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RIGHT TO INFORMATION ACT

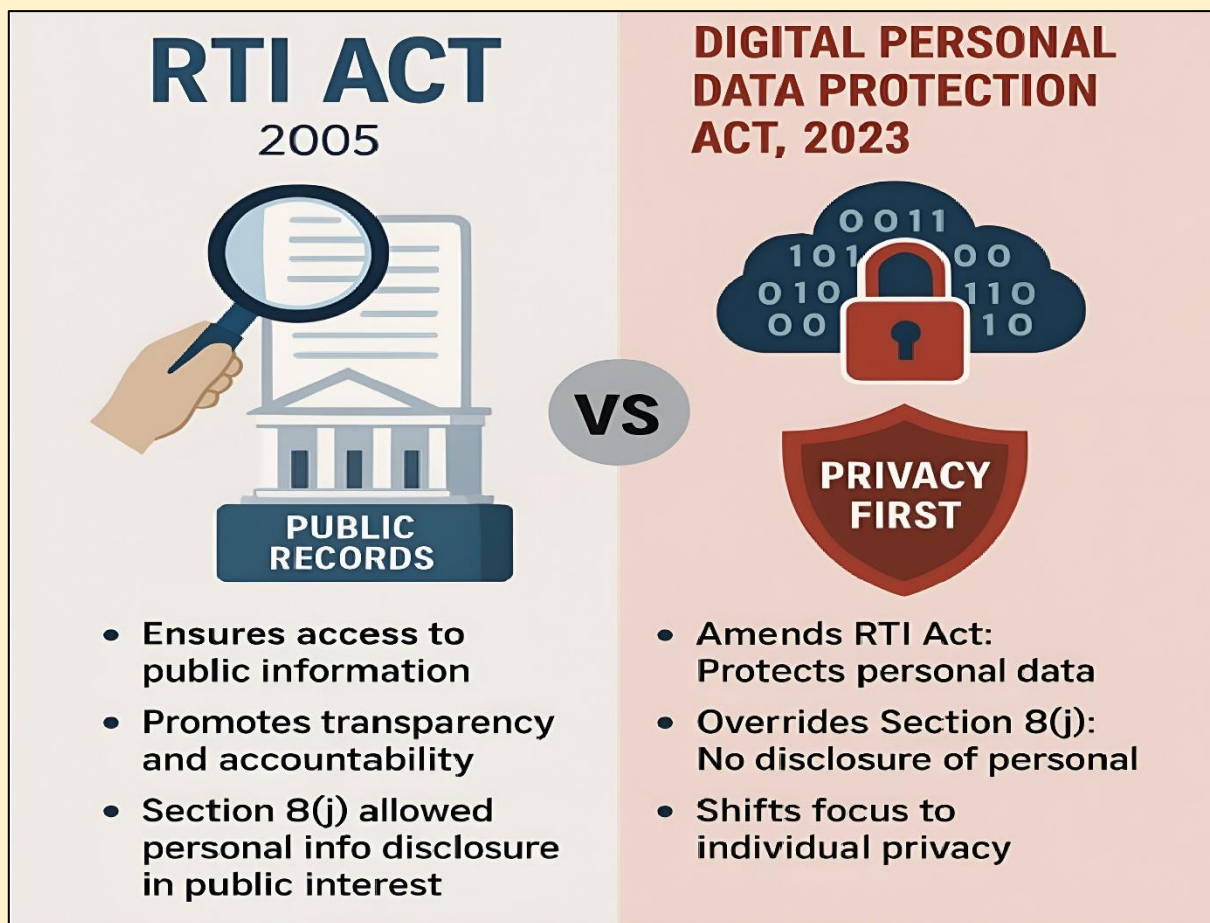
The **Right to Information (RTI) Act, 2005** was a landmark legislation that empowered citizens to hold the state accountable by accessing information. It has been one of the strongest tools for ensuring transparency, curbing corruption, and deepening participatory democracy.

However, recent amendments through the **Digital Personal Data Protection (DPDP) Act, 2023** have drastically altered **Section 8(1)(j)** of the RTI Act. This shift, critics argue, effectively transforms RTI into a “Right to Deny Information (RDI)”.

About Right to Information

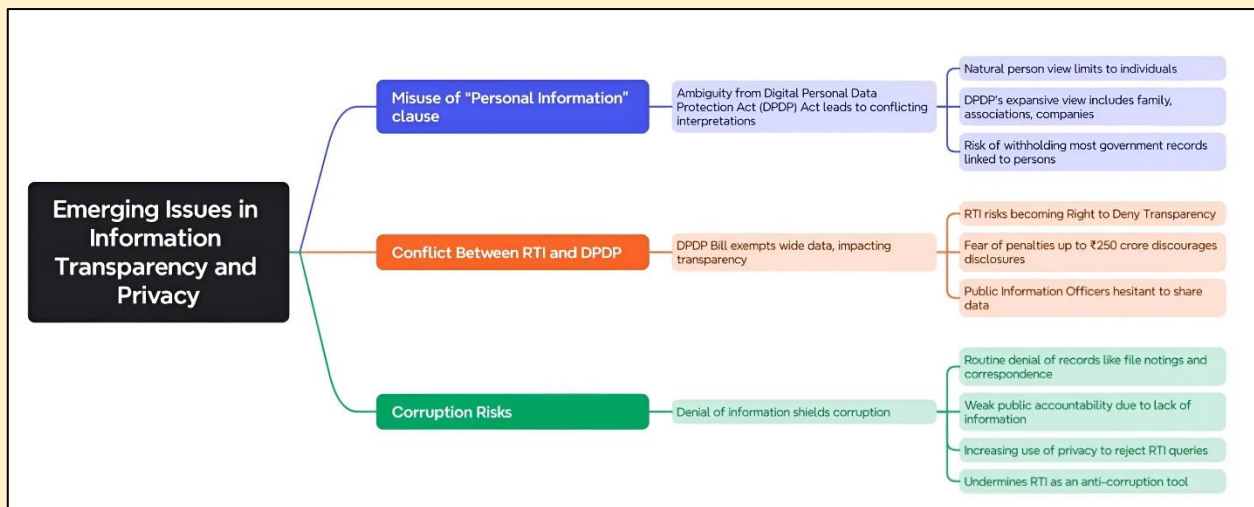
- The Right to Information (RTI) Act is based on the idea that in a democracy citizens elect their representatives, who then control the bureaucracy, so the information must flow back to the people.
- One important exemption is Section 8(1)(j), which deals with personal information.
- According to the Section, the government could refuse to give information only in two cases:
 1. If the information had nothing to do with any public work or public activity.
 2. If giving it would unnecessarily interfere with someone’s personal privacy unless sharing it was clearly in the larger public interest (for example, exposing corruption).
- *There was also a strong safeguard:* if the government could not refuse that information to Parliament or a State Legislature, then it could not refuse it to an ordinary citizen either.
- Restrictions on RTI must follow Article 19(2) of the Constitution, which limits them only on grounds like decency and morality. If sharing violates decency or morality, it can be denied both to Parliament and to citizens.

(Public work / public activity means any task, function, or duty that the government, a public authority, or a public official performs as part of their job for the people.)



The Amendments under DPDP Act

- The DPDP Act has changed Section 8(1)(j) of the RTI Act, making it very easy to deny information.
- The main problem is the meaning of “personal information,” which is not clearly defined.
- There are two different ways to understand it:
 1. One view is that “person” means only a normal human being (natural person).
 2. Another view, based on the DPDP Act, says “person” also includes companies, firms, associations, Hindu undivided families, and even the State.
- If the broader DPDP definition is applied, almost everything can be treated as personal information.
- This allows most information to be denied, turning RTI into a “Right to Deny Information (RDI).”
- Such an interpretation goes against the spirit of transparency and accountability.
- The DPDP Act also has a clause that overrides all other laws in case of conflict, making it stronger than RTI.
- It imposes heavy penalties (up to ₹250 crore) for wrong disclosure, creating fear among Public Information Officers (PIOs). Since most records are now digital, PIOs may prefer to reject applications to avoid risk of punishment.
- This may change RTI to Right to Deny Information.



Consequences

- These amendments are harmful for public accountability and the fight against corruption.
- Citizens are the best watchdogs against corruption. If they are denied information, this natural monitoring mechanism is lost.
- With the wider meaning of “personal information”, even basic and important documents can be withheld.
- Example: Sharing details of pension beneficiaries to combat “ghost employees” and “ghost cards” will cease. Even a simple order signed by an official could be denied as “personal information”. It can result in over 90% of information being denied.
- Corruption will find safe cover. Details of ghost employees, fraud in welfare schemes, or charges of misconduct can all be classified as “personal information”, making it easy for corruption to continue without exposure.

- Though the RTI Act still has a clause that allows disclosure if “larger public interest” is served, in practice this is rarely used. Citizens should not have to prove larger public interest to access what is already their fundamental right.
- In reality, less than 1% of decisions apply this “larger public interest” exception. Officers usually avoid it because it is hard to weigh private harm against public benefit. This makes the safeguard almost useless after the amendment.
- RTI is part of the right to freedom of speech and expression under **Article 19(1)(a)**. Restricting it without proportional safeguards is unconstitutional.

Way Forward

- Media and citizens must actively engage through public discussions, debates, and awareness drives to show how the amendment weakens democracy.
- Political parties should be pressured to commit in their manifestos that the amendment will be reversed.
- Civil society groups and RTI activists need to strengthen public opinion by mobilising grassroots campaigns.
- The amendment can be challenged in courts, as its constitutionality can be tested against Articles 19(1)(a) and 21.
- Laws must be balanced so that data protection safeguards individual privacy without becoming a shield for the state to hide information.

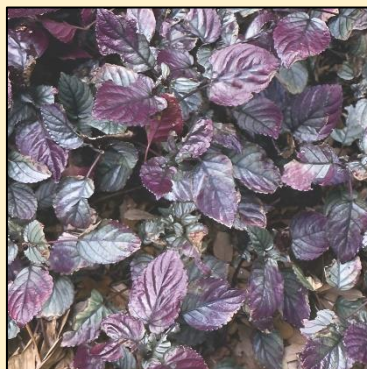
The RTI Act transformed governance by making secrecy the exception and disclosure the norm. The DPDP-led amendment to Section 8(1)(j) threatens to reverse this ethos, replacing transparency with opacity. If unchecked, this could cripple one of India’s most powerful democratic tools against corruption and abuse of power.

RED IVY PLANT

Researchers at the Jawaharlal Nehru Tropical Botanic Garden & Research Institute (JNTBGRI), Thiruvananthapuram, have developed a wound-healing pad using the red ivy plant (*Strobilanthes alternata*), locally called murikooti pacha

Key points:

- **Active Ingredient:** A new molecule, acteoside, isolated from red ivy, is effective even at low concentrations (0.2%).
- **Technology:** Multi-layered pad created using electro-spun nanofiber.
- **Features:** Ultra-thin, biodegradable, non-toxic, FDA-approved polymers, with added neomycin sulfate.
- **Function:** Porous nanofiber structure enables gas exchange, aiding faster healing.
- **Background:** Builds on the plant’s traditional use for treating cuts and wounds.



Red Ivy Plant (*Strobilanthes alternata*)

- A medicinal plant commonly found in Kerala and other tropical regions.
- Locally known as murikooti pacha.
- Traditionally used in folk medicine for treating cuts, wounds, and skin ailments.
- Leaves are reddish-purple, giving the plant its “red ivy” name.
- Rich in bioactive compounds such as acteoside, known for antimicrobial, anti-inflammatory, and wound-healing properties.
- Recently studied by JNTBGRI scientists for developing advanced biodegradable wound-healing pads.

SECTION 498A OF THE INDIAN PENAL CODE

The Supreme Court of India, in the 2025 case of Shivangi Bansal vs Sahib Bansal, reaffirmed guidelines set by the Allahabad High Court to curb misuse of Section 498A of the Indian Penal Code.

These guidelines include a two-month ‘cooling period’ before any coercive action and referral of complaints to a Family Welfare Committee (FWC). The ruling has stirred debate over victims’ timely access to justice and the autonomy of criminal justice agencies.

Background

Section 498A was enacted to address cruelty against women by husbands or their families. It aims to protect women from harassment and abuse in matrimonial settings. However, courts have noted increasing misuse of this provision to file false complaints and cause wrongful arrests.



Judicial Safeguards Against Misuse

The Supreme Court has introduced multiple safeguards. In Lalita Kumari, it mandated preliminary inquiry before registering FIRs in matrimonial disputes.

The 2008 amendment to the Code of Criminal Procedure added the 'principle of necessity' for arrests. The Arnesh Kumar judgment (2014) introduced a checklist and notice requirements before arrest. Later, Satender Kumar Antil (2022) strengthened bail protections for wrongful arrests.

Impact on Arrests and Crime Data

Data from the National Crime Record Bureau shows Section 498A offences rose from 113,403 in 2015 to 140,019 in 2022. Arrests declined from 187,067 to 145,095 during the same period.

This indicates judicial and legislative measures helped reduce arbitrary arrests while balancing victims' rights.

Controversy Over the 'Cooling Period' and FWCs

The Allahabad High Court's introduction of a two-month 'cooling period' and referral to FWCs aims to prevent hasty arrests and encourage mediation.

However, critics argue this delays justice for victims and undermines criminal justice autonomy. Similar directions in Rajesh Sharma (2017) were overturned by the Supreme Court in 2018 after public backlash.

Judicial Experimentalism

The introduction of FWCs and cooling periods is seen as judicial overreach. These steps are not backed by statute and interfere with police and magistrate functions. Past experience shows such experimental directions face societal resistance and risk rollback.

Need for Reconsideration

Given existing checks against misuse, the recent ruling may unnecessarily hinder victims' access to justice. It is important for the Supreme Court to reassess the balance between protecting the innocent and ensuring timely redressal for genuine complaints.

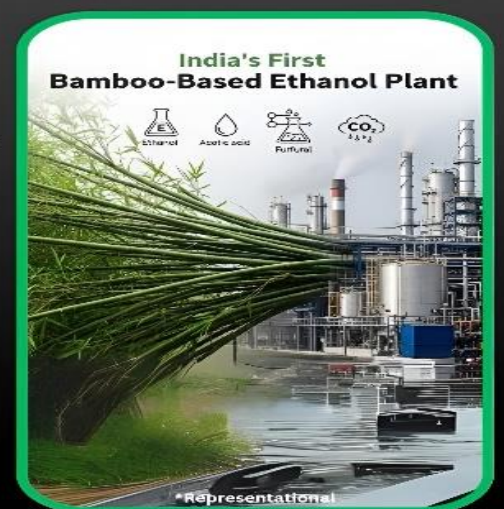
INDIA'S FIRST BAMBOO-BASED BIOETHANOL PLANT

India recently inaugurated its first bamboo-based bioethanol plant in Golaghat, Assam. This milestone marks boost to the country's green energy ambitions and industrial growth.

The plant will source bamboo from Assam and northeastern states, benefiting farmers and tribal communities. Alongside, a polypropylene plant foundation was laid to strengthen regional manufacturing. These developments reflect India's shift towards renewable energy and self-reliance.

Key Details

Reports says, NRL has set up a supply chain with farmers and bamboo-chipping units across Arunachal Pradesh, Assam, and Meghalaya. Farmers receive ₹65-70 per bamboo pole. NRL also distributed saplings free of cost, grown via tissue culture by start-ups.



INDIA'S FIRST BAMBOO-BASED ETHANOL PLANT IN ASSAM HARNESSSES NORTH EAST'S FINEST BAMBOO

Significance

Bioethanol is a renewable, high-octane biofuel produced from biomass such as bamboo, sugarcane, and grains. Bamboo offers a sustainable raw material due to its fast growth and wide availability in the Northeast.

The new plant will process about 5 lakh tonnes of bamboo annually. This development supports India's goal to reduce dependence on fossil fuels and promote cleaner energy sources.

Policy Changes Supporting Bamboo Use

Bamboo was earlier classified as a tree under the Indian Forest Act, 1927, restricting its harvest. Recent amendments have removed this classification, lifting the ban on cutting bamboo.

This policy shift empowers local farmers and forest communities to cultivate and sell bamboo legally. It also aligns with the government's vision to promote rural livelihoods and sustainable resource use.

Economic and Social Impact

The bamboo ethanol plant is expected to inject Rs 200 crore into Assam's rural economy. It creates new income avenues for farmers and tribal groups involved in bamboo cultivation.

The project supports 'Make in Assam' and 'Make in India' initiatives by spurring local manufacturing and industrial growth. The polypropylene plant will further expand industrial opportunities by producing essential plastic raw materials.

Bioethanol Production Process

Bioethanol production involves fermentation of sugars derived from biomass. The process includes pretreatment of raw material to release fermentable sugars, fermentation by microbes, distillation, and dehydration to obtain fuel-grade ethanol.

This ethanol can be blended with petrol or used in modified engines. Bamboo's cellulose content makes it a viable feedstock for this biofuel.

India's Renewable Energy Progress

India has rapidly advanced in renewable energy over the past decade. It now ranks among the top five countries in solar power generation. The bamboo ethanol plant exemplifies diversification into alternative fuels beyond solar and wind. This aligns with national goals for energy security, environmental sustainability, and rural development.

TACKLING URBAN FLOODS

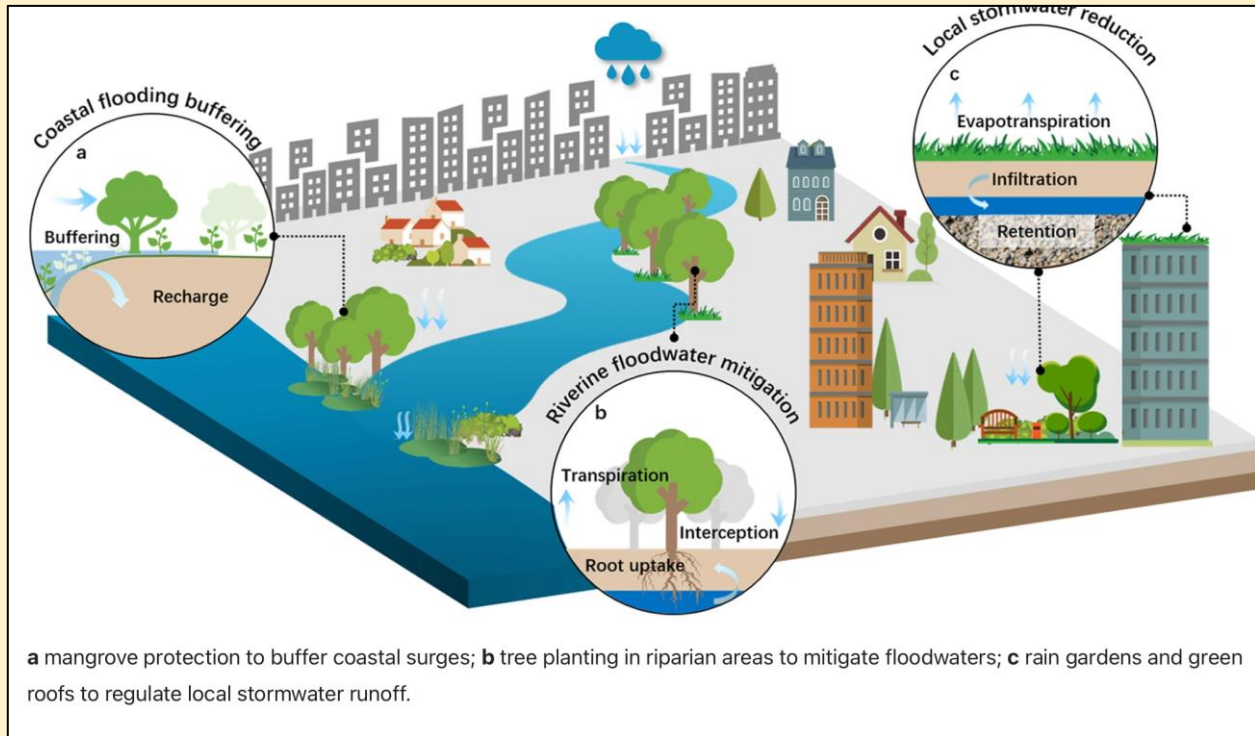
Northern States are seeing heavy flooding even in September, with all of **Punjab's** 23 districts being hit by floods. **Delhi and Gurugram** have been inundated by intense rains, and **Uttarakhand and Himachal Pradesh** are experiencing frequent cloudbursts. In the east, **Kolkata** is facing torrential rains.

These all examples highlight that Indian cities are still designed for an older predictable climate that no longer exists

Key trends

- Heavy rains now occur earlier and later than traditional monsoon months.
- In May, Mumbai recorded 135.4 mm of rainfall in just 24 hours, followed by 161.9 mm the next day. Delhi recorded 81 mm fall within a few hours on the same day, overwhelming the drainage systems.

- According to the Council on Energy, Environment and Water 64% of Indian tehsils have witnessed a rise in heavy rainfall days (by 1–15 days), especially in Maharashtra, Tamil Nadu, Gujarat, and Karnataka.
- CEEW's analysis of daily rainfall from 1970 to 2021 in the coastal city of Thane shows that one-hour rainfall now reaches 50 mm once every two years, and about 80 mm per hour once every 50 years.
- Floods cause the highest loss of life and property among natural disasters, with a single flood causing damages of around ₹8,700 crore.



Gaps in urban flood management

- **Calendar-Driven Planning:** Urban flood management still relies on **fixed monsoon schedules**, with drain cleaning and desilting planned for June, even though rain now arrives earlier, later, and with higher intensity. This gap leaves cities unprepared for unseasonal downpours.
- **Intense, Short-Duration Rain:** Rainfall is increasingly **compressed into a few hours**, overwhelming drainage systems built for slower, steady rain and causing rapid flooding.
- **Outdated Preparedness:** Pre-monsoon cleaning and emergency drills follow **old timelines** instead of real-time rainfall data, while hourly trends are rarely factored into infrastructure design.
- **Slow Climate Adaptation:** Cities have been **slow to update** rainfall-intensity data and drainage standards, keeping storm water systems under-designed for today's extreme weather.

Steps Needed

- Integrate **sub-daily rainfall analysis** into monsoon planning to account for short, high-intensity rain events and guide both drainage design and real-time operations.
- Use **real-time rainfall data** to inform citizens and strengthen infrastructure, as seen in Mumbai where drains were widened to handle up to 120 mm rain per hour.
- Acknowledge that seasonal rainfall is increasingly compressed into intense bursts, and design systems to withstand **hourly extremes** rather than relying only on seasonal averages.

- Align **storm water drain cleaning with solid waste management**, ensuring schedules are coordinated so that garbage does not relog freshly cleared drains.
- Activate **joint sanitation drives and inspections** based on IMD alerts, taking cues from Vijayawada's monsoon response teams that integrate multiple departments.
- Regularly update **Intensity–Duration–Frequency (IDF) curves** every 5–10 years so drainage systems reflect evolving rainfall patterns and volumes.
- Design drainage networks using **micro-catchment hydrology and topography**, and ensure storm water systems are kept separate from sewerage to avoid overload and improve efficiency.

Urban floods are not caused by rain alone but by outdated planning. Cities must shift from seasonal calendars to rainfall-pattern readiness, ensuring infrastructure and operations are agile enough to handle the rain that is already falling.

INDIA'S FIRST OVERSEAS DEFENCE MANUFACTURING FACILITY

India has launched its first overseas defence manufacturing facility in Morocco, led by Tata Advanced Systems Limited (TASL).

- Defence Minister Rajnath Singh and his Moroccan counterpart inaugurated TASL's first overseas defence plant in Berrechid, Morocco (20,000 sq. m).
- The facility will manufacture the indigenously developed WhAP 8x8 (by TASL and DRDO).
- Project aligns with India's "Make with Friends" and "Make for the World" vision. It will generate local jobs, sourcing one-third of components locally, to rise to 50% in future.
- Aims to make Morocco a strategic defence manufacturing hub for Africa and Europe.

रक्षा मंत्रालय
MINISTRY OF DEFENCE




रक्षा उत्पादन विभाग
DEPARTMENT OF DEFENCE PRODUCTION

A historic milestone in India–Morocco defence cooperation

**TATA ADVANCED SYSTEMS & DRDO
WhAP 8X8 FACILITY,
Berrechid, Morocco**

**First Indian private defence
facility in Africa**

- State-of-the-art **Wheeled Armoured Platform (WhAP) 8x8** production
- Spread over **20,000 square metres**
- Strengthening **local jobs & ecosystem**
- Deliveries to **Royal Moroccan Army** from October 2025

DefProdIndia

Indian Overseas Defence Facilities

- **Farkhor Air Base, Tajikistan:** Often regarded as India's first overseas base. India has had an arrangement with Tajikistan for operating/supporting this base, mainly for strategic depth in Central Asia.
- **Ayni (Gissar) Air Base, Tajikistan:** Renovated and upgraded by India with extended runway, air traffic control and defence infrastructure. It can host IAF aircraft during contingencies, though full operational rights remain limited.
- **IMTRAT, Bhutan:** The Indian Military Training Team trains Bhutanese armed forces. It is one of India's longest-standing overseas defence missions.
- **Listening / Surveillance Posts:** India is reported to maintain radar or surveillance facilities in parts of the Indian Ocean Region, such as Madagascar, to monitor maritime traffic and enhance domain awareness.

OJU HYDROELECTRIC PROJECT

Union Environment Ministry's expert committee has given clearance to the 2,200 MW Oju Hydroelectric Project on the Subansiri river in Arunachal Pradesh, near the China border.

- **Location & Project Details**
 - Proposed on the Subansiri river in Upper Subansiri district, Arunachal Pradesh.
 - Close to the China border; part of India's border infrastructure push.
 - To be developed by Oju Subansiri Hydro Power Corporation Pvt. Ltd.
- **Technical Features**
 - Installed capacity: 2,200 MW.
 - Dam type & height: Gravity dam, 120 m high.
 - Reservoir: Submergence area of 434 hectares forest land (total diversion of ~750 hectares forest).
 - Annual design energy: ~7,934 million units.
 - Displacement: Only nine families affected.
- **Strategic & Development Significance**
 - One of India's largest hydroelectric projects.
 - Strengthens infrastructure in Northeast, especially near the China border.
 - Boosts India's renewable energy capacity.
- **Concerns & Criticism**
 - The Cumulative Impact Assessment (CIA) and Carrying Capacity Study (CCS) of the Subansiri basin were done in 2014, now considered outdated.
 - Critics warn of landslides, dam-break scenarios, flash floods, and ecological impacts in the fragile Himalayan terrain.
 - Environmentalists argue that the approval process did not sufficiently update scientific studies before clearance.



- Also called the **Gold River**, it is the largest tributary of the Brahmaputra, about **518 km long** with a **32,640 sq. km basin**.
- It originates in **Lhuntse County, Tibet**, flows through **Upper Subansiri district (Arunachal Pradesh)**, and enters India via the **Miri Hills**.
- The **Upper Subansiri** refers to its Himalayan origin stretch, while the **Lower Subansiri** marks its descent into the Assam Valley through Lower Subansiri district.
- It joins the **Brahmaputra at Jamurighat/Majuli Island in Assam**; key tributaries are **Rangandi, Dikrong, Kamle, Char Chu, and Tsari Chu**.

Subansiri River – Overview

- **Origin:** Rises in the Tibet Plateau (China), where it is known as the *Chayul Chu*.
- **Course:** Flows east and south-east through Tibet, then enters Arunachal Pradesh (India) near Taksing, before flowing into Assam, where it joins the Brahmaputra River at Lakhimpur district.
- **Significance:** Largest tributary of the Brahmaputra, draining a major part of the Eastern Himalayas.

Tributaries of Subansiri

- **Right-bank tributaries:** Kamla, Kurung, Panior, Ranga Nadi.
- **Left-bank tributaries:** Panyor, Dikrong, Pare.
- Collectively these streams drain the Upper Subansiri basin and feed the main Subansiri channel before it meets the Brahmaputra.

Hydroelectric Projects on Subansiri

1. Lower Subansiri Hydroelectric Project (2000 MW)

- Located at Gerukamukh (on Assam–Arunachal border).
- Being developed by NHPC.
- India's largest hydroelectric project under construction, but facing delays due to environmental and safety concerns.

2. Upper Subansiri Projects

Includes projects like Oju (2200 MW), Niare, Naba, Nalo, Denger, and others.

- Together, they form a series of cascade hydropower projects planned to harness the river's steep gradient in Arunachal Pradesh.

3. Oju Subansiri Hydroelectric Project (2200 MW)

- Recently given environmental clearance (Sept 2025).
- Located near Taksing in Upper Subansiri, close to the China border.
- To be developed by Oju Subansiri Hydro Power Corporation Pvt. Ltd.

2025 PN7

Astronomers have discovered a new asteroid, 2025 PN7, which follows an orbit similar to Earth's and is classified as a quasi-moon.

Quasi-moons and mini-moons are small celestial objects that temporarily accompany Earth in its orbit. The newly observed quasi-moon, 2025 PN7, spotted this summer, could be the smallest of its kind at under 52 feet.

Such objects often originate from the asteroid belt between Mars and Jupiter or as debris from the Moon. Unlike permanent moons, they are temporary companions, staying for decades before drifting away.

Earth's Hidden Quasi-Moon: 60 Years with Us!

Meet 2025 PN7, our newly discovered quasi-moon!

It's not a real moon. Instead, this little asteroid, only about 19 meters wide, travels around the Sun almost exactly in Earth's path.

From our point of view, it looks like it's tagging along with us.



2025 PN7

Astronomers using the Pan-STARRS1 telescope in Hawaii first spotted it in August 2025.

It's super faint—so faint you'd never see it without powerful telescopes. PN7 has actually been keeping us company for nearly 60 years, and it's likely to stick around for another 60 before drifting away.

Earth has had similar followers before, with quasi-moons providing opportunities for research and possible future space missions.

Quasi-moons and Mini-moons:

- **Mini-moons:**
 - Small natural objects that temporarily orbit Earth.
 - Unlike the permanent Moon, they are short-term companions, often staying a few months to years.
 - Many are captured asteroids or chunks of the Moon ejected after meteorite impacts.
 - Example: 2006 RH120, a mini-moon that orbited Earth for about a year.
- **Quasi-moons:**
 - Objects that orbit the Sun, but follow a path very similar to Earth's orbit, appearing like companions.
 - They are not true satellites but remain in Earth's vicinity for decades in a stable gravitational "dance."
 - Example: 2025 PN7 (recently spotted), 469219 Kamo'oalewa (discovered in 2016).
 - They maintain a constant average distance from Earth, often staying in a resonant orbital pattern.
- **Significance:**
 - Both are temporary companions of Earth.
 - Useful for scientific studies, space missions, and potential resource exploration, as they are relatively close and easier to reach than main-belt asteroids.

NEW START NUCLEAR ARMS CONTROL TREATY

Context Russia has proposed a one-year extension to the New START nuclear arms control treaty with the US, set to expire in February 2026.

President Vladimir Putin offered the US a one-year extension of the New START treaty, the last remaining nuclear arms pact between the two nations, which limits each side to 1,550 deployed strategic nuclear warheads.

Russia said it is willing to continue adhering to the treaty while negotiations proceed, but warned that the offer is conditional on the US not imposing unilateral conditions or undermining Russia's defense capabilities.

The move comes amid heightened US-Russia tensions, particularly over Ukraine, and growing global concerns about arms control.

Major nuclear treaties between USA and Russia

Nuclear Non-Proliferation Treaty (NPT), 1968

- Not bilateral, but both USA and USSR were key signatories.
- Aimed to prevent spread of nuclear weapons, promote peaceful use of nuclear energy, and work toward disarmament.

Strategic Arms Limitation Talks (SALT I & II)

- **SALT I (1972):** Limited the number of Intercontinental Ballistic Missiles (ICBMs) and Submarine-Launched Ballistic Missiles (SLBMs). Also led to Anti-Ballistic Missile (ABM) Treaty restricting missile defense systems.
- **SALT II (1979):** Proposed limits on nuclear delivery systems, but never formally ratified due to the Soviet invasion of Afghanistan. However, both sides largely adhered to it informally.

Intermediate-Range Nuclear Forces (INF) Treaty, 1987

- Signed by Reagan (US) and Gorbachev (USSR).
- Eliminated all land-based missiles with ranges between 500–5,500 km.
- First treaty to eliminate an entire category of nuclear weapons.
- The US withdrew in 2019, citing Russian violations.

Strategic Arms Reduction Treaties (START I & II)

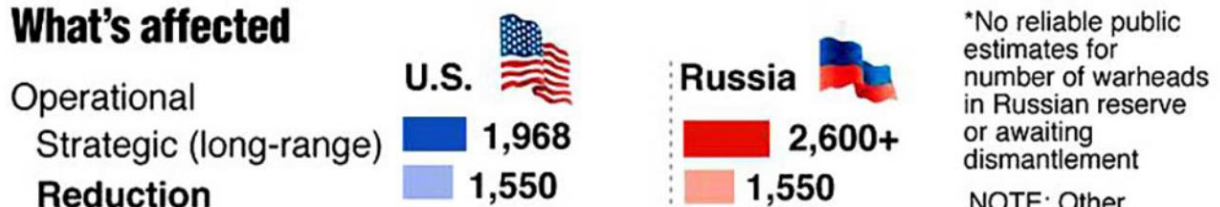
- **START I (1991):** Reduced deployed strategic nuclear warheads to 6,000 on each side.
- **START II (1993):** Banned multiple warheads (MIRVs) on ICBMs but never entered into force.

Strategic Offensive Reductions Treaty (SORT) / Moscow Treaty, 2002.

New START arms treaty

The U.S. Senate has ratified the new START treaty to reduce deployed strategic warheads by about 30 percent. The treaty must now be ratified by the Russian Duma; current stockpiles and reductions under the treaty:

What's affected



Not affected by treaty



Treaty would also

- Revive on-the-ground arsenal inspections
- Limit missiles, bombers, launchers capable of carrying nuclear warheads

Source: Arms Control Association

- Signed by Bush (US) and Putin (Russia).
- Limited operationally deployed warheads to 1,700–2,200.

New START Treaty, 2010

- Signed by Obama (US) and Medvedev (Russia).
- Limits deployed strategic warheads to 1,550 and delivery systems to 700.
- Set to expire in February 2026 after a 5-year extension agreed in 2021.
- Currently the last remaining nuclear arms control treaty between the two powers.

Significance:

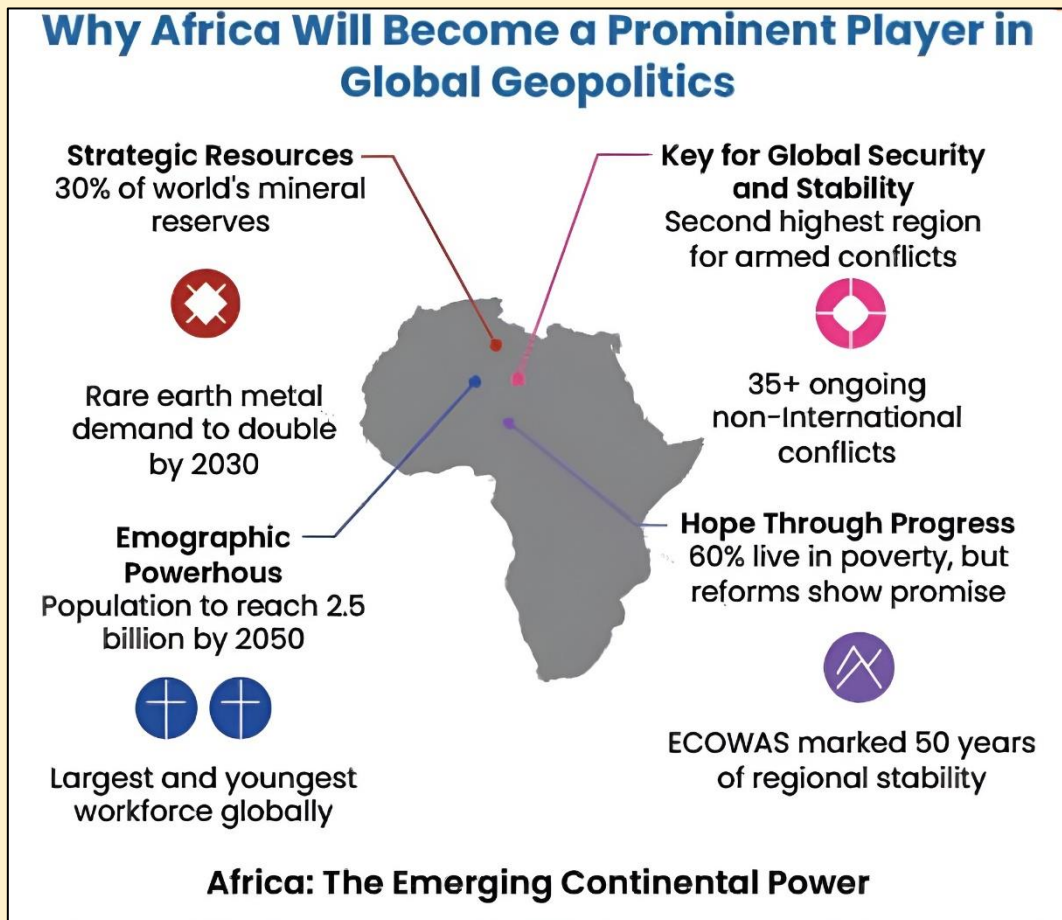
- These treaties helped reduce Cold War tensions and massive nuclear stockpiles.
- However, with the collapse of the INF Treaty and expiry of New START looming, the future of nuclear arms control is uncertain.

INDIA'S DIGITAL TRANSFORMATION -LEADING THE WAY

India's Digital India initiative, launched in 2015, marked a strategic effort to transform the country's digital ecosystem, enhance governance, and ensure inclusive socio-economic development.

Over the past decade, it has expanded internet access, improved service delivery, and strengthened India's digital economy.

As most African nations are poised for digital transformation, the Indian experience could offer them a cost-effective and contextually relevant model.



India's Digital transformation data

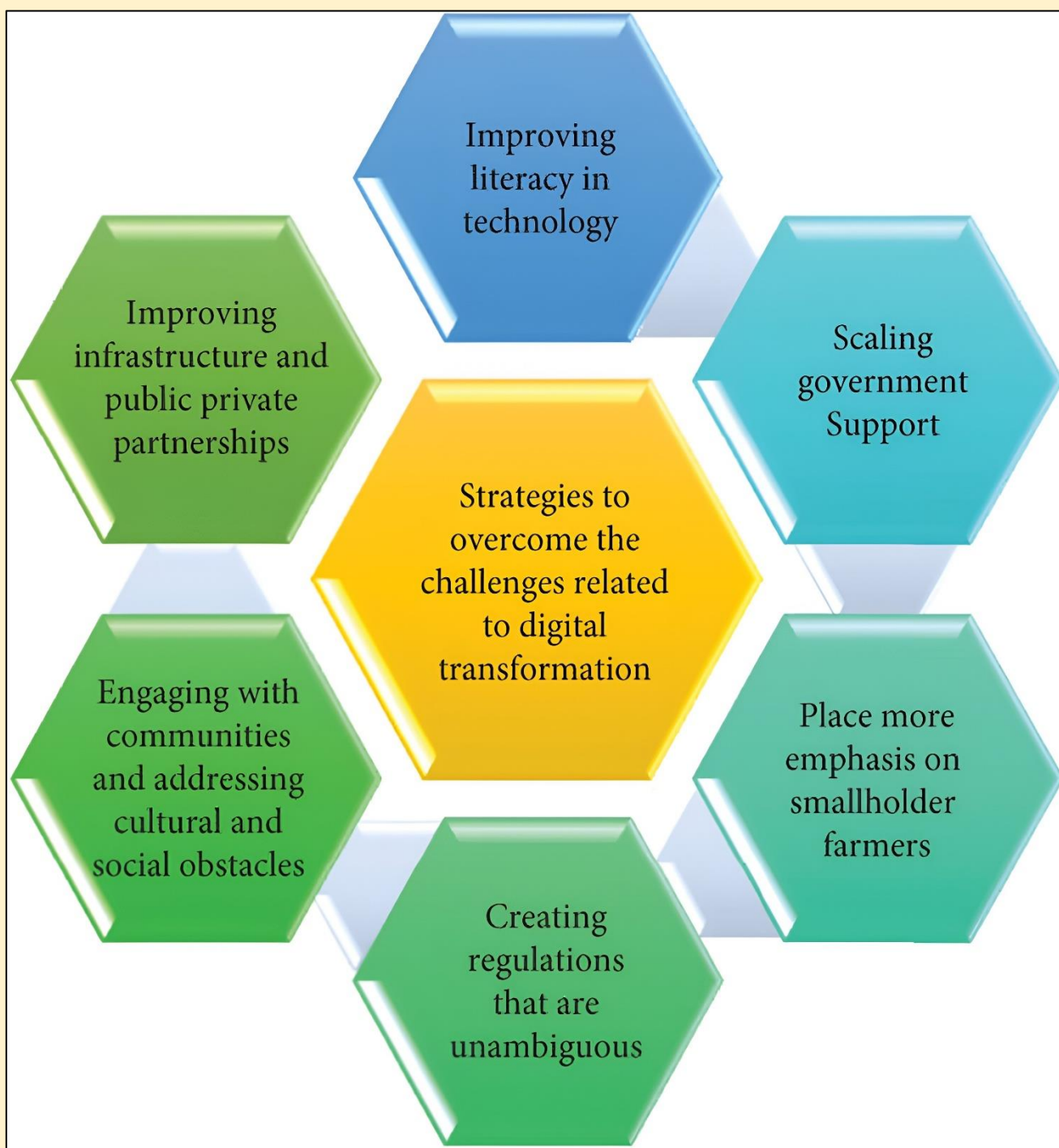
- Internet users increased from 251 million in 2014 to nearly 970 million in 2024.
- Over 2,18,000 villages connected with high-speed networks.
- Digital infrastructure enabled telemedicine, tele-education, and e-governance services at scale.
- Contributes approximately USD 200 billion annually; 11.74% of India's GDP (2022-23).
- Key sectors benefiting include fintech, e-commerce, health-tech, and agri-tech.

Africa Digital Economy

- Internet penetration increased from 2.1 per cent in 2005 to approximately 38 per cent in 2024.
- In 2023, the mobile industry contributed \$140 billion, or 7 per cent, to the GDP of the region, a number which is expected to grow to \$170 billion by 2030.
- The continent has also established itself as a leader in mobile financial services, with half of the world's mobile money providers based in sub-Saharan Africa.

Challenges

- Low internet penetration and limited broadband connectivity in rural and remote areas.
- Inadequate digital infrastructure, including data centers, reliable electricity, and network coverage.
- High cost of digital devices and internet services, limiting accessibility for marginalized populations.
- Fragmented and underdeveloped regulatory and policy frameworks for digital governance.
- Shortage of skilled workforce in ICT, data science, AI, and other emerging digital technologies.
- Weak cybersecurity frameworks and limited awareness of online safety and data protection.
- Insufficient integration of digital solutions with public service delivery, healthcare, and education systems.



India-Africa digital initiatives

- **India-Africa Forum Summit (IAFS)** facilitating dialogue, Lines of Credit (LoCs), grants, and technical support for digital projects.
- In 2009, India launched the **Pan Africa e-Network**, a continent-wide initiative facilitating tele-education and telemedicine services. Building upon this, the **e-VidyaBharti (Tele-education)** and **e-ArogyaBharti (Tele-medicine) project (e-VBAB)** was initiated in 2019 to further integrate African students and patients with Indian academic and medical institutions.
- Under the **e-VBAB scheme**, in the last few years, thousands of scholarships have been offered to African students for higher education in Indian universities.
- India has established **IT Centres in Kenya, Botswana, Uganda, Tanzania, and Ghana** to promote digital skills.
- **Established cyber Tower in Mauritius** to strengthen ICT infrastructure and training capabilities.
- **Established Kofi Annan Centre of Excellence in ICT, Ghana**, supporting ICT skill development.
- **Established Centre of Excellence in Information Technology at Al Azhar University, Egypt**, promoting digital skills among youth.
- **Established Overseas IIT campus in Zanzibar, Tanzania (2023)** offering advanced programs in Data Science and Artificial Intelligence.
- **Xtelify, Bharti Airtel's subsidiary**, signed a multi-year, multi-million-dollar deal with Nigeria to deploy AI-powered platforms, boosting telecom infrastructure, operational efficiency, and customer service across 14 African countries.
- **Promotion of Indian start-ups** in fintech, health-tech, and agri-tech to collaborate with African enterprises.
- Organising **Study tours** by African delegations to learn India's digital payments and public distribution system models.
- Sharing **India's Aadhaar digital identity system** as a model for inclusive governance and financial inclusion.
- With a median age of approximately 19 years, Africa possesses the youngest population globally. However, to harness this demographic advantage, substantial investment in digital skill development would be required. Hence, promoted **Skill development programs** inspired by India's Skill India, Digital Saksharta Abhiyan, and ITEC for vocational training and digital literacy.

Way forward

- Strengthen India-Africa collaboration to promote inclusive development and mutual capacity-building.
- Leverage joint technological expertise to support Africa's digital infrastructure and governance systems.
- Foster South-South cooperation in the context of the Fourth Industrial Revolution.
- Encourage policy frameworks that are flexible, scalable, and adaptable to local contexts.
- Promote strategic partnerships between governments, educational institutions, and the private sector to drive innovation.

India's successful deployment of digital technologies for inclusive governance provides a replicable model for African nations. With strong political will, flexible policy frameworks, and strategic cooperation, India and Africa are well-placed to co-create a future where digital innovation drives socio-economic progress across the Global South.

UNESCO HERITAGE SITES

In September 2025, seven new natural heritage sites from India were added to UNESCO's Tentative List, taking the total to 69 properties (49 cultural, 17 natural, 3 mixed).

Newly Added Sites:

- Deccan Traps at Panchgani and Mahabaleshwar, Maharashtra
- St. Mary's Island Cluster, Karnataka
- Meghalayan Age Caves, Meghalaya
- Naga Hill Ophiolite, Nagaland
- Erra Matti Dibbalu (Red Sand Hills), Andhra Pradesh
- Tirumala Hills, Andhra Pradesh
- Varkala Cliffs, Kerala



(Naga Hill Ophiolite)



(Meghalayan Age Caves)



(Natural Heritage of Tirumala Hills)



Deccan Traps at Panchgani and Mahabaleshwar



(Geological Heritage of St. Mary's Island Cluster)



(Varkala Cliffs)



(Natural Heritage of Erra Matti Dibbalu)








Significance:

- Highlights India's commitment to preserving geological and ecological diversity.
- Represents a shift from focusing only on biodiversity to geological heritage and key Earth epochs.
- Sites include ancient volcanic regions, coastal formations, and significant caves with scientific and tourism value.

- Entry on the tentative list is the first step toward full UNESCO World Heritage status, promoting protection, sustainable development, and geotourism.

Administration:

- The Archaeological Survey of India (ASI) compiles and submits these nominations, reinforcing India's role in global heritage preservation.

Sites	Key Features
 Natural Heritage of Erra Matti Dibbalu or Red Sand Dunes (Visakhapatnam, Andhra Pradesh)	<ul style="list-style-type: none"> First documented in 1886 by British geologist William King Represent unique coastal geomorphological and paleo-climatic set up Declared a GeoHeritage Monument by the Geological Survey of India (GSI) in 2016. Composed of sand, silt, and clay with a reddish color from natural oxidation.
 Meghalayan Age Caves (Meghalaya)	<ul style="list-style-type: none"> They are some of the world's longest caves and host impressive stalactites, stalagmites, fossils, and rare cave-dwelling species. Mawmluh cave is listed among the global first 100 geologically important sites in the world.
 Natural Heritage of Tirumala Hills (Tirupati, Andhra Pradesh)	<ul style="list-style-type: none"> The hills form part of the Seshachalam Biosphere Reserve and Venkateswara National Park
 Natural Heritage of Varkala (Kerala)	<ul style="list-style-type: none"> Varkala coast is noted for its scenic beauty, unique laterite formations, fossil-bearing rocks, and cultural significance as a pilgrimage destination.
 Deccan Traps at Panchgani and Mahabaleshwar	<ul style="list-style-type: none"> Location: Western Ghats of Maharashtra. They form a part of Koyna Wildlife Sanctuary.
 Geological Heritage of St Mary's Island Cluster (Karnataka)	<ul style="list-style-type: none"> The sites are protected by the coastal regulation zones of the government of India and have been declared as National Geological Monument by GSI.
 Naga Hill Ophiolite (Nagaland)	<ul style="list-style-type: none"> This belt displays a section of oceanic crust and mantle thrust onto land, offering crucial evidence of tectonic plate movement and earth's internal processes.

UNESCO World Heritage Sites (WHS)

- Definition:** Sites recognized by UNESCO for their cultural, natural, or mixed significance of outstanding universal value to humanity.
- Categories:
 - Cultural Sites** – Monuments, architectural works, or urban settlements (e.g., Taj Mahal, Jaipur City).
 - Natural Sites** – Natural landscapes, ecosystems, or geological formations (e.g., Sundarbans, Western Ghats).
 - Mixed Sites** – Sites with both cultural and natural importance (e.g., Khangchendzonga National Park).

India's WHS:

- As of 2025, India has 42 World Heritage Sites: 29 cultural, 12 natural, 1 mixed.
- Additionally, 69 sites are on the Tentative List, the first step toward nomination.

Significance:

- Ensures protection, conservation, and global recognition.
- Promotes sustainable tourism, education, and research.
- Helps safeguard heritage for future generations.

Administration:

- In India, the Archaeological Survey of India (ASI) and the Ministry of Culture manage nominations and site protection.

UNESCO Criteria: Sites are evaluated based on ten criteria, six cultural and four natural, emphasizing outstanding universal value.

NE-SPARKS PROGRAMME.

Union Minister of Development of North Eastern Region, Jyotiraditya M. Scindia, virtually interacted with students from the North East who visited ISRO headquarters under the NE-SPARKS programme.

The initiative aims to nurture scientific curiosity among youth from all eight North Eastern states by exposing them to India's space technology.

Nearly 400 meritorious students in four batches have participated so far, with the Minister encouraging them to pursue careers in STEM and highlighting the government's commitment to empowering the region's youth.

NE-SPARKS Programme

- **Full form:** *North East Students' Programme for Awareness, Reach, and Knowledge on Space.*
- **Launched by:** Ministry of Development of North Eastern Region (DoNER) in collaboration with ISRO.
- **Objective:** To nurture scientific curiosity and inspire youth from all eight North Eastern states by giving them exposure to India's space research and technology.



NE - SPARKS 2025
 Igniting Young Minds of Northeast India

**99 BRIGHT STUDENTS × 8 STATES
 = 1 STELLAR MISSION**

Space exploration isn't just for the few—it's for everyone, including the vibrant young minds of Northeast India!

- **Features:**
 - Meritorious students from the region visit ISRO facilities.
 - Hands-on exposure to cutting-edge space science, satellite technology, and research activities.
 - Interaction with scientists to encourage STEM career choices.
- **Progress:** Nearly 400 students across four batches have already participated.
- **Significance:** Enhances scientific temperament, bridges regional gaps in science education, and empowers the North Eastern youth by connecting them directly with national scientific institutions.

INTERNATIONAL EQUAL PAY DAY

September 18 was first marked as International Equal Pay Day by the United Nations General Assembly in 2019, following the efforts of the Equal Pay International Coalition (EPIC), which is led by the International Labour Organisation (ILO), UN Women, and the Organisation for Economic Co-operation and Development (OECD).

The day underscores that equal pay is not merely a legal principle but a tangible right that must be reflected in paychecks. It calls on governments, employers, and societies to ensure fairness in compensation for work of equal value.



What does equal pay mean?

- **Equal pay for equal work** means that individuals performing the same or equivalent tasks must receive the same remuneration, regardless of gender or other identities.
- It represents fairness and justice in workplaces, where skill, effort, and responsibility – not gender – determine earnings.

Global pay gap

- The **Global Gender Gap Report 2025** by the World Economic Forum reveals that only 68.8% of the overall gender gap has been closed, leaving over 30% of inequality still unresolved.
- At the present rate, it would take around 123 years to achieve full parity in pay and opportunities worldwide.

European Union:

- In the European Union, women in 2021 earned on average 12.7% less per hour than men, and by 2023 the gap narrowed slightly to around 12.0%, showing only marginal improvement despite decades of policy efforts.

United States

- In the United States, women earned roughly 85 cents for every dollar earned by men in 2024, with Pew Research noting only minor changes in the last twenty years.
- Among younger workers (ages 25–34), the difference is smaller, with women earning about 95 cents to the male dollar, but the gap widens as age increases, reflecting slower career growth for women over time.

Australia:

- Australia's Workplace Gender Equality Agency (2025) reported that women continue to earn significantly less than men, keeping the gender pay gap a key issue in national policy debates.

Regional variations highlight contrasting trends:

- **Iceland** leads the world with 92.6% of its gender gap closed, maintaining the top position for 16 consecutive years.
- **Nordic nations** such as **Finland, Norway, and Sweden** also score high due to robust equality laws and family-friendly welfare policies.
- Belgium reports one of the lowest pay gaps globally at only 1.1%, while Luxembourg has slightly reversed the trend with women earning about 0.7% more than men.
- At the other extreme, **South Korea** records the highest pay gap among OECD countries, with women earning 31.2% less than men, reflecting structural and cultural barriers to workplace equality.

Status in India

- India ranks 131 out of 148 countries in the Global Gender Gap Report 2025, slipping from 129 in 2024.
- Overall gender parity score: 64.1%, far below the global average.
- Education parity: High levels achieved in school enrolment and literacy.
- Economic participation: Alarmingly low at 40.7%, with women underrepresented in leadership and earning less for similar work.

The data underscores that while some regions demonstrate near parity, global progress remains slow, requiring stronger legal safeguards, cultural change, and transparent pay structures to close the remaining gap.

Why Pay Gaps Exist

- **Occupational segregation** places women in lower-paying sectors like teaching, caregiving, or social services, while men dominate higher-paying fields such as engineering, finance, and technology.
- **Career interruptions** for caregiving responsibilities—whether for children or elderly parents—slow women's earning growth and limit promotions, while men often experience uninterrupted career progression.
- **Leadership underrepresentation** keeps fewer women in senior managerial or CXO-level roles, where salaries are significantly higher and decision-making power greater.
- **Pay secrecy** allows discrimination to persist; studies show that organisations with transparent salary ranges tend to have smaller gender pay gaps.

- **Cultural and systemic biases** influence hiring, promotion, and performance evaluations, creating barriers that perpetuate unequal pay even within the same company or field.

Implications

- The gender pay gap affects not just salaries but also savings, pensions, and long-term financial independence, leaving women with less security in retirement.
- Midlife women, particularly those in their 40s, often have smaller retirement funds and may need to rely on family support or government assistance.
- Lower earnings reduce investment capacity, limiting wealth accumulation over time and widening economic inequality.
- Family income is directly impacted, especially in single-parent or one-income households, making it harder to meet education, healthcare, and lifestyle needs.
- Wage inequality lowers overall productivity, as women's skills and potential remain underutilised in the workforce.
- The International Labour Organisation (ILO) estimates that closing the gap could add trillions of dollars to global GDP, making it an economic imperative as well as a social one.

Way Forward

- Implement pay transparency laws requiring companies to publish gender pay data, as seen in the EU, to expose hidden wage gaps and drive corrective action.
- Strengthen legal safeguards by enacting and enforcing clear equal pay legislation, which has been shown to reduce disparities in countries with strong frameworks.
- Promote supportive workplace practices such as flexible schedules, affordable childcare, and parental leave to help women balance career growth with family responsibilities.
- Ensure corporate accountability through mandatory annual pay audits, public reporting, and internal review mechanisms to track and close wage gaps.
- Encourage skill development and leadership training programs like *She-Marches* to empower women with negotiation abilities, confidence, and career growth opportunities.
- Foster awareness and advocacy by using platforms like International Equal Pay Day to highlight data-driven evidence and keep public attention on wage inequality.

The gender pay gap persists worldwide, with women still earning 15–20% less than men for similar work. International Equal Pay Day reminds us that achieving equal pay is vital for fairness, economic growth, and social justice, demanding stronger laws, corporate accountability, and cultural change to make equality a reality.

GM CORN BAN

Recent tensions between India and the United States centre on corn trade. The U.S. demands India import American corn, but India remains largely self-sufficient. This dispute marks differences in agriculture, trade policy, and political interests in both countries.

India's Maize Production and Ethanol Use

India produces about 50 million tonnes of maize annually with yields below the global average. Despite this, India often meets its maize needs domestically and occasionally exports.

Maize is increasingly used for ethanol production, with 10 to 12 million tonnes expected to be diverted this year. This shift balances food security with energy goals, especially ethanol blending in petrol to reduce oil imports and carbon emissions.

India's Import Patterns and GM Crop Policy

India imports maize mainly from Myanmar and Ukraine, not the U.S. This is partly due to India's ban on genetically modified (GM) corn imports.

Only GM cotton is approved for cultivation, while GM brinjal and mustard remain under study. Public concerns about GM crop safety influence policy. India's maize imports have increased recently but remain limited and targeted at ethanol feedstock.

GM Corn Ban



- **Regulatory Prohibition:** India bans the import of genetically modified (GM) corn for both human and animal consumption under the Environment Protection Act and oversight by the Genetic Engineering Appraisal Committee (GEAC).
- **US Corn Profile:** Over 90% of US corn is genetically modified, making it incompatible with India's biosafety regulations and import norms.
- **Health and Ecological Concerns:** The ban is rooted in precautionary principles, citing potential risks to biodiversity, food safety, and long-term ecological balance.
- **Political Sensitivity:** A 2023 proposal to allow GM corn imports for ethanol was withdrawn due to backlash from farmer groups and political stakeholders, especially in maize-producing states like Bihar.
- **Trade Implications:** The GM ban remains a major hurdle in India-US agricultural trade, with India prioritizing food sovereignty and domestic farmer protection over external pressure.

U.S. Agricultural Structure and Export Motivations

U.S. farming is highly mechanised, capital-intensive, and focused on cash crops like corn and soybeans. The U.S. produces 350 million tonnes of corn annually, exporting about 45 million tonnes.

Corn supports industries including ethanol, animal feed, and processed foods. Overproduction drives the U.S. to seek export markets, including India's ethanol sector, to sustain agribusiness profits and political support.

Political Stakes in U.S. Corn Exports

Corn and soybean production dominate the U.S. Midwest, a Republican stronghold crucial to presidential primaries. The corn lobby wields influence on U.S. trade and farm policies.

Loss of the Chinese soybean market has intensified pressure to find alternative buyers. Exporting to India fits U.S. political and economic interests, despite India's reluctance to import GM corn.

India's Strategic Concerns and Domestic Impact

India fears that cheap U.S. corn imports could harm its domestic maize ecosystem and farmers, especially in politically sensitive states like Bihar.

The experience of Mexico post-NAFTA, where cheap U.S. corn devastated local farmers, serves as a cautionary tale. Importing corn feedstock for ethanol contradicts India's goals of energy self-reliance and reducing foreign exchange outflow.

Economic and Environmental Dimensions

Ethanol blending reduces India's oil import bill by up to \$10 billion annually and lowers carbon emissions. Using domestically grown maize supports farmers and rural economies. Relying on imports would undermine these benefits and weaken India's ethanol policy objectives.

ADI KARMAYOGI ABHIYAN

The Ministry of Tribal Affairs, in collaboration with the United Nations in India, launched the Adi Yuva Fellowship and the Adi Karmayogi Volunteers Programme in 2025. These initiatives form part of the Adi Karmayogi Abhiyan, the world's largest tribal grassroots leadership movement.

The campaign was inaugurated by Prime Minister Narendra Modi on 17 September 2025 during Janjatiya Gaurav Varsh (15 November 2024 – 15 November 2025).

It aims to engage 11 crore citizens across 100,000 tribal villages in 550 districts of 30 States and Union Territories. The Abhiyan promotes responsive and accountable governance rooted in citizen participation, supporting India's vision for Viksit Bharat 2047.

The Abhiyan focuses on transforming governance into a people's movement. It mobilises tribal communities to co-create development plans called Tribal Village Vision 2030 Action Plans.

These plans chart pathways for inclusive growth at the village level. The ongoing Adi Sewa Parv (17 September – 2 October 2025) facilitates collaboration between tribal members and government officials to implement these plans.

ADI KARMAYOGI

INDIA'S LARGEST TRIBAL LEADERSHIP MOVEMENT

7 Objectives of Adi Karmayogi Abhiyan:

- ✓ Promote transparent and accountable governance
- ✓ Encourage bottom-up planning and participation
- ✓ Set up proactive grievance and feedback systems
- ✓ Implement national and state schemes collaboratively
- ✓ Conduct local visioning aligned with Viksit Bharat @2047
- ✓ Build leadership from village to state level
- ✓ Ensure last-mile delivery through scheme convergence

Adi Yuva Fellowship – Empowering Tribal Youth

The Adi Yuva Fellowship is a pioneering programme designed to empower tribal youth through structured learning and mentorship. Supported by the United Nations in India, it offers a 12-month paid fellowship with a customised learning plan. Fellows gain knowledge, practical experience, and reflective practice.

Benefits include monthly allowances, comprehensive health and life insurance, and access to both UN and commercial learning platforms. The programme links fellows to national skilling schemes such as PMKVY 4.0, NAPS, and PM Viksit Bharat Rozgar Yojana.

The first batch of 16 fellows will be selected through a competitive process and placed with UN agencies at various administrative levels.

Adi Karmayogi Volunteers – Grassroots Catalysts

The Adi Karmayogi Volunteers initiative, supported by the United Nations Population Fund (UNFPA), deploys tribal youth as grassroots change agents. Eighty-two volunteers are active across 82 blocks in 13 districts of Madhya Pradesh and Rajasthan.

Their roles include supporting Village Vision 2030 planning, conducting awareness campaigns, facilitating outreach, and improving access to government schemes. This effort strengthens community participation and inclusive governance at the village level.

Significance and Impact

The partnership between the Ministry of Tribal Affairs and the United Nations demonstrates a strong commitment to inclusive development. It aims to empower tribal youth as leaders, innovators, and agents of change.

The programmes encourage skills, mentorship, and opportunities for long-term career growth. They also ensure that tribal communities actively participate in their own development and governance. This initiative aligns with the Sustainable Development Goals and India's vision for a developed nation by 2047.

TOKAMAK-BHARAT (SST-BHARAT)

India is advancing its nuclear fusion research with a detailed plan to develop the Steady-state Superconducting Tokamak-Bharat (SST-Bharat). This fusion-fission hybrid reactor aims to generate 130 MW of power, with 100 MW from fission and 30 MW from fusion, targeting a power output five times the input.

The project envisages commissioning a full-scale demonstration reactor by 2060 with an ambitious output-to-input ratio of 20 and a power output of 250 MW.

Fusion Power and Its Advantages

Fusion is the process where two light atomic nuclei combine to form a heavier nucleus, releasing vast energy. It powers stars and offers a cleaner alternative to nuclear fission.

Fusion produces less radioactive waste, reducing storage and environmental concerns. However, fusion requires extreme conditions, such as temperatures exceeding 100 million degrees Celsius, to sustain reactions.

Fusion Technologies – Magnetic and Inertial Confinement

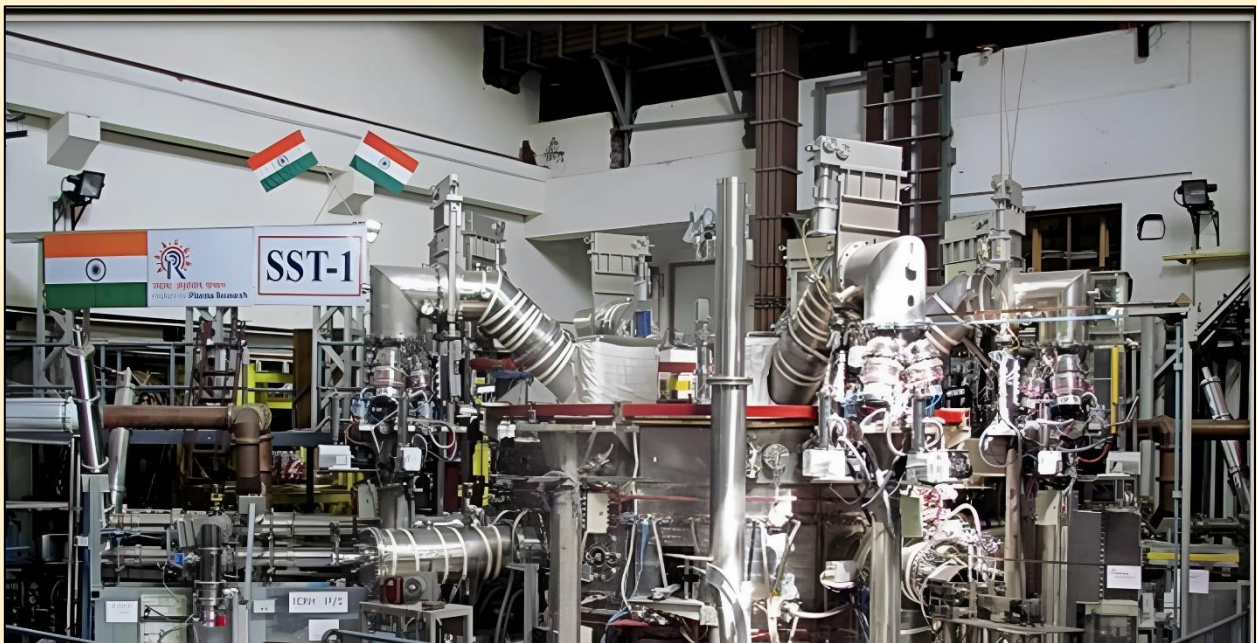
Two main methods exist to achieve fusion – inertial confinement and magnetic confinement. Inertial confinement uses powerful lasers to compress fuel capsules rapidly. Magnetic confinement, the approach India pursues, involves heating plasma and controlling it with magnetic fields inside a tokamak reactor.

India participates in the global ITER project, which focuses on magnetic confinement and aims to reach a power gain factor (Q) of 10.

India's Tokamak Progress and SST-Bharat

India's current tokamak, SST-1, can maintain plasma for up to 650 milliseconds, with a design target of 16 minutes. The SST-Bharat is planned as the next step, aiming for continuous and efficient fusion energy production.

The success of tokamaks depends on plasma confinement duration and stability, which directly impact energy output and reactor efficiency.



Innovations – Digital Twins and Machine Learning

Researchers propose using digital twins—virtual models of physical reactors—to simulate real-time plasma behaviour and optimise designs. Machine learning will assist plasma confinement and control.

Development of radiation-resistant materials is also a priority to enhance reactor longevity. These technologies are vital for overcoming technical challenges and reducing costs.

Global Fusion Landscape and India's Timeline

Internationally, fusion projects vary in timelines. The UK's STEP programme targets a prototype by 2040, and some US private firms aim for operational fusion plants in the 2030s.

China's EAST tokamak already holds plasma duration records. India's 2060 target is more cautious but focuses on steady progress through public funding and international partnerships.

Challenges – Economic Viability and Policy Priorities

Fusion power's economic feasibility remains unproven due to high research, construction, and operational costs. India's fusion programme faces competition from expanding renewable energy sources and existing nuclear fission plants.

Limited private sector involvement contrasts with global trends. Experts caution that fusion timelines are often optimistic and that affordable fusion power is not guaranteed soon.

Strategic and Scientific Benefits

Despite uncertainties, fusion research drives advances in superconducting magnets, plasma physics, and materials science. These innovations can boost India's technological autonomy and industrial capabilities. Collaborations with ITER and global entities may enhance expertise and accelerate progress in fusion energy and related fields.

INDIA'S CLEAN PLANT PROGRAM

India faces rising challenges from climate change and plant diseases that threaten agricultural productivity. Viruses and other pathogens cause severe crop losses, affecting farmers' income and food quality. To tackle this, the government launched the Clean Plant Programme (CPP) in August 2024. CPP aims to provide virus-free, high-quality planting material to farmers, ensuring healthier crops and higher yields.

Background and Need for Clean Planting Material

Plant diseases often go unnoticed until symptoms appear, making field management difficult. Using disease-free planting material is the most effective preventive step. It reduces the spread of systemic pathogens, improves crop quality, and extends shelf life. The CPP focuses on clean plant stock to safeguard plant health without harmful side effects.



Programme Structure and Funding

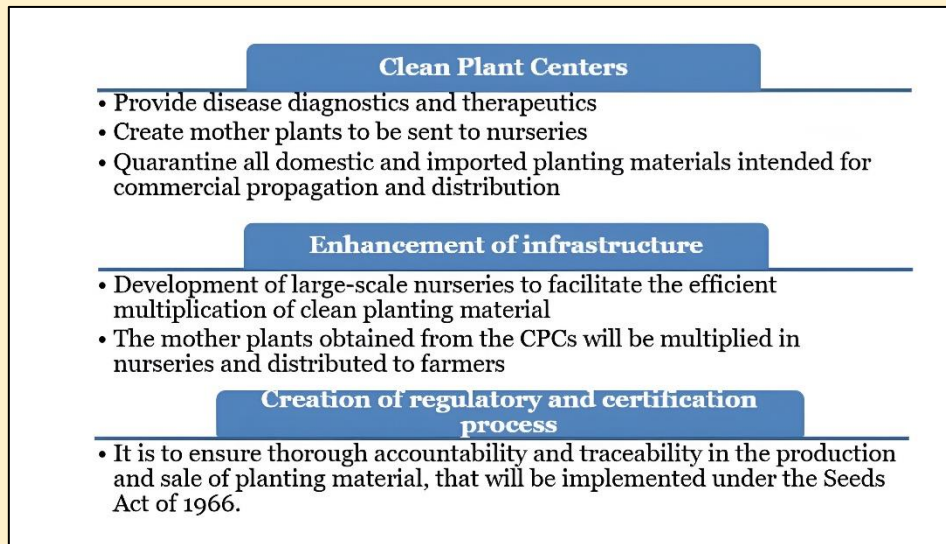
CPP is implemented by the National Horticulture Board (NHB) with technical support from the Indian Council of Agricultural Research (ICAR). The total investment is ₹1,765.67 crore, including a \$98 million loan from the Asian Development Bank.

Nine Clean Plant Centres will be set up nationwide, with three centres in Maharashtra for grapes, oranges, and pomegranates. Modern nurseries will be financially supported to supply 8 crore disease-free seedlings annually.

Key Activities and Progress

The programme has launched a dedicated website to provide updates and resources. Hazard Analysis is underway to identify viruses in crops like grapes, apples, and citrus. Sample testing has been conducted across various states.

The first Clean Plant Centre is in the design phase. Experts from NHB and ADB have visited nurseries in Maharashtra and Jammu & Kashmir to study best practices. Laboratory assessments are ongoing to develop advanced bioinformatics tools for virus detection.



Process of Producing Clean Planting Material

Plant material is first tested for pathogens. If negative, it is propagated to produce disease-free mother plants.

If positive, virus elimination treatments like tissue culture or heat therapy are applied before propagation. Certified clean plants are then distributed through nurseries to farmers, ensuring quality and safety.

Benefits for Stakeholders

Farmers gain access to healthy, high-yield seedlings. Nurseries receive infrastructure support and streamlined certification. Consumers benefit from better quality fruits with improved taste and nutrition.

The export sector is strengthened by offering virus-free produce. The programme promotes equity by making clean planting materials affordable and includes women farmers in planning and training. It also develops region-specific varieties suited to diverse agro-climatic zones.

Alignment with National Initiatives

CPP supports India's Mission LiFE, which encourages environmental sustainability through behavioural change. It also complements the National One Health Mission, integrating human, animal, and environmental health to manage disease risks holistically.

CPP aligns with the Mission for Integrated Development of Horticulture (MIDH) to boost sector productivity and quality.

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