model through a Public-Private Partnership (PPP). It follows the Design, Build, Finance, Operate, and Transfer (DBFOT) framework.
- The Adani Vizhinjam Ports Private Ltd., a wholly owned subsidiary of Adani Ports and Special Economic Zone Ltd. (APSEZ), is spearheading the project in partnership with the Kerala government. This collaboration highlights the growing role of private sector participation in transforming India's infrastructure, especially in states governed by ideologically different political regimes.

Key Features of the Port:

- **Dedicated Container Transshipment:** The primary focus of the port is to facilitate container transshipment, thereby reducing India's reliance on international ports like Colombo and Singapore.
- **Green Energy Hub:** The port is envisioned to become a global bunkering hub, offering

clean fuels such as hydrogen and ammonia, aligning with India's goals for sustainable development and green energy leadership.

- **High-Volume Capacity:** Once completed, the port will feature approximately 30 berths, most of which will be capable of accommodating Mother Vessels — the largest category of cargo ships operating globally.
- **Deep Draft Facility:** The natural deep draft of nearly 20 metres allows for seamless docking of ultra-large container vessels, making it one of the few ports in India with such a feature.

Implications of the port:

- The port is expected to drastically reduce the 75% of transshipment operations currently handled outside the country, translating into significant revenue retention and increased national economic resilience.
- The project is also a major boost for Kerala's economy, generating thousands of direct and indirect jobs and fostering ancillary industries such as logistics, ship repair, and maritime services.
- With two Indian ports now ranked among the world's top 30 and India climbing the Logistics Performance Index, the commissioning of Vizhinjam port signals the country's readiness to lead in 21st-century trade and maritime innovation.

Conclusion:

The Vizhinjam International Seaport is significant as it is a strategic asset, a green energy hub, and a symbol of cooperative federalism and public-private synergy. As ships begin docking at Vizhinjam, they will carry not just cargo, but the weight of a new maritime vision for India.

India Renews \$50 Million Treasury Bill with Maldives

Context:

On May 12, 2025, India announced the rollover of a \$50 million Treasury Bill with the Maldives,

marking a continuation of its economic support to the island nation. The move highlights India's commitment to regional cooperation and stability, despite recent diplomatic tensions between the two countries.

What Are Treasury Bills?

- Treasury Bills (T-bills) are short-term government debt instruments with maturities typically under one year.
- Used to raise immediate funds for operational needs
- Considered low-risk due to government backing
- Often used in bilateral or multilateral financial assistance programs
- A rollover refers to the reinvestment of funds from a maturing T-bill into a new one, effectively extending the investment duration. In this case, SBI's rollover of the T-bill for one more year provides the Maldivian government continued access to interest-free funds, which are vital for addressing short-term fiscal pressures.

Background: Maldives' Economic Crisis:

- The Maldives is grappling with a public debt exceeding 134% of GDP, aggravated by external borrowings and the lingering impact of the COVID-19 pandemic on its tourism-dependent economy.
- Credit rating downgrades and low foreign exchange reserves have further limited its access to new financing.
- India's subscription to the T-bill, first made in 2023, now stands extended as part of India's ongoing financial diplomacy in the Indian Ocean region.

Significance of India-Maldives Economic Cooperation:

- **Strategic Importance:** The Maldives is India's maritime neighbor in the Indian Ocean and plays a vital role in the success of India's 'Neighbourhood First' policy and regional strategy under Vision MAHASAGAR.
- **Stabilizing Influence:** Indian financial aid serves as a buffer against overdependence on non-democratic powers, especially amid

growing influence from China, a major creditor to the Maldives.

- **Diplomatic Outreach:** The extension comes on the heels of recent diplomatic frictions, signaling India's constructive engagement and willingness to maintain open lines of dialogue with Male.
- **Soft Power Projection:** India's repeated financial interventions reflect its evolving role as a reliable regional partner, bolstering its image as a first responder in South Asia.

Conclusion:

India's decision beyond mere economic aid—it is a strategic signal of commitment to regional peace, prosperity, and partnership. As the Maldives faces a critical debt period in 2025–26, India's gesture reaffirms its enduring support, even amidst shifting diplomatic tides.

Digital Lending Directions, 2025

Context:

Reserve Bank of India (RBI) has issued the Digital Lending Directions, 2025, aiming to consolidate and streamline the growing digital lending ecosystem in India. These directions are designed to enhance borrower protection, ensure data transparency, and encourage responsible digital lending by Regulated Entities (REs).

Objective of the Directions

- Promote responsible digital lending practices.
- Strengthen customer protection mechanisms.
- Ensure data privacy and transparency in loan disbursements and collections.
- Enable greater accountability of both Regulated Entities and Lending Service Providers.

Key Guidelines for Digital Lending:

- **Digital Lending Agreements:**
 - » All digital lending operations involving Lending Service Providers (LSPs) must

be formalized through a contractual agreement with the Regulated Entity.

- » The contract must clearly define roles, rights, and obligations of both parties.
- **Enhanced Due Diligence on LSPs:** REs must thoroughly assess the LSP's:
 - » Technical capability
 - » Data privacy practices
 - » Fairness in borrower conduct
 - » Past performance and compliance record
- **Borrower Data Collection:** Before loan disbursement, REs must collect and record:
 - » Age
 - » Occupation
 - » Income details
 - » This information must be maintained for audit purposes.



RBI issues Digital Lending Directions, 2025

Digital Lending refers to a remote and automated lending process, largely by the use of seamless digital technologies for customer acquisition, credit assessment, loan approval, disbursement, recovery and associated customer service.

Regulated Entities (REs) have to conduct enhanced due diligence before they enter into an agreement with a Lending Service Provider (LSP) for digital lending.	LSP will provide a digital view of all the loan offers matching the borrower's request on the Digital Lending Apps (DLAs) which meets the requirement of the borrower.
The content displayed by the LSP shall be unbiased, objective and shall not directly/indirectly promote or push a product of a particular RE.	There should be no automatic increase in credit limit unless an explicit request is received, evaluated and kept on record from the borrower for such increase.
The option to exit a digital loan can be given to borrowers by paying the principal and the proportionate Annual Percentage Rate (APR) without any penalty during an initial "cooling-off period".	The RE and the LSP which has an interface with the borrower, shall designate nodal grievance redressal officers to deal with digital lending related complaints/issues raised by the borrowers.
Explicit consent of the borrower should be taken before sharing personal information with any third party.	The biometric data should not be stored/collected by the RE and LSP.
RE and LSPs engaged by RE should have a comprehensive privacy policy compliant with applicable laws.	REs have to ensure that the total amount of Default Loss Guarantee (DLG) cover on any outstanding portfolio which is specified upfront shall not exceed 5% of the total amount disbursed out of that loan portfolio at any given time.

Source: <https://rbi.org.in/Scripts/Notification.aspx?id=12646&Mode=0>

Borrower Protection Measures:

- **Cooling-Off Period for Loan Exit**
 - » Borrowers must be provided with an explicit option to exit the loan during a cooling-off period.
 - » This period, set by the RE's Board policy,

must be at least one day.

- » No penalties are allowed during this exit window.
- **Consent-Based Credit Limit Increases**
 - » REs are prohibited from automatically increasing a borrower's credit limit.
 - » An explicit request from the borrower is mandatory and must be documented.
- **Strict Guidelines on Loan Disbursement**
 - » Loan funds must be disbursed directly into the borrower's bank account.
 - » Exceptions are limited to:
 - Statutory or regulatory mandates
 - Co-lending arrangements between REs
 - Loans for specific end-use, disbursed directly to the end-beneficiary
 - » Disbursement to third-party accounts, including those of LSPs, is not permitted.

Data Protection:

- **Need-Based Data Collection:**
 - » REs and LSPs are allowed to collect only essential borrower data.
 - » Explicit consent from the borrower is mandatory.
- **Data Storage Limitations:**
 - » LSPs may store only basic personal data (e.g., name, address, contact details).
 - » Full responsibility for data security lies with the RE.
- **Grievance Redressal Mechanism:**
 - » Both REs and LSPs must designate nodal grievance redressal officers.
 - » Contact details must be displayed on:
 - Websites of the RE, LSP, and DLA
 - The Key Fact Statement (KFS) issued to the borrower

Regulatory Reporting:

- **Public Directory of Digital Lending Apps (DLAs)**
 - » RBI will maintain a public directory of DLAs.
 - » This will allow borrowers to verify the legitimacy of digital lending apps claiming to be associated with regulated financial institutions.
- **Reporting to Credit Information Companies (CICs)**

- » REs must report all loans disbursed via DLAs (including those through LSPs) to Credit Information Companies, regardless of loan nature or tenure.

Conclusion:

The Digital Lending Directions, 2025, signal a comprehensive regulatory overhaul that recognizes both the opportunities and risks of India's growing digital credit ecosystem.

Government Expands Credit Guarantee Scheme for Startups

Context:

Recently, the Department for Promotion of Industry and Internal Trade (DPIIT), under the Ministry of Commerce and Industry, has officially notified the expansion of the Credit Guarantee Scheme for Startups (CGSS). This reform is aimed at increasing capital mobilization for startups, reducing credit-related risks for lenders, and reinforcing India's mission to become an innovation-driven, self-reliant economy.

Key Features of the Expanded CGSS:

The expansion of the CGSS introduces several crucial enhancements that significantly improve the scheme's utility and attractiveness:

- **Increased Guarantee Cover Ceiling**
 - » The maximum guarantee cover per borrower has been doubled, rising from Rs.10 crore to Rs. 20 crore.
- **Revised Guarantee Cover Percentages**
 - » For loan amounts up to Rs.10 crore, the government will now cover 85% of the defaulted amount.
 - » For loan amounts exceeding Rs.10 crore, the coverage will be 75% of the defaulted amount.
- **Reduced Annual Guarantee Fee (AGF) for Champion Sectors**
 - » The AGF has been slashed from 2% to 1% per annum for startups operating in 27 identified Champion Sectors under the 'Make in India' initiative.
 - » These sectors are critical to

strengthening India's manufacturing base, technological advancement, and export potential.



BIG BOOST TO STARTUPS!

Expansion of Credit Guarantee Scheme for Startups (CGSS)

- Ceiling on Guarantee Cover per Borrower Increased**
 - From ₹10 crore to ₹20 crore
- Guarantee Cover Enhanced**
 - 85% for loans up to ₹10 crore
 - 75% for loans above ₹10 crore
- Annual Guarantee Fee (AGF) Reduced**
 - From 2% to 1% p.a. for startups in 27 Champion Sectors under 'Make in India'

Benefits of the Expanded Scheme:

- **Increased Access to Credit:** The improved guarantee terms are expected to encourage more banks and financial institutions to offer debt funding to startups. This will expand the capital pool available for early-stage and innovation-driven ventures.
- **Lower Lending Risks:** By sharing the credit risk with lenders, the government reduces the hesitation of financial institutions in funding startups, which are often viewed as high-risk due to their limited track records and lack of collateral.
- **Boost to R&D and Innovation:** Startups will now have greater financial runway to invest in research, development, and product innovation, helping India produce cutting-edge solutions and become a global innovation hub.
- **Enhanced Support for Priority Sectors:** By lowering the AGF for Champion Sectors, the government is making credit more affordable and directing capital toward strategic areas that are vital to India's growth story and global competitiveness.

About CGSS:

- The Credit Guarantee Scheme for Startups (CGSS) was launched on October 6, 2022, as part of the broader Startup India initiative, which was inaugurated by Prime Minister Narendra Modi on January 16, 2016. The scheme's core objective is to facilitate collateral-free debt funding for startups via instruments such as:
 - » Working capital loans
 - » Term loans
 - » Venture debt
- CGSS covers loans extended by:
 - » Scheduled Commercial Banks
 - » All India Financial Institutions (AIFIs)
 - » Non-Banking Financial Companies (NBFCs)
 - » SEBI-registered Alternative Investment Funds (AIFs)

Conclusion:

This expansion aligns with the Union Budget 2025–26, which emphasized the need to catalyze entrepreneurship by improving credit access and reducing capital costs. It also reflects the government's commitment to turning India into a Viksit Bharat (Developed India) through innovation, startup empowerment, and economic self-reliance.

India Becomes the Third-Largest Vehicle Manufacturer in the World

Context:

Union Minister for Road Transport and Highways, Nitin Gadkari recently announced that India has become the third-largest vehicle manufacturer globally. This announcement, made at the 4th International BBB Summit and Expo on Bioenergy Value Chain in New Delhi.

About 4th International BBB Summit and Expo:

- The 4th International BBB Summit and Expo focused on India's bioenergy value chain. This summit gathered experts from

across the bioenergy sector, emphasizing the need for innovative solutions to meet India's energy demands while promoting sustainable development.

India's Position in the Global Automobile Industry:

- India's automotive sector has made remarkable progress in recent years. The country has firmly positioned itself as the third-largest vehicle manufacturer globally, trailing only behind China and the United States. The rise in production capacity is attributed to a growing domestic demand, advances in manufacturing technology, and a surge in exports.

India's Growing Role in the Global Automobile Market:

- Economic Contribution:** The automobile sector contributes 7.1% to India's GDP and accounts for approximately 4.7% of the country's total exports.
- Employment Generation:** The automobile industry directly and indirectly employs over 19 million people, making it one of the largest employment generators in the country.
- Production Milestone:** India's production of vehicles reached 25.9 million in FY23, with significant contributions from passenger vehicles, two-wheelers, and commercial vehicles.
- Export Hub:** India exported 4.76 million vehicles in FY23, cementing its role as a major exporter, particularly of two-wheelers.

Key Segments Driving Growth:

- Two-Wheelers:** India leads the global two-wheeler market, driven by affordability, fuel efficiency, and growing demand, especially in rural areas.
- Passenger Vehicles:** The passenger vehicle market is seeing substantial growth, with SUVs leading the way.
- Commercial Vehicles:** India is the world's largest manufacturer of buses, the second-largest producer of tractors, and the third-largest producer of heavy trucks.

- Electric Vehicles (EVs):** India's electric vehicle market is poised to reach Rs.50,000 crore (approximately \$7.09 billion) by 2025, with a potential investment opportunity exceeding \$200 billion by 2030.

Growth Drivers:

- Government Initiatives:** The Automotive Mission Plan 2026, Production-Linked Incentive (PLI) Scheme, and Vehicle Scrappage Policy are aimed at boosting manufacturing, exports, and the adoption of clean technologies.
- Infrastructure Development:** The expansion of national highways under the Gati Shakti Plan and the establishment of EV charging infrastructure are key enablers of the industry's growth.
- Policy Support:** Schemes like FAME (Faster Adoption and Manufacturing of Hybrid and Electric Vehicles) Scheme continue to encourage EV adoption and clean technologies.

Conclusion:

India's emergence as the third-largest vehicle manufacturer in the world presents immense opportunities for the country's economic growth and development. The continued expansion of the automotive sector will enhance employment, exports, and industrial innovation. However, the challenge remains to balance this growth with sustainability and energy efficiency.

CCI Notifies New Cost Framework to Tackle Predatory Pricing

Context:

To promote fair competition, the Competition Commission of India (CCI) has introduced a new framework to decide whether a company's pricing is predatory. This step follows the CCI's role under the Competition Act, 2002, which aims to stop unfair business practices, protect consumers, and ensure a level playing field for businesses.

About Predatory Pricing:

- Predatory pricing is when a powerful company sells products or services at very low prices—lower than the cost to make them—so that smaller rivals are pushed out of the market. Once competition is reduced, the dominant firm can raise prices later to gain profits.
- The main problem with regulating such behaviour has been the lack of a clear legal definition of what “cost” really means.
- Under Section 4 of the Competition Act, selling below cost to hurt competition is seen as misuse of market power. But without a clear idea of how to measure cost, it’s been difficult to take strong action.
- To solve this, the CCI began work in February 2025 to define cost properly. It released a draft for public feedback and has now issued the final notification after considering the suggestions.

Key Provisions of the New Notification:

- **Average Variable Cost (AVC) as the Benchmark:** The cost of a product or service will now be based on its average variable cost. This is calculated by dividing the total variable cost by the total output for a specific period.
 - » Total Variable Cost includes all the costs that change with production, like raw materials and labour. It does not include fixed costs like rent or overheads.
- **Case-by-Case Evaluation:** The CCI decided not to use different definitions of cost for each sector. Instead, it will judge each case on its own facts using a general approach that applies to all industries.
- **Applicability to Digital Markets:** The CCI recognised that digital businesses often have very different cost patterns. This new framework can adjust to these differences and ensure fairness when checking if companies in the digital space are using unfair pricing tactics.

Implications for Indian Businesses:

- **Legal Clarity:** Companies will now have a better idea of how their pricing will be

judged by regulators.

- **Regulatory Predictability:** Using AVC as a standard will make it easier to apply the law fairly and consistently.
- **Digital Sector Accountability:** Tech companies and startups with unique cost structures will now be assessed more transparently.
- **Prevention of Abuse:** This rule helps the CCI act against large companies that try to push out smaller rivals through unfair pricing.

Conclusion:

The CCI’s has taken major step toward fair and transparent markets. By clearly defining cost and allowing flexibility, the Cost Regulations 2025 give the Commission more power to stop predatory pricing. In a fast-changing digital economy, this framework helps ensure that rules keep up with the times—supporting healthy competition while stopping market abuse.

India's Exports reach Record \$824.9 Billion in FY 2024–25

Context:

In a landmark achievement for the Indian economy, the country's total exports for the financial year 2024–25 surged to a historic high of \$824.9 billion, marking a 6.01% increase over the previous fiscal’s figure of \$778.1 billion.

Key Highlights of India’s Export Performance in FY 2024–25

Category	FY 2024–25	FY 2023–24	Growth (%)
Total Exports	\$824.9 billion	\$778.1 billion	+6.01%
Services Exports	\$387.5 billion	\$341.1 billion	+13.6%
Non-Petroleum	\$374.1 billion	\$352.9 billion	+6.0%
Overall	\$437.4 billion	\$433.9 billion	+0.08%

Engineering Goods Exports	\$116.67 billion	\$109.3 billion	+6.74%
---------------------------	------------------	-----------------	--------

What's driving the Export Surge?

- **Services Sector:** The services sector remains the major driver of India's export success, contributing nearly 47% to total exports. Exports from services like:
 - » Information Technology (IT)
 - » Business Process Management (BPM)
 - » Financial services
 - » Travel and tourism
- The Sector has registered a 13.6% growth, reaching an all-time high of \$387.5 billion. This performance highlights India's evolving role as a global services hub, particularly in the digital economy, fintech, and outsourcing ecosystems.
- **Non-Petroleum Merchandise:** While overall merchandise exports recorded only a marginal uptick (+0.08%), non-petroleum merchandise exports surged by 6.0%, reflecting a healthy trend in high-value manufacturing. Key contributors included:
 - » Engineering goods (record \$116.67 billion)
 - » Electronics and telecom equipment
 - » Pharmaceuticals
 - » Textiles and garments
- This diversification indicates progress in India's efforts to move beyond traditional commodity exports and focus on value-added industrial sectors.
- **External Demand:** India's export surge has also been bolstered by rising global demand for Indian goods and services, particularly in:
 - » United States
 - » European Union
 - » Southeast Asia
 - » Middle East and Africa
- Improved bilateral trade agreements and expanding diplomatic engagement under India's Act East and Neighborhood First policies have helped unlock new trade corridors.

India's top export destinations:

- Top merchandise export destinations:
 - » USA
 - » UAE
 - » Netherlands
 - » China
 - » Singapore

Strategic Significance of export performance:

- The FY25 export performance aligns with key national strategies:
 - » Foreign Trade Policy 2023, which targets \$2 trillion in exports by 2030, combining merchandise and services.
 - » Government schemes like Production Linked Incentive (PLI), which incentivize manufacturing of electronics, pharmaceuticals, and other export-worthy products.
 - » Ease of Doing Business, digital trade facilitation, and improved port infrastructure under initiatives like PM Gati Shakti.
 - » These reforms are helping Indian exporters become more globally competitive while reducing bureaucratic hurdles.

Challenges ahead:

- Despite the positive figures, India's export sector must remain cautious of:
 - » Global inflation and geopolitical tensions (especially in West Asia and Europe)
 - » Logistics disruptions due to supply chain realignments
 - » Pressure from rising protectionism and trade barriers in some regions

Conclusion:

The record \$824.9 billion in total exports signals that India is firmly on course to become a global trade powerhouse. With services exports booming and non-petroleum merchandise showing steady growth, India is not only diversifying its export base but also enhancing its economic resilience.

United States Places India on 'Priority Watch List'

Context:

The United States has once again placed India on its "Priority Watch List" in the 2025 Special 301 Report issued by the Office of the U.S. Trade Representative (USTR), citing ongoing concerns over India's intellectual property (IP) rights protection and enforcement mechanisms. India is among eight countries identified as posing significant challenges to American IP stakeholders.

- The Special 301 Report is an annual review published by the Office of the U.S. Trade Representative (USTR) assessing the global state of intellectual property rights (IPR) protection and enforcement.

Why has India been placed on the 'Priority Watch List'?

- The U.S. cited inconsistent progress and long-standing IP concerns, including:
 - » Procedural and discretionary issues under the Indian Patents Act (e.g., Section 3(d))
 - » Long patent processing delays and high compliance burdens
 - » Alleged weak IP enforcement mechanisms
 - » High customs duties on IP-intensive imports
 - » Perceived uncertainty in legal interpretation

Key Issues related to IP system in India:

- **Patentability Concerns:** India's patent laws, particularly Section 3(d) of the Indian Patents Act, 1970, restrict innovation. The clause disallows patents on incremental changes to existing drugs unless they significantly enhance efficacy.
- **Enforcement Weaknesses:** IP enforcement in India is criticized for lacking coordination between national and state authorities, lenient penalties for violations, and the country's inclusion in the 2024 Notorious Markets List due to rampant piracy and

counterfeiting.

- **Trademark Challenges:** The poor trademark examination quality and high levels of counterfeiting. Notably, India is not a signatory to the Singapore Treaty on the Law of Trademarks, a key international framework for trademark harmonization.
- **Barriers to Foreign Entities:** The new Biological Diversity Rules, 2024, require foreign entities to obtain prior approval before claiming IP rights over Indian biological resources, adding complexity for multinational companies.
- **Other Concerns:** These include delays in IP granting, a backlog in applications, and growing issues with online piracy fueled by increasing digitization.

India's Ongoing Reforms:

- The National IPR Policy (2016) aligns with the WTO's TRIPS Agreement and aims to foster innovation.
- Programs like the National Intellectual Property Awareness Mission (NIPAM) and Scheme for Startups Intellectual Property Protection (SIPP) are designed to promote awareness and streamline IP processes.
- The Patents (Amendments) Rules, 2024, aim to simplify and speed up patent approvals.
- Specialized IP Divisions have been set up in several High Courts, including Calcutta and Himachal Pradesh in 2024, enhancing judicial focus on IP matters.
- India has also committed to align with international treaties like the WIPO Performances and Phonograms Treaty and the WIPO Copyright Treaty.

Conclusion:

While India asserts its IP framework is TRIPS-compliant and geared toward public interest, the continued presence on the Priority Watch List reflects persistent tension between domestic policy objectives and international IP expectations. Dialogue between the two nations is likely to continue, balancing innovation, access, and trade relations.

Shillong–Silchar Greenfield Corridor project

Context:

The Union Cabinet recently approved the construction of a 166.8 km-long, 4-lane high-speed corridor along National Highway-6 (NH-6), under Shillong–Silchar Greenfield Corridor project, connecting Mawlyngkhung near Shillong in Meghalaya to Panchgram near Silchar in Assam.

About the Shillong–Silchar Greenfield Corridor project:

- The project will pass through the challenging terrain of the Northeastern region, incorporating advanced engineering solutions to overcome geographical obstacles. It will include the construction of:
 - » 19 major bridges
 - » 153 minor bridges
 - » 326 culverts
 - » 22 underpasses
 - » 26 overpasses
 - » 34 viaducts
- The project is expected to be completed within three years, with a cost estimation of Rs. 22,864 crore. Of the total 166.8 km stretch, 144.8 km will lie in Meghalaya, while the remaining 22 km will be in Assam.
- The strategic project will be implemented under the Hybrid Annuity Mode (HAM), a form of Public-Private Partnership (PPP) at a capital cost of Rs. 22,864 crore.
- The project aligns with PM Gati Shakti National Master Plan and Atmanirbhar Bharat.

Significant benefits of the Corridor:

- **Journey Time Reduction:** Travel time between Shillong and Silchar will decrease from 8.30 hours to 5 hours.
- **Distance Reduction:** The distance between Guwahati and Silchar will shrink by 25%.
- **Increased Vehicular Speed:** Average vehicular speeds are expected to double, improving traffic flow and efficiency.
- **Linking Key States:** The corridor will

enhance connectivity between Meghalaya, Tripura, Mizoram, and Manipur.

- **Improvement in Freight Movement:** It will become the shortest and fastest route for trucks and heavy vehicles traveling to Silchar and further east, boosting trade and logistics in the region.

Strategic Importance for the Northeast:

- **Silchar as a Gateway:** Silchar serves as the entry point for connecting Mizoram, Tripura, and Manipur, as well as Assam's Barak Valley. The new corridor will facilitate better access to these regions.
- **Regional Economic Growth:** The enhanced infrastructure will promote economic development, improve access to goods and services, and support regional trade and connectivity.

Conclusion:

The construction of this high-speed corridor is poised to revolutionize transportation within the Northeast, making travel more efficient while fostering economic development. This strategic infrastructure project is expected to enhance inter-state connectivity and regional development, addressing both passenger and freight mobility needs.

India Overtakes Japan to Become the World's Fourth-Largest Economy

Context:

India has officially surpassed Japan to become the world's fourth-largest economy, with its nominal Gross Domestic Product (GDP) crossing the USD 4 trillion mark. The announcement was made by NITI Aayog CEO B.V.R. Subrahmanyam during a press briefing following the 10th NITI Aayog Governing Council Meeting on the theme "Viksit Rajya for Viksit Bharat 2047".

Key Highlights:

- India's Nominal GDP is projected to reach USD 4.187 trillion in FY26 (2025), slightly ahead of Japan's estimated GDP of the

same figure, according to the International Monetary Fund (IMF).

- Per Capita Income in India has nearly doubled over the past decade—from USD 1,438 in 2013-14 to USD 2,880 in 2025.
- **Global Economic Ranking:** India now ranks fourth globally, behind only the United States, China, and Germany.
- **Growth Forecast:** The Indian economy is expected to grow at 6.2% in FY26, driven primarily by rising private consumption, especially in rural areas, despite a backdrop of global trade tensions.



About Vision 2047: Viksit Bharat

- India's long-term economic vision is captured in the NITI Aayog's approach paper titled "Viksit Rajya For Viksit Bharat @ 2047", which lays out an ambitious goal for the nation: to become a high-income country and achieve a USD 30 trillion economy by 2047, the centenary of India's independence.
- The Six Strategic Pillars:
 - » Macro-Economic Goals and Strategy
 - » Empowered Citizens

- » A Thriving and Sustainable Economy
- » Technology and Innovation Leadership
- » A Global Leader (Vishwa Bandhu)
- » Enabling Factors – Governance, Security, and Justice Delivery
- The framework focuses on transforming India into a nation marked by innovation, equitable growth, robust governance, and global leadership.

What are high-income countries?

- The World Bank defines high-income countries as those whose annual per capita income is more than USD 14,005 (2024-25). India has the potential and aims to be a high-income country by 2047.
- **Path to High-Income Status:** India's journey to becoming a high-income country will require sustained economic growth, driven by factors such as:
 - » **Private Consumption:** Increasing private consumption, particularly in rural areas.
 - » **Innovation and Technology:** Embracing technology and innovation to stay competitive and achieve rapid growth.
 - » **Sustainable Development:** India's growth will need to be sustainable, with a focus on environmental protection and social inclusivity.

Conclusion:

India's rise to the fourth-largest economy in the world reflects not only the scale of its economic transformation over the last decade but also its potential for future leadership on the global stage. With strategic reforms, inclusive development, and a clear roadmap to 2047, India is poised to emerge as a leading economic power, shaping the 21st-century global order.

Modified Interest Subvention Scheme for FY 2025-26

Context:

The Union Cabinet, chaired by Prime Minister Narendra Modi, has recently approved the continuation of the Modified Interest Subvention

Scheme (MISS) for the financial year 2025-26. The scheme provides short-term credit to farmers at an affordable interest rate through Kisan Credit Cards (KCC).

About Modified Interest Subvention Scheme (MISS):

- The Modified Interest Subvention Scheme (MISS) is a Central Sector Scheme designed to provide short-term credit to farmers at affordable interest rates through Kisan Credit Cards (KCC). Here are the key features and benefits:
- **Key Features:**
 - » **Interest Subvention:** 1.5% interest subvention is provided to eligible lending institutions, enabling farmers to access loans at a subsidized interest rate of 7%.
 - » **Prompt Repayment Incentive:** Farmers repaying loans promptly are eligible for an incentive of up to 3%, effectively reducing their interest rate to 4%.
 - » **Loan Limit:** The interest benefit is applicable on loans up to Rs.3 lakh for general purposes and up to Rs.2 lakh for loans taken exclusively for animal husbandry or fisheries.

CABINET APPROVES CONTINUATION OF MODIFIED INTEREST SUBVENTION SCHEME (MISS) FOR FY 2025-26

- Short-term loans up to Rs.3 lakh through Kisan Credit Cards (KCC) at a subsidized interest rate of 7%, with 1.5% interest subvention
- Farmers repaying loans promptly eligible for an incentive of up to 3% as Prompt Repayment Incentive (PRI)
- No changes have been proposed in the structure or other components of the scheme

Benefits:

- **Affordable Credit:** Lowers the cost of

borrowing for farmers, making it easier to access funds for agricultural needs.

- **Increased Credit Flow:** Encourages banks to lend more to the agriculture sector.
- **Financial Stability:** Helps farmers manage their financial requirements without falling into high-interest debt traps.

Implementation:

- **Implementing Institutions:** Public Sector Banks (PSBs), Private Sector Banks (rural and semi-urban branches), Small Finance Banks (SFBs), and computerized Primary Agriculture Cooperative Societies (PACS) are eligible for interest subvention.
- **Fund Allocation:** The continuation of the scheme for FY 2025-26 is expected to incur an expenditure of Rs.15,640 crore

Impact of the Scheme:

- **Credit Disbursement Boost:** Institutional credit disbursement through KCC has seen a major rise from Rs. 4.26 lakh crore in 2014 to Rs.10.05 lakh crore by December 2024.
- **Surge in Agricultural Credit Flow:** Total agricultural credit flow increased from Rs.7.3 lakh crore in FY 2013-14 to Rs.25.49 lakh crore in FY 2023-24.
- **Digital Reforms:** The Kisan Rin Portal (KRP), launched in August 2023, has streamlined claim processing, improving transparency and efficiency in the system.

Conclusion:

The Government's commitment to supporting farmers through initiatives like the MISS scheme demonstrates its focus on promoting agricultural growth and ensuring the well-being of farmers. By providing affordable credit and promoting financial inclusion, the scheme contributes to the overall development of the agricultural sector and the economy.

Bank Frauds Surge to Rs. 36,014 Crore in FY25

Context:

The Reserve Bank of India (RBI) Annual Report 2024-25 has reported a massive spike in bank frauds for the financial year 2024-25. The total value of reported frauds surged 194% to reach Rs.36,014 crore, up from Rs.12,230 crore in FY24.

Key Highlights from RBI's Annual Report 2024-25:

- **Private Sector Banks Lead in Number of Cases**
 - » Private banks accounted for over 59% of all reported frauds.
 - » They reported 14,233 fraud cases in FY25, although this is a decline from 24,207 cases in the previous year.
 - » The majority of these were related to card and internet transactions, reflecting ongoing challenges in managing digital risks.
- **Public Sector Banks Dominate in Value of Frauds**
 - » Despite reporting fewer cases—6,935 in FY25 compared to 7,460 last year—public sector banks (PSBs) contributed Rs.25,667 crore to the total fraud value.
 - » This marks a dramatic jump from Rs.9,254 crore in FY24 and underscores the severity of frauds in PSBs' loan portfolios.
- **Spike in Loan (Advances) Frauds**
 - » Frauds linked to loan disbursements (advances) surged to Rs.33,148 crore, from Rs.10,072 crore the previous year.
 - » This category continues to represent the bulk of financial fraud by value, raising red flags about credit evaluation and monitoring practices.

The reason behind such sudden Jump:

- According to the RBI, a significant portion of the increase—Rs.18,674 crore across 122 cases—was due to retrospective reporting. These cases, though originating in earlier years, were reclassified and reported afresh in FY25 following a Supreme Court ruling dated March 27, 2023.

Implications for the Banking Sector

- The rising trend of high-value frauds, especially in the loan segment, highlights critical gaps in due diligence, credit assessment, and post-loan monitoring, particularly within public sector banks. While private banks appear more vulnerable to digital transaction fraud, the magnitude is lower and appears to be declining.
- As digital banking grows and credit delivery expands across sectors, banks must urgently:
 - » Strengthen internal controls and fraud detection systems
 - » Adopt advanced analytics for risk assessment
 - » Enhance staff training in fraud prevention
 - » Implement robust cyber-security and forensic measures

Possible solutions from RBI:

- Recognizing the gravity of the situation, the RBI has proposed multiple regulatory and supervisory interventions to mitigate fraud risks and improve operational resilience in the banking sector.
 - » RBI plans to strengthen supervision of private banks and small finance banks.
 - » To avert systemic crises, RBI is developing new cash-flow-based stress testing frameworks to assess the liquidity position of banks under extreme but plausible conditions.
 - » RBI is working on a framework to monitor the uptime and resilience of digital banking services in near real time.

Conclusion:

The RBI's FY25 fraud report is both a wake-up call and a call to action. With the Indian banking system becoming increasingly complex and digital-first, the costs of inadequate vigilance are mounting. Going forward, transparency, accountability, and technology-driven oversight will be key pillars in safeguarding the trust of millions of depositors and ensuring the resilience of India's financial system.

Curbing Dark Patterns in Indian E-Commerce

Context:

Ministry of Consumer Affairs recently convened a high-level meeting in New Delhi to address the growing menace of dark patterns on digital platforms. Chaired by Union Minister Prahlad Joshi, the meeting brought together representatives from over 50 e-commerce companies and aimed to foster compliance with recently issued guidelines targeting manipulative digital practices.

What are Dark Patterns?

- Dark patterns refer to deceptive user interface designs that subtly coerce, mislead, or manipulate consumers into making decisions they would not have otherwise made.
- These may include tactics such as creating false urgency, hiding cancellation options, auto-selecting add-ons, or misrepresenting prices.
- Such practices violate the principles of fair trade and transparency, and increasingly fall under the ambit of misleading advertisements and unfair trade practices.

Ministry's Action and Guidelines:

- The ministry has officially identified 13 distinct types of dark patterns, including tactics like false urgency and misleading promotional content. These patterns have drawn concern due to a marked increase in consumer complaints, especially those reported on the National Consumer Helpline (NCH).
- The Ministry's guidelines on dark patterns were framed following extensive consultations with key stakeholders, including major e-commerce firms and industry associations.
- **Key provisions of the guidelines include:**
 - » Clear opt-out and cancellation options during digital transactions.
 - » Prohibition of manipulative urgency tactics, such as fake countdown timers

or false stock levels.

- » A strong emphasis on informed consumer consent, particularly around add-on services and subscription renewals.

Steps Taken to Tackle Dark Patterns:

- The Guidelines for Prevention and Regulation of Dark Patterns, 2023 were introduced under the Consumer Protection Act, 2019. These guidelines clearly define and ban 13 types of dark patterns—tricks used by websites or apps to mislead users into making choices they wouldn't normally make.
- As part of the effort, new tools were created during the Dark Patterns Buster Hackathon 2023 to help protect consumers:
 - » **Jagriti App:** Lets users report dark patterns they see on shopping websites directly to the government (CCPA).
 - » **Jago Grahak Jago App:** Warns users about unsafe platforms and gives live safety scores for e-commerce links.
 - » **Jagriti Dashboard:** A powerful tool that tracks and analyses dark patterns on online platforms, helping the CCPA take action.

Conclusion:

This initiative marks a pivotal moment in India's consumer protection regime. While the rise of e-commerce has empowered consumers with more choices, it has also introduced complex interface designs that often exploit behavioral psychology. With dark patterns increasingly recognized as violations of consumer rights, India joins a global movement that includes jurisdictions like the European Union and the United States in tackling deceptive digital design.



Internal Security

"Defense Revolution of Self-reliant India: India's Technological Leap in Operation Sindoor"

Operation Sindoor was a significant military mission carried out by India over four days, targeting terrorist camps and military bases deep inside Pakistan. Beyond its immediate military objectives, the operation highlighted India's growing technological edge in defence, demonstrating the country's capability to conduct precise, powerful, and coordinated strikes while maintaining minimal collateral damage.

Indian Army's Multi-Tiered Air Defence Performance:

- ❖ The success of Operation SINDOOR was partly due to a unique blend of multiple defensive layers:
 - » Counter-Unmanned Aerial Systems
 - » Shoulder-Fired Weapons
 - » Legacy Air Defence Weapons
 - » Modern Air Defence Weapon Systems
- ❖ This multi-tiered approach created successive lines of defence from the international boundary inward, safeguarding airfields and logistic installations from Pakistan's retaliatory air attacks on May 9-10, 2025. These systems, built over the past decade with continuous government investment, acted as force multipliers, preserving civilian and military infrastructure across India.

Strategic Role of Space: ISRO's Satellite Network:

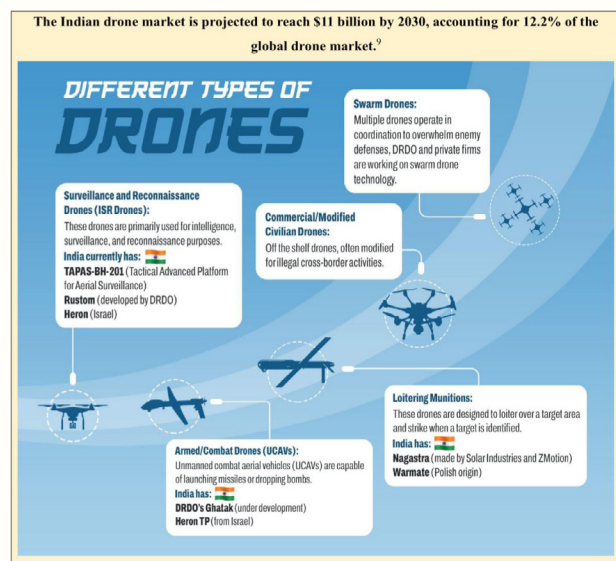
- ❖ India's space agency ISRO played a vital supporting role. At least 10 satellites were continuously engaged in monitoring India's northern borders and 7,000 km coastline, providing real-time surveillance and early

warning.

- ❖ These satellites enhance the operational reach of drone and air defence systems by offering persistent surveillance and intelligence, essential for timely threat detection and response. The integration of space-based assets into India's defence ecosystem exemplifies the country's comprehensive approach to national security.
- ❖ This extraordinary accuracy was achieved through sophisticated guidance and navigation systems integrating both ground and space-based assets:
 - » **NavIC (Navigation with Indian Constellation):** India's indigenous satellite navigation system providing positional accuracy within 10 to 20 centimeters.
 - » **Earth Observation Satellites:** The Cartosat, RISAT, and EOS series offer high-resolution imagery capable of identifying objects as small as 25 to 30 centimeters.
- ❖ Together, these systems enable Indian weapons to achieve sub-meter targeting precision. For example, BrahMos supersonic cruise missiles, likely used in the operation, incorporate state-of-the-art guidance developed through years of indigenous research by organizations such as DRDO and ISRO.
- ❖ The emphasis on guidance and navigation was recently underscored when it was identified as one of 75 priority technology areas during DRDO's Anusandhan Chintan Shivir in June 2023.

Lethality and Destructive Power:

- ❖ The destruction observed in satellite images of terrorist hideouts and Pakistani air bases confirmed the lethal effectiveness of Indian weaponry. Large craters and complete annihilation of targets underscored the reliability and power of propulsion systems, warheads, and fuses developed through India's Integrated Guided Missile Development Programme (IGMDP), a pioneering initiative led by Dr. A.P.J. Abdul Kalam.
- ❖ Moreover, India continues to advance in this field, developing technologies such as:
 - » Deep Penetration Warheads
 - » Green Explosives
 - » **Directed Energy Weapons (DEWs):** Laser-based systems capable of damaging or disabling targets, likely used to neutralize incoming Pakistani drones during the operation.
- ❖ In 2022, DEWs were officially recognized by the Defence Ministry as a key sector for industry-led development, with demonstrations of laser-based DEWs showcased during the Republic Day Parade in 2024.



Indigenous Radars and Air Defence:

- ❖ While the Russian S-400 missile system has

received public attention, India's air defence network comprises a sophisticated blend of indigenous radars and missile systems that operated seamlessly during Operation Sindoor.

❖ **Key radar systems include:**

- » **Rajendra Radar:** A multifunction fire control radar capable of tracking multiple targets simultaneously and guiding missiles.
- » Rohini 3D Medium-Range Surveillance Radar
- » 3D Low-Level Lightweight Radars
- » Low-Level Transportable Radars (LLTR)
- ❖ These radars provide critical battlefield awareness, enabling the tracking of enemy drones and airborne threats with remarkable precision. Research at DRDO continues to enhance radar capabilities through AI integration, signal processing, foliage penetration radars, and stealth detection technologies.

The Akash Missile System:

A central component of India's defensive success was the Akash missile system. Developed under DRDO's Integrated Guided Missile Development Programme, Akash is a mobile, short-to-medium-range surface-to-air missile system, offering protection for critical infrastructure and vulnerable areas. Its key features include:

- ❖ Ability to engage multiple aerial targets simultaneously — aircraft, missiles, and UAVs.
- ❖ 96% indigenous content, with over 250 Indian industries contributing to production.
- ❖ Mobile platform allowing quick deployment and redeployment.
- ❖ A powerful ramjet engine propelling missiles at speeds up to Mach 2.5.
- ❖ Rajendra radar's precise 3D target acquisition and tracking with 80 km coverage.
- ❖ A 55 kg pre-fragmented warhead activated by a proximity fuse, enabling effective damage even without a direct hit.
- ❖ Electronic counter-countermeasures (ECCM) that provide resilience against enemy jamming and electronic warfare.

❖ **India is actively developing improved variants:**

- » **Akash Prime:** Enhanced reliability in high-altitude and low-temperature environments, equipped with an indigenous active radio frequency seeker.
- » **Akash-NG (New Generation):** Extended range up to 70 km, sleeker design, lighter weight, canisterised for improved storage and handling, and designed to intercept stealthy, highly maneuverable targets.

❖ Notably, in December 2020, the Indian government approved the export of Akash missiles, signaling international confidence in the system's capabilities.

AKASHTHEER AIR DEFENCE SYSTEM

Akashteer is an advanced Air Defence Control and Reporting System (ADCRS) developed by Bharat Electronics Limited (et) for the Indian Army.

Akashteer Air Defence System

- **Command and Control:** Manages air defence operations but does not fire missiles
- **Automation:** Provides automated detection, tracking, and response
- **Sensor Integration:** Fuses radar and sensor data from Army and Air Force units
- **Decentralised Operations:** Allows field units to take action independently
- **Redundancy and Upgrades:** Includes backup communication and upgrade capabilities
- **Mobile and Static Use:** Deployable on vehicles or in fixed locations



Akash Missile System

- **Range:** Intercepts aerial targets up to 25-30 kilometers away
- **Target Types:** Engages aircrafts, missiles, drones, helicopters
- **Radar-Guided:** Directed to targets using radar systems
- **All-Weather Capability:** Operates



The Growing Role of Unmanned Vehicles:

❖ The drone sector has emerged as a critical component of India's defence modernization. The Drone Federation India (DFI), representing over 550 drone companies and 5,500 pilots, is driving India's ambition to

become a global drone hub by 2030.

❖ **Industry Growth and Key Players:**

- » Alpha Design Technologies (Bengaluru) collaborates with Israel's Elbit Systems to produce the SkyStriker drone.
- » Tata Advanced Systems provides integrated defence and security solutions.
- » Paras Defence & Space Technologies specializes in indigenous drone development.
- » IG Drones focuses on defence applications and services such as drone surveying and mapping, collaborating with the Indian Army and various governments.

❖ India's drone market is projected to reach \$11 billion by 2030, accounting for over 12% of the global market. The government's Production Linked Incentive (PLI) scheme launched in 2021 with an allocation of Rs 120 crore over three years has accelerated domestic manufacturing and innovation in drone and counter-drone technology.

❖ Operation Sindoor marked a significant shift in India-Pakistan conflicts, with drones and other unmanned systems playing pivotal roles. Experts highlight that the future of warfare will increasingly rely on the integration of manned and unmanned systems operating in coordination.

Policy, Innovation, and Defence Manufacturing:

❖ India's defence exports reached a record Rs 24,000 crore in FY 2024-25, with ambitions to hit Rs 50,000 crore by 2029 and emerge as the world's largest defence exporter by 2047.

❖ The "Make in India" initiative has been instrumental in this growth:

- » Indigenous defence production reached Rs.1.27 lakh crore in FY 2023-24.
- » Exports surged 34-fold since 2013-14.
- » Private sector participation and government-backed innovation platforms such as iDEX and SRIJAN have enhanced R&D and manufacturing.

- » Defence Industrial Corridors in Uttar Pradesh and Tamil Nadu further boost ecosystem development.
- ❖ Major indigenous platforms include the Dhanush artillery gun, Advanced Towed Artillery Gun System (ATAGS), Arjun Main Battle Tank, Light Combat Aircraft (LCA) Tejas, Advanced Light Helicopter (ALH), and naval assets such as aircraft carriers and submarines.

Conclusion:

- ❖ Operation Sindoor is a testament to India's remarkable progress in developing and integrating indigenous defence technologies. The operation's success reflects:
 - » Decades of foundational work in

- satellite navigation, missile guidance, and propulsion.
- » Development of sophisticated radar and missile defence systems.
- » Rapid incorporation of emerging technologies such as Directed Energy Weapons and unmanned aerial vehicles.
- » Strategic emphasis on self-reliance with over 96% indigenous content in key systems like the Akash missile.
- ❖ Continued investment in research, innovation, and ecosystem building will be essential to sustain and advance India's defence capabilities in an era of rapidly evolving threats and technologies.

India's Evolving Response to Terrorism: From the Ground to Cyberspace

Introduction:

Terrorism has long been a significant challenge to India's national security, evolving from traditional physical threats like cross-border intrusions, ambushes, and bombings to more sophisticated, multi-dimensional tactics. Today, terrorism has expanded beyond the battlefield into cyberspace, digital misinformation, and psychological manipulation. The 2025 Pahalgam terror attack, the military operation that followed was significant, the speed with which countermeasures were deployed in the cyber and information domains marked a pivotal response. With terrorism increasingly adopting hybrid warfare—combining physical attacks, cyber disruptions, and propaganda—India's strategies are evolving to counteract these new threats.

Understanding Hybrid Warfare and Terrorism:

- ❖ Modern terrorism is no longer limited to armed violence; it now includes hybrid warfare, which blends conventional warfare with cyberattacks, fake news, deepfakes,

and economic pressure. This hybrid nature creates confusion and destabilizes nations by targeting both military forces and civilian minds. The 2025 Pahalgam attack exemplified this shift, where, alongside direct armed conflict, coordinated cyber tactics were deployed. Fake Twitter accounts impersonated Indian Navy ships, spreading misinformation, while deepfake audio clips falsely claimed retaliatory strikes. These tactics show how hybrid warfare seeks to confuse the public and cause widespread panic.

- ❖ India has faced numerous such threats in recent years, including the 2019 Pulwama attack, the ambushes in Jammu's Samba and Poonch regions, and cyber espionage attempts on defense installations. The frequency and sophistication of these threats have led India to adapt its security responses, incorporating both physical and digital measures.

India's Military and Cyber Responses:

- ❖ India has traditionally countered terrorism with military operations, such as the surgical

strikes across the Line of Control (LoC) in 2016 and the Balakot airstrikes in 2019. In April 2025, following the Pahalgam attack, India launched "Operation Sindoor"—a rapid and precise military operation in Jammu and Kashmir. What set this operation apart was the integration of real-time intelligence, surveillance technologies, and cyber vigilance, which allowed for a more coordinated response.

- ❖ India's cybersecurity response has also become a crucial element in its national security strategy. According to the IBM X-Force Threat Intelligence Index 2023, India ranks as the fourth most targeted country for cyberattacks. In 2023 alone, the Indian Computer Emergency Response Team (CERT-In) reported over 1.4 million cybersecurity incidents, including phishing attempts and malware attacks, many originating from Pakistan. As part of its proactive measures, India dismantled over 22,000 fake social media accounts in 2023.
- ❖ During Operation Sindoor, the government acted decisively to counter online misinformation, removing fake accounts and issuing media briefings to ensure public trust in official sources. This shift marks a move from reactive damage control to a more proactive, comprehensive defense against hybrid threats.

Legal and Institutional Frameworks:

- ❖ India's legal and institutional framework for combating terrorism and cyber threats includes the Information Technology (IT) Act, 2000, which addresses cybercrimes like hacking, identity theft, and cyberstalking. More recently, the Digital Personal Data Protection Act, 2023, was enacted to safeguard citizens' personal data from misuse and unauthorized access. However, experts argue that these laws are insufficient to tackle the complexities of modern hybrid warfare, particularly cyberattacks and psychological manipulation through technologies like deepfakes and AI-generated content.
- ❖ Institutions like the National Investigation

Agency (NIA), the National Technical Research Organisation (NTRO), and the Multi-Agency Centre (MAC) coordinate India's responses to terrorism and cyber threats. The CERT-In, under the Ministry of Electronics and Information Technology, is India's primary cyber emergency response unit. However, the fragmented jurisdiction across various ministries often hampers real-time coordination, and the absence of a unified cyber command structure limits India's ability to swiftly counter cyber aggression.

- ❖ Additionally, the existing legal tools, such as the IT Act, were drafted before the widespread use of social media and the advent of new technologies like deepfake. As a result, law enforcement struggles to prosecute cases involving modern hybrid warfare techniques, such as the manipulation of public opinion via AI-generated content.

What Worries Indian Companies the Most?

Corporate India is prioritising cybersecurity as the top risk to mitigate



Source: PwC report on 2025 Global Digital Trust Insights - India edition based on 155 responses
Graphic: Samrat Sharma & Mudita Singh

Strategic Diplomacy and International Cooperation:

- ❖ India's counter-terrorism strategy is increasingly shaped by its diplomatic engagements. At the global level, India has consistently pushed for the adoption of the

Comprehensive Convention on International Terrorism (CCIT) at the United Nations. This proposed treaty aims to define terrorism and criminalize all forms of terrorist activities, regardless of political motives.

- ❖ India has also bolstered its cybersecurity cooperation with nations like the United States, France, and Israel. These partnerships focus on sharing cyber intelligence, securing critical infrastructure, and promoting technology transfers. Within the QUAD grouping (India, US, Japan, Australia), India has worked towards building cyber norms, securing 5G networks, and ensuring supply chain resilience.
- ❖ However, at the regional level, cooperation remains limited. The South Asian Association for Regional Cooperation (SAARC), which could serve as a platform for regional counter-terrorism efforts, remains inactive due to tensions with Pakistan. In contrast, regional bodies such as ASEAN and the European Union have developed more effective strategies to combat transnational threats.

Socio-Economic and Political Implications:

- ❖ Terrorism has significant socio-economic consequences. Prolonged conflicts divert public funds from development initiatives to defense spending. Sensitive regions become less attractive to investment, exacerbating the vulnerability of marginalized communities, particularly the youth, to radicalization. For a country aiming to become a \$5 trillion economy, internal security is crucial for sustained growth. According to the Global Terrorism Index, India ranks among the top 10 countries globally in terms of GDP loss due to terrorism.
- ❖ Politically, terrorism can influence public discourse and electoral outcomes. Repeated attacks often fuel demands for militarized responses, contributing to nationalism and social polarization. While strong leadership in times of crisis is essential, it is important to balance security measures with democratic values and civil liberties.
- ❖ India also faces a strategic dilemma. While

a robust military response is necessary, it may attract international scrutiny and escalate conflicts. Conversely, a lenient approach could embolden terrorist elements. Therefore, navigating this delicate balance requires both tactical precision and strategic foresight.

The Road Ahead:

- ❖ Establishing a dedicated Cyber Command within the armed forces.
- ❖ Updating the legal framework to address new hybrid warfare challenges, including AI-generated threats and misinformation.
- ❖ Investing in advanced technologies like quantum encryption, indigenous operating systems, and cutting-edge surveillance tools.
- ❖ Enhancing public awareness campaigns to increase resilience against misinformation.
- ❖ Strengthening the integration of civil society, media, and tech platforms in the fight against hybrid threats.

While military preparedness is crucial, India's long-term security will depend on its ability to adapt, innovate, and collaborate both domestically and internationally. The true test lies not only in defending against attacks but in creating a resilient society capable of withstanding the disruptive influence of terrorism and hybrid warfare.

Conclusion:

India's battle against terrorism has moved beyond traditional methods of defense; it now encompasses cyberspace, digital warfare, and psychological tactics. As hybrid warfare becomes the norm, India's response must evolve to address both conventional and digital threats. The experience of 2024 highlighted India's willingness to embrace a multifaceted defense strategy, integrating military power, technological innovation, legal reform, and diplomatic efforts. Understanding this evolution is critical for students and future policymakers to grasp the complexity of modern national security and India's role as a responsible global power.

Short Issues

Operation Sindoor

Context:

India launched Operation Sindoor on May 7, 2025, targeting nine terror-linked sites across Pakistan and PoK in its most extensive counter-terror strike since Balakot (2019) and Uri (2016).

Targeted Locations:

- **Bahawalpur (Pakistan Punjab):** Known as the ideological and operational base of Jaish-e-Mohammed (JeM), this city has long been a focal point of terror logistics. It is the hometown of Maulana Masood Azhar, the group's founder, who was released by India in exchange for the hostages of Indian Airlines Flight IC-814 hijacked in 1999. Bahawalpur also has symbolic relevance due to its historical association with Pakistan's former military dictator Zia-ul-Haq, who died in a mysterious plane crash there in 1988.
- **Muridke (near Lahore, Pakistan Punjab):** Headquarters of the Lashkar-e-Taiba (LeT), the group responsible for the 26/11 Mumbai terror attacks. The town hosts the Markaz-e-Taiba, a religious and military complex that trains and indoctrinates militants.
- **Muzaffarabad (Capital of PoK):** A known staging ground for terror infiltration into Jammu & Kashmir. It houses several terror groups supported logistically by the Pakistan Army, particularly for cross-LoC operations. It lies close to India's Baramulla and Kupwara districts.
- **Kotli (PoK):** Situated near the LoC, opposite India's Jammu region, Kotli has long been suspected of harbouring launch pads and militant camps. It is strategically located between Poonch and Rajouri, both sensitive sectors in Jammu & Kashmir.

Political and Diplomatic Undertones:

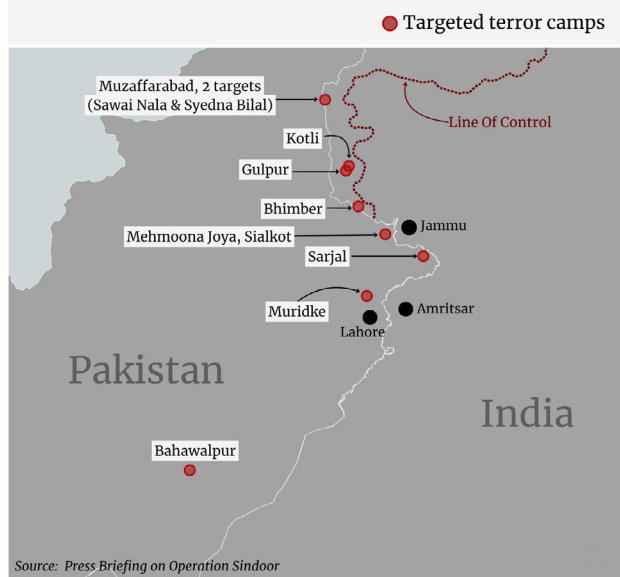
- The operation was preceded by diplomatic outreach, signalling India's intent to international stakeholders and reaffirming its right to self-defence under Article 51 of the UN Charter. The operation was also

strategically named "Sindoor", possibly referencing the religious targeting of individuals in Pahalgam, which catalyzed this phase of retaliation. The naming underscores the moral and civilisational undertone often embedded in Indian strategic communications.

- Following the attack, the Ministry of Defence issued a statement calling the action "focused, measured, and non-escalatory." This language aligns with India's longstanding emphasis on responsible use of force, especially in contrast to Pakistan's use of proxy actors for plausible deniability.

Operation Sindoor

Indian armed forces on May 7, 2025, carried out missile strikes on nine terror targets in Pakistan and Pakistan-Occupied Jammu and Kashmir.



Implications for Regional Security:

- India's recent cross-border operations must be viewed within the continuum of its shift from a traditionally defensive posture to one of assertive retaliation against cross-border terrorism. The 2016 surgical strikes targeted launch pads across the Line of Control (LoC) in PoK following the killing of Indian soldiers in Uri. The 2019 Balakot

airstrikes were a response to the Pulwama terror attack and marked India's first use of air power across the LoC since 1971.

- Operation Sindoor adds a new layer to India's strategic doctrine: a move from isolated retaliatory strikes to systematic neutralisation of terror infrastructure across multiple sites. This operation highlights the shift toward a deterrence-based model, where India communicates not only capability but also political resolve to strike with precision, even in densely populated or diplomatically sensitive regions.
- In doing so, India seeks to:
 - » Undermine the operational depth of terror networks,
 - » Disrupt their recruitment and training pipelines,
 - » And impose reputational and strategic costs on their state sponsors.

Conclusion:

Operation Sindoor marks a pivotal moment in India's counter-terrorism approach, combining intelligence-based targeting, diplomatic groundwork, and technologically sophisticated execution. As regional dynamics continue to evolve, such operations may become a core component of India's response framework, reflecting a more assertive, integrated national security doctrine.

Anti-Naxal Operation

Context:

Indian security forces recently carried out a 21-day-long anti-Naxal operation in the Karreguttalu Hills, located on the Chhattisgarh-Telangana border. It culminated in the killing of 31 Maoists, marking one of the biggest counter-Naxal operations in India's history.

About Operation:

- Launched on April 21, 2025, the operation was jointly executed by the Central Reserve Police Force (CRPF), Special Task Force (STF), District Reserve Guard (DRG), and Telangana's elite Greyhounds unit.
- It targeted the Maoist stronghold deep in the Karreguttalu Hills (also referred to as Kurraguttalu), a region long considered impenetrable due to its rugged terrain and forest cover.

About Naxalism:

- Naxalism, also known as Left-Wing Extremism (LWE), is a significant internal security challenge in India. It originated in 1967 in Naxalbari, West Bengal, as a peasant uprising led by the Communist Party of India (Marxist-Leninist) (CPI-ML).
- The movement is driven by socioeconomic disparities, land disputes, and tribal rights issues, affecting multiple states, including Chhattisgarh, Jharkhand, Odisha, Andhra Pradesh, Bihar, and Maharashtra, forming the 'Red Corridor'

India's strategy to eliminate Naxalism:

India's strategy to eliminate Left-Wing Extremism (LWE) includes a comprehensive, multi-pronged approach that seeks to strike a balance between security enforcement, socio-economic development, and community empowerment.

- **Development Initiatives:** These initiatives aim to address the root causes of Naxalism—namely poverty, alienation, and lack of infrastructure—in affected areas. These include:
 - » **Road Connectivity (PMGSY-II):** Enhances access to remote tribal areas, facilitating both development and security operations.
 - » **Eklavya Model Residential Schools:** Expands educational opportunities for tribal children, addressing long-term socio-economic disparities.
 - » **Mobile Connectivity (USOF/Digital Bharat Nidhi):** Reduces isolation of tribal communities and enables better administration and citizen services.
- **Security Operations:** Recognizing the immediate threat posed by armed insurgents, the government has also implemented robust security measures such as:

- » **Operation Green Hunt:** A coordinated paramilitary campaign to dismantle Naxalite strongholds.
- » **Deployment of CAPFs, CoBRA, and Greyhounds:** Specialized counter-insurgency units are trained for guerrilla warfare and jungle operations.
- **Legal and Governance Framework:** India's legal approach seeks to suppress insurgent activities while protecting tribal rights and promoting decentralized governance.
 - » **Unlawful Activities (Prevention) Act (UAPA):** Used to ban Naxalite groups and prosecute their members.
 - » **Forest Rights Act (2006):** Recognizes traditional rights of forest dwellers, reducing tribal alienation.
 - » **PESA Act (1996):** Empowers Gram Sabhas in Scheduled Areas to manage natural resources and local governance.
 - » To encourage defection from extremist ranks, the government offers rehabilitation for surrendered Naxals.

Progress made so far:

- Data from the Ministry of Home Affairs and CRPF highlight the progress made over the past decade:
 - » Naxal-affected districts reduced from 126 in 2014 to 18 in 2025
 - » Most severely affected districts dropped from 35 to just 6
 - » Violent incidents fell from 1,080 (2014) to 374 (2024)
 - » Security personnel deaths declined from 287 (2014) to 19 (2024)
 - » 2,089 Maoists eliminated since 2014
 - » 928 Naxals surrendered in 2024, with 718 surrendering in 2025 (so far)

Conclusion:

This operation marks a decisive shift in the government's long-running war against Left-Wing Extremism. It sends a strong signal that no safe haven will be tolerated for insurgents. As India pushes forward to meet its 2026 goal of a Naxal-free nation, the Karreguttalu success may be remembered as a defining moment—both militarily and symbolically.

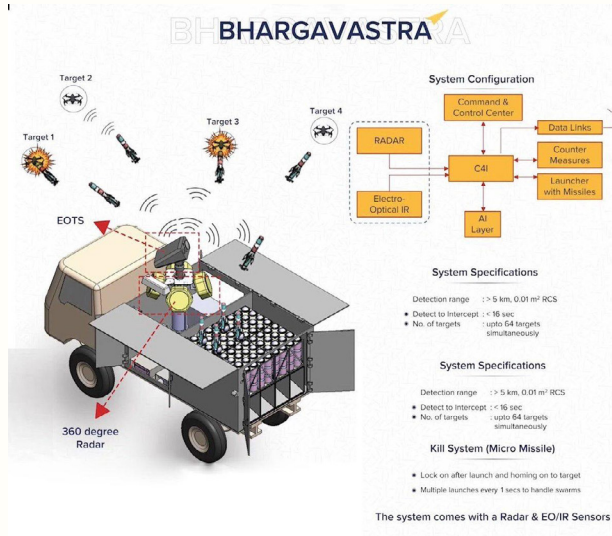
Bhargavastra Counter-Drone System

Context:

Solar Defence and Aerospace (SDAL) has recently tested a new low-cost counter-drone system in hard kill mode named Bhargavastra at the Seaward Firing Range in Gopalpur. This system aims to provide cost-effective and responsive solutions for the evolving nature of modern warfare, including drone swarms and mobile target environments.

About Bhargavastra:

- The Bhargavastra system is India's First Micro Missile-Based Counter-Drone System developed by Solar Defence and Aerospace Limited (SDAL) in collaboration with Economic Explosives Ltd, represents a breakthrough in counter-drone technology. This low-cost, hard-kill system is designed to detect and neutralize drones, including swarm formations, using guided micro rockets.



Key Features:

- » **Detection range:** Capable of detecting small aerial threats beyond 6 km.
- » **Engagement range:** Effective neutralization of targets beyond 2.5 km.
- » **Simultaneous firing:** Can launch over 64 micro missiles at once.

- » **Mobility:** Mounted on mobile platforms for rapid deployment in diverse terrains, including high-altitude regions.
- » **Role:** Specifically designed for Army Air Defence, filling a vital capability gap. The Indian Air Force has also expressed interest.
- This system underwent three successful trials on May 13, 2025, in the presence of senior Indian Army officials. Two of the trials involved single-rocket launches, while the third demonstrated a salvo mode with two rockets fired within two seconds. All rockets met their launch parameters, validating the system's ability to intercept drone threats effectively.
- Bhargavastra addresses a growing global challenge: the proliferation of low-cost drones, especially in swarm formations, which pose continuous security threats and strain traditional air defence systems reliant on expensive missile interceptors.

Conclusion:

India has already witnessed the effectiveness of integrated defence systems in recent conflicts. During Operation Sindoor, the S-400 missile defence system played a pivotal role in intercepting Pakistani drones, missiles, and aircraft along the western border. However, the use of such high-cost missile systems for countering low-cost drone threats is not economically viable long-term. This operational experience underscores the need for cost-effective, scalable solutions like Bhargavastra. As drones become increasingly accessible and pose asymmetrical threats, India's ability to deploy affordable, mobile, and precision-guided systems becomes critical.

Air Defence Systems

Context:

India's recently neutralised air defence system in Lahore, Pakistan. This underscores the strategic significance of such systems in contemporary conflicts.

About Air Defence Systems:

- A modern air defence system is a networked, multilayered setup integrating diverse technologies to ensure robust protection and deny enemy aerial dominance, thereby granting operational flexibility to ground and air forces. Pakistan's recent failure to damage Indian targets in a cross-border attempt underscores their strategic importance.
- Conversely, neutralising enemy air defences through Suppression of Enemy Air Defences (SEAD) operations is vital for securing air superiority, enabling uninterrupted bombing runs, paratrooper deployments, and logistical support. According to a 2005 U.S. Congressional study, around 25% of American combat sorties in recent conflicts were SEAD missions. India's targeting of air defence systems in Lahore reflects a similar strategic calculus.



Components and Functionality:

- **Detection:** The initial and most crucial step, detection, is primarily conducted via radar systems that emit electromagnetic waves. Reflected signals from objects like enemy aircraft or missiles help determine their location, speed, and trajectory. In strategic cases, satellites assist in tracking long-range threats such as ICBMs.
- **Tracking:** Post-detection, continuous tracking uses advanced radar, infrared sensors, and laser rangefinders to monitor multiple aerial objects in real-time, distinguishing hostile targets from friendly

ones. Precision in tracking is vital to prevent false positives and ensure timely response.

- **Interception:** Once a threat is identified and tracked, it is neutralised through tailored tactical responses based on its type and range. This phase's success hinges on the effective integration of command, control, and communication (C3) systems.

Tools of Interception:

- **Fighter Aircraft:** These are fast, agile aircraft equipped with advanced air-to-air missiles, radar, and electronic warfare systems. Interceptor roles can be performed by aircraft such as the MiG-21 Bison, MiG-29, Sukhoi Su-30MKI, HAL Tejas, and Dassault Rafale—all currently operational in the Indian Air Force.
- **Surface-to-Air Missiles (SAMs):** SAMs are the backbone of any air defence network. They are more effective and safer than traditional anti-aircraft artillery (AAA). These missiles can be:
 - » **Heavy, long-range systems (e.g., S-400 Triumf):** Target high-altitude threats like ballistic missiles.
 - » **Medium-range mobile systems (e.g., Akash, Barak):** Offer operational flexibility.
 - » **Short-range, man-portable systems (MANPADS):** Engage low-flying aircraft or drones. These are cost-effective and widely used, even by irregular forces.
- **Anti-Aircraft Artillery (AAA):** Although outdated in the face of modern missile systems, AAA retains relevance as a last-resort measure and for defending against drones. These guns operate at high rates of fire and cover wide areas using fragmentation shells.
- **Electronic Warfare (EW):** Modern air defence also leverages non-kinetic methods like jamming, spoofing, and electromagnetic interference. EW systems target the enemy's radar, guidance, and communications, rendering their platforms ineffective without direct confrontation.

Conclusion:

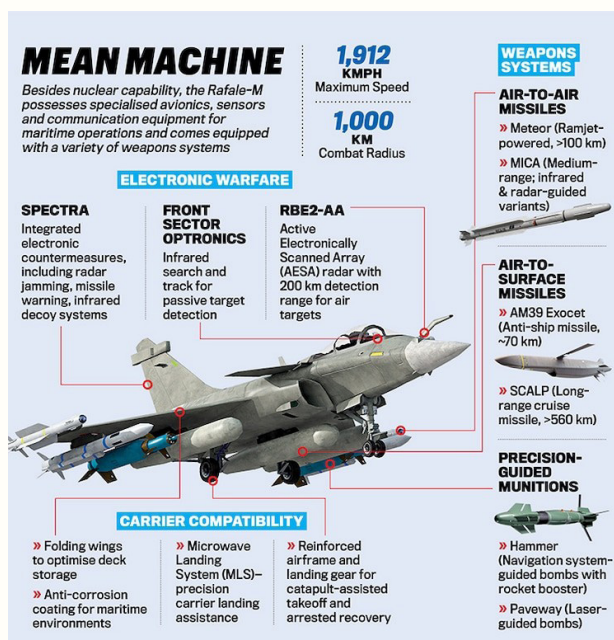
Air defence systems represent the convergence

of surveillance, communication, and strike capabilities. Their role is not confined to defence alone but extends to enabling broader military strategies, including offensive air operations.

Deal for 26 Rafale-M Jets

Context:

In a recent development related to India's maritime defense strategy, New Delhi and Paris have formally concluded an Inter-Governmental Agreement (IGA) for the procurement of 26 Rafale-Marine (Rafale-M) fighter jets for the Indian Navy. Valued at approximately ₹64,000 crore, the agreement is considered a significant step in the ongoing efforts to modernize India's naval aviation capabilities.



Key Highlights of the Rafale-M Agreement:

- **Delivery Timeline:** The first batch of Rafale-M jets is expected to arrive by mid-2028, with full deliveries completed by 2030. Indian Navy personnel will receive extensive training both in France and at domestic facilities.
- **Technology Transfer:** A significant component of the agreement is the Transfer of Technology (ToT), enabling the integration

of indigenous weapons systems like the Astra Beyond Visual Range (BVR) air-to-air missile into the Rafale platform.

- **Interoperability with IAF Rafales:** The naval variant will share a high degree of commonality with the Rafales already in service with the Indian Air Force. This harmonization will streamline maintenance, logistics, and joint operations.
- **Domestic Infrastructure Development:** The deal also includes the establishment of production facilities for Rafale fuselage components and Maintenance, Repair, and Overhaul (MRO) capabilities in India for engines, sensors, and weapon systems, further boosting the Make in India initiative.

Strategic Implications:

- **Enhanced Naval Power Projection:** The Rafale-Ms, capable of carrier-based operations, will greatly enhance the Indian Navy's offensive and defensive capabilities, especially aboard INS Vikrant and INS Vikramaditya.
- **Economic Growth and Job Creation:** The agreement is poised to generate substantial employment opportunities and economic activity, particularly benefiting India's Micro, Small, and Medium Enterprises (MSMEs) involved in defense manufacturing.
- **Bilateral Defense Cooperation:** The successful conclusion of this deal reaffirms the deepening strategic partnership between India and France, particularly in the defense and aerospace sectors.

Background:

- The Indian Navy currently operates two aircraft carriers, INS Vikramaditya and INS Vikrant, and has been looking to replace its aging MiG-29K jets with a new generation of fighter aircraft. The Rafale-M deal is part of this effort to modernize the Navy's fleet and enhance its operational capabilities.

Conclusion:

The Rafale-M agreement marks a milestone in India's defense modernization journey, positioning the Indian Navy for enhanced power projection in the Indian Ocean Region and

beyond. Coupled with parallel investments in unmanned systems and indigenous capability development, the deal underscores India's commitment to securing its maritime interests through robust international partnerships and self-reliance.

YouTuber Arrest in Alleged Pakistan Spy Link

Context:

Jyoti Rani, a 33-year-old travel blogger from Haryana, was arrested on May 16 for allegedly spying for Pakistani intelligence agencies. The arrest was part of a broader espionage operation involving passing sensitive information and logistical support to Pakistani intelligence.

Allegation against her:

- Jyoti Rani is accused of sharing sensitive information with Pakistani intelligence operatives, compromising national security. She was tasked to present a positive image of Pakistan online, influencing her large Indian audience as part of a coordinated propaganda effort.
- Jyoti Rani has been charged under:
 - » Section 3 of the Official Secrets Act, 1923 (Spying)
 - » Section 5 of the Official Secrets Act, 1923 (Wrongful communication of information)
 - » Section 152 of the Bharatiya Nyaya Sanhita (BNS) (Acts endangering sovereignty, unity, and integrity of India)

About Section 3 of the Official Secrets Act:

- This section penalizes spying or any activity prejudicial to the state's safety. It criminalizes actions such as:
 - » Approaching or entering prohibited areas
 - » Making plans, sketches, or notes that may aid an enemy
 - » Collecting or communicating secret government information
- **Punishment:**
 - » Up to 14 years imprisonment for

espionage involving military or defence sites

- » Up to 3 years imprisonment for other related activities

About Section 5 of the Official Secrets Act:

- This section addresses:
 - » Wrongful communication or handling of classified material
 - » Disclosure of secrets due to negligence or to unauthorized persons
- **Punishment:**
 - » Up to 3 years imprisonment, or fine, or both

More arrests made in Punjab, Haryana and Uttar Pradesh

Four more people were arrested in Uttar Pradesh, Punjab and Haryana for allegedly leaking sensitive information with Pakistani operatives, taking the total arrests 14 in connection with the espionage cases. Key details

PUNJAB

Name: Sukhpreet Singh and Karanbir Singh

Date of arrest: May 19

Allegations: Sharing sensitive information related to Operation Sindoor, including troop movement, to Pakistan

HARYANA

Name: Mohammad Tarif

Date of arrest: May 19

Allegations: Sending photos, videos of IAF base in Sirsa to Pak operatives

UTTAR PRADESH

Name: Shahzad Wahab

Date of arrest: May 18

Allegations: Spying for Pakistan's ISI and cross-border smuggling



Another YouTuber under scanner

Odisha Police have started a probe into alleged links between Puri-based YouTuber Priyanka Senapati and Jyoti Malhotra (below), who was arrested on espionage charges. Intelligence Bureau and state intelligence officials, questioned Senapati who allegedly came in contact with Malhotra when she visited Puri in September 2024

Officials aware of the matter said that they have yet to find anything suspicious



Past arrests

Punjab: Guzala, Yameen Mohamad, Falak Sher Masih, Suraj Masih, Sunil Kumar, Raquib Khan

Haryana: Nauman Elahi, Devendra Singh Dhillon, Arman

activities

▪ **Punishment:**

- » Life imprisonment, or
- » Imprisonment up to 7 years, plus fine

About Official Secrets Act, 1923:

- The Indian Official Secrets Act (OSA), 1923 is a key national security law that aims to prevent espionage and protect sensitive government information from falling into the wrong hands. Rooted in British colonial-era legislation, the Act continues to play a vital role in preserving the secrecy and integrity of India's defense and foreign affairs.
- **Objective of the Act:** The primary purpose of the Official Secrets Act is to:
 - » Protect national security and sovereignty
 - » Prevent the unauthorized disclosure of classified government information
 - » Maintain the confidentiality of sensitive operations, particularly in the defense, military, and intelligence sectors

Why is this case significant:

- This case highlights growing concerns over:
 - » Espionage via influencers and content creators
 - » Misuse of digital platforms for intelligence gathering
 - » The blurred lines between soft propaganda and state-sponsored subversion
 - » It also underscores the national security risks emerging from the intersection of social media and geopolitics.

INS Tamal

Context:

India is set to strengthen its naval forces with the addition of INS Tamal, a new multi-role stealth frigate built in Russia. This warship is the second of its kind to be delivered under a bilateral defence agreement and will soon join the Indian Navy.

What is INS Tamal?

- INS Tamal is a 3,900-tonne stealth frigate built for the Indian Navy as part

About Section 152 of the Bharatiya Nyaya Sanhita:

- This section pertains to:
 - » Acts that threaten India's sovereignty, unity, and integrity
 - » Exciting or attempting to excite secession, rebellion, or subversive

of an agreement signed with Russia in October 2016. The agreement included the construction of four upgraded Krivak-III class frigates:

- » Two of these frigates, including INS Tushil and INS Tamal, are being built in Russia at a cost of around Rs 8,000 crore.
- » The remaining two, named INS Triput and INS Tavasya, are being built in India at Goa Shipyard Limited, under a technology transfer agreement, at a cost of about Rs 13,000 crore.
- The first frigate, INS Tushil, was commissioned in December 2024 and reached its Indian base in February 2025. INS Tamal is currently undergoing final testing in Kaliningrad, Russia, and will be handed over to the Indian Navy shortly.
- INS Tamal is expected to be the last warship commissioned outside India or imported from another country. With this, India shifts focus entirely to designing and building warships domestically, reflecting its progress toward naval self-reliance.

Key Features of INS Tamal:

- INS Tamal is designed for multi-dimensional warfare and can operate in air, surface, underwater, and electronic environments. Some of its major features include:
 - » BrahMos supersonic cruise missiles with a strike range of 450 km.
 - » Shtil surface-to-air missiles, launched vertically and capable of intercepting aerial threats.
 - » Anti-submarine weapons, including torpedoes and rockets.
 - » High operational speed, capable of sailing at over 30 knots.
 - » Ability to carry Kamov-28 and Kamov-31 helicopters, used for submarine detection and early warning.
 - » Advanced stealth technology to reduce visibility across radar, infrared, and sound frequencies.
 - » Automation systems that improve combat efficiency and reduce human error.

India's Shipbuilding Progress:

- India's warship construction capabilities have significantly advanced. The Directorate of Naval Design, established in 1970, has played a key role in making India a builder's navy. Currently:
 - » Over 60 warships are under construction at Indian shipyards.
 - » The first indigenous frigate under the current agreement has already been launched into water.
 - » The second frigate is scheduled to be launched within a few months.
 - » GSL plans to deliver the first Indian-built frigate in 2026, and the second six months later.
 - » All four ships in the project are powered by engines supplied by Zorya Nashproekt of Ukraine.

Conclusion:

The commissioning of INS Tamal reflects India's focus on building a modern and capable naval force. With advanced weapons, stealth features, and high mobility, the warship will enhance the country's maritime strength. Together with the success in indigenous mine development, it shows India's balanced approach—strengthening foreign partnerships while promoting self-reliance in defence technology. This is especially important as India seeks to secure its maritime interests in a region facing increasing security challenges.

Dhruv Advanced Light Helicopter (ALH)

Context:

The Dhruv Advanced Light Helicopter (ALH) developed by Hindustan Aeronautics Ltd. (HAL) is back in operation for the Indian Army and Air Force after being grounded since January 2025. HAL has now cleared the Army and Air Force variants for operation based on the findings of a Defect Investigation (DI) Committee.

- All ALH helicopters were grounded following a fatal crash of an ALH Mark-III operated

by the Indian Coast Guard on January 5 in Porbandar, Gujarat, which resulted in the death of all three crew members.

About Dhruv Helicopter:

- The Advanced Light Helicopter (ALH) Dhruv is a 5.5-ton class, indigenously developed, multi-role utility helicopter, designed for both military and civilian use.
- Developed by Hindustan Aeronautics Limited (HAL) – a state-owned aerospace and defense company in India.

Variants of Dhruv

- **Dhruv Mk-I / Mk-II:** Basic utility variants used for transport and general operations.
- **Dhruv Mk-III:** Upgraded with advanced avionics, navigation, and mission systems.
- **Dhruv Mk-IV (Rudra):** Armed variant with integrated attack and close air support capabilities.

Key Features:

- **Multi-Mission Capabilities:** Suitable for search and rescue, troop transport, disaster relief, and combat missions, including high-altitude operations.
- **Twin-Engine Design:** Ensures enhanced safety and flight reliability even in extreme conditions.
- **Rigid Rotor System:** Allows superior agility and maneuverability, especially in mountainous terrain.
- **Electronic Warfare Suite:** Includes missile and radar warning systems, IR jammers, chaff, and flare dispensers for battlefield survivability.
- **Advanced Armament (Mk-IV):** Equipped with:
 - » 20 mm turret gun
 - » 70 mm rockets
 - » Air-to-air missiles

Conclusion:

The clearance of the Dhruv helicopter for Army and Air Force operations marks a crucial step in restoring India's rotary-wing operational capacity. With a systematic plan for resumption and renewed confidence from the users, the Dhruv is poised to reclaim its central role in

India's defense and disaster-response missions.

India's Fifth-Gen Fighter AMCA

Context:

The Indian government has approved the programme execution model for the Advanced Medium Combat Aircraft (AMCA), a fifth-generation fighter jet being developed by the Defence Research and Development Organisation (DRDO).

About AMCA:

- The Advanced Medium Combat Aircraft (AMCA) is India's first indigenously designed fifth-generation stealth fighter jet, developed by the Aeronautical Development Agency (ADA) and to be manufactured competitively by Indian firms, including Hindustan Aeronautics Limited (HAL).
- AMCA is part of a broader push for self-reliance (Atmanirbharta) in defence, alongside:
 - » Tejas Mk1/Mk2
 - » LCA Navy
 - » Stealth drone programmes
 - » Missile systems like MPATGM and VSHORAD

Key Features of the AMCA Project:

- **Aircraft Specifications:** The AMCA will be a 25-tonne twin-engine aircraft with advanced stealth features, enabling it to avoid detection by enemy radars.
- **Internal Fuel Tank:** The aircraft will have a bigger internal fuel tank, capable of carrying 6.5 tonnes of fuel while remaining concealed.
- **Internal Weapons Bay:** The AMCA will have an internal weapons bay for a range of weapons, including indigenous ones, to be buried in its belly.
- **Engine:** The AMCA Mk1 will fly on the existing 90kN class engine (GE 414 engines from the US), while the AMCA Mk2 will be powered by a stronger engine of 110kN to be developed indigenously by the DRDO.

AMCA

INDIA'S FUTURE READY FIGHTER

Cost: ₹15,000 crore to develop the first five jets

Length 17.6 m		Performance Can achieve supersonic speed without afterburners (supercruise)
Wingspan 11.13 m		
Maximum Take-off Weight 25,000 kg		
Maximum Speed 2,600 kmph (Mach 2.15)		
Service Ceiling 20,000 m		
		Combat Range 1,620 km
		Payload Capacity 6,500 kg

Design Features

Wings: Shoulder-mounted, diamond-shaped trapezoidal wings reduce drag and improve stealth
Fuselage: Faceted design with radar-absorbent surface
Cockpit: Glass cockpit with a single bubble canopy
Engines: Twin-engine configuration
Internal Weapons Bay: Located under the fuselage for stealth

Weapons

- ▼ **Air-to-Air Missiles:**
Close Combat Missiles Beyond Visual Range Missiles
- ▼ **Air-to-Ground Weapons:**
Joint Direct Attack Munitions Precision Guided Munitions
- ▼ **AMCA Variants:**
AMCA Mark-1: Fifth-gen stealth aircraft using US-made engines
AMCA Mark-2: Sixth-gen technologies expected, will have indigenous engines

AMCA comparison:

Feature	AMCA (India)	F-35	Su-57 (Russia)	J-20 (China)
Stealth	Yes	Yes	Partial (less stealthy)	Yes
Thrust	90–110 kN engines	~191 kN	~147 kN x 2	Classified (~150 kN x 2)
Supercruise	Planned	Yes	Yes	Reported
Avionics	Advanced + AI pilot	Advanced + MADL	Moderate	Advanced
Internal Payload	1,500 kg	8,160 kg	~2,200 kg	Estimated ~1,500–2,000 kg
Status	In	In active service	Limited service	In service
Key Strength	Indigenous + AI	Stealth +	Maneuverability	Long-range missiles

Significance of the Project:

- The AMCA project is expected to bring India into a select league of nations that possess fifth-generation fighter aircraft. The project will not only enhance India's defence capabilities but also promote self-reliance in the aerospace sector. The development of the AMCA is estimated to cost around Rs 15,000 crore, and the first flight of the aircraft is expected within five years after the cabinet approval.

Conclusion:

The approval of the programme execution model for the AMCA project is a significant step towards the development of India's fifth-generation fighter jet. The project is expected to promote self-reliance in the aerospace sector and enhance India's defence capabilities.

Key fifth-gen features include:

- Stealth design with internal weapons bay and low radar cross-section
- AI-powered Electronic Pilot for real-time decision-making
- Sensor fusion for unified situational awareness
- Supercruise capability (supersonic flight without afterburners)
- Netcentric warfare systems for real-time combat with UAV coordination
- Integrated Vehicle Health Monitoring (IVHM) for predictive maintenance

Power Packed News

E-Hansa

- India has taken a big step towards green aviation by launching indigenously developed electric trainer aircraft 'E-Hansa'. This announcement was made by Union Minister of State for Science and Technology Dr. Jitendra Singh in May 2025.
- E-Hansa is part of the Hansa-3 Next Generation (NG) program, which aims to develop affordable and local pilot training aircraft. The aircraft is designed to reduce India's dependence on foreign technology and aid PPL and CPL training.
- It features an advanced glass cockpit, Rotax 912 ISC3 engine, bubble canopy and lightweight composite airframe, making it efficient, comfortable and easy to operate. Its estimated cost is Rs. 2 crore, which is significantly lower than similar foreign models.
- E-Hansa promotes green aviation, as it is based on clean energy and low-emission technology. This initiative is part of India's comprehensive strategy to promote innovation, self-reliance and environmental sustainability, leading the country towards a green and technologically empowered future.

Three Defence Public Sector Undertakings get Miniratna-I status

- Defence Minister Rajnath Singh has conferred Miniratna Category-I status to Munitions India Limited (MIL), Armoured Vehicles Nigam Limited (AVNL) and India Optel Limited (IOL). All three were earlier part of the Ordnance Factory Board (OFB) and were established as independent companies after its restructuring on 1 October 2021. This recognition reflects their transformation into profitable companies in three years.
- MIL earned a revenue of Rs 8282 crore in FY25 (provisional) as against Rs 2571.6 crore in FY22. The company manufactures ammunition, mortars, rockets, grenades and explosives.
- AVNL's turnover grew from Rs 2569.26 crore to Rs 4986 crore, and it has fully localised engines for T-72, T-90 and BMP-II tanks. IOL's sales grew from Rs 562.12 crore to Rs 1541.38 crore. The company manufactures opto-electronic systems for tanks, artillery and naval weapon systems.
- Miniratna status provides these companies with greater autonomy, innovation, export and rapid growth potential. MIL and AVNL are listed under Schedule 'A' while IOL is listed under Schedule 'B'.

National Florence Nightingale Award 2025

- On 30 May 2025, President Draupadi Murmu conferred the National Florence Nightingale Award to 15 outstanding nurses. This award is given for exemplary contribution in public health and community service. The recipients were given a cash prize of ₹1,00,000, a certificate of merit and a medal symbolizing the nation's gratitude.
- The award honors registered nurses, midwives, auxiliary nurse midwives and female health visitors associated with government and voluntary institutions.
- In addition, the National Nursing and Midwifery Commission Act recently passed by the government is a historic step towards modernization of nursing education. Under this, the goal is to strengthen the regulatory framework.
- Also, efforts are being made to prepare a skilled, competent and empowered nursing workforce by setting up 157 new nursing colleges and coordinating with medical colleges.
- These initiatives are aimed at ensuring better healthcare outcomes and dedicating the role of nurses to nation building.

Launch of e-passports in India

- The Government of India has introduced e-passports in line with international security standards, which is part of the Passport Seva Program (PSP) 2.0. This service has been implemented by the Ministry of External Affairs from 1 April 2024 and is a digital and secure transformation of the traditional passport system.
- E-passports have a cover with RFID chip and antenna, which stores personal and biometric data such as face and fingerprint in a secure form. These passports are secured with Public Key Infrastructure (PKI) technology, which ensures data integrity and reduces the possibility of identity fraud. The key benefits include increased data security, faster and accurate identity verification, and convenience in travel. E-passports facilitate automated check-in at airports, saving time for passengers.
- Initially, these passports are being issued in cities like Nagpur, Chennai, Bhubaneswar, Delhi, etc. More than 20,700 e-passports have been issued in Chennai so far. Existing passports will remain valid till their validity. This initiative is an important step towards making government services secure and efficient under the Digital India Mission.

Rethinking "Safe Harbor" policy for social media

- The central government is rethinking the "Safe Harbor" principle to prevent the spread of fake news on social media. The Ministry of Information and Broadcasting informed the Standing Committee of Parliament that the move has been taken to fix accountability of social media platforms and ensure compliance with Indian laws.
- Safe Harbor is a legal protection provided under Section 79 of the Information Technology Act, 2000, under which an online platform is not held liable for content posted by users if it takes due precautions.
- However, if platforms are informed of any illegal content by a court or government agency and they do not take appropriate action, then they will not have this protection.
- Under the IT Rules, 2021, strict controls have been imposed on social media companies, including the appointment of Chief Compliance Officer, Grievance Redressal Officer, and Nodal Officer and timely action and reporting is mandatory.
- This policy review is an important step towards making India's digital space more secure, accountable and transparent, which will enable effective control over misinformation, crime and negligence of foreign platforms.

Launch of 'UP Agriz' and 'AI Pragma' initiatives in Uttar Pradesh

- On 9 May 2025, Uttar Pradesh Chief Minister Yogi Adityanath launched two important schemes called 'UP Agriz' and 'AI Pragma' in the presence of World Bank President Ajay Banga. These initiatives aim to promote agricultural innovation and digital skill development in the backward areas of the state.
- UP Agriz (Uttar Pradesh Accelerated Growth through Rural, Economic and Environmental Sustainability) is an initiative for agricultural modernization in 28 districts of Bundelkhand and Purvanchal. The project focuses on sustainable agricultural techniques, precision farming, improved irrigation and farmer training, which can increase agricultural productivity and farmers' income.
- At the same time, 'AI Pragma' is a comprehensive digital skills program, under which 10 lakh youth of the state will be trained in digital skills related to AI, education, health and governance. Its aim is to make Uttar Pradesh a leader in the field of digital workforce.
- World Bank's partnership in these initiatives provides global support to Uttar Pradesh's development agenda. It is leading the state towards sustainable and inclusive development by

building a bridge between traditional agriculture sector and cutting-edge technologies.

Shubman Gill becomes India's new Test captain

- Shubman Gill has been appointed the 37th captain of India's Test team for the England tour. Chief selector Ajit Agarkar announced the team on 24 May. This change was made after Rohit Sharma's retirement from Test cricket.
- The five-match series will start in England from June 20. Rishabh Pant has been appointed vice-captain along with Gill. Gill has so far scored 1893 runs in 32 Tests, including 5 centuries and 7 half-centuries. Karun Nair has returned to this team after seven years.
- Also, fast bowler Arshdeep Singh and young batsman B Sai Sudarshan have been included in the Test team for the first time. Gill's leadership is a new chapter for the team, in which a balance of young talent and experience will be seen.
- The selectors have strategically taken this decision towards strengthening the foundation of the future Test team. Gill's technical skills and patient batting make him suitable for this role. This appointment signals a new beginning for Indian cricket.

MP Government's 'Rahveer' scheme for Road Safety

- The Madhya Pradesh government has approved the 'Rahveer' scheme with the aim of providing quick assistance to road accident victims and promoting road safety. Under this scheme, a reward of Rs 25,000 will be given to the helper who takes the injured person in a road accident to the primary health center.
- This scheme is in line with the suggestions given by Prime Minister Narendra Modi in 'Mann Ki Baat' in which he described medical assistance immediately after the accident as life saving.
- The scheme was approved in the state cabinet meeting chaired by Chief Minister Dr. Mohan Yadav. Its purpose is not only to provide economic incentives but also to encourage social participation and human approach. The person who helps the victims will be given the title of 'Rahveer' and will be honored at the state level.
- Madhya Pradesh is among the top five states in the country in road accidents, where about 58,580 people died between 2018-2022. This scheme will not only help save lives but will also increase awareness about road safety and encourage citizen participation.

Algeria becomes new member of BRICS Bank

- On 19 May 2025, Algeria was made a member of the New Development Bank (NDB).
- The bank was established in 2015 by the BRICS countries (Brazil, Russia, India, China, South Africa) and serves to finance sustainable development projects. There is a system of rotating leadership of the bank among the BRICS countries, which maintains balance in the institution.
- Algeria's membership symbolizes the growing global reach of the bank. Bank President Dilma Rousseff described Algeria's membership as important for global economic strategy.
- Algeria is rich in natural resources and has vast potential for development. The NDB has so far approved 120+ projects worth more than \$40 billion, including water supply, clean energy, transportation and digital infrastructure.
- Algeria's membership will give the bank an opportunity to expand further in Africa and through this regional development projects can get new impetus. This membership will give a new direction to cooperation between BRICS and developing countries.

President confers 69 Padma Awards

- President Draupadi Murmu conferred Padma Awards to 69 eminent persons in the second phase of the Civil Investiture Ceremony 2025. The awards included three Padma Vibhushan, nine Padma Bhushan and 57 Padma Shri.
- Justice (Retd.) J.S. Khehar received the Padma Vibhushan for contribution to public service. Dancer Kumudini Lakhia was also given this honor for outstanding contribution in the field of art. Folk singer Sharda Sinha was awarded the Padma Vibhushan posthumously.
- Those who received Padma Bhushan include names like Jatin Goswami, Kailash Nath Dixit and Sadhvi Ritambhara. Renowned economist Bibek Debroy received this honor posthumously.
- Those who were awarded Padma Shri included Manda Krishna Madiga, Dr. Neerja Bhatla, Sant Ram Deswal, Syed Ainul Hasan and Ajay Bhatt. Ajay Bhatt received this honor for his contribution to the development of USB technology.
- The Padma Awards are among the highest civilian honors of India, given for exceptional contributions in diverse fields, including art, literature, science, public service and medicine.

President Murmu Presented Gallantry Awards

- On 22 May 2025, President Draupadi Murmu awarded six Kirti Chakras and 33 Shaurya Chakras in the first phase of the Defense Investiture Ceremony at Rashtrapati Bhavan. Four Kirti Chakras and seven Shaurya Chakras were awarded posthumously.
- Rifleman Ravi Kumar, Colonel Manpreet Singh, Deputy SP Himayan Muzammil Bhat and Naik Dilwar Khan received the Kirti Chakra posthumously. Major Malla Ram Gopal Naidu and Major Manjeet received this award while alive.
- The recipients of Shaurya Chakra include Major Ashish Dhonchak, Sepoy Pradeep Singh, Havildar Rohit Kumar, Constable Pawan Kumar and seven others posthumously.
- These awards were given for the unique courage shown during anti-terrorism operations, piracy and operations in Jammu and Kashmir and the Northeast.
- Kirti Chakra is the second highest gallantry award given in peacetime, while Shaurya Chakra is at the third place. These honors are given to those soldiers who displayed extraordinary bravery and self-sacrifice, Even if they are not directly involved in the war. This ceremony symbolizes the highest recognition of the sacrifice and service of the soldiers.

Mizoram becomes India's first fully literate state

- On 20 May 2025, Mizoram was declared India's first fully literate state. Chief Minister Lalduhoma made this announcement in Aizawl, which is a historic achievement for the state.
- Mizoram has an area of 21,081 sq km and its literacy rate was 91.33% in 2011. After this, under the "Ullas - Nav Bharat Literacy Program", 3,026 illiterates were identified by conducting a door-to-door survey in 2023.
- The central government considers a literacy rate of more than 95% as full literacy. Mizoram's rate in PFLS 2023-24 was 98.20%. 292 volunteer teachers, students and CRCC played an important role in this campaign.
- Earlier, Ladakh was declared fully literate in 2024, but it is a Union Territory. The Ullas scheme targets illiterates in the age group of 15+ and is in line with NEP 2020. Its five components include basic literacy, life skills, vocational education, continuing education.
- This achievement exemplifies the determination and community-based efforts of the people of Mizoram, which set an inspiration for India.

Kempaiah Somshekhar appointed Chief Justice of Manipur High Court

- On 20 May 2025, the President of India appointed Justice Kempaiah Somshekhar as the Chief Justice of Manipur High Court. The appointment was made ahead of the retirement of Chief Justice D. Krishnakumar on 21 May, and was as per the recommendation of the Supreme Court Collegium.
- Justice Somshekhar was earlier a judge in the Karnataka High Court. He started practicing law in 1990 in Mysore and Chamarajanagar, where he worked in civil and criminal cases. In 1998, he was directly appointed as District and Sessions Judge.
- In 2016, he was made an additional judge in the Karnataka High Court and confirmed as a permanent judge in 2018. He has more than three decades of experience in the judiciary.
- The appointment of an experienced judge in a sensitive state like Manipur is an important step towards ensuring the efficiency and impartiality of the judicial system.
- This appointment not only reflects the strength of the judiciary, but also reinforces the tradition of independence and transparency of the judiciary under the Constitution.

Prime Minister inaugurates 'Rising North East Summit'

- On 23 May 2025, Prime Minister Narendra Modi inaugurated the 'Rising North East Investors Summit 2025' at Bharat Mandapam in New Delhi. The aim of this two-day summit is to make the Northeast region the engine of India's economic growth.
- Modi termed the Northeast as "Ashtalakshmi" and called it a land of possibilities. He underlined the vast potential for investment in sectors such as tourism, organic farming, bamboo, tea, bio-economy, textiles, sports, energy and IT.
- The strategy for the development of the region was presented under the approach called 'EAST' (Empower, Act, Strengthen, Transform). The summit saw B2B and B2G meetings between ministers, business representatives and investors.
- Investment opportunities in key sectors such as food processing, handicrafts, health, education and infrastructure were presented. The event was a major step from "Look East" to "Act East" policy. This initiative will connect the Northeast more strongly to the national mainstream, thereby accelerating regional balance and overall development.

Brazilian Microbiologist wins 2025 World Food Prize

- Brazilian scientist Dr. Mariangela Hungaria has been awarded the 2025 World Food Prize. The award was given to her for her contribution to environmentally friendly and sustainable agriculture. She was awarded this prestigious prize of \$500,000 by the World Food Prize Foundation on 13 May 2025.
- In her 40-year career at EMBRAPA, she developed organic seeds and soil treatments to reduce dependence on chemical fertilizers, improve crop yields and nutrition. Her innovations led to Brazil's soybean production reaching 173 million tons from 15 million tons (1979).
- She developed natural nitrogen fixation techniques, which save farmers \$40 billion annually. This technology converts atmospheric nitrogen into a form absorbable by plants.
- Research on Rhizobia bacteria from Hungaria proved that biological inoculation of soybeans could achieve 8% higher yields. She developed more than 30 microbial technologies that increased the productivity of maize, rice, wheat and beans.

Indian Army's 'Teesta Prahar' exercise and DRDO's achievement

- On 15 May 2025, the Indian Army successfully conducted an integrated field exercise called 'Teesta Prahar' at the Teesta Field Firing Range in West Bengal.
- Its objective was to demonstrate combat capability in riverine areas and coordination between various forces. It included infantry, artillery, armored corps, para special forces and engineer units. New generation weapons and systems were tested and demonstrated.
- This exercise demonstrated the army's ability to deploy quickly in challenging geographical and weather conditions. The exercise also underlined the commitment to be prepared for future war situations.

Gulzar and Jagadguru Rambhadracharya awarded 58th Jnanpith Award

- Two giants of Indian literature, renowned Urdu poet Gulzar and Sanskrit scholar Jagadguru Rambhadracharya were awarded the 58th Jnanpith Award for 2023. On 16 May 2025, President Draupadi Murmu conferred the award at Vigyan Bhavan in New Delhi.
- Gulzar, the original name is Sampooran Singh Kalra, has previously received prestigious awards like Sahitya Akademi, Dadasaheb Phalke and Padma Shri. He also won Oscar and Grammy for the film "Jai Ho" by Slamdog Millionaire.
- At the same time, Jagadguru Rambhadracharya, the founder of Tulsi Krishna in Chitrakoot, is a highly respected personality in Sanskrit and Hindi literature. He is still the author of more than 240 texts in vision and is adept in 22 Sagar.
- He received the Padma Vibhushan in 2015. The Jnanpith Award is given for outstanding scientific contribution in 22 Sagar Sagar of India. It was started in 1961 and it has a petition of Rs 21 lakh, a statue of Vagdevi and an interview letter.

India's Growth Rate Ahead of Global Economy: UN report

- According to the United Nations' World Economic Situation and Remaining Resources' (WESP) mid-year report, 2025, India's economy is expected to grow at a rate of 6.3%.
- This growth rate is higher than countries like the US (1.6%), the European Union (1%), Japan (0.7%) and China (4.6%), keeping India ahead of global major economies. In January 2025, this estimate was 6.6%, but the report has also reduced it slightly and described India as a fast-growing economy.
- The main reason for India's growth includes strong domestic platforms, government investment and services. It is expected to remain strong in 2026 as well and the growth rate can be 6.4%.
- Along with this, India's citizenship rate may be 4.3% in 2025 from 4.9% in 2024, which is a sign of economic stability. This is a proof of India's stability and economy diversity amid the crisis of global stability and recession.

India's Foreign Exchange Reserves Increase

- According to the Reserve Bank of India (RBI), India's foreign exchange reserves jumped by \$ 4.5 billion to \$ 690.62 billion in the week ended May 9. This includes an increase of \$ 196 million in foreign exchange assets and \$ 4.5 million in gold reserves.
- A decline of \$ 26 million in Special Drawing Rights (SDR) and \$ 134 million in India's foreign position in the IMF has also been recorded. Strong Indian Reserve Bank provides stability and output in the online stock market- helps control the stock market.
- Also, positive signs have also been seen in India's joint sector. The percentage of total assets

and services increased by 12.7% to \$ 73.80 billion in April 2025 from \$ 65.48 billion last year.

- Electronics (39.5%), engineering (11.3%) and gems and jewellery (10.7%) sectors witnessed special growth. Strong foreign exchange reserves and growth in partner make India's economy flexible and capable structure among the global portfolio.

ISRO's PSLV-C61 Mission Relay

- On May 18, 2025, the Indian Space Research Organization (ISRO)'s PSLV-C61 mission was partially launched when the earth satellite satellite EOS-09 could not be placed in its intended orbit.
- After the launch from Sriharikota, the first two stages of the rocket worked properly, but the mission was disrupted due to technical class in the third stage. This was the 63rd flight of PSLV and the 27th flight of PSLV-XL.
- This is only the third failure of the design system since 1993. Earlier, PSLV-D1 was launching a mission in 1993 and in 2017. All the failures in December 2024 were successful. ISRO has formed a committee to investigate this failure.
- ISRO chief V. Narayanan said that the technical principles are being analyzed. Despite the failure of the mission, confidence has been reposed in ISRO's studio and technical capabilities, and improvements will be learned from the shortcomings in future launches.

India imposes new restrictions on imports from Bangladesh

- India has imposed new restrictions on certain items imported from Bangladesh, which apply exclusively to trade through land border.
- According to the notification issued by the Directorate General of Foreign Trade on May 17, 2025, now ready-made garments, fruits, processed food items, silicone, plastic products, scientific religious and wooden furniture will not be able to enter India from land customs Ukraine of Assam, Tripura, Mizoram and Meghalaya.
- Bangladeshi garments were purchased only through the Nhava Sheva ports of Kolkata and Mumbai. However, transit trade from Bangladesh to Nepal and Bhutan is exempted from these restrictions. The move is in response to Bangladesh's ban on Indian tourist destinations through land route in April 2025. In the financial year 2024, India contributed \$ 9 billion to Bangladesh, while the contribution was only \$ 1.56 billion.
- On April 9, India also canceled the transshipment facility given to Bangladesh. This decision has been taken to protect the economic balance and trade interests of India-Bangladesh.

Operation Olivia

- The annual marine conservation mission 'Operation Olivia' being run by the Indian Coast Guard (ICG) protected the nesting sites of more than 6.98 lakh Olive Ridley turtles at the mouth of the Rushikulya river in Odisha during February 2025.
- The operation operates every year from November to May especially in the Gahirmatha Beach and surrounding coastal areas of Odisha, where more than 8 lakh turtles come to lay eggs every year.
- So far, 5,387 surface patrol flights and 1,768 aerial surveillance operations have been conducted under the operation. During this, 366 illegal fishing boats were detained.
- The ICG is working with the local fishing communities to encourage the use of Turtle Excluder Devices (TEDs). Along with this, partnerships are also being done with NGOs to promote sustainable fishing practices and conservation education.
- This operation is playing an important role in protecting marine biodiversity and maintaining

environmental balance.

First Edition of Khelo India Beach Games in Diu

- On 19 May 2025, Sports Minister Mansukh Mandaviya inaugurated the first Khelo India Beach Games at Ghoghla Beach in the Union Territory of Diu. This was the first occasion when beach-based games were organized under the Khelo India campaign.
- More than 1000 athletes from across the country participated in this six-day event. It included 6 competitive sports – Beach Soccer, Beach Volleyball, Beach Kabaddi, Beach Sepak Takraw, Pencak Silat and Open Water Swimming.
- Apart from this, two traditional performance sports – Mallakhamb and Tug of War – were also the center of attraction.
- The event marked a new beginning towards promoting the culture of beach sports in India, encouraging tourism and youth participation. The event concluded on 24 May.
- Khelo India Beach Games will play an important role in the development of India's diverse sports culture and water-based sports in the future.

Golden Dome Missile Defence Programme

- The US President has announced a state-of-the-art missile defence system called 'Golden Dome', which aims to provide protection against all types of advanced aerial threats including space-launched missiles.
- The project is designed to create a multi-layered defence shield with the help of space-based sensors and interceptors. The system can neutralise hypersonic, ballistic, cruise missiles and drones coming from any part of the world from any platform including space.
- Thousands of satellites will be deployed in Earth's orbit, which will be able to destroy missiles immediately after their launch. The idea is inspired by concepts proposed by Nazi Germany in World War II and the US and the Soviet Union during the Cold War.
- The 'Golden Dome' is also inspired by Israel's 'Iron Dome' and Ronald Reagan's 'Star Wars Project', but it is capable of working in all three areas - land, sea and space.
- Currently, countries like China, Russia, France, Japan and UK, including the US, have their own independent space military branches. This project is a major step towards providing a strategic edge in future wars.

Progress of iGOT Karmayogi Platform

- More than one crore civil servants have registered on the iGOT Karmayogi platform, a 30-fold increase from just 3 lakh users in January 2023. This growth reflects India's commitment to digital public service training.
- iGOT Karmayogi Platform is a key component of Mission Karmayogi, which aims to build capacity and upskill civil servants. The platform offers 2,400+ courses in 16 Indian languages, contributed by government, academic, private and non-profit organizations.
- Most users are from state governments, while the rest are from the central government. Its utility is highest in Bihar, UP, MP, Rajasthan and Andhra Pradesh. More than 3.1 crore certificates have been issued so far.
- The first Karmayogi Week was celebrated in October 2024. Future plans include improving the quality of the curriculum with AI-assisted support and expanding content in regional languages. It is growing as a global platform, with Caribbean countries also showing interest in it.

PM e-Drive Scheme and EV Charging Initiatives

- The Government of India has allocated Rs 2,000 crore to set up 72,000 public EV charging stations across the country under the PM e-Drive Scheme. These stations will be set up on major highways, metro cities, toll plazas, railway stations and airports.
- BHEL may be chosen as the central agency, which will oversee demand aggregation. A digital platform will also be developed, which will provide services such as real-time slot booking, payment facility, charger availability and deployment tracking.
- The scheme aims to empower the EV ecosystem, promote clean transportation and reduce dependence on fossil fuels. The move will also encourage carbon emission reduction, creation of green jobs and EV infrastructure creation under 'Make in India'.
- The project is a major effort towards making India a global leader in sustainable and zero-emission transportation, providing accessible and eco-friendly options to citizens.

Banu Mushtaq wins International Booker Prize

- Kannada writer and women's rights activist Banu Mushtaq created history by winning the International Booker Prize for her short story collection Heart Lamp. The award was presented at a ceremony held in London on 20 May.
- Originally written in Kannada, the book was translated into English by Deepa Bhashti. It contains 12 stories from 1990 to 2023, which portray the experiences of women in the patriarchal society of South India.
- The award was jointly given to Mushtaq and the translator for their first complete English translation. Mushtaq has published six short story collections, a novel, essays and poems and has received several literary awards.
- Deepa Bhashti is known for translating major Kannada literature into English. This honor underlines the representation of Indian literature on the international stage and the power of translation.

Dr. Jayant Narlikar passed away

- On 20 May 2025, renowned astronomer Dr. Jayant Vishnu Narlikar passed away in Pune at the age of 86. He was a pioneer in the field of cosmology and also made significant contributions to science communication.
- He was born in 1938. He was educated at BHU and Cambridge, where he was awarded the Tyson Medal. He worked at the Tata Institute of Fundamental Research (TIFR) and founded the IUCAA in Pune in 1988, of which he was the founding director.
- He is known for co-developing the Hoyle-Narlikar theory and the steady-state universe model. He received many honours like Padma Bhushan (1965), Padma Vibhushan (2004), Maharashtra Bhushan (2011) and UNESCO's Kalinga Prize (1996). His Marathi autobiography received the Sahitya Akademi Award in 2014. His contribution to Indian astronomy and public science will remain indelible.

WHO certification to India for Trachoma Elimination

- India has been certified by the World Health Organization (WHO) for the elimination of trachoma as a public health problem. The achievement came as a recognition at the 78th World Health Assembly in Geneva. India is the third country in South-East Asia to receive this recognition, which reflects the country's continued efforts towards disease elimination and health for all.
- The Government of India took various steps for trachoma elimination under the National

Programme for Control of Blindness and Visual Impairment (NPCBVI). Case reports were collected from across the country through a surveillance system since 2019. Trachomatous trichiasis survey in 200 endemic districts from 2021 to 2024 was conducted under WHO guidelines.

- Trachoma is an infectious bacterial disease caused by *Chlamydia trachomatis* and affects the eyes. The disease is more prevalent in underprivileged communities and was the leading cause of blindness in India in the 1950-60s. This achievement reflects the strength of India's healthcare system and the success of awareness campaigns.

Three new digital platforms for Public Distribution System

- Union Minister Pralhad Joshi launched three new digital platforms Depot Darpan, Anna Mitra, and Anna Sahayta to modernise and make the Public Distribution System (PDS) transparent. These platforms will empower over 81 crore beneficiaries and service capacity of 5.38 lakh fair price shops.
- Depot Darpan is a digital monitoring system that enables self-assessment and monitoring of foodgrain depot operations. It uses technologies like IoT sensors and CCTV, which is likely to help FCI save Rs 275 crore and generate additional revenue of Rs 140 crore from better utilisation of CWC warehouses.
- Anna Mitra is a tool with features like stock tracking, sales reports, alerts and grievance redressal, providing special facilities for key stakeholders such as FPS dealers, DFSO officers and food inspectors.
- Anna Sahayta is a citizen-centric grievance redressal platform that simplifies complaint registration using WhatsApp, IVRS and speech recognition technology. It is currently in the pilot phase in five states and will soon be expanded across the country.

Sixth Semiconductor unit approved in Jewar, UP

- The central government has approved India's sixth semiconductor manufacturing unit near Jewar airport in Uttar Pradesh. The unit will be set up by a joint venture of HCL and Foxconn under the India Semiconductor Mission (BSM). The plant is designed to produce 20,000 wafers per month, and will have a total output capacity of 36 million units per month.
- The unit will manufacture display driver chips for mobiles, laptops, automobiles and other electronic devices. It is likely to attract an investment of about Rs 3,700 crore, which will make Uttar Pradesh a strong player in electronics manufacturing.
- Earlier in September 2024, India's fifth semiconductor plant was approved in Sanand, Gujarat. The India Semiconductor Mission, which was launched in 2021 with an outlay of Rs 76,000 crore, aims to make India a global semiconductor hub. The mission serves as the nodal agency under MeitY, which is instrumental in the effective implementation of semiconductor and display schemes.

Trump leads Qatar to \$243.5 billion deals

- Historic deals worth \$243.5 billion were announced during US President Donald J. Trump's visit to Qatar on May 14, 2025. The highlight of the visit was Qatar Airways' purchase of 160 Boeing jets for \$200 billion, including GE Aerospace engines. Overall, the visit ensured potential economic cooperation of up to \$1.2 trillion.
- Boeing and GE together secured contracts worth \$96 billion from Qatar, including 210 Dreamliner and 777X aircraft. These deals will create an estimated 1.54 lakh US jobs.
- Other important deals include McDermott's seven LNG projects worth \$8.5 billion, Parsons'

30 projects worth \$97 billion, and Quantinuum and Al Rabban Capital's \$1 billion Quantum Technologies JV.

- Additionally, Qatar bought a \$1 billion counter-drone system from Raytheon and also inked a \$2 billion MQ-9B drone deal with General Atomics. Letters of intent were also signed on defence investments worth \$38 billion, including plans to expand the Al Udeid airbase.

Dr Ajay Kumar appointed as the new chairman of UPSC

- Dr Ajay Kumar has been appointed as the new chairman of the Union Public Service Commission (UPSC). The appointment has been made by President Draupadi Murmu. Dr Kumar is a retired IAS officer of the 1985 batch of Kerala cadre. He has been the Defence Secretary of India from August 2019 to October 2022.
- Dr. Kumar's appointment comes after former Chairman Preeti Sudan retired on 29 April. He played an important role in the establishment of Chief of Defense Staff (CDS) in the defense sector and the implementation of the Agniveer scheme.
- He is a graduate from IIT Kanpur and has a PhD in Business Administration degree from the Carlson School of Management of the University of Minnesota. His tenure will last till October 2027 or he will retire at the age of 65, whichever is earlier.
- UPSC is a constitutional body under Article 315-323 of the Indian Constitution, whose chairman and members are appointed by the President. This commission is responsible for the recruitment of the country's civil services and ensuring their transparency and fairness.

Anita Anand becomes Canada's Foreign Minister

- Canadian Prime Minister Mark Carney has appointed Anita Anand of Indian origin as the new Foreign Minister of the country. This appointment has been made with the aim of reinvigorating India-Canada relations and maintaining strategic relations with the US.
- Carney appointed Maninder Sidhu as Minister of International Trade and two other Indian-origin MPs as Secretaries of State. Ruby Sahota, who was previously the Minister of Democratic Institutions, was made Secretary of State and given charge of the Crime Department.
- Randeep Sarai has been appointed Secretary of State for International Development. The new cabinet consists of a total of 28 members. Anand's appointment is particularly important after the recent tension in India-Canada relations.
- The participation of the Indian community in Canada's foreign policy is constantly increasing. Anita Anand has previously been the defense minister and played an important role in the purchase of the Kovid-19 vaccine. Her experience and leadership ability make her suitable for this challenging role. This appointment is raising new hopes in the India-Canada strategic partnership.

Justice Suryakant becomes acting chairman of NALSA

- Senior Supreme Court judge Suryakant has been appointed as the acting chairman of the National Legal Services Authority (NALSA). The appointment was made by President Draupadi Murmu under the Legal Services Authority Act, 1987, and will be effective from May 14, 2025.
- He will replace Justice BR Gavai, who is going to become the 52nd Chief Justice of India. Justice Suryakant has been a former Chief Justice of Himachal Pradesh High Court and a former judge of Punjab and Haryana High Court.
- During his tenure, the objective of NALSA will be to provide free legal aid to the weaker sections of the society and ensure easy access to justice. His tenure as acting chairman will last till November 23, 2025.

- It is believed that after this he can be made the 53rd Chief Justice of India. NALSA was constituted in accordance with Article 39A of the Constitution and its main objective is to ensure justice for all citizens. This appointment can give a new direction to judicial reforms and access to legal services in India.

Virat Kohli and Rohit Sharma say goodbye to Test cricket

- Two legends of Indian cricket, Virat Kohli and Rohit Sharma have announced their retirement from Test cricket, bringing an era of Indian cricket to an end. Virat Kohli scored 9230 runs in 123 Tests, including 30 centuries and 31 half-centuries.
- He led India in 68 Tests and won 40 to become the most successful Test captain. Kohli's 7 double centuries and 20 captaincy-centuries give him a distinct place in Indian cricket history. He made his Test debut in 2011.
- At the same time, Rohit Sharma scored 4301 runs in 67 Tests, including 12 centuries. His highest score was 212 runs. He became the Test captain in 2022 and led the team to the ICC Test Championship final in 2023.
- Both the players had also retired from T20s after winning the T20 World Cup in 2024. However, Rohit Sharma will continue to captain in ODIs. The contribution of both the players has been invaluable in taking Indian Test cricket to global heights.

Maldives thanks India for treasury bill assistance

- India offered interest-free treasury bills worth \$50 million to Maldives, supporting its economic stability and fiscal reform efforts. Maldives Foreign Minister Abdullah Khaleel expressed gratitude to India for this help and called it a symbol of strong friendship between the two countries.
- The assistance was provided at the request of the Maldives government and is being administered under a special government-to-government arrangement through the State Bank of India. India has been facilitating annual subscription and rollover of treasury bills since 2019.
- The assistance is part of India's comprehensive emergency financial assistance policy and reflects the "Neighbourhood First" policy. Maldives is a key strategic partner of India in the Indian Ocean and plays a central role in the 'Vision Ocean' initiative.
- India also extended the special quota for export of essential commodities to Maldives earlier this year. This economic support is an important step towards further strengthening regional stability and mutual cooperation.

Robert Prevost becomes new Pope, takes name Leo XIV

- Robert Francis Prevost was elected the new Pope of the Catholic Church on 8 May 2025. He is the first Pope from the United States and assumed the name Leo XIV. He became the 267th Pope and replaced Pope Francis, who died on 21 April 2025.
- Pope Francis led the Church for 12 years and was known for his progressive outlook and compassion. However, he faced criticism from conservative factions.
- The new Pope faces many challenges – maintaining unity in the Church, dealing with the effects of the sexual abuse scandal, and strengthening the role of the Church in global conflicts.
- The conclave began on May 7 with 133 cardinals participating, and the election was announced via white smoke on May 8. It is not clear how many ballots were cast, but it was traditional.
- The selection of Prevost is one of the most remarkable in church history. This is a new chapter in which the role and influence of the United States has grown. As Leo XIV, he is committed to guiding the Church through contemporary challenges.

Pulitzer Prize 2025

- The 2025 Pulitzer Prizes have been awarded to novelist Percival Everett and playwright Branden Jacobs-Jenkins. The award is given for outstanding contributions in the field of journalism, literature and musical composition in the US.
- It was started in 1917 in the name of eminent publisher Joseph Pulitzer. The award is awarded in 21 categories, with each winner receiving a certificate and a cash prize of US\$15,000.
- Percival Everett was praised for his innovative literary works, which present a deep perspective on social, political and racial issues. At the same time, Branden Jacobs-Jenkins received the honor for effectively presenting diverse topics in his theater and playwriting.
- The Pulitzer Prizes are considered the top recognition of literary and journalistic achievements globally. The award not only honors individuals but also encourages dialogue, free expression and strengthening of democracy in society. The 2025 winners are symbols of contemporary creativity and awareness.

Anthony Albanese re-elected as Australia's PM

- Anthony Albanese has been re-elected as Australia's PM, the first leader in decades to win a second consecutive term. With 70.8% of the votes counted so far, the Labor Party is leading with 85 seats in the 150-member House of Representatives, far more than the 76 seats needed for a majority.
- The Liberal-National Coalition is expected to win 36 seats, while independent candidates may win about 10 seats. Liberal Party leader Peter Dutton has accepted defeat.
- Before the election, the Albanese government had a narrow majority. His approval ratings were historically low earlier this year, as voters were concerned about the cost of living, healthcare and rising housing prices.
- Despite this, his return represents a significant political shift. Australia is a parliamentary democracy and constitutional monarchy, with Canberra as its capital and the Australian dollar as its currency. This election result provides an opportunity for Albanese to push forward political stability and reforms.

Friedrich Merz becomes the new Chancellor of Germany

- German conservative leader Friedrich Merz has been elected as the new Chancellor of the country on 6 May. He got the support of 325 out of 630 MPs in the second round of voting in the lower house, which enabled him to cross the required threshold of 316 votes.
- In the first round, he got only 310 votes, which was considered a setback for his political position. This is the first time since 1949 that a Chancellor candidate could not get elected in the first attempt. Prime Minister Narendra Modi has congratulated Mr. Merz.
- Merz's election is a moment of stability and direction in German politics. Germany is the most populous and economically strong country in the European Union. Its capital is Berlin and the currency is Euro.
- The system of governance here is a parliamentary democracy, in which the Chancellor is the head of the government, while the President is the head of the state.

MCQs Based on Current Affairs

1. Which of the following statements is correct about the Rafale Marine (Rafale M) aircraft?

- A: It is a twin-engine, 5th-generation stealth fighter
- B: It is designed specifically for land-based operations only
- C: It is a carrier-capable 4.5-generation fighter jet
- D: It has no commonality with the Indian Air Force variant

2. With reference to access to antibiotics for drug-resistant infections in India, consider the following statements:

Assertion (A): A large number of patients in India with drug-resistant infections do not receive appropriate antibiotic treatment.

Reason (R): India lacks an effective national policy for antibiotic procurement and distribution.

In the context of the above statements, which one of the following is correct?

- A: Both A and R are correct and R is the correct explanation of A
- B: Both A and R are correct but R is not the correct explanation of A
- C: A is correct but R is incorrect
- D: A is incorrect but R is correct

3. With reference to the Shillong–Silchar Greenfield Corridor project, consider the following statements:

- 1. The entire length of the corridor lies in Assam.
- 2. The project is being developed under the EPC (Engineering, Procurement, Construction) model.
- 3. The project aims to reduce travel time between Shillong and Silchar by 5 hours.

Which of the above statements is/are correct?

- A: 1 only
- B: 3 only
- C: 1 and 2 only
- D: 2 and 3 only

4. Which of the following are true applications of Brain-Computer Interface (BCI) technology?

- 1. BCI systems can enable paralyzed individuals to control robotic arms using only their thoughts.
- 2. BCIs can help detect emotions and awareness in patients with minimal consciousness.
- 3. BCIs are mainly used for research in improving neural functioning, with no significant medical applications.
- 4. BCIs can facilitate communication for people with speech disabilities.

Select the correct answer using the code below:

- A: 1, 2, and 4 only
- B: 1 and 2 only
- C: 1, 2, and 3 only
- D: All four

5. Consider the following statements regarding the Vizhinjam International Seaport:

- 1. Vizhinjam Port is strategically important for India's maritime trade.
- 2. It is situated just 10 nautical miles from a major international shipping route connecting Europe, the Persian Gulf, and East Asia.

Which of the above statements is/are correct?

- A: Only 1
- B: Only 2
- C: Both 1 and 2
- D: Neither 1 nor 2

6. What is the role of the PM Vishwakarma Scheme in the development of MSMEs?

- 1. Promotes artisan-based MSMEs and rural industries.
- 2. Facilitates the development of rural agri-based enterprises.
- 3. Provides direct cash support to women entrepreneurs.
- 4. Reduces the logistical costs for MSMEs in urban areas.

Choose the correct statements:

- A: 1, 2, and 3 only
 B: 2 and 4 only
 C: 1 and 3 only
 D: 1 and 2 only

7. Consider the following two statements regarding genome-edited crops in India:

Statement 1: Genome-edited crops in India are subject to the same strict safety approvals as genetically modified (GM) crops.

Statement 2: SDN-1 and SDN-2 genome editing methods do not involve the insertion of foreign DNA.

Which one of the following options is correct?

- A: Both statements are correct, and Statement 2 explains Statement 1
 B: Both statements are correct, but Statement 2 does not explain Statement 1
 C: Statement 1 is incorrect, but Statement 2 is correct
 D: Statement 1 is correct, but Statement 2 is incorrect

8. With reference to Angola, consider the following statements:

1. It has a significant coastline along the Atlantic Ocean.
2. It is a member of the Southern African Development Community (SADC).
3. It shares a border with the Democratic Republic of the Congo.
4. It is landlocked with no direct access to sea trade routes.

How many of the above statements are correct?

- A: Only one
 B: Only two
 C: Only three
 D: All four

9. Consider the following statements:

Statement 1: The Vizhinjam Port will increase India's container throughput capacity significantly.

Statement 2: The development of this port will

reduce India's dependence on transshipment hubs in neighboring countries like Sri Lanka and Singapore.

Which of the following is the correct answer?

- A: Statement 1 is correct and Statement 2 is correct, and Statement 2 is the correct explanation of Statement 1
 B: Statement 1 is correct and Statement 2 is correct, but Statement 2 is not the correct explanation of Statement 1
 C: Statement 1 is incorrect but Statement 2 is correct
 D: Both Statement 1 and Statement 2 are incorrect

10. With reference to INS Tamal, how many of the following statements are correct?

1. It is equipped with both anti-air and anti-submarine capabilities.
2. It can carry helicopters used for submarine detection.
3. It has stealth technology that reduces visibility across radar and infrared frequencies.
4. It is the first warship to be built under India's Project 17A.

Choose from the options below:

- A: Only one
 B: Only two
 C: Only three
 D: All four

11. With reference to the constitutional provisions related to inter-state river water distribution, consider the following:

1. Entry 17 in the State List gives states exclusive legislative power over river water disputes.
2. Entry 56 in the Union List allows the central government to intervene in the regulation of inter-state rivers.
3. Article 262 allows Parliament to provide for the adjudication of inter-state river water disputes.

How many of the above statements are correct?

- A: Only one
 B: Only two

C: All three

D: None

12. Which of the following statements is incorrect regarding the National Scheme for ITI Upgradation?

A: It follows a hub-and-spoke implementation model.

B: It aims to establish five NCOEs.

C: It is a fully centrally funded scheme.

D: It involves participation from industry through an SPV model.

13. Consider the following statements about the habitat preferences of Snow Leopards:

1. They inhabit high-altitude regions generally above 3,000 metres.

2. They thrive in densely forested tropical ecosystems.

3. They prefer rugged terrain such as cliffs and ravines.

4. They are most active during midday hours.

How many of the above statements are correct?

A: Only one

B: Only Two

C: Only Three

D: All four

14. The term "Double Contribution Convention" in the context of the India-UK FTA refers to:

A: Double taxation of export-related profits in both countries

B: Exemption from simultaneous social security contributions in host and home countries

C: Requirement for joint investment from public and private sectors

D: Tax rebates for businesses operating in both nations

15. With reference to modern air defence systems, consider the following statements:

1. Akash and Barak are examples of short-range man-portable air defence systems.

2. S-400 Triumf is designed to intercept high-altitude threats such as ballistic missiles.

3. Electronic warfare systems can neutralise threats without physical interception.

How many of the above statements are correct?

A: Only one

B: Only two

C: All three

D: None

16. Consider the following statements and choose from the options below:

Statement-1: Predatory pricing becomes a regulatory challenge due to ambiguity in defining "cost."

Statement-2: The Competition Act, 2002 clearly defines Average Total Cost as the legal standard for cost assessment.

A: Both statements are correct, and Statement 2 explains Statement 1

B: Both statements are correct, but Statement 2 does not explain Statement 1

C: Statement 1 is correct, but Statement 2 is incorrect

D: Statement 1 is incorrect, but Statement 2 is correct

17. With reference to India's automobile sector, consider the following statements:

1. The automobile sector contributes over 10% to India's GDP.

2. India is the world's largest manufacturer of buses.

3. India's electric vehicle market is expected to surpass ₹80,000 crore by 2025.

How many of the above statements are correct?

A: Only one

B: Only two

C: All three

D: None

18. With reference to the High Courts in India, consider the following statements:

1. Article 217 declares High Courts as courts of record.

2. High Courts have the power to issue writs under Article 227 of the Constitution.

3. The President appoints High Court judges in consultation with the Governor and the Chief Justice of India.

How many of the above statements are correct?

- A: Only one
B: Only two
C: All three
D: None

19. Consider the following statements regarding the RSF World Press Freedom Index 2025:

1. It classifies the global press environment as “difficult” for the first time ever.
2. India’s improved rank means its press environment is now classified as “satisfactory.”
3. Editorial interference is recorded in over half of the countries surveyed.

How many of the above are correct?

- A: Only one
B: Only two
C: All three
D: None

20. Which of the following statements about National Education Policy 2020 is not correct?

- A: It mandates implementation of the three-language formula nationwide
B: It promotes instruction in the mother tongue till at least Grade 5
C: It proposes a 5+3+3+4 pedagogical structure
D: It sets a target of 50% Gross Enrolment Ratio in higher education

21. Which international organization is supporting the UP AGREES and AI Pragma initiatives?

- A: International Monetary Fund
B: World Bank
C: Asian Development Bank
D: UNESCO

22. With reference to precision-strike capabilities of

India’s aerial platforms, consider the following statements:

1. SCALP missiles use multiple redundant navigation systems for target acquisition.
2. HAMMER munitions can be launched in terrain-hugging profiles and remain unaffected by jamming.
3. METEOR missile’s propulsion system enables it to maintain constant speed throughout its flight.

How many of the above statements are correct?

- A: Only one
B: Only two
C: All three
D: None

23. Which of the following statements reflect the strategic significance of the France-Poland Mutual Defense Treaty for European security?

1. It replaces NATO’s role in regional defense.
2. It enhances regional deterrence against external aggression.
3. It promotes EU’s independent defense capabilities aligned with NATO.
4. It marks a shift from multilateralism to bilateral defense strategies.

How many of the above statements are correct?

- A: Only one
B: Only two
C: Only three
D: All four

24. Consider the following statements regarding the Rice Pangenome:

1. It includes both core and unique genes across different rice varieties.
2. It was based solely on the genomes of wild rice species.
3. It adds new genetic sequences beyond the traditional reference genome.
4. It was created by the Indian Council of Agricultural Research (ICAR).

How many of the above statements are correct?

- A: Only one
- B: Only two
- C: Only three
- D: All four

25. Which of the following trends are evident from the SRS 2021 report?

1. India's Total Fertility Rate (TFR) has fallen below replacement level.
2. Bihar has the lowest elderly population share in India.
3. Kerala has the highest share of working-age population.
4. States like Tamil Nadu and Punjab have TFRs below the replacement level.

How many of the above statements are correct?

- A: Only one
- B: Only two
- C: Only three
- D: All four

26. Consider the following statements regarding the recent discovery of new crocodile species off the Yucatán Peninsula:

1. The species were earlier believed to be populations of Morelet's crocodile.
2. The discovery increases the total number of New World crocodile species to six.
3. Cozumel Island and Banco Chinchorro are the only known habitats of these newly identified species.
4. Both new species are named after prominent Mexican researchers.

How many of the above statements are correct?

- A: Only one
- B: Only two
- C: Only three
- D: All four

27. Which of the following best describes the concept of a "Circular Economy"?

- A: Producing goods in a closed industrial zone

- B: Using goods once and discarding them safely
- C: A system aimed at extending product lifespan and resource recovery
- D: Reducing the use of electronics to minimise waste

28. With reference to the Bhakra-Nangal Water Dispute, consider the following statements:

1. The Bhakra-Nangal Project is located on the Yamuna River.
2. The water distribution among states is managed by the Bhakra Beas Management Board (BBMB).
3. The depletion of water resources in Punjab and Haryana is largely due to the unregulated pumping of groundwater for water-intensive crops.
4. The Indus Waters Treaty of 1960 limits India's use of eastern rivers such as the Sutlej, Beas, and Ravi.

How many of the above statements are correct?

- A: Only one
- B: Only two
- C: Only three
- D: All four

29. Which of the following is a key objective of the Digital Lending Directions, 2025 issued by the Reserve Bank of India (RBI)?

- A: To promote unrestricted access to digital lending for all citizens
- B: To enhance borrower protection and ensure data transparency in digital lending
- C: To regulate only the interest rates charged by digital lenders
- D: To allow automatic credit limit increases without borrower consent

30. What is the primary function of geotubing technology in coastal areas?

- A: To generate tidal energy by trapping wave currents
- B: To promote marine biodiversity through artificial reefs
- C: To absorb and dissipate wave energy, reducing shoreline erosion

D: To reclaim land for infrastructure development

31. Consider the following statements regarding the PM SHRI Scheme:

1. It aims to establish entirely new central schools with exclusive funding from the Union government.
2. It seeks to upgrade existing schools into model institutions aligned with the National Education Policy, 2020.
3. The scheme is implemented only in districts identified as educationally backward by NITI Aayog.

Which of the statements given above is/are correct?

- A: 1 and 2 only
 B: 2 only
 C: 2 and 3 only
 D: 1, 2 and 3

32. Which of the following statements best describes the difference between a geomagnetic reversal and an excursion?

- A: A reversal involves the magnetic poles flipping temporarily, while an excursion is a permanent change.
- B: A reversal leads to a complete and long-lasting polarity switch, while an excursion is a brief and partial deviation.
- C: Reversals are caused by solar storms; excursions are due to asteroid impacts.
- D: Excursions occur only in polar regions; reversals affect the entire Earth.

33. Consider the following statements with reference to Bhargavastra:

1. It is India's first micro missile-based counter-drone system.
2. It is designed to use soft-kill technologies like jamming and spoofing to neutralize drone threats.
3. It is capable of launching micro missiles in salvo mode against swarm drones.

Which of the statements given above is/are correct?

- A: 1 and 3 only

B: 2 and 3 only

C: 1 and 2 only

D: 1, 2 and 3

34. Consider the following initiatives in the context of India's strategy to combat Naxalism:

1. Eklavya Model Residential Schools
2. Forest Rights Act, 2006
3. Unlawful Activities (Prevention) Act (UAPA)
4. PM KUSUM Scheme

Which of the above are directly aimed at addressing the causes or consequences of Left-Wing Extremism?

- A: 1, 2 and 3 only
 B: 1 and 4 only
 C: 2, 3 and 4 only
 D: 1, 2, 3 and 4

35. Which of the following statements correctly describes Article 143 of the Constitution of India?

- A: It empowers the Parliament to impeach the President on legal grounds.
- B: It allows the Supreme Court to review laws passed by Parliament.
- C: It empowers the President to seek the opinion of the Supreme Court on questions of law.
- D: It allows Governors to consult the President on matters of state legislation.

36. With reference to e-passports recently introduced in India, consider the following statements:

1. They contain a microchip embedded in the cover using RFID technology.
2. The chip stores both biometric and demographic data of the passport holder.
3. Public Key Infrastructure (PKI) is used to prevent unauthorized data access.

Which of the statements given above is/are correct?

- A: 1 and 2 only
 B: 2 and 3 only
 C: 1 and 3 only

D: 1, 2 and 3

37. With reference to the Right of Children to Free and Compulsory Education (RTE) Act, 2009, consider the following statements:

1. It guarantees free and compulsory education to all children between 6 to 18 years of age.
2. It mandates a 25% reservation for Economically Weaker Section (EWS) students in private unaided schools.
3. It includes Early Childhood Care and Education (ECCE) as a fundamental right.

Which of the statements given above is/are correct?

- A: 1 and 2 only
 B: 2 only
 C: 1 and 3 only
 D: 2 and 3 only

38. Consider the following statements with reference to Bhargavastra:

1. It is India's first micro missile-based counter-drone system.
2. It is designed to use soft-kill technologies like jamming and spoofing to neutralize drone threats.
3. It is capable of launching micro missiles in salvo mode against swarm drones.

Which of the statements given above is/are correct?

- A: 1 and 3 only
 B: 2 and 3 only
 C: 1 and 2 only
 D: 1, 2 and 3

39. Which of the following statements correctly describes Article 143 of the Constitution of India?

- A: It empowers the Parliament to impeach the President on legal grounds.
 B: It allows the Supreme Court to review laws passed by Parliament.
 C: It empowers the President to seek the opinion of the Supreme Court on questions of law.

D: It allows Governors to consult the President on matters of state legislation.

40. With reference to the Tsarap Chu Conservation Reserve, consider the following statements:

1. It is located in the cold desert region of the Spiti Valley.
2. It is now the largest conservation reserve in India.
3. It lies entirely within the state of Jammu and Kashmir.
4. It forms a wildlife corridor between Kibber and Chandratat Wildlife Sanctuaries.

How many of the above statements are correct?

- A: Only one
 B: Only two
 C: Only three
 D: All four

41. With reference to the Global Report on Food Crises (GRFC) 2024, which of the following statements is/are incorrect?

1. The Report is published by the Food and Agriculture Organization (FAO) alone.
2. GRFC 2024 shows child malnutrition is highest in Latin America.
3. The report is based on analysis from the Food Security Information Network.

- A: 1 and 2 only
 B: 2 and 3 only
 C: 1 only
 D: 3 only

42. Which of the following activities are punishable under Section 3 of the Official Secrets Act, 1923?

1. Sketching or photographing military areas
2. Entering prohibited zones without permission
3. Disclosing information due to negligence
4. Helping a foreign government access Indian defense data

- A: Only two
 B: Only three

C: All four
D: Only one

43. Read the Assertion (A) and Reason (R) carefully and select the correct option.

Assertion (A): Body Mass Index (BMI) alone is not an accurate measure of obesity in India.

Reason (R): Many lean individuals with low BMI have high abdominal fat, which increases their risk of cardiovascular disease.

- A: Both A and R are correct, and R is the correct explanation of A
B: Both A and R are correct, but R does not explain A
C: A is correct, but R is incorrect
D: A is incorrect, but R is correct

44. With reference to the e-Zero FIR system, consider the following statements:

1. It allows FIRs to be registered without regard to the location of the incident.
2. Only financial frauds below ₹10 lakh are eligible under the system.
3. It was initially recommended by the Justice Verma Committee.

Which of the statements given above is/are correct?

- A: 1 and 3 only
B: 2 and 3 only
C: 1 only
D: 1, 2 and 3

45. Consider the following statements about India's crude oil imports:

1. Turkey is one of India's top three suppliers of crude oil.
2. Azerbaijan contributes less than 1% to India's total crude oil imports.
3. India is among the top buyers of crude oil from Azerbaijan.

Which of the statements given above are correct?

- A: 1 and 2 only
B: 2 and 3 only

C: 1 and 3 only
D: 1, 2 and 3

46. Consider the following:

Assertion (A): India opposes the China-Pakistan Economic Corridor (CPEC) because it violates its territorial sovereignty.

Reason (R): CPEC passes through Pakistan-occupied Kashmir, a territory claimed by India.

Choose the correct option:

- A: Both A and R are true, and R is the correct explanation of A
B: Both A and R are true, but R is not the correct explanation of A
C: A is true, but R is false
D: A is false, but R is true

47. Consider the following statements:

1. The Supreme Court has recently ruled that maternity leave is not just an employee facility but a constitutional right linked to the reproductive rights and dignity of women.
2. The Maternity Benefit Act, 1961 applies only to establishments employing 20 or more employees.
3. As per the amended Act, no maternity leave is given to women if they have more than two living children.

Which of the statements given above is/are correct?

- A: Only 1
B: Only 1 and 2
C: Only 2 and 3
D: Only 1 and 3

48. Consider the following statements related to conducting international trade transactions in local currencies:

1. It can reduce the impact of fluctuations in currency exchange rates.
2. It increases the dependence of countries on foreign exchange reserves.
3. It can help in reducing dependence on major

currencies like the dollar.

4. It increases transaction costs in international trade.
Which of the statements given above are correct?

A: 1 and 3 only
B: 2 and 4 only
C: 1, 2 and 3 only
D: 1 and 4 only

49. Consider the following statements with reference to antimicrobial resistance (AMR):

- Antimicrobial resistance develops only in bacteria, not in viruses or fungi.
- AMR refers to pathogens becoming resistant to drugs that were previously effective.
- Excessive and inappropriate use of antibiotics promotes AMR.

Which of the above statements are correct?

A: 1 and 2 only
B: 2 and 3 only
C: 1 and 3 only
D: All of 1, 2 and 3

50. Consider the following statements with reference to the Maternity Benefit (Amendment) Act, 2017:

- This Act applies only to government institutions and not to private establishments.
- Under this amendment, a female employee with less than two living children can get 26 weeks of maternity leave.
- It is mandatory to provide crèche facility where 50 or more employees are employed.

Which of the above statements are correct?

A: 1 and 2 only
B: 2 and 3 only
C: 1 and 3 only
D: All of 1, 2 and 3

ANSWER

1	C
2	B
3	B
4	A
5	C
6	D
7	C
8	C
9	A
10	C

11	B
12	C
13	B
14	B
15	B
16	C
17	A
18	A
19	B
20	A

21	B
22	C
23	C
24	B
25	C
26	B
27	C
28	B
29	B
30	C

31	B
32	B
33	A
34	A
35	C
36	D
37	B
38	A
39	C
40	C

41	A
42	B
43	A
44	A
45	B
46	A
47	A
48	A
49	B
50	B



UPSC (IAS) Foundation Batch

9th June 2025

Timing: 08:30 AM

UP - PCS Foundation Batch

11th June 2025

Timing: 09:00 AM | 06:00 PM

FOR

ONLINE COURSES



IAS- 9506256789, PCS - 7619903300



A-12 Sector-J, Aliganj, Lucknow