MONTHLY CURRENT AFFAIRS

APRIL-2025

TIRUMAL CLASSES IAS INSTITUTE

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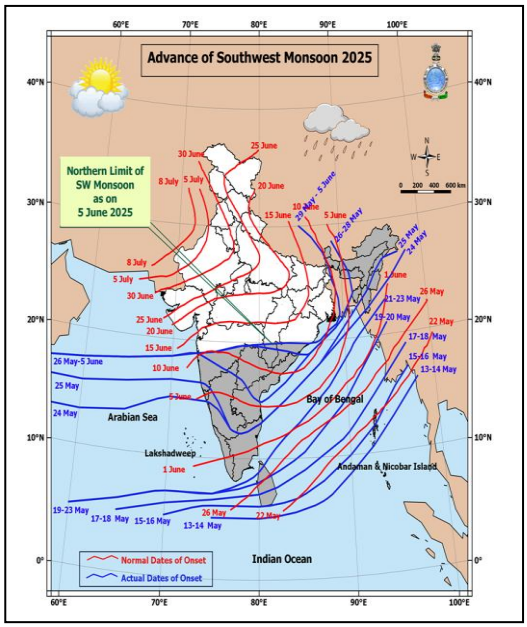
GS-I:

1. The Development of Indian Monsoon Forecasting:



Background: At 105% of the Long Period Average, the IMD has forecast a monsoon that is "above normal" for 2025.

This demonstrates how monsoon forecasting models have advanced, particularly dynamic and ensemble-based systems like MMCFS and MME.

The scientific estimation of atmospheric conditions at a given location and time using mathematical models and observational data is known as weather forecasting.

Forecast Types:

1. Nowcasting (0–6 hours): Uses real-time data from satellites and radars to provide extremely brief weather updates.
2. Short range (1-3 days): Dependent on numerical weather prediction models, useful for planning and agricultural
3. Medium range (4–10 days): anticipates moderate-term trends by simulating atmospheric conditions using dynamic models.
4. Long Range (10 days–2 years): includes ocean-atmosphere interactions and focuses on seasonal patterns like the monsoon

5. Ensemble forecasting: provides more accurate and probabilistic forecasts by combining several models and parameters.

After the ***famine of 1876***, IMD was founded to track the weather and make scientific monsoon predictions. ***Henry Blanford*** established the first forecasting foundation later in ***1882–1825*** by connecting the amount of snow in the Himalayas to the intensity of the monsoon. ***Sir John Eliot*** started making regional forecasts based on April-May data in 1889 and included ocean and Australian weather. In order to predict monsoon patterns, ***Sir Glibert Walker*** presented 28 worldwide predictors and statistical correlations in 1904.

In order to predict the seasonal monsoon, the Gowariker Model employed a power regression model using 16 meteorological variables in 1988. To improve accuracy, parameter reduction introduced two-stage forecasts and two simplified models in 2003. To avoid overfitting, SEFS introduced a five-parameter and six-parameter model in 2007.

Dynamic coupled models that combine atmospheric, terrestrial, and ocean variables have been developed recently for comprehensive prediction. To increase monsoon accuracy, a multi-model ensemble incorporates predictions from global climate models.

Current Forecasting's Drawbacks:

1. ***Regional inaccuracies*** and poor performance during intense events are caused by systematic mistakes in simulations.

2. In India, rainfall results are not always correlated with climate signals such as ***ENSO and IOD.***

3. District-wise forecasting becomes unreliable as forecast precision declines at the micro level.

4. Model dependability is impacted by long-used predictors that have lost statistical significance.

5. Droughts, floods, and abrupt monsoon failures are still difficult for current models to anticipate.

2. Women and the Unequal Burden: Their Role in a Risk Society

Context: Ulrich Beck's idea of the "risk society" emphasizes how contemporary crises increase risks on a worldwide scale, disproportionately affecting women, particularly in poor nations.

A risk society is a time when, in contrast to historical natural risks, manmade risks resulting from environmental and technology advancements predominate in contemporary life. Reflecting the unforeseen effects of industrialization, it places more emphasis on risk management than wealth distribution.

Qualities:

1. Reflective Modernization: Societies must continuously adjust to issues brought about by past technology developments.

2. Globalized risks: dangers that cut across national borders include pandemics, nuclear accidents, and climate change.

3. Unpredictability: Manufactured hazards are intricate, difficult to predict, and challenging to manage.

Risk Types:

1. Natural Risk: results from occurrences such as disease outbreaks, floods, or earthquakes.

2. Manufactured Risk: results from human endeavours, especially the advancement of industry and technology.

The Inequitable Burden on Women in a Risk Society:

1. Women are exposed to contaminated water and indoor air pollution due to their roles in gathering water and using biomass fuels for cooking.

2. According to UNDP research, women are 14 times more likely to perish in climate disasters as a result of limited mobility, caregiving obligations, and insufficient access to early warning systems.

3. When climate-related droughts, floods, or soil degradation destroy crops and lower rural income, women in agriculture bear the brunt of the consequences.

4. Women without financial recognition bear a disproportionate share of post-disaster recovery responsibilities, such as food preparation, healthcare, and childcare.

5. Women go farther for water and receive less food during shortages due to resource scarcity brought on by climate change.

Path Ahead:

1. Require gender-sensitive data gathering and risk assessment in order to create policies that specifically address vulnerabilities.

2. Encourage women-led cooperatives to manage water resources, save seeds, and practice sustainable agriculture.

3. Extend cash-for-work initiatives similar to MGNREGA after a disaster, giving women-headed households priority for prompt recovery.

4. Encourage rural women to reestablish their livelihoods following environmental or health catastrophes by offering them specialized microfinance and insurance packages.

5. Establish mandatory quotas for the representation of women in Panchayati Raj institutions that administer natural resources and local climate adaption organizations.

3. Indian Heritage Sites

Context: Heritage under Threat from Disasters and Conflicts: Preparedness and Learnings from 60 Years of ICOMOS Activities is the theme of World Heritage Day 2025, which is being observed worldwide and serves as a reminder of the importance of preserving natural and cultural heritage.

Sites designated by UNESCO as having exceptional cultural, natural, or combined universal value are known as heritage sites. They stand for the collective heritage of humanity, conserving for future generations the accomplishments of history, architecture, biodiversity, and culture.

India's vast and varied civilizational history is demonstrated by the 43 UNESCO World Heritage Sites it proudly owns as of 2024. The Agra Fort, Taj Mahal, Ajanta Caves, and Ellora Caves were included as the first acknowledged landmarks in 1983, marking the beginning of India's journey. India's sites fall into three categories: mixed, cultural, and natural.

Significance:

1. India's centuries-old customs, culture, and legacy are preserved for future generations by heritage sites.

2. India's tourism-driven economy benefits from UNESCO-recognized sites, which foster local development and employment creation.

3. India's cultural legacy enhances its international standing and cultural diplomacy initiatives.

4. Natural heritage sites are essential areas for scientific study and biodiversity conservation.

Challenges:

1. Unplanned urban growth encroaches on and harms neighbouring ecosystems and heritage structures

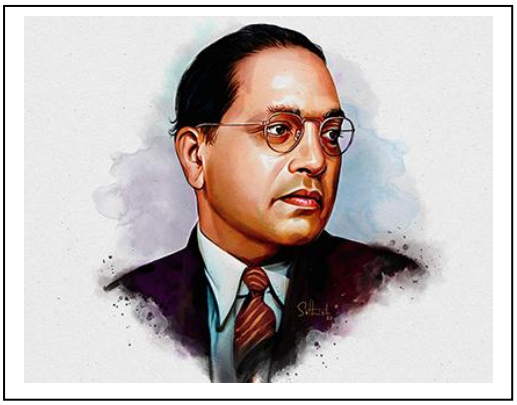
2. Sensitive heritage habitats are impacted by the acceleration of environmental degradation caused by global warming.

3. Historic monuments are frequently irreparably damaged by natural disasters and conflict areas.

4. Long-term conservation efforts are hampered by a lack of qualified personnel and inadequate finance.

5. Physical wear, discoloration, and structural degradation are caused by heavy foot traffic and pollutants.

4.Ambedkar's Contributions to the Indian Economy:



In view of Ambedkar Jayanti 2025, Dr. B.R. Ambedkar's contributions to Indian economic theory are receiving fresh attention, with particular emphasis on his groundbreaking work in labour reforms, monetary policy, and Dalit land rights.

He argued in favour of a gold exchange standard in his book The Problem of the Rupee: Its Origin and Its Solution (1923). He had an impact on the Reserve Bank of India's establishment in 1934.

The Finance Commission of India and financial decentralization were conceptualized as a result of his thesis, Provincial Decentralization of Imperial Finance in British India (1921).
The 8-hour workweek, maternity benefits, and dispute settlement boards were instituted by the Labour Member of the Viceroy's Executive Council. He established job exchanges throughout India.

Led initiatives that connected water management with economic growth, including as the Central Water Commission, the Damodar Valley Project, and the Hirakud Dam.

To guarantee economic independence, separate settlements and land distribution for Dalits are suggested.

Supported the collectivization of agriculture and the nationalization of land.

Claimed that social democracy is lacking without economic fairness and connected economic empowerment to social dignity.

In order to eliminate caste-based occupational immobility and provide jobs, he backed state-led industrialization.

Warned that the poor are disproportionately affected by inflation and promoted monetary restraint, a notion that is mirrored in India's current inflation-targeting system.

5. Feminism in a Polarized World:

Discussions over gender justice in politics have been rekindled by India's recent enactment of the Women's Reservation Bill, 2023. However, tackling interpersonal and institutional injustices without escalating societal polarization is a problem for feminist discourse today.

Women's rights and their waves:

1. First Wave: 1848–1920s: centred on legal rights and suffrage. Emmeline Pankhurst and Elizabeth Cady Stanton are important figures. White women predominated, excluding important activists due to a lack of diversity.

2. Second Wave: 1963–1980s: broadened to include gender violence, reproductive rights, and workplace equality. Crucial were Germaine Greer's The Female Eunuch and Betty Friedan's The Feminine Mystique. condemned for leaving out women of colour.

3. Third Wave: 1990s–2010s: embraced digital activism, diversity, sex, and positivism. In 1992, Rebecca Walker came up with the term "third wave." There were movements like #GirlPower and Riot Grrrl.

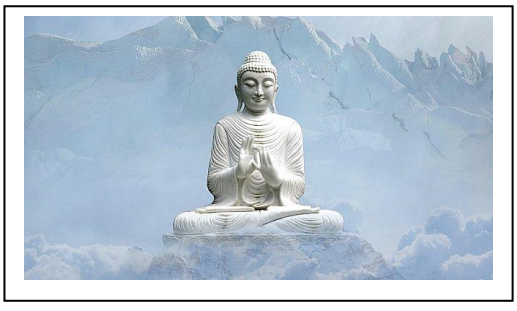
4. Fourth Wave: Global, digitally driven mobilization, 2013–present.

Challenges:

1. Confusing privileged fights with systemic oppression
2. Men's economic strains exacerbate opposition to feminist discourse
3. Partisan agendas frequently appropriate feminism, weakening its fundamental goals.
4. Feminist activism and anti-feminist trolling are both amplified in online venues.
5. Gender reforms are impeded by conservative countries' traditional values.

6. Why did Buddhism decline in its birthplace?

Context: During his visit for the ***6th BIMSTEC Summit***, the Thai government presented the Prime Minister of India with the Tipitaka, rekindling public interest in the history of Buddhism and its decline in India.



Siddhartha Gautama was the founder of Buddhism. He preached the Four Noble Truths and the Eightfold Path after becoming enlightened in Bodh Gaya. He was born in Lumbini, Nepal. rejected Brahminical rites and the caste system in favour of focusing on personal enlightenment. Buddhism was favoured by the Magadha kings as a substitute for Brahmanism. To preserve Buddha's teachings after his passing, the first Buddhist Council met at Rajgir. Use missionaries and edicts to spread Buddhism throughout India and beyond.

Nalanda, Vikram Shila, and Taxila developed into major Buddhist learning hubs worldwide. In Bengal and Bihar, Vajrayana developed by fusing Mahayana philosophy with occult rites. It has expanded to China, Sri Lanka, and Southeast Asia in addition to India.

Buddhist influence can be seen in Gandharan art, Ajanta Caves, and Sanchi Stupa.

Buddhism's contributions to India include:

1. Providing an equal Sangha and opposing caste discrimination

2. Indian languages were enhanced by Pali and Prakrit writings, and moral storytelling was inspired by Jataka tales.

3. Affected Gandhi's Satyagraha and Ashoka's Dhamma

4. Buddhist missions enhanced India's cultural connections with Asia

5. Stupas, Chaityas, and Viharas established standards for Indian architecture.

The following factors contributed to Buddhism's decline:

1. The joyous, deity-centred traditions of Hinduism stood in stark contrast to the austere, monastic concentration of Buddhism.

2. Buddhism's distinctiveness was diminished when Buddha was adopted by Hindus as Vishnu's ninth avatar.

3. Buddhism remained meditative and austere, but Hindu temples dynamically included dance, music, and festivals.

4. By promoting monasticism, Buddhism diverted physically fit men from their responsibilities to their families and the economy.

5. Buddhism's attractiveness was diminished when Hindu reformers like Shankara adopted its rejection of caste.

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6. Rich monasteries lost connection with the general populace as they became dependent on slaves and donations.

7. Nalanda, Vikram Shila, and other important centres were destroyed by the Turks. Buddhism had weak grassroots, thus there was no widespread opposition.

8. Intellectuals were won back by Advaita Vedanta, which refuted Buddhist reasoning.

GS-II

1. Deputy Speaker of the Lok Sabha:

Background: Similar to the 17th Lok Sabha, the 18th has not yet chosen a Deputy Speaker, which raises questions regarding parliamentary customs and constitutional compliance.
The Indian Constitution's Article 93 requires the house to choose a Speaker and a Deputy Speaker as soon as possible.

Chosen from among themselves by members of the Lok Sabha. The date is set by the Speaker upon their election. Although it is not required by law, the deputy speaker is typically from the opposition.

Functions and Powers:

1. Takes over as speaker in the absence of the latter

2. Only casts vote in the event of a tie while presiding

3. Immediately assumes the head of any parliamentary committee upon appointment.

4. Answerable directly to the Lok Sabha.

5. Ensures that the Speaker's absence never interrupts house proceedings

6. Preserves objectivity and maintains equilibrium in legislative discussions

Effect of Vacuum in the Office of the Deputy Speaker:

1. The absence of the Speakers causes procedural hiccups and jeopardizes the Lok Sabha's ability to operate smoothly.

2. The Speaker becomes the exclusive source of power, weakening the checks and diminishing the balance that parliamentary democracy is meant to provide.

3. Bipartisan collaboration and confidence in parliamentary procedures are diminished when the custom of selecting a Deputy Speaker is disregarded.

4. A leadership crisis might be triggered by the lack of a Deputy Speaker, which would halt legislative proceedings in the case of the Speaker's abrupt resignation, death, or dismissal.

The Need for Legislative Reform

1. Change Article 93 to require the election of the Deputy Speaker within 60 days of the first session.

2. Permit the President to start the election process if it is postponed, based on Cabinet advice.

3. In order to foster inclusivity and trust, enforce the custom of presenting the job to an opposition member.

4. Modify the Lok Sabha's rules of procedure and business conduct to codify the functions and election schedule.

2. The Poverty and Equity Brief 2025 from the World Bank

Context: Between 2011–12 and 2022–23, India successfully lifted 171 million people out of extreme poverty, according to the World Bank's Spring 2025 Poverty and Equity Brief. These briefs, which are released twice a year, follow developments in inequality, shared prosperity, and poverty in more than 100 developing nations.

Highlights of India:

1. India's rate of extreme poverty decreased from 16.2% in 2011–12 to 2.3% in 2022–23

2. 378 million individuals were lifted out of lower-middle income poverty, which decreased from 61.8% to 28.1%.

3. From 2005–06 to 2022–23, multidimensional poverty decreased from 53.8% to 15.5%.

4. The Gini index increased to 25.5 from 28.8.

5. The lowest level of urban unemployment during 2017–18 was 6.6%.

Factors contributing to the reduction of poverty:

1. Safety nets were enlarged by programs like PMAY, MGNREGA, and Ujjwala Yojana.

2. The rise of the formal sector was hastened by GST and Ease of Doing Business reforms, which increased job prospects.

3. Programs like the Jan Dhan Yojana and Ayushman Bharat enhanced financial inclusion and healthcare.

4. Rural electricity and improved road connectivity under PMGSY improved rural income and market accessibility.

5. Family incomes increased due to an increase in rural women's employment and SHG-based entrepreneurship.

Analysis of Report

1. Poverty rates in both rural and urban areas drastically decreased, reducing the difference between the two from 7.7% to 1.7%.

2. Women's employment increased significantly, and rural women's self-employment increased.

3. States like Maharashtra, Bihar, and Uttar Pradesh made significant contributions to the national effort to reduce poverty.

4. A higher Gini index suggests a more equitable distribution of wealth.

5. Youth unemployment is still alarming, reaching 29% among graduates, despite overall employment improvements of 13.3%.

6. Agriculture is still primarily an informal sector, with only 23% of non-farm jobs being official.

7. Women's labour force participation is at 31% despite advancements, underscoring ongoing inequity.

8. Of India's severely poor in 2022–2023, 54% still reside in five populous states.

Path Ahead:

1. Youth receive extensive occupational training and upskilling to solve educated employment

2. Employment can be shifted toward formal, stable positions through labour reforms and MSME strengthening.

3. Particular efforts to eradicate poverty in states with high rates of poverty, such as Uttar Pradesh and Bihar

4. To guarantee sustainable rural incomes, diversifying revenue streams through agri-tech, services, and rural industries

5. Policies that promote women's employment by creating safer work environments and flexible work schedules

6. Increasing the effect and last-mile delivery of programs like Ayushman Bharat and PM-Kisan.

3. The 2025 World Social Report

Context: In light of growing insecurity, inequality, and eroding trust globally, the United Nations published the World Social Report 2025, emphasizing the urgent need for a new global policy consensus centred on fairness, economic security, and solidarity.

Important Synopsis:

1. Over 690 million people remain in extreme poverty, and economic uncertainty affects 1.60 percent of the world's population.

2. Income inequality increased in two-thirds of countries despite progress in reducing poverty, with the richest 1% owning more wealth than 95% of the world's population

3. The prevalence of informal and insecure work is still high, particularly in South Asia and Africa, which results in vulnerability and inconsistent revenues.

4. Due to economic hardship, disinformation, and poor governance, over 50% of people worldwide say they have little to no faith in their governments.

5. In 2024, one in seven people experienced conflicts and one in five individuals experienced climate shocks, which reversed development achievements and increased insecurity.

6. Since 1995, more than 1 billion people have been lifted out of extreme poverty, and gains in life expectancy, literacy, and access to essential services have been observed.

7. The gap between rich and poor countries keeps growing due to inadequate social security, unfair taxes, and underinvestment in public goods.

8. The report calls for universal social insurance, fair taxation, and reinvigorated multilateralism in order to create inclusive, equitable, and resilient societies.

4. Nutrition in Children's

Context: In order to address the worldwide malnutrition issues, international leaders emphasized the critical necessity to incorporate food literacy into school instruction during the nutrition for growth conference in Paris.

The goal of the global Nutrition for Growth summit is to mobilize pledges to address malnutrition in all of its manifestations.

By coordinating nutrition goals with the 2030 Agenda for Sustainable Development, it aims to speed the process of eradicating hunger by highlighting a change from focusing on food availability to enhancing food literacy and healthy eating practices, particularly for children.

The UN Decade of Action on Nutrition will be extended from 2025 to 2030, nutrition education will be incorporated into school curriculum worldwide, and a renewed commitment to promoting sustainable and biodiverse diets are among the outcomes.

1. Adolescence is a critical time for proper nutrition, providing a second chance to make up for deficiencies from early childhood.

2. Poor eating habits throughout childhood are connected to about 70% of adult diseases that can be prevented.

3. Social behaviours, emotional stability, cognitive development, and physical growth are all impacted by nutrition.

4. The SDG 2 Minimum Dietary Diversity measure assesses the quality of children's diets and encourages a diversified, nutrient-dense consumption.

Challenges:

1. Healthy choices are distorted by the ease with which processed, high-sugar foods can be accessed through digital marketing and quick delivery apps.

2. Because nutrition teaching in schools is either out-of-date or non-existent, the majority of kids lack basic food literacy.

3. The majority of youngsters in India and around the world do not regularly eat at least five to 10 key food categories.

4. The absence of well-trained educators, organized curricula, and nurturing spaces such as school kitchen gardens.

5. Local, seasonal, and traditional food systems that are essential for sustainability and nutrition are being neglected more and more in modern diets.

5. The World Trade Organization

Context: In light of growing protectionist policies like reciprocal tariffs, some contend the WTO has lost its purpose and requires significant modifications, casting doubt on its continued relevance.

With its headquarters located in Geneva, Switzerland, it took the place of GATT on January 1, 1995. It supports the Most Favoured Nation and National Treatment, monitors member nations' trade policies, conducts international trade discussions, and settles trade disputes through a legally binding process.

It remains the only global trade platform with a single structure and legally binding regulations. It continues to be a stronghold against protectionism. The WTO provides transparency through Trade Policy assessments, despite its limits.

Since 2017, the United States has blocked appointments, paralyzing the WTO's appellate body. The 2001 Doha round was unable to come to an agreement on trade facilitation, subsidies, and agriculture. In order to avoid the WTO's MFN commitments, countries now favour bilateral or multilateral free trade agreements.

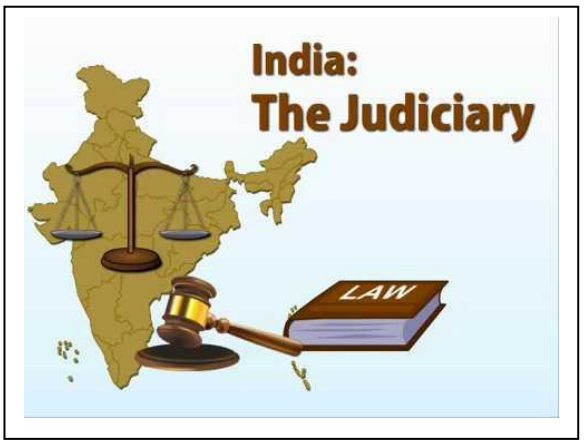
Asymmetries in market access and state-led excess capabilities were neither anticipated or addressed by the WTO. An ineffective appellate system prevents any case from being resolved in its entirety.

6. The Power of the Judiciary

Context: Discussions concerning judicial overreach have been rekindled by recent Supreme Court decisions on issues such as Article 370, the assent powers of the Governor's Bill, and the application of Article 142.

When unelected judges abuse their power and supersede legislative and executive authority, it is referred to as judicial despotism. It occurs when judges go beyond interpretation and take on governance or policy-making responsibilities.

Features:



1. The ability to circumvent statutory procedures by ensuring "complete justice"

2. The separation of powers is impacted because courts consider petitions even when they don't involve personal grievances.

3. Unlike elected MPs, judges are not subject to electoral scrutiny.

4. In the guise of diversity or discretion, the judicial collegium frequently avoids seniority.

5. Prohibiting crackers without a formal legislation or issuing recommendations on mob lynching.

Judicial Despotism Causes:

1. In order to reestablish legitimacy after an emergency, courts enlarged their authority through concepts like PIL.

2. Courts intervene when other organs are unable to act or postpone making judgments.

3. Articles 142 and 370's ambiguous wording grants courts broad power.

4. Courts are pressured to maintain civil freedoms due to elevated expectations.

5. Unchecked authority is made possible by judges' lack of formal accountability.

Consequences:

1. Courts that overreach runs the possibility of substituting their own interpretations for legislative processes.

2. Trust in judicial neutrality is weakened by perceptions of bias or activism.

3. The judiciary may subtly erode state sovereignty.

4. It could lead to judicial intolerance if reasonable criticism is silenced under contempt of court.

7. Relations between Saudi Arabia and India

Context: India's Prime Minister's trip to Saudi Arabia is intended to bolster the expanding Under the framework of the Strategic Partnership Council, additional trade, defence, and investment agreements are anticipated in the India-Saudi Strategic Partnership.

Relationships:

1. In 1947, formal diplomatic relations were formed.

2. The Delhi Declaration of 2006 established a strategic alliance during King Abdullah's visit.

3. During PM Manmohan Singh's visit, the Riyadh Declaration-2010 raised the strategic level of the partnership.

4. The focus has been broadened to include energy, defence, space, and culture by PM Modi's trips in 2016, 2019, and 2025. Relationships were further strengthened by Saudi Crown Prince Muhammad bin Salman's trips to India in 2019 and 2023.

5. With USD 42.98 billion in bilateral trade (FY 2023-24), Saudi Arabia ranks as India's fifth-largest trading partner, enormous opportunity for investment, including PIF's USD 10 billion commitment to industries like technology, retail, and agriculture.

6. With 13% of India's oil imports in 2023–2024, Saudi Arabia continues to be the country's third-largest supplier of crude oil. The International Solar Alliance facilitates cooperation in the renewable energy sector.

7. Expanding defence cooperation, cooperative land forces drill Ex-Sada Tanseeq-I in 2024, and naval drills such as AI Mohed AI Hindi.

8. There are 7 million Indians living in Saudi Arabia, serving as an important socioeconomic link. Yoga collaboration, cultural memorandums of understanding, and rising interest in sports and travel.

9. Collaboration between Viksit Bharat 2047 (India) and Vision 2030 (Saudi Arabia) promotes innovations, infrastructure, and human capital development.

Challenges:

1. Bilateral dynamics may be impacted by regional events such as the Yemen War or tensions between Saudi Arabia and Iran.

2. India may face strategic balancing difficulties as a result of Saudi Arabia's concurrent involvement with China, which includes joining BRICS plus.

3. India is susceptible to changes in the energy market due to its heavy reliance on Saudi oil.

4. Periodically, concerns about the welfare and rights of Indian workers in Saudi Arabia arise, necessitating ongoing consular assistance.

5. Although Saudi Arabia is implementing reforms that navigate cultural and religious standards, it is nonetheless sensitive to growing people-to-people contacts.

8. India's Primary Healthcare

Context: Despite initiatives like Ayushman Bharat, the National Health Accounts 2021–22 show a meagre growth in healthcare spending, exposing weaknesses in India's primary healthcare system.

The public health system in India comprises 1.75 lakh 350 crore consultations are handled by Ayushman Arogya Mandirs. Although per capita out-of-pocket spending has decreased, the private sector continues to have a dominant position. Despite efforts to improve service quality through the National Quality Assurance Standards, public healthcare confidence is still low.

India's need for primary healthcare

1. Early disease detection and management through primary care reduces the strain on tertiary institutions.

2. By offering early treatment, effective primary healthcare reduces costly hospitalization expenses.

3. In rural and tribal communities, primary health centres serve as the initial point of contact.

4. Long-term management of lifestyle diseases such as diabetes, cancer, and heart conditions requires primary care.

5. To combat pandemics, lessen hospital overcrowding, and guarantee community health readiness, a strong primary care network is essential.

Challenges:

1. A lack of trust in public healthcare lowers its use; private hospitals are frequently chosen since they are thought to be of higher quality.

2. Ayushman Bharat Arogya Mandir and other programs are not well known by the public, which lowers community involvement.

3. The spread of basic health centres in remote and tribal communities is still insufficient.

4. The provision of high-quality healthcare in rural areas is hampered by a lack of contemporary facilities, particularly diagnostic equipment.

5. Despite governmental programs, a significant portion of healthcare services are provided by private organizations, making treatment expensive.

6. Rural families are nevertheless burdened by costs such as transportation, diagnostics, and non-listed therapies.

9. India's Elderly Population

Context: A 2025 feature emphasizes the country's growing senior citizenry and the pressing need for social security, integrated healthcare, and support services. India will have more than 300 million senior people by 2050, making it extremely difficult to care for its aging population.

According to government programs and census classifications, those 60 years of age and older are regarded as elderly in India. According to statistics on 2020 demographic forecasts, India's old population was 103.8 million in 2011 and is predicted to grow to 193.4 million by 2031. The number of senior citizens in India could reach 300 million by 2050 due to rising life expectancy and decreased fertility.

Issues that older Indians face:

1. As people age, they develop a number of chronic illnesses that require lifetime medicine and specialized care.

2. Loneliness, depression, and dementia are on the rise, particularly among older people in nuclear households and after COVID-19.

3. Long-term care is unaffordable for many elderly people since they do not have regular income, pensions, or health insurance.

4. As younger generations migrate, there is a lack of family support and qualified caregivers.

5. There aren't many senior-friendly hospitals, assisted living facilities, or transportation networks.

Government Programs for the Care of the Elderly:

1. Atal Vayo Abhyudaya Yojana

2. The National Elder Health Care Program

3. The doorway of SACRED

4. Rastriya Vayoshri Yojana

5. The Social Pension Plan

10. The 2025 India Justice Report

Context: No State or UT has fulfilled its own reserved quotas for women in the police service, according to the India Justice Report 2025.

The ability of States and UTs to administer justice across four pillars is evaluated in this national ranking. published by Tata Trusts in association with partners such as TISS-Prayas, DAKSH, Vidhi Center, and CHRI.

By assessing governments' performance in delivering justice using official government data, it seeks to advance data-driven reforms.

Among the major states, Karnataka, Andhra Pradesh, Telangana, Kerala, and Tamil Nadu ranked first through fifth.

The proportion of women in the police and courts is continuously increasing in all states.

The subordinate courts also improved, while the high court maintained a disposal rate of over 100%.

Access has been enhanced by digital filing, e-Sewa Kendras, and legal aid tracking through NALSA's online system.

With an ideal staff-to-inmate ratio and 100% budget utilization, Tamil Nadu maintained its top spot in prison administration.

Thirty percent of police stations lack female help desks, while seventeen percent lack CCTV.

71% of lawsuits in Bihar are still waiting after three years, with over 5 crore files pending at all judicial levels.

Undertrials now make up 76% of convicts, up from 66% ten years ago.

Reforms that have been proposed include:

1. Enforcing women's reservation in high police and judiciary positions with open audits

2. Digitalized FIR systems, universal CCTV coverage, and female assistance desks at each station

3. A uniform hiring schedule and the All-India Judicial Service for subordinate courts

4. Boost the PLV network, taluka clinics, and community-based legal help.

5. Boost parole, open prisons, and guarantee medical personnel in proportion to the number of inmates.

6. Provide more funds to states that demonstrate improvement year after year.

11. Examining NREGA Wages Again: Handling Inflation and Inequalities

Context: Citing the growing cost of living and insufficient inflation indexation, the Parliamentary Standing Committee on Rural Development has strongly suggested a reform and uniformity in MGNREGA salaries.

1. Every year, rural households are promised 100 days of paid work under the Mahatma Gandhi National Rural Employment Guarantee Act (2005).

2. MGNREGA is the largest public employment program in the world, with over 25 crore registered workers.

3. During emergencies like the COVID-19 epidemic, when rural unemployment increased, NREGA serves as a safety net for the impoverished in rural areas.

4. It encourages the management of natural resources while offering jobs.

5. Research indicates that NREGA has increased rural wages generally and given casual workers more negotiating leverage.

Independent wage rates might be notified by the central government. Notwithstanding the minimum pay set by the state under the Minimum salaries Act, the Center has the authority to establish NREGA salaries. If there is no central announcement, state minimum agricultural wages are applicable. The CPI for Agricultural Laborers is used to update the pay every year. Some states choose to voluntarily cover the difference between their minimum wage and the Centre's rate.

Problems:

1. NREGA earnings in several states fall very short of the legally required minimum wage.

2. Compared to CPI-R, using CPI-AL fails to adequately reflect increased rural living expenses.

3. For the same NREGA task, workers in various states receive wildly disparate compensation.

4. Wage calculations continue to rely on antiquated price data, which undervalues labor in the present economic climate.

5. Funds frequently arrive late, which results in financial difficulties and employee attrition.

12. India-Bangladesh Transshipment Facility

Context: Citing strategic and logistical concerns, India cancelled the 2020 transshipment facility that let Bangladesh to use its territory for third-country exports. The action has important ramifications for regional diplomacy and trade.

1. India let Bangladesh to export goods to third nations like Nepal, Bhutan, and Myanmar by using its ports and land customs stations.

2. It sought to lower transportation expenses and boost logistical effectiveness for Bangladesh's main export industries, especially ready-made clothing.

3. To provide for quicker worldwide access, particularly for landlocked areas, cargo was transported via Indian ports.

4. Considering India's "Neighbourhood First" policy, it is viewed as a goodwill gesture that strengthens regional trade integration.

The reason behind India's facility withdrawal:

1. With reference to competition with textile exports from Bangladesh, the Apparel Export Promotion Council argued for withdrawal.

2. India's own exporters were hit by rising freight costs and airport and port congestion, especially in Delhi.

3. Concerns were heightened by Bangladesh's increasing closeness to China and comments that questioned India's strategic location in the northeast.

4. Red flags were raised when Bangladesh invited Chinese investments close to India's Siliguri Corridor.

5. The action can be seen as a diplomatic attempt to prevent India's power from eroding geopolitically.

Repercussions:

1. RMG exports, which brought in $50 billion for Bangladesh in 2024, are particularly affected by rising export costs and delivery delays to third nations.

2. Bangladesh's logistics capacity is insufficient to swiftly make up for this shortfall.

3. Decreases confidence among international investors and impacts Bangladesh's positioning as a transportation hub.

4. Reduces the strain on Indian ports and airports that handle cargo from Bangladesh as well as domestically.

5. Prevents Indian exporters from losing market share to Bangladeshi competitors in the US and Europe.

6. Strengthens India's control over regional logistics in the face of China's expanding regional influence.

13. Supreme Court Judgement on Governor Assent

Context: In order to establish time-bound procedures for future gubernatorial decisions, the Supreme Court of India criticized the Tamil Nadu Governor for unconstitutionally delaying the assent of ten bills that had been repassed.

A law enacted by the State Legislature can be delivered to the Governor with four alternatives, according to Article 200 of the Indian Constitution: Grant assent, withhold assent, Return the law for

Reconsideration, or Reserve the Bill for President's Consideration.

Except in situations where discretion is permitted, Article 163 mandates that the governor operate with the Council of Ministers' assistance and advice.

The Supreme Court has the authority to administer "complete justice" in any situation under Article 142.

Concerning the Governor's Role in Bills:

1. Governors use a "pocket veto" to postpone assent indefinitely.

2. It has been said that political disagreements cause governors in states controlled by the opposition to postpone legislation.

3. It is against constitutional obligation to withdraw assent without providing justification.

4. Citing comparable delays, states like Telangana, Punjab, and Kerala have petitioned the SC.

A time-bound structure is established:

1. One month to consent or reserve in accordance with the State Cabinet's recommendation

2. Three months if the governor rejects the advice.

3. It takes one month for a re-enacted bill to receive assent.

4. The President may reserve Bill for a maximum of three months.

Importance:

1. Enhances elected state governments' legislative autonomy

2. Prevents governors from using inaction or silence to stall legislation.

3. Reiterates that Article 200 is obligatory rather than optional.

4. Preserves parliamentary democracy, in which the legislature reflects the people's will.

5. Improves judicial uniformity by influencing ongoing issues in Punjab, Telangana, and Kerala.

14. PM Mudra Yojana

Context: In April 2025, Mudra Yojana commemorated its tenth anniversary. The program's contribution to financial inclusion and grassroots entrepreneurship was praised by the Indian Prime Minister and other important ministers.

Implemented under SIDBI by MURDA Ltd. Its goal is to give non-corporate, non-farm micro, and small businesses loans up to 10 lakhs without the need for collateral. Under the Tarun Plus category, loans are now available up to Rs. 20 lakhs.

Types of Loans:

1. Up to 50,000/- for ***Shishu***

2. 50,000-5 lakhs for ***Kisor***

3. ***Tarun:*** five to ten lakhs

4. ***Tarun Plus:*** between 10 and 20 lakhs

Lending organizations include cooperative banks, SCBs, RRBs, NBFCs, MFIs, and SFBs.
No collateral is needed, and lending institutions establish nominal interest rates in accordance with RBI guidelines.

Pay attention to marginalized populations such as women, minorities, and SC/ST/OBC.

Results:

1. More than 52 crore loans totalling Rs. 32.61 lakh crore have been approved.

2. Women received 2.68% of all loans disbursed.

3. The average loan for women increased at a 13% CAGR to Rs. 62,679/-.

4. Startups run by women shown greater rates of employment generation.

5.50% of the recipients are OBC, SC, or ST.

6.Minority communities own 6.11% of the accounts.

7.Kishor loans increased to 44.7% from 5.9%.

8. From 15.8% to almost 20%, the MSME credit share in bank lending increased.

9. Tamil Nadu is in the top with a disbursal of Rs. 3.23 lakh crore, followed by Karnataka and Uttar Pradesh.

10. In several publications, the IMF commended PMMY for encouraging inclusive entrepreneurship and women-led MSMEs.

Limitations:

1. The majority of supported businesses continue to be small or unofficial, with little ability to create jobs.

2. A tiny portion still comes from higher loan categories.

3. Low NBFC/MFI penetration in rural areas and a heavy reliance on public sector banks

4. In certain areas, credit pushes without accompanying financial awareness may raise the risk of default.

5. Limited post-credit disbursement handholding or upskilling help undermines sustainability

15. The 2024 Report on Women and Men in India

Context: The 26th edition of "Women and Men in India 2024," which provides a thorough gender statistics snapshot, was released by the Ministry of Statistics and Program Implementation.

1. In 2022–2023, the gender parity index stayed above 1.00 in the elementary, upper primary, and higher secondary levels, indicating a larger enrolment of female students.

2. The female labour force participation rate grew from 49.8% to 60.1% under normal circumstances, indicating a greater presence of women in the workforce.

3. In 2023–2024, women will make up 39.2% of all bank accounts and 39.7% of total deposits.

4. Growing financial autonomy in non-urban areas is indicated by the 42.2% of accounts held by rural women.

5. In 2024, there were 143.02 million DEMAT accounts, up from 33.26 million in 2021.

6. In just three years, the number of female account holders grew from 6.67 million to 27.71 million, representing a 4.2x gain.

7. From 2021–2022 to 2023–2024, the proportion of female-headed proprietary businesses in manufacturing, trade, and services increased gradually.

8. In 2024, female voter turnout was 65.8%, which was nearly equal to male turnout of 65.5%.

9. DPIIT-recognized startups with at least one female director increased by 800%, from 1,943 to 17,405, demonstrating increased inclusivity in the startup ecosystem.

10. In 2023, the national total fertility rate fell to 2.0, and women's health improved as their life expectancy rose to 71.3 years.

16. Sri Lanka-India Relations

Context: India's prime minister's visit to Sri Lanka improved bilateral relations with seven important memorandums of understanding in the fields of energy, defence, and digitization. China's expanding influence in the Indian Ocean region was another topic of discussion during the visit.

Recent Meeting Results:

1. An umbrella an agreement was made to fight China's port presence in Hambantota through organized military cooperation.

2. Development of the Trincomalee Energy Hub in collaboration with the UAE. Trincomalee saw the launch of a solar power plant, and railway improvements totalling $106 million were inaugurated.

3. Interest rates on current debt were lowered, and $100 million in Indian loans were converted to grants.

4. For Vesak 2025, Buddha relics from Gujarat will be on exhibit in Sri Lanka. India will renovate the temples of Sita Eliya and Thirukoneswaram.

5. Memorandums of Understanding on Eastern Province Development, Healthcare, and e-Government.

Historical Relations:

1. In order to spread Buddhism, Emperor Ashoka dispatched his children to Sri Lanka in the third century BCE, connecting Bodh Gaya with the Mahabodhi temple in Anuradhapura.

2. Formal diplomatic connections were established in 1948, shortly after Sri Lanka gained independence from British rule, and both countries shared anti-colonial battles.

3. Despite efforts to calm the ethnic situation, India's 1987–1990 peacekeeping assignment during the LTTE conflict deteriorated relations.

4. The 2000 India-Sri Lanka Free Trade Agreement increased trade to $5.54 billion in 2023–2024, and ferry services between Tamil Nadu and Jaffna were restored.

5. India has constructed 60,000 homes for Tamils impacted by the war since 2014 and supplied crucial assistance amid Sri Lanka's economic crisis in 2022.

Challenges:

1. India has serious security concerns about the 99-year lease of Hambantota Port to China and the 2022 docking of Yuan Wang 5.

2. Unresolved maritime boundaries and livelihood tensions are highlighted by the frequent arrests of Tamil Nadu fisherman near Katchatheevu Island.

3. Changing alliances in Sri Lanka, such as those that support China, call into question continued adherence to policies that favour India.

4. Tamil post-war complaints are still unsolved, and the 13th amendment, which India supports, has made only modest progress toward devolution.

17.Preventive Healthcare

Context: Non-communicable illnesses account for 66% of fatalities in India and pose a threat to economic growth due to a "silent epidemic." To stop this disaster and ensure a healthier future, experts recommend preventive healthcare.

Through immunizations, lifestyle modifications, and early detection, it emphasizes disease prevention over treatment. Regular health examinations are part of it, and wearables, apps, and artificial intelligence are used to anticipate risk.

Relevance:

1. In India, non-communicable diseases like diabetes, cancer, and heart disease account for more than 5 million fatalities per year.

2. India's rising NCD epidemic is expected to lower national productivity and cost the country $3.5–4 trillion by 2030.

3. India's demographic dividend is being weakened by an increase in young adults' obesity and hypertension.

4. Eighty percent of heart attacks and strokes are associated with poor diet, inactivity, and tobacco use.

Challenges:

1. Early detection is delayed since the majority of Indians only seek medical attention when symptoms arise.

2. Rural areas have inadequate primary healthcare facilities, with few doctors and diagnostics.

3. Investment in screenings and preventative treatments is limited by low public health budget.

4. People avoid going to the doctor unless they are ill, ignoring early screenings and preventive measures.

5. Few businesses encourage wellness programs or preventive treatment for their staff.

18. Why do marginalized communities not succeed in India's educational system?

Background: Systemic flaws in India's educational system are highlighted in recent publications, disproportionately impacting marginalized communities (SC, ST, and OBC).

Advocates and the Supreme Court call for changes to address caste and class-based inequalities in access to high-quality education.

1. In rural and urban slums, government schools are underequipped with digital resources, qualified teachers, and infrastructure.

2. English-medium, urban, and coaching-trained students are given preference on competitive tests.

3. On universities, caste-based exclusion still exists.

4. Less than 10% of PhD students at prestigious universities are SC/ST students.

5. After Class 10, dropout rates rise as poor families put their livelihoods before their education.

Government programs:

1. The SHREYAS Scheme provides financial aid and guidance for higher education to OBC, EBC, and DNT students.

2. National Fellowship for Students from SC, ST, and OBC: Provides funding for MPhil and PhD programs at Indian universities.

3. The purpose of the Mid-Day Meal Scheme is to increase school enrolment and attendance by offering free lunches. Children from poor families and SC and ST families particularly benefit from it.

4. Ambedkar Interest Subsidy Scheme: Provides OBC and EBC students with interest subsidies on education loans for study abroad.

5. Beti Bachao Beti Padhao: Encourages girls' education and self-determination, particularly in underdeveloped regions.

Systemic exclusion's effects include:

1. Over 80% of manual scavengers are Dalits, and marginalized people are trapped in poverty due to limited access to high-quality education.

2. In prestigious universities like IITs, where 90% of the teachers are from wealthy backgrounds, upper-caste dominance still exists.

3. Deep flaws in fair access to higher education are revealed by student-led demonstrations, like as those opposing JNU fee increases.

4. According to World Bank estimates, educational disparity results in an annual GDP loss of $56 billion.

5. Institutional prejudice and isolation cause marginalized students to drop out at higher rates.

Reforms are required.

1. To guarantee more equitable results, assess exam performance in light of socioeconomic obstacles.

2. Use affirmative action when recruiting faculty and expand its use to private schools.

3. Update remote schools with internet connectivity, modern classrooms, and qualified teachers.

4. Create efficient grievance redressal units with severe sanctions for harassment and bias based on caste.

5. To increase employability, implement career-linked training and skill-based learning as described in NEP 2020.

19. The Global South's Contribution to Ukraine's Peace

Context: As the conflict in Ukraine draws closer to a tenuous truce, discussions about who should be in charge of enforcing the peace are becoming more heated. Given its neutrality and UN peacekeeping experience, the Global South (Africa, Asia, and Latin America) shows itself to be a viable option to NATO-led forces.

1. A group of poor countries from Asia, Latin America, and Africa that support fair global governance

2. Maintained non-aligned positions, in contrast to Russian ties or Western support for Ukraine

3. Provided 60% of UN peacekeeping; in 50+ missions, India alone sent 290,000 troops.

4. It accounts for 40% of the world's GDP and 75% of the world's population.

5. Difficulties Western dominance in organizations such as the IMF and UNSC.

Why did the US and EU's peace efforts in Ukraine fail?

1. Referring to troops as "Trojan Horses," Russia rejects NATO's participation in peace initiatives and views it as a danger.

2. Russian worries of encirclement and aggression are heightened by more than $175 billion in Western military assistance.

3. In 2024, almost 70% of French people opposed the deployment of troops, which limited EU political manoeuvring.

4. Trump's unclear position undermines long-term peace involvement, and the EU lacks strategic autonomy.

5. The likelihood of a full-scale conflict is increased when NATO soldiers are positioned close to Russian borders.

Why Is Ukraine's Peace Important to the World?

1. More than 400 million people are fed by Ukraine's grain exports, and the conflict has interrupted important agricultural supply systems.

2. EU gas supplies are disrupted by ongoing warfare, leading to energy insecurity and price increases worldwide.

3. Shelling close to the Zaporizhzhia plant puts the area at danger for a Chernobyl-style catastrophe.

4. The economic systems of host nations and Europe are under stress due to the more than 8 million displaced Ukrainians.

5. After 2022, war-related disruptions fuelled worldwide inflation and economic instability.

The Global South's role in ensuring the peace in Ukraine:

1. Nations like South Africa, Indonesia, and India can mediate without siding with Western blocs

2. The African Union demonstrates its readiness for impartial enforcement by its peacekeeping missions in Sudan and Somalia.

3. Countries with mine-clearing and reconstruction experience include Chile and India.

4. An example of inclusive diplomacy is provided by India's all-female UN peace team in Liberia in 2007.

5. Post-war recovery can be financed and facilitated by BRICS Bank and Global South institutions.

20. Compassion in the Healthcare

Context: A recent report from the World Health Organization emphasized the importance of compassion in primary healthcare.

Empathy, attentive listening, and responsive behaviour based on the patient's feelings and circumstances are all components of compassion. emphasizes diversity, emotional support, and dignity in the provision of healthcare.

1. Involves establishing trust via consistent communication and community involvement

2. Care is tailored to socioeconomic circumstances, particularly during emergencies.

3. Involves caring conduct from employees at all levels, including administrators, physicians, and ASHAs.

Compassion's Significance in Healthcare

1. Promotes seeking treatment early and following medical advice more closely

2. Enhances PHC response during emergencies or epidemics

3. Enables ASHAs to recognize and assist elderly or survivors of violence

4. People-centred care lowers mortality, relapses, and mental trauma

5. More people visit and interact with compassionate systems.

Challenges:

1. PHC physicians oversee more than 40 nationwide programs, cutting down on patient time

2. Decentralization without accountability makes it more difficult to provide compassionate care.

3. Medical education does not incorporate compassion or trauma-informed treatment.

4. Compassionate action is undermined by shortages of medications, diagnostics, and logistics.

5. Patients who are dealing with delicate difficulties or abuse fear that well-known community professionals will condemn them.

21. The 2025 Waqf (Amendment) Act

Background: Based on JPC recommendations, the Waqf (Amendment) Bill 2025 introduced significant amendments to the Waqf act of 1995 and was introduced in the Lok Sabha amidst protests from the opposition.

It aims to improve Waqf property governance, registration, dispute resolution, and transparency throughout India.

Important attributes:

1. Preserves, unless contested, religious properties created by customary practice prior to the new law's passage.

2. In order to foster openness and administrative proficiency, non-Muslims may serve on Central and State Waqf Boards and tribunals.

3. Requires all waqf properties to register through a centralized online portal within six months, with the option for waqf tribunals to extend this time frame.

4. In place of the previous two-member panel, each waqf tribunal will henceforth consist of a district judge, a Joint Secretary-level officer, and a specialist in Muslim law.

5. After 12 years of unlawful occupancy, Section 107 is repealed to apply the Limitation Act of 1963, allowing adverse possession claims.

Problems:

1. According to critics, the bill applies restrictions unique to one faith, targeting assets managed by Muslims.

2. Property can only be dedicated to waqf by Muslims who have practiced for five years, unfairly barring fresh converts.

3. Illegal squatters may be able to lawfully claim waqf lands by using the limitation act.

4. Using state officers as arbiters in place of waqf tribunals could jeopardize community rights and justice.

5. Although this prevents abuse, it also prevents Waqf Boards from identifying undocumented waqf holdings, which puts heritage assets at risk of being lost.

The necessity of the bill

1. Accountability and a decrease in property misuse are ensured by digital records and audit improvements.

2. Deals with anomalies in ownership disputes, surveys, and property registration

3. Makes sure that arbitrary waqf claims that cause conflict between communities and the law are checked at the state level.

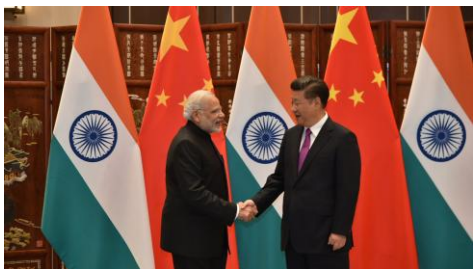
4. More effective waqf governance will increase financing for the poor's housing, healthcare, and education.

5. Checks and balances are restored by tribunals with legal and religious expertise as well as judicial appeal rights to High Courts.

22. The 75th anniversary of diplomatic relations between China and India

Context: On April 1, 2025, India and China commemorated the 75th anniversary of their diplomatic relations. In their message exchange, Presidents Xi Jinping and Droupadi Murmu emphasized mutual growth, regional peace, and strategic trust.

Importance:



1. Draws attention to the enduring connections between two ancient civilizations and contemporary Asian powers.

2. This anniversary provides a chance to restore tense relations following the 2020 Galwan conflict.

3. While Xi Jinping called for a "dragon-elephant tango" of cooperation, PM Modi emphasized multipolar stability.

4. In Q1 2025, 4,70,000 visas were granted to Indians, demonstrating an increase in interest.

5. A reaffirmation of our common global obligations as Global South leaders.

The Bilateral Relationship's History:

1. In 1954, the Panchsheel Agreement was reached, making India the first non-socialist nation to recognize the PRC.

2. Unresolved border disputes caused relations to deteriorate after the Sino-Indian War.

3. Relations were restored when Rajiv Gandhi visited China in 1988. Border issues were resolved by mechanisms such as the WMCC.

4. Economic relations improved; by 2024, bilateral commerce will have surpassed $138 billion.

5. The Doklam stalemate and the conflict in the Galwan Valley severely strained relations.

6. Active involvement in Global South, G20, SCO, and BRICS efforts

7. A rise in tourism, art shows, and student exchange programs

8. Trade remains a solid foundation of cooperation in spite of border difficulties.

9. Shared concerns about reducing climate change and promoting a just world order

10. Continued high-level visits, media discussions, and interpersonal interactions

11. Unresolved problems with the Line of Actual Control, particularly in Arunachal Pradesh and Ladakh

12. India is concerned about China's presence in the Indian Ocean and its strong links to Pakistan.

13. India's significant reliance on Chinese imports has resulted in a persistent trade deficit with China.

14. India's insistence on strategic autonomy and sovereignty clashes with China's forceful measures.

23. Nutrition and Education: Develop Healthy Eating Habits Report

Context: In March, at the French-hosted "Nutrition for Growth" meeting, UNESCO published its global report, "Education and Nutrition: Learn to Eat Well."

1. School lunches are provided to 1.418 million children worldwide in 161 nations.

2. A third of school meal programs worldwide provide sugary drinks, and more than one in two lack enough fruits and vegetables.

3. Over the past 20 years, childhood obesity and overweight have increased in more than 100 nations

4. The PM-POSHAN system is one of the biggest school feeding programs in the world, feeding 118 million children every day.

5. Due to inadequate dietary diversity, micronutrient deficiencies persist despite coverage.

The connection between nutrition and education

1. Healthy eating directly enhances focus, memory, and academic performance.

2. School meals encourage enrolment, particularly for low-income families and girls.

3. Childhood nutrition affects earning potential by influencing lifelong cognitive and physical development.

4. School nutrition generates farm-to-table economies when connected to regional agriculture.

5. Reduces disparities in access to food and education by serving as a safety net for those that are more susceptible.

Challenges:

1. A lot of school lunches are highly processed, sugary, and nutrient-poor foods.

2. Few nations associate curriculum-based nutrition awareness with feeding.

3. Programs that lack dietary diversification and rely too much on rice, wheat, and maize

4. Supply chains, cold chains, and infrastructure vary greatly, which affects consistency.

5. Standard measures to assess the impact of meals on education and health are lacking in many countries.

GS-III

1. The Waste Management Crisis in India:

Background According to a recent international study published in Nature, India emits 9.3 million tonnes of plastic each year, making it the biggest polluter in the world.

Through ongoing mandates, the Supreme Court's ruling on Vellore tanneries provides a model for enforcing environmental justice and waste remediation.

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8247738641/8500837178

In order to stop environmental deterioration, waste management involves the collection, separation, treatment, and disposal of solid, liquid, and plastic waste.

According to Nature (2025), India generates 0.54 kg of plastic garbage per day per person, which is far more than the official figures of 0.12 kg per day, despite claims of 95% national waste collection. This suggests that rural waste is underreported and that the informal sector is excluded.

Waste Management Initiatives in India:

1. ***Plastic Waste Management Rules (2016–2024):*** To reduce generation and enhance responsibility, these progressive regulations implemented Extended Producer Responsibility, segregation at the source, and prohibitions on certain single-use plastic products.

2. The ***2010 Mandatory Jute Packaging Act*** requires environmentally friendly jute packaging for essential goods in an effort to lessen reliance on plastic and fight pollution from synthetic packaging.

3. The Extended Producer Responsibility framework, which mandates collection, recycling, and reuse goals with environmental compensation for non-compliance, is applicable to producers, importers, and brand owners.

4. ***Decentralized trash Governance:*** Gram Panchayats were given more authority over trash management, with a focus on rural waste coverage and accountability at the local level.

Important problems with the waste management system in India:

1. ***Inaccurate data:*** There is no standard trash audit methodology.

2. Inadequate Facilities

3. ***Urban-Rural Divide:*** The issue is made worse by the rural areas' continued exclusion from official collecting methods under PRIs.

4. Poor EPR Implementation

5. ***Non-Compliance Culture:*** The SC observed that although laws are in place, they are only enforced in theory, and that plans fail because they are not promptly implemented.

The Way Ahead:

1. Implement ongoing mandated court supervision

2. Fortify data systems

3. Mandatory mapping of infrastructure

4. Decentralized implementation of EPR

5. The principle of government pay

6. Make use of technology

2. Infiltration Across Boundaries

Context: India's counter-infiltration grid along the Pakistani border has become more important in the wake of the Pahalgam terror assault, which claimed the lives of 26 tourists.

Unauthorized movement of armed militants over international borders to commit acts of terrorism is known as cross-border infiltration. affects Jammu and Kashmir mostly, especially the Pri Panjal area, Poonch, Rajouri, Kathua, Doda, and more recently, places like Pahalgam.

Causes of international terrorism:

1. Unnoticed movement is made easier by rugged mountains and thick woods like Pir Panjal.

2. Winter deteriorates border barrier, leaving holes that militants take advantage of.

3. Terrorists with extensive training employ sophisticated, encrypted communication and little local interaction.

4. Infiltration attempts are made worse by active support from terrorist organizations located in Pakistan.

The government Actions made:

1. After the 2003 ceasefire, border fencing was erected, and as of 2010, the success rate of infiltration attempts had dropped to around 20%.

2. Utilizing radars, thermal imagers, ground sensors, and aerostats for aerial surveillance

3. To reduce reliance on humans, plans are in place for sensor-triggered notifications following fence breaches.

4. A significant military presence with fast repair units and night vision equipment along the LoC.

Challenges:

1. Every year, almost one-third of fencing is damaged by heavy snowfall, creating short-term security holes.

2. In remote areas, night vision equipment encounters power supply problems and have limited operational houses.

3. Tough terrain and bitter cold wear down workers, decreasing their level of attentiveness

4. The complete closure of the India-Pakistan border, which was originally scheduled for 2018, has been postponed until 2025.

3. High Seas Treaty

Context: To establish implementation regulations, delegates have convened in New York for the inaugural session of the BBNJ Treaty's Preparatory Commission. India has not yet ratified the pact, despite being a signatory.

The third implementing agreement under the UN Convention on the Law of the Sea is the Biodiversity Beyond National Jurisdiction Treaty.

Its goals include ensuring equitable benefit-sharing from marine genetic resources, protecting marine biodiversity in the high seas, and requiring environmental impact assessments for operations conducted there.

It covers regions that are more than 200 nautical miles from country EEZs, which include 64% of the world's oceans. India has not yet ratified the treaty, despite having signed it.

Even though the high seas make up two-thirds of the ocean's surface, just 1.44% of it is currently protected. There is little international control of deep-sea mining, overfishing, and pollution. A regulatory framework is required due to the growing commercial exploitation of marine genetic resources in biotechnology and pharmaceuticals. It seeks to guarantee the Global South's access to ocean wealth while preventing the domination of wealthier nations.

Challenges:

1. Low approval

2. Tensions in Geopolitics

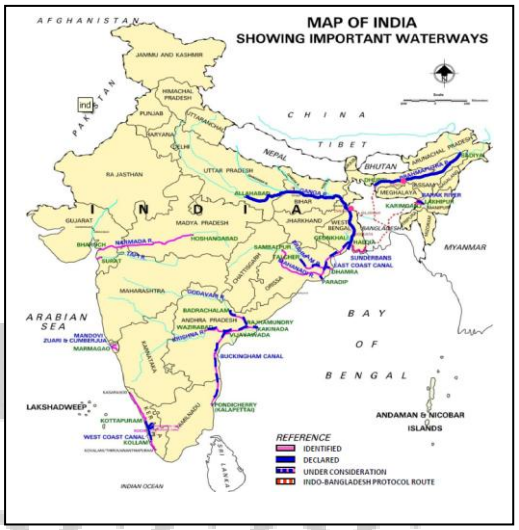
3. Inadequate Enforcement

4. Intersection with Additional Conventions

5. The Economic Cost to Developing Countries

6. Gaps in implementation.

4. Indian Inland Waterways



Context: From just 18.1 MMT in FY 2013–14 to an all-time high of 145.5 MMT in FY 2024–25, India observed inland waterway cargo movement. This represents a 20.86% CAGR.

The National Waterways Act of 2016 increased the number of National Waterways from 5 (2014) to 111 (2024). The operational length grew to 4,894 km (2023–24) from 2,716 km (2014–15).

More than 68% of the cargo is made up of coal, iron ore, sand fly, and ash.

Navigation efficiency and safety are increased by digital developments including LADIS, RIS, PANI, Car-D, and MIRS. Introduced are three MMTs, one IMT, community jetties, and green boats.

The Jalvahak plan was introduced, and inland vessels were subject to the Tonnage Tax. IWT is regarded as a sustainable and affordable substitute for rail and roads.

The viability of IWT corridors is impacted by the following

Challenges:

1. The absence of significant industry close to waterways lowers freight volume.

2. Inadequate connectivity to road and rail networks raises logistical expenses and delays the flow of cargo.

3. During dry seasons, river levels decrease, making it difficult to navigate throughout the year and affecting the reliability of services.

4. Sustainable development is essential to maintaining biodiversity since large-scale dredging can damage aquatic habitats.

5. Despite the potential, just 2% of all cargo uses waterways; underutilization maintains freight costs higher than they should be.

Path Ahead:

1. Promote PPP initiatives to build jetties, terminals, and cargo-handling facilities in order to increase efficiency.

2. To increase operational readiness and safety, train port operations, logistics personnel, and inland vessel crews.

3. To reduce the environmental impact, use eco-friendly port architecture and green dredging technology.

4. Emphasize IWT's economic and environmental advantages to draw in businesses and move freight away from roads and railroads.

5. Create integrated logistics parks that connect rivers with roads and railroads to expedite end-to-end shipping.

5. Coral Bleaching:

Context: According to NOAA and the International Coral Reef Initiative, the globe is currently experiencing its worst coral bleaching event ever, affecting around 84% of all coral reefs worldwide.

When corals experience extended heat stress, they expel zooxanthellae, which results in the loss of colour and an essential source of energy. This process is known as coral bleaching. In addition to looking white, bleached corals are far more susceptible to illness, famine, and death.

Qualities:

1. 83.7% of coral reef areas globally have been affected by bleaching-level heat stress.

2. Reefs in the Pacific, Atlantic, and Indian oceans—including Lakshadweep and the Great Barrier Reef—are impacted.

3. To indicate over 80% possible coral mortality threats, NOAA created Alert levels 3-5.

4. Since 1998, the Great Barrier Reef has had six mass bleaching events, the most recent two occurring in 2023–2024.

5. Bleaching occurred in even thermally resilient areas, such as the Red Sea and Raja Ampat, suggesting worldwide vulnerability.

Causes of Coral Bleaching

1. El Nino episodes and climate change

2. Ocean chemistry is changed by rising CO2, which weakens coral structures.

3. Toxins, runoff, and plastic weaken coral resilience

4. Alters the dynamics between coral and algae, upsetting reef ecology

Repercussions:

1. A third of marine life depends on coral reefs, and as they deteriorate, many species are lost.

2. Impacts 1 billion people who depend on reef-related tourism and fishing.

3. Coastal communities are at risk because weak reefs are unable to protect against erosion and storm surges.

4. The estimated yearly value of the services provided by global reef ecosystems is $375 billion.

5. Reef recovery capability is diminished by frequent bleaching, which pushes systems past tipping points.

6. The Movement of Credit in MSMEs and SMEs

Context: An increasing trend toward decentralized, digital credit systems is being driven by the predicted $330 billion credit shortfall in India's MSME sector (RBI, 2023).

MSMEs employ more than 110 million people and account for over 30% of India's GDP. Despite their importance, 80% of MSMEs depend on unofficial funding, which has high interest rates and problems with scalability. Applications are frequently denied by traditional banks for lack of collateral or credit history.

Importance:

1. Accessible finance enables MSMEs to grow and recruit additional staff, which has a direct effect on the creation of jobs.

2. Increased productivity and increased GDP contributions from MSMEs are made possible by improved loan availability.

3. Online financing, credit analytics, and digital payments formalize microbusinesses and integrate them into the mainstream of finance.

4. Credit flow encourages the use of new technological instruments that increase the competitiveness and scalability of businesses.

5. In times of crisis, dependable working capital keeps small enterprises from closing.

Problems:

1. Most MSMEs lack the property or high-value assets that banks require

2. MSMEs frequently select informal financing because it is processed more quickly despite the higher expenses.

3. Fintech adoption is hampered by low interest access and digital illiteracy.

4. Data breaches in fintech platforms could jeopardize borrower privacy.

5. The existence of credit support programs is unknown to many MSMEs.

7. AI in Weather Forecasting:

As part of Mission Mausam, India is using AI/ML to improve the accuracy of weather forecasts, particularly for extreme events like heat waves and cloudbursts.

Teams from IIT Delhi and IIIT Delhi have created AI-based monsoon models that surpass conventional ones.

How AI Can Help with Weather Prediction:

1. Unlike physics-based models that depend on predefined equations, artificial intelligence (AI) learns intricate patterns from historical data to forecast heatwaves, cyclones, and rainfall.

2. AI models are perfect for nowcasting and real-time notifications because they can generate short-term forecasts rapidly and with less computational expense.

3. AI aids in capturing nonlinear relationships between variables, which is helpful in forecasting sporadic and abrupt weather phenomena like tornadoes or flash floods.

4. Enhances forecast dependability and interpretability by combining the advantages of AI technologies and physics-based models.

Challenges:

1. Clean, long-term, high-resolution weather datasets are crucial. There may not be enough or consistent historical data.

2. Deep partnerships may be limited since ML developers frequently lack a meteorological foundation, while climate scientists may lack AI/ML knowledge.

3. Because AI models are opaque, it is challenging to communicate their results to meteorologists or policymakers.

4. Due to a lack of local computational or technological capacity, the majority of forecasters rely on model outputs from outside organizations.

5. Model projections must be rigorously validated; otherwise, missed warnings or false alarms may erode public confidence.

8. India's Economic Success and the Environmental Cost

Context: According to the DHL Trade Atlas report, India's trade contribution is expected to increase to 6% of world trade growth by 2025. However, growing exports of products with high levels of pollution have raised significant questions about the sustainability of the environment.

By 2023, India's merchandise exports from pollution-intensive industries alone had grown to USD 231.48 billion, outpacing overall export growth.

38% of pollution-intensive exports were made up of coal and petroleum products. These industries accounted for 84% of India's pollution-related exports, together with chemicals, pharmaceuticals, and autos.

Cement, steel, and pharmaceutical industries increased GDP, employment, and foreign reserves, making India more competitive internationally.

Impact of Trade Growth on the Environment:

1. India's emissions from the energy and industrial sectors increased by about five times, from 699 Mt CO2 e in 1991 to 2606 Mt CO2 e in 2021.

2. Industries like chemicals and pharmaceuticals contribute to soil, water, and air pollution and endanger biodiversity.

3. Industry exemptions weaken environmental protections, and environmental regulations such as the Environmental Protection Act of 1986 are still not adequately enforced.

4. Sustainability goals are undermined when trade policy and environmental standards are not aligned.

9. India's heat waves

Context: In March 2025, India experienced extreme heatwaves 20 days sooner than in 2024, underscoring the pressing need for both immediate and long-term solutions to address heat stress and its ripple effects.

A heatwave is a protracted stretch of very hot weather, frequently with high humidity, that has a substantial negative influence on ecosystems, agriculture, and human health.

Features:

1. Maximum temperatures over 40 degrees Celsius and 30 degrees Celsius in mountainous regions are considered heatwaves in India.

2. Urban heat islands, wind speed, and humidity all exacerbate it.

3. One of the main causes of the rising frequency and intensity is climate change and global warming.

Effects:

1. Reduces agricultural productivity and kills cattle

2. Causes heat stress that damages kidneys, liver, and brain and can be fatal

3. Reduces work hours, particularly for employees in the unorganized sector

4. Disproportionately impacts women, older people, migrants, and underprivileged groups

Challenges:

1. There are heat action plans, but they are not well implemented.

2. Statistics on heat-related morbidity and mortality are incomplete.

3. Risks in impoverished neighbourhoods are increased by confined areas and dense housing.

4. A lack of public water sources, cooling shelters, and ORS

5. Public awareness of heat safety is still uneven.

10. Decarbonizing India's Logistics Sector:

As part of its larger Viksit Bharat 2047 vision and its promise to reaching net-zero carbon emissions by 2070, India is making decarbonization of its logistics sector a top priority. Pilot initiatives like electrified roads are gaining traction.

The process of lowering carbon dioxide emissions across all sectors through the adoption of low-carbon technologies, energy efficiency improvements, and cleaner energy sources is known as decarbonization.

It reduces carbon intensity across value chains by switching from fossil fuels to renewables, electrifying transportation, and utilizing green fuels like LNG and hydrogen.

Decarbonization is required:

1. Road transport accounts for 88% of India's total greenhouse gas emissions, with logistics accounting for about 13.5%.

2. Road transport accounts for 70% of freight and nearly 90% of passenger transit, which increases carbon emissions.

3. A forward-thinking, environmentally conscious logistics network is necessary for Viksit Bharat to achieve inclusive and resilient growth.

4. Green logistics will help India fulfil its international climate commitments and increase its appeal in international trade.

Difficulties with Decarbonization:

1. Transition is challenging due to a heavy reliance on trucks, which account for 38% of CO_2 emissions.

2. Significant upfront expenditures are necessary for the electrification of trucks and infrastructure such as e-highways.

3. Rapid low-carbon transitions are hindered by the limited modal share of inland shipping and railroads.

4. Conventional warehousing uses a lot of energy, and renewable energy sources are not widely used.

5. Adoption of clean fuels in shipping, such as LNG, ammonia, and hydrogen, is hampered by both economic and technological issues.

11. Cap and Trade India

Context: According to recent research in the Quarterly Journal of Economics, Surat's Emissions Trading Scheme—the first particle emissions market in the world—reduced pollution by 20–30% and compliance costs by 11%.

A market-driven environmental strategy known as "cap and trade" places a cap on the overall amount of pollution that businesses are permitted to produce.

Businesses are granted pollution permits under this system, enabling them to release a set quantity of pollutants. A company can sell its unused licenses to other companies that are having trouble meeting their restrictions if it emits less than the allowed share. Because doing so may result in a profit, this provides enterprises with a financial incentive to invest in cleaner technologies and reduce pollution effectively.

Based on environmental objectives, the government or regulatory body establishes a cap on the overall emissions of all participating companies.

Challenges:

1. Accurate, real-time emissions data is essential for effective cap and trade, necessitating ongoing monitoring system maintenance and supervision.

2. It can be expensive to set up infrastructure such as Continuous Emissions Monitoring Systems, particularly for small businesses.

3. If stringent regulations are not implemented, companies may band together to steal permits, manipulate prices, and erode the genuine purpose of carbon trading.

4. Because pollution abatement costs vary by industry, certain businesses may find it easier to benefit from permit trading than others.

5. Regular and erratic modifications to trading regulations or cap levels may deter long-term industrial investments in sustainable technologies.

6. Expanding cap and trade to additional contaminated urban-industrial areas can increase its effectiveness and create a framework for pollution control across the country.

7. To fully address industrial pollution, expand the ETS to include gases such as sulphur dioxide and nitrogen oxides.

8. Increasing funding for dependable, impenetrable CEMS technology will guarantee increased regulatory effectiveness and transparency.

9. To be more effective, emission restrictions must be flexible enough to take into consideration changes in industrial production cycles and seasonal pollutants.

10. To guarantee wider acceptance and success, industries, local government agencies, and residents can actively participate in awareness initiatives.

12. India, the hydrogen factor, and growing electricity need

Context: In order to fulfil India's growing energy demand, energy experts have emphasized the significance of combining nuclear power and hydrogen generation.

India's energy objectives:

1. India wants to attain net-zero emissions by 2070, which calls for significant changes to its energy systems.

2. India intends to put up 500 GW of non-fossil power.

3. In order to meet base-load demands, the government plans to have 100 GW of nuclear power capacity by 2047.

4. Emphasize the use of green hydrogen and renewable electricity to decarbonize industries.

5. Make the switch to electric furnaces, heat pumps, and cars to reduce reliance on fossil fuels.

Causes of India's growing energy needs:

1. India wants to build its economy, which means using more energy in all industries.

2. Growing cities and the adoption of middle-class lifestyles are driving up energy demands.

3. The need for electricity increases as the steel, cement, and fertilizer industries switch to clean inputs.

4. AI systems, data centres, and smart infrastructure need a steady source of power.

5. Reliable electricity is necessary for more cooling, irrigation, and disaster relief.

Current Remedies for Increasing Demand:

1. The capacity of solar, wind, and hydro projects has increased dramatically

2. Nuclear provides dependable, low-carbon electricity to supplement intermittent sources

3. Stores solar and wind energy for use during non-generating hours.

4. Produces green hydrogen for enterprises using excess electricity.

5. During peak solar hours, coal-fired plants are modified to balance renewable inputs.

Difficulties

1. Solar and wind power cannot supply energy continuously

2. Flexing is not cost-effective due to nuclear's high capital cost and low marginal cost.

3. Cost and material issues are obstacles to large-scale battery deployment.

4. By treating electricity and hydrogen storage as distinct systems, synergy is diminished.

5. At the moment, nuclear is not included in the definition of green hydrogen; only renewables are.

13. Governmentality and Stubble Burning

Context: An IIM Amritsar report from 2025 attributes Punjab's stubble burning to both market failures and governmentality. The study emphasizes how unsustainable farming methods are unintentionally encouraged by governmental regulations such as MSP.

The term "governmentality," coined by Michel Foucault, describes how governments affect citizens' self-regulation without resorting to outright force.

Governmentalities in Agriculture Types:

1. Neoliberal Governmentality: Without direct enforcement, market-driven policies influence farmer behaviour

2. Discipline-based governance: sanctions compel adherence without providing alternatives

3. Pastoral Governmentality: The state presents itself as a guardian but puts the interests of urban industry ahead of those of farmers.

4. Security-Oriented Governmentality: Policies prioritize food security while ignoring environmental consequences

5. Market-Driven Governmentality: Farmers are caught in debt cycles by middlemen who set prices.

The deterioration of governmentality Pollution

1. The state penalizes burning but does not support happy seeders or bio decomposers

2. The emphasis on rice and wheat eliminates incentives for environmentally friendly crops.

3. Farm fires are demonized while industrial pollution is ignored

4. Arhatias controls financing, pressuring farmers into debt and cost-cutting measures like burning

5. Systemic problems are not addressed by short-term plans.

Solutions:

1. Encourage the packaging, biofuel, and feed sectors to make money off of crop waste.

2. To lessen reliance on paddy, incorporate oilseeds, pulses, and millets into MSP.

3. Direct farmer-market connections and state-led price transparency to cut out intermediaries

4. Use cooperatives to increase access to contented seeders, bio decomposers, and balers.

5. Work with religious and non-profit organizations to lessen farming that is motivated by aspirational debt.

14. Space Tourism

Context: The financial and environmental effects of space tourism were rekindled when pop star Katy Perry and an all-female crew travelled to space via Blue Origin.

Private firms like Virgin Galactic, SpaceX, and Blue Origin offer space tourism, which is leisure, business, or recreational travel outside of Earth's atmosphere. It serves civilians, although at astronomical prices, in contrast to government-led space projects.

Space tourism types include:

1. Sub-Orbital Tourism: Quick flights that provide minutes of weightlessness across the Karman line.

2. Orbital tourism: Prolonged space travel, frequently involving dockings with private space stations or the International Space Station

3. Lunar tourism: Future missions that are planned to circle or land on the moon.

Issues:

1. It is a billionaire's pastime because tickets cost from $450,000 (Virgin Galactic) to millions (SpaceX).

2. Rocket emissions cause ozone depletion and climate change.

3. Compared to NASA/ISRO research, the majority of missions don't provide any advances.

4. Compared to government organizations, private enterprises are more likely to have accidents.

5. Tourism-related funds could be used to combat climate change or reduce poverty.

15. Indian traditional seeds

Context: Market preferences for hybrid crops are driving a decline in traditional seed varieties, endangering climate resilience and biodiversity.

Traditional seeds are native crop varieties that have been naturally grown, preserved, and traded by farmers over many generations. They are also known as indigenous, heirloom, or Desi seeds. They may be replanted without losing their genetic characteristics because they are open-pollinated, in contrast to hybrid or genetically engineered seeds.

Important Features of Conventional Seeds:

1. Over millennia, they have adapted to the local soil, climate, and pests.

2. Naturally immune to illnesses, floods, and droughts

3. Need fewer chemical pesticides, fertilizers, or irrigation

4. Have higher levels of minerals, fibre, and antioxidants than hybrid types

5. Associated with organic farming, festivals, and tribal diets

Relevance:

1. Preserve the genetic diversity necessary for food security

2. Have more fibre, minerals, and micronutrients than contemporary crops

3. Continue production in the face of unpredictable weather, illness, and pests

4. Release farmers from reliance and yearly seed purchases

5. Encourage spontaneous soil enrichment and ecological equilibrium

Obstacles:

1. Low support and procurement costs deter cultivation

2. State funding and R&D priorities continue to favour HYVs.

3. Inadequate facilities for sharing and storing local variety

4. Demand is impacted by urban preferences for homogenous, polished crops.

5. Seed survival is threatened by unpredictable monsoons and floods.

16. Indian Microfinance Institutions

Context: In response to an increase in borrower suicides and public outcry about forceful recovery practices by unlicensed microfinance brokers, Karnataka approved the Micro Loan and Small Loan (Prevention of forceful Actions) Bill, 2024.

Microfinance offers low-income, unbanked people small loans, savings accounts, insurance, and remittance services. developed in the 1980s with the SHG-Bank Linked Program, which was subsequently regulated by the RBI after being institutionalized through NABARD.

Significance:

1. MFIs target rural poor people outside of conventional banking, particularly women.

2. A large number of MFIs lend mostly to women, encouraging social mobility and financial independence.

3. Microloans assist MSMEs, minor trade, dairy, and agriculture.

4. Lowers excessive interest rates and borrowings from the unorganized sector

Issues:

1. Unregulated MFIs' aggressive recovery practices result in harassment and suicides.

2. Nightmare lenders that do not have an RBI registration

3. Election pledges of exemptions upend the repayment culture

4. Debt spirals are caused by a lack of unified credit tracking.

5. NPA spikes and inadequate credit assessment models

17. The Indian Genetic Mapping:

Preliminary results from the Genome India Project, which mapped the genomes of 9,772 Indians from 83 endogamous population groupings, were published in Nature Genetics in April 2025.

The practice of examining DNA sequences to identify genes and variants within a population is known as genetic mapping. It facilitates precision medicine and aids in the understanding of genetic diversity and disease vulnerability.

Non-coding regions, which make up 98% of the genome, are essential for gene control and evolution. Because to endogamy, each group displayed distinct mutation patterns. Previous global genome efforts mainly ignored India's genetic diversity.

Significance:

1. In certain groups, endogamy causes the recurrent spread of specific hereditary illnesses.

2. Genetic signals reveal information about ancestry and historical migrations.

3. Facilitates medical screening for high-risk mutations using cluster-based methods.

4. Contributes to global genetic data by illustrating the ethnolinguistic diversity of India

5. Allows for personalized care based on genetic information at the individual and community levels.

6. Designing predictive diagnostics is aided by population-specific mutations.

7. Pharmacogenomics will increase medication effectiveness in the Indian populace.

8. Assists in developing national policies on rare diseases and genetic abnormalities.

18. The Indian Automobile Industry Landscape

Context: In partnership with CRISIL, India's leading think tank, NITI Aayog, published a report titled "Automative Industry: Powering India's Participation in Global Value Chains," which outlines a strategic path to establish India as a major worldwide hub for the production of auto components.

1. With 28 million vehicles produced in 2023–2024 across all sectors, India ranks fourth in the world for automobile production.

2. In 2023, auto component exports totalled $20 billion, or 3% of world trade. By 2030, India wants to quadruple its exports to $60 billion.

3. The demand for EVs and small cars has surged due to a growing middle class and regulatory incentives.

4. India's auto component trade ratio of 0.99 indicates unrealized export potential.

5. PLI, FAME-II, PM E-Drive, and ACC Battery storage-catalysts are important government programs for manufacturing scale-up.

The significance of the automotive industry

1. Contributes approximately 49% of India's manufacturing GDP and 7.1% of its GSP.

2. Robust backward and forth connections with IT, glass, steel, rubber, and electronics, among other materials

3. With anticipated scaling, there is a chance to add two to 2.5 million jobs by 2030.

4. Promoting industry, AI, and battery innovation Adoption of 4.0 in many sectors

Challenges:

1. Because of higher material and capital expenses, India has a cost disability of about 10% as compared to China.

2. Engine and transmission systems, which account for 60% of the world's auto component commerce, only have a 2-4% share.

3. Excessive dependence on Germany, South Korea, and China for premium components.

4. Inadequate auto clusters and multimodal connection delays

5. Insufficient industry-academia connections, a shortage of trained workers in software-led automative technologies and EV

19. Dust Storm

Context: One person was killed and three injured when a violent dust storm with wind speeds of up to 80 kmph struck Delhi-NCR. Due to low visibility and strong winds, 15 planes were diverted after the IMD issued a red alert.

Strong winds that carry loose sand and dust from arid areas into the atmosphere cause dust storms, which lower air quality and visibility.

Reasons:

1. Natural Causes: High pressure gradients, limited vegetation, dry weather, and droughts

2. Land degradation, overgrazing, deforestation, and unsustainable farming are examples of ***human-induced problems.***

Areas affected in India: Dust storms are common in pre-monsoon months in Rajasthan, Haryana, Delhi, Gujarat, and portions of Uttar Pradesh.

Repercussions:

1. PM 2.5 and PM 10 particles are the cause of an increase in respiratory conditions like bronchitis and asthma.

2. The potential for harm and death due to flying debris and falling structures

3. Damage to public services and infrastructure due to power supply disruption

4. Emergency responses and logistics are impacted by delays in air and train transportation.

5. Dust inhalation, eye irritation, and dehydration in livestock

6. Because of poor vision and changed air currents, bird migration patterns are disturbed.

7. Topsoil erosion exacerbates desertification by lowering land fertility.

8. Pathogens carried by dust storms affect agriculture and water sources.

Actions:

1. AI-based forecasting, satellite monitoring, and IMD notifications for immediate action

2. Green belts, wind-resistant buildings, and underground cabling to prevent the flow of dust

3. Sustainable soil conservation methods, afforestation, and reforestation

4. In storm-prone locations, medical advice, free mask distribution, and mobile health units

5. UNCCD, WMO, and regional organizations' support for coordinated migration policy frameworks and initiatives.

20. Indian Startup Ecosystem:

Background: The Indian Commerce Minister called for a change toward deep-tech innovation and harshly criticized the Indian startup ecosystem for being centred on consumer-centric endeavours like food delivery applications.

1. Digital payments, e-commerce, and consumer technology have propelled India's more than 100 unicorns.

2. Startup growth has been made possible by initiatives like Startup India, Digital India, and the IndiaAI mission.

3. India has a large pool of tech-savvy young people and engineers, with more than 65% of the population under 35.

4. Indian IT giants like Satya Nadella of Microsoft and Sundar Pichai of Google serve as global examples of Indian tech prowess.

5. UPI, Aadhaar, and BharatNet have established a digital platform for entrepreneurs to succeed.

Problems:

1. A strong emphasis on short-cycle consumer businesses like food delivery and fast commerce

2. Compared to China or the U.S., startups in AI, quantum, or space technology face financial obstacles.

3. Indian venture capitalists steer clear of long-term technology initiatives in favor of rapid rewards.

4. Limited cooperation between entrepreneurs and universities and inadequate R&D infrastructure

5. Exit barriers and an excessive amount of tax compliance stifled innovation.

21. Marine Litter

Context: India has not yet enacted a clear policy aimed at mitigating marine litter, despite the fact that the issue is receiving more attention worldwide. In order to address the growing ecological and

economic repercussions, experts now stress the importance of giving local implementation first priority.

The term "marine litter" describes rubbish produced by humans that finds its way into rivers, sewers, and coastal activities and ultimately ends up in oceans and seas. Bags, bottles, fishing gear, and microplastics make up more than 80% of marine garbage. Long after their useful life is over, abandoned fishing nets continue to catch and destroy marine life. Microplastics affect human health and marine biodiversity by getting into the food chain. Litter poses a safety and financial problem to the maritime, fishing, and tourism industries.

1. The amount of plastic produced worldwide in the past ten years has exceeded that of the entire 20th century.

2. By 2050, if the current trend continues, the weight of plastic in the oceans may surpass that of fish.

3. Litter flows were exacerbated by the pandemic's disruption of disposal systems.

4. Found in deep-sea tunnels and Arctic ice, demonstrating irreversibility and global size

5. Every year, more than one million marine species perish as a result of ingesting or being entangled in plastic.

International efforts to combat marine litter:

1. ***MARCOL (1983)*** Annex V A worldwide pact prohibits ships from discarding plastics and other trash into the ocean.

2. ***UNCLOS-1994:*** Countries are required to conserve the ocean environment under the United Nations Convention on the Law of the Sea. All forms of pollution are covered, including garbage from ships, land, and offshore sources.

3. The ***Honolulu Commitment-2011***, which has been signed by numerous nations and organizations, attempts to decrease the amount of waste that enters the ocean from both land and water. In order to clean up the oceans, it encourages collaboration between governments, NGOs, and businesses.

4. ***UNEP's Clean Seas Campaign-2017***: This UN initiative urges nations to use less plastic, particularly single-use plastic.

5. ***SDG 14.1:*** By 2025, all nations are expected to minimize marine pollution, particularly plastic waste. It promotes healthier oceans by reducing dumping and improving trash management.

When it comes to reducing marine debris, India is falling behind:

1. India does not have a clear national policy to reduce marine litter.

2. Although a National Action Plan is being formulated, its execution is still pending.

3. Untreated solid waste is dumped into oceans by rivers and sewers.

4. The majority of current maritime pollution control efforts concentrate on ships rather than all waste streams.

22. India's Environmental Movement Waves

Background: At NCBS, Bengaluru, Ramachandra Guha recently spoke about the three waves of Indian environmentalism, tracing its roots from colonial industrialization to contemporary climate activism.

A sociopolitical movement known as environmentalism advocates for the peaceful coexistence of humans and the natural world. It emerged in reaction to unbridled industrialization and prioritized sustainability, fairness, and ecological balance.

Qualities:

1. It seeks to preserve species diversity and natural ecosystems in order to preserve ecological equilibrium.

2. Environmentalism promotes resource use that satisfies current demands without endangering future generations.

3. It connects the rights and well-being of underprivileged populations with environmental protection.

4. The movement advocates for laws and rules to lessen harm to the environment.

About India's Three Waves of Environmentalism:

1. First Wave: In the early 20th century, intellectuals denounced British policies that exploited rivers and forests. Gandhi emphasized minimalism and self-sufficiency, while Howard supported natural farming practices. Kumarappa promoted economic structures that take into account India's

delicate ecosystems. Geddes advocated for ecological urban plans that combined human habitation with the natural environment.

2. The Second Wave: the 1970s and 1980s To save trees, common people—women in particular—led nonviolent campaigns. Movements combined calls for environmental justice with nonviolent protest. Laws protecting forests are examples of institutional responses to these movements. The emphasis moved to how large initiatives impacted the nature and lifestyles of impoverished communities.

3. Third Wave: In the twenty-first century, youth movements are increasingly centered on ecological degradation and global warming. New dangers to cities include uncontrolled technological waste and dangerous air. Rapid and extensive environmental efforts are made possible by social media. Young people look to eco-tech and clean energy for sustainable lives.

Importance:

1. Environmental activism has prompted institutional and legislative reforms to safeguard the environment and control business.

2. On international stages, India demonstrates leadership in climate diplomacy and sustainable energy.

3. Communities that depend on forests are protected by environmental conservation.

4. To lessen the vulnerability to disasters, environmentalism encourages ecosystem-based solutions.

23. India's Urban Ecological Crisis

Context: Amid widespread demonstrations against the state-led land auction for IT development, the Supreme Court halted the destruction in Hyderabad's Kancha Gachibowli forest.

With more than 730 plant species and 220 bird species, Kancha Gachibowli is a biodiverse urban forest patch close to the University of Hyderabad. Students, environmentalists, and members of civil society have protested the Telangana government's decision to auction 400 acres of this property for IT infrastructure.

1. Industrial initiatives increase GDP and create jobs, but they also cause pollution, deforestation, and biodiversity loss.

2. Although infrastructure development yields immediate benefits, it damages the environment irreparably.

3. Welfare programs frequently take advantage of natural resources, eroding ecosystems' inherent value.

4. Indigenous populations are displaced and traditional knowledge is undermined by development efforts on forest lands.

5. Rapid approval frequently circumvents necessary environmental assessments, which is against intergenerational equality.

6. Urban flood cycles, air quality, and temperature are all regulated by forest areas. They also stop habitat fragmentation and protect biodiversity.

7. By absorbing CO2 and reducing the impacts of heat islands, urban trees serve as green lungs.

8. Having access to green places helps mental health and lowers stress and respiratory problems.

9. For local communities, urban commons are places of worship, grazing grounds, and herb sources.

10. City woods are crucial to climate adaption measures due to the increase in heatwaves, pollution, and water shortages.

Challenges:

1. The Forest Conservation Act frequently does not grant legal status to forests located inside municipal limits.

2. There is legal difficulty since urban forests are situated between municipal, forest, and development authorities.

3. Vertical expansion is frequently given precedence over ecological preservation in urban development plans.

4. Major choices are made without the permission of the Gram Sabha or the local community.

5. Shortsighted planning is fuelled by the valuation of green space based on its real estate potential rather than its ecological worth.

24. The 2025 RBI Remittances Survey

Context: A historic change is revealed by the RBI's 2023–24 Remittances Survey: For the first time, Advanced Economies (AEs) now account for more than 50% of India's remittances, overtaking the Gulf (37.9%). This is a reflection of shifting economic priorities and migration trends.

1. The top countries for remittance inflows are the USA (27.7%), UK (10.8%), Singapore (6.6%), Canada (3.8%), and Australia (3.1%).

2. In the US, 2.78% of Indian migrants work in high-paying industries and send bigger payments.

3. Through education loans and post-study earnings, 3.13.4 lakh Indian students studying overseas increase remittances.

4. During COVID-19, AE remittances remained consistent, whereas Gulf flows declined significantly.

Causes of the transition from the Gulf to the Global Economy:

1. Indians lost low-skilled jobs as a result of nationalization policy and fluctuations in oil prices.

2. Remittance values are increased by purchasing power parity and stronger currencies

3. US/UK STEM professionals make three to five times as much as those in the Gulf.

4. The PGWP in Canada and the Graduate Visa in the UK draw students who go on to secure well-paying positions.

5. The number of Indian migrants to the UK has tripled due to bilateral agreements like the India-UK Mobility Partnership.

Consequences for India

1. Remittances alleviate forex pressures by covering 42% of India's trade imbalance.

2. Less vulnerability to migrant worker crises and Gulf recessions caused by oil

3. Skilled migration to AEs could reduce the pool of talent in vital industries like technology and healthcare.

4. While Telangana and Karnataka gain, states like Kerala can see slowdowns.

5. By reducing transfer fees to 1%, UPI-Pay Now Linkage increases inflows.

25. Underwater Cables:

Context: The arrival of Airtel's 2 Africa Pearls subsea cable in India has increased internet capacity by 100 Tbps, underscoring the increasing demand for reliable subsea cable infrastructure.

Fiber-optic cables installed on the ocean floor that provide worldwide interest and telecommunication access are known as submarine or undersea cables. There are more than 600 cables in use and planned worldwide as of early 2025, totalling 1.48 million kilometres.

Data is carried by cables utilizing light signals that are encoded by lasers at high speeds and sent through incredibly thin glass fibres. The light signals are converted into usable internet data by receptors at the other end. In deeper areas, cables are either placed directly on the ocean floor or buried close to the coast. To reduce the potential of damage, careful mapping stays away from fishing grounds, anchor zones, and fault lines. Global data flow is made possible by each cable's capacity to transport hundreds of terabits per second.

Qualities:

1. The core fibres are as fine as human hair, making them comparable to a garden hose.

2. Additional armouring is utilized close to coastlines and is made of plastic, steel wiring, and insulation.

3. Almost all coastal countries have numerous connections for redundancy, preventing data blackouts.

Importance:

1. Makes it possible to send and receive emails, stream financial activities, and more globally.

2. Uses internet infrastructure to support 80% of trade and $10 trillion in global financial transactions.

3. Lessens dependency on foreign-controlled or satellite-based connection choices

4. Secure data transfer is essential for government and defence.

5. Encourages innovation and the digital economy.

Challenges:

1. In 2023, Red Sea cable cuts impacted 25% of India's internet, and 2.95 percent of subsea cables in Mumbai fell within a 6-kilometer radius, becoming a chokepoint.

2. Deployment is delayed since more than 51 permits are required to land cables.

3. India depends on foreign ships with delayed clearance since it lacks indigenous repair vessels.

4. Cable wires are frequently damaged by dredging and fishing trawlers.

26. Viksit Bharat Labor Reforms

Context: Rapid automation and capital-heavy growth threaten employment, necessitating immediate changes for Viksit Bharat. Since 2017–18, just 6 crore formal jobs have been generated for 9 crore new working-age citizens in India.

1. Given that 65% of Indians are under 35, creating productive jobs is essential to the country's long-term development.

2. A competent workforce is necessary for the shift from agriculture to high-value industries like IT and pharmaceuticals.

3. By increasing consumption, formal employment lowers poverty and income disparities.

4. India's low labour costs make it more appealing to foreign direct investment in export-oriented industries.

5. Social instability and migratory crises might result from unemployment.

Problems:

1. Employability is limited because only 10% of the workforce has formal occupational training.

2. The need for repetitive, low-skilled labour is declining due to automation and artificial intelligence.

3. 90% of the labour is still unorganized and lacks legal or social protection.

4. Strict labour restrictions discourage small and medium-sized businesses from recruiting people on a large scale.

5. At only 2% per year, real pay growth is still slow.

27. India's Agricultural Crossroads: Integration of Global Trade against Food Security at Home

Background: Amid growing worries about safeguarding domestic food security and farmer livelihoods, India is facing mounting pressure from around the world to liberalize agricultural markets.

The significance of integrating global trade

1. Indian goods, such as rice, mangoes, and spices, can generate significant foreign money thanks to improved worldwide availability.

2. Trade agreements can draw in foreign capital for rural infrastructure and agri-tech.

3. Better price discovery and competition are fostered by integration, which benefits premium producers.

4. In organizations like the WTO and BRICS, trade alliances complement India's larger geopolitical ambition.

5. Production continuity is ensured by the importation of vital inputs such as fertilizers and palm oil.

The significance of food security at home

1. 42% of Indian workers are employed in agriculture, primarily as small-scale and marginal farmers.

2. During global crises, self-sufficient food production shields the impoverished from price shocks.

3. India is protected from worldwide supply interruptions by its domestic food resiliency.

4. Social instability can result from food insecurity, particularly in rural and agrarian areas.

5. Food self-sufficiency permits policy autonomy free from outside influence.

Challenges:

1. Rich nations provide substantial subsidies that distort international agribusiness.

2. Local producers could become unstable due to demands for dairy access from countries such as New Zealand.

3. Chinese garlic enters India in spite of prohibitions, driving down prices for local producers.

4. WTO standards provide a challenge to India's MSP system, limiting policy flexibility.

5. While high tariffs shield farmers, they also restrict export access and lead to retaliatory taxes.

28. The 2025 India-USA Nuclear Deal

Context: Holtec International's approval by the US Department of Energy to transfer Small Modular Reactor technology to India represents a significant step toward the operationalization of the 2007 Indo-US Civil Nuclear Deal (123 agreement).

1. In accordance with 10CF810 standards, the US DoE has allowed Holtec International to share unclassified SMR technology with Indian companies.

2. To guarantee no retransfer without US approval, Indian partners with regulatory compliance include L&T, Tata Consulting Engineers, and Holtec Asia.

3. Previously forbidden, US-designed reactors can now be jointly developed and produced in India.

4. The action comes after Modi and Trump discussed energy resiliency and decarbonization objectives in February 2025.

5. In order to increase private sector involvement in civil nuclear power, the government is looking at amending the Atomic Energy Act of 1962.

Importance:

1. Unlike solar or wind, nuclear energy provides dependable, low-carbon power that is not impacted by weather.

2. Promotes energy sovereignty by assisting India in reducing its 70% reliance on fossil fuels.

3. Essential to reaching Net-Zero by 2070 and 500 GW of non-fossil fuel energy by 2030

4. To generate clean captive power, BSRs and SMRs can be placed close to industries.

5. Addresses energy security and raises India's profile internationally in clean energy technology

India's Nuclear Energy Achievements

1. Across 24 reactors, nuclear capacity increased from 4,780 MW in 2014 to 8,180 MW in 2025.

2. The design and operation of Kakrapar Units 3 and 4 are entirely Indian.

3. In 2024, the Prototype Fast Breeder Reactor reached significant commissioning milestones.

4. To jointly develop nuclear facilities within the bounds of the law, NPCIL and NTPC established the ASHVINI JV.

5. The discovery of the Jaduguda mine extends India's uranium supply by more than 50 years.

Challenges:

1. Private investment and innovation in reactor development are restricted by the Atomic Energy Act of 1962.

2. Compared to renewable energy, nuclear projects require lengthy gestation periods and significant upfront costs.

3. Public opposition is still strong following Fukushima, despite a strong safety record.

4. India still hasn't completely utilized its thorium potential and imports uranium.

5. Project schedules are delayed by multi-layered permissions from AERB, MoEF, and local bodies.

FACTS FOR PRELIMS:

1. India's GHCI (Green Hydrogen Certification Scheme):

Context: Japan and Singapore have agreed to purchase 4.12 lakh tons of green hydrogen derivatives from India. In order to guarantee transparent and reliable green hydrogen generation, it simultaneously introduced the Green Hydrogen Certification Scheme of India.

In order to ensure that hydrogen is recognized as environmentally friendly, ***GHCI is India's first certification system to confirm that it is produced only with renewable energy. The Ministry of New and Renewable Energy launched it.***

The goals include promoting ***traceability, transparency, and market credibility***; certifying really green hydrogen based on emissions intensity; aligning with India's objective to produce ***5 MMT of green hydrogen by 2030***; and integrating with India's Carbon Credit Trading Scheme.

It credibly increases India's exports of hydrogen worldwide. establishes unambiguous market criteria to draw in investments. It lessens reliance on fossil fuels and solidifies India's position as a pioneer in green energy. By producing certified clean hydrogen, it makes carbon trading easier.

2. Turtles with red-crowned roofs:

Background: After 30 years, 20 extremely endangered Red-crowned roofed turtles were successfully restored into the Ganga River under the Namami Gange Mission, marking an important ecological milestone.

It is ***indigenous to Bangladesh, Nepal, and India.*** They require sandy beaches or sandbars to lay their eggs, and they inhabit deep, swift-moving rivers. They only consume water plants and algae since they are strict herbivores.

Their river habitats are destroyed by pollution, dam development, and excessive water use. Nesting sites are destroyed by riverbank farming and sand mining, providing no secure location for eggs. Despite having legal protection, they are poached for their meat and shells.

3. Selection of India's Chief Justice:

Context: The 52nd Chief Justice of India is Justice Bhushan Ramkrishna Gavai. He will take over for ***Justice Sanjiv Khanna on May 14, 2025.***

The ***President may designate the CJI under Article 124(2).*** When necessary, the appointment of an ***acting Chief Justice is permitted by Article 126.***

The President of India selects the CJI after consulting with the departing CJI and acting on the Prime Minister's recommendation.

Retains office until the age of 65 but has no set term.

The eligibility requirements are as follows: the candidate must be an Indian citizen, have at least five years of experience as a High Court judge or lawyer, or, in the President's view, be a prominent jurist.

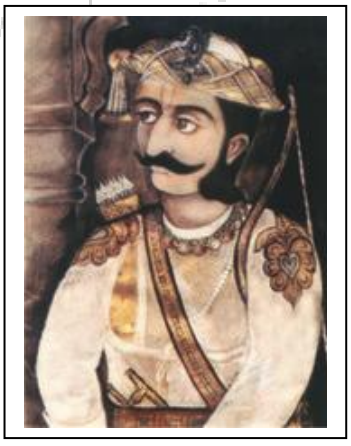
4. Project Kuiper:

Background: Using the Atlas V rocket, Amazon launched the first 27 Project Kuiper satellites from Cape Canaveral, USA.

Amazon is launching a satellite-based broadband project to use Low Earth Orbit satellites to deliver high-speed internet all across the world.

5. Raghuji Bhosale I:

Background: The Maharashtra government was able to recapture the ceremonial sword of Raghuji Bhosale I from the 18th century at a London auction for Rs. 47.15 lakh, including all expenses. It is thought to have been a gift to the British or war plunder following the ***Battle of Sitabuldi (1817).***



The early ***18th-century Bhosale dynasty, centred in Nagpur, was founded by Raghuji Bhosale I***. Under Chhatrapati Shahu Maharaj, he is a devoted Maratha general. He ruled ***over parts of Odisha, Bengal, and the eastern states of Chhattisgarh, Sambalpur, and Chanda***. The iron and copper-rich Vidarbha area was dominated by his dynasty. He ***defeated the Nawabs of Kurnool and Cuddapah*** while leading victorious military campaigns in Bengal and South India. He encouraged the use of handcrafted weapons; the Bhosales were renowned for their artisanal weaponry, which had native hilts and foreign blades.

6. Special Report 301:

Context: Due to uneven advancements in the defence of intellectual property rights, India has been placed back on the U.S. "Priority Watch List" in the 2025 Special 301 report.

The U.S. Trade Representative evaluates international IP protection and enforcement in its yearly report. Its goal is to pinpoint nations whose IPR laws have a detrimental impact on American companies and promote advancements in international IP ecosystems.
India was added to the Priority Watch List along with ***China, Indonesia, Russia, and Argentina.***

7. SIPRI Military Spending Report:

Context: India's military spending increased to $86.1 billion, about nine times that of Pakistan, according to the Stockholm International Peace Research Institute report "trends in world military expenditure 2024.

India ranks fifth globally in terms of military spending, behind the United States, China, Russia, and Germany.

8.Padma Awards:

Background: At Rashtrapati Bhavan, the President of India presented the Padma Awards 2024 to 71 individuals in recognition of their excellence in a variety of professions.

One of India's highest civilian distinctions is the Padma Award. They honour outstanding and noteworthy service in a variety of public service-related professions. They were established in 1954 and are divided into three groups: ***Padma Shri, Padma Bhusan, and Padma Vibhushan.*** At a ceremonial event held at Rashtrapati Bhavan, the President of India formally delivers the awards. The Cabinet Secretary leads the selection committee, which also consists of the president's secretary, the home secretary, and four to six other distinguished individuals.

All citizens are welcome, regardless of gender, colour, or occupation. Awards will be given for accomplishments in a variety of disciplines, including the arts, social work, science, public affairs, trade, medicine, sports, literature, education, and the civil service. Nominations from the general public are welcome, as are self-nominations. ***Every year on the eve of Republic Day, an announcement is made. A maximum of 120 prizes are given out each year.***

9. Board of Direct Taxation Central:

Background: In order to recover Rs. 2.4 lakh crore in unreported income, the Central Board of Direct Taxes initiated a vigorous approach that included increased searches, raids, and data-driven measures.

India's direct tax rules are administered by the Central Board of Direct Taxes, a statutory body. It operates under the Ministry of Finance's Department of Revenue. In accordance with the ***Central Board of Revenue Act of 1963, it was founded in 1964.***

Its goals include creating policies for the direct administration of taxes, making sure that tax laws are effectively enforced and followed, expanding and deepening the revenue base to support fiscal stability, encouraging transparency and voluntary compliance, and combating tax evasion.

10. The AIM4NatuRe campaign:

Context: To improve worldwide monitoring of ecosystem restoration under the Kunming-Montreal Biodiversity Framework, FAO initiated the AIM4NatuRe program with UK backing.

An international project called ***Accelerating Innovative Monitoring for Nature Restoration*** aims to enhance the tracking and reporting of ecosystem restoration activities. The FAO launches it.

Its goals are to promote the attainment of Target 2 of the Kunming-Montreal Global Biodiversity Framework, which calls for restoring at least 30% of degraded ecosystems by 2030, and to improve nations' capacity to track and report restoration efforts.

Establishing standardized data formats for smooth cross-border integration, training nations to use data-driven restoration tracking techniques, creating a harmonized global dataset on restoration, and supporting indigenous peoples' monitoring efforts through pilot projects in Brazil and Peru are some of its features.

It addresses the needs identified by 80% of countries in the CBD capacity study, bridges significant data and reporting gaps, and encourages nature-based solutions to address climate change, biodiversity loss, and land degradation. It also supports openness, accountability, and ownership of restoration goals.

11. Bio-Input Resource Centers (BRCs):

Guidelines for establishing Bio-Input Resource Centres to support natural farming under the National Mission on Natural Farming were published by the Ministry of Agriculture and Farmers Welfare.

BRCs are cluster-level businesses that supply farmers with locally made natural farming inputs, such as ***organic formulations, bio-pesticides, and bio-fertilizers***. Additionally, they serve as information centres to instruct and mentor farmers making the switch to natural farming methods.

Its goals include making high-quality bio-inputs easily accessible to farmers, providing technical assistance to farmers using natural farming techniques, and encouraging the expansion of natural farming across villages.

The ***National Mission on Natural Farming*** is a centrally sponsored initiative that promotes sustainable, chemical-free farming that is based on indigenous knowledge and local agro-ecology. In order to guarantee safe and wholesome food, lessen reliance on outside chemical inputs and cultivation expenses, create healthy soil ecosystems, encourage biodiversity, and improve climate resilience, it seeks to promote natural farming.

12. Draft Intensity Target Rules for Greenhouse Gas Emissions, 2025:

Background: In order to operationalize India's Carbon Credit Trading Scheme and support active climate commitments, the Ministry of Environment, Forests, and Climate Change has produced the Draft Greenhouse Gases Emissions Intensity Target Rules, 2025.

India's larger plan to encourage the establishment of low-carbon sectors depends on the GEI Target Rules, 2025, which set mandatory emission intensity reduction targets for energy-intensive industries.

Its goals include ***lowering the intensity of greenhouse gas emissions*** in important industries, putting the carbon credit trading scheme into operation in 2023, helping India fulfil its pledge under the Paris Agreement to cut the intensity of its GDP's emissions by 45% by 2030 compared to 2005 levels, and encouraging innovative, climate-resilient, and sustainable industrial practices.

13. The Rafale-M Jets:

Background In the face of escalating Indo-Pacific tensions, the Cabinet Committee on Security authorized the purchase of 26 Rafale Marine aircraft from France, strengthening India's maritime attack capabilities.

The ***4.5-generation Rafale fighter jet from Dassault Aviation's carrier-borne Rafale-M version*** was created especially for naval missions from aircraft carriers. Air superiority, deep strike, reconnaissance, nuclear deterrence, and anti-ship missions are among its many roles.

14. NICDC-National Industrial Corridor Development Corporation:

Background: ***The Udyog Vikas Award was given to the National Industrial Corridor Development Corporation*** in recognition of its exceptional work creating Greenfield Industrial Smart Cities. India's top government agency for designing, creating, and executing smart cities and industrial corridors to improve logistics and manufacturing is called NICDC. Originally founded in 2007 as the Delhi-Mumbai Industrial Corridor Development Corporation, it subsequently underwent expansion to become NICDC.

Developing smart technology-enabled, futuristic industrial towns, establishing globally competitive manufacturing hubs, encouraging industrial investments, innovation, and regional economic growth, and assisting India in realizing its goal of becoming a global manufacturing powerhouse are some of its goals.

Developing and overseeing industrial corridors such as the Bengaluru-Mumbai Industrial Corridor, the Amritsar-Kolkata Industrial Corridor, the Chennai-Bengaluru Industrial Corridor, and the Delhi-Mumbai Industrial Corridor are among its duties. It organizes the design of infrastructure across sectors, including IT, utilities, logistics, and transportation. It serves as a stimulant for socioeconomic growth and the creation of jobs.

15. Similipal National Park

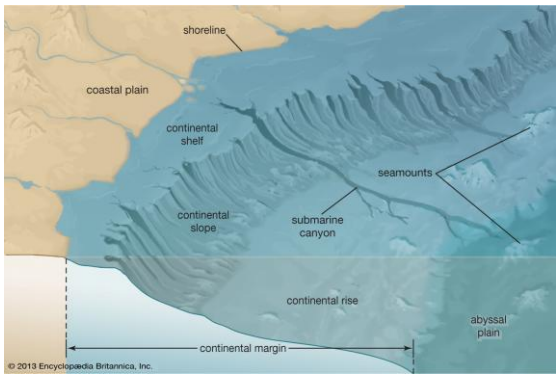
Context: Similipal Tiger Reserve is now the 107th national park in India and the second in Odisha after Bhitarkanika after the Odisha government formally declared it a national park.

A recently designated protected region in Odisha, Similipal National Park was formed from the Similipal Tiger Reserve. It is the state's largest national park, with an area of 845.70 square kilometers. It is located in the southeast region of the Deccan Peninsula in the district of Mayurbhanj, Odisha.

Melanistic tigers, more than 55 mammal species, 361 bird species, 62 reptile species, and 21 amphibian species can all be found there. More than 1,352 plant species can be found there, including 94 indigenous orchid species. It is home to large ***grasslands, semi-evergreen areas, dry deciduous woods, and tropical moist deciduous forests***. Rivers including the Burhabalanga, Palpala, Bandan, Salandi, Kahairi, and Deo drain it.

16. Indian Continental Shelf Claim in Arabian Sea

Context: In order to avoid maritime disputes with Pakistan, India has modified previous submissions to the UN to increase its continental shelf claim in the Arabian Sea by about 10,000 square kilometres.



Beyond the Exclusive Economic Zone, a continent's extended submerged border is known as its continental shelf, which grants rights over undersea resources. Based on scientific evidence of natural prolongation, coastal governments are able to claim more than 200 nautical miles.

In the central Arabian Sea, India has requested recognition for an extra 10,000 square kilometres. In order to avoid the Sir Creek Dispute with Pakistan, it adds partial claims to India's initial 2009 proposal. In accordance with the UN Convention on the Law of the Sea, the submission is sent to the Commission on the Limits of the Continental Shelf.

It supports India's aspirations for a blue economy, energy security, and marine security.

17. Technology for RNA Silencing:

Context: To combat the cucumber mosaic virus, researchers at Martin Luther University have created a potent RNA-based antiviral drug that provides robust crop protection.

More than ***1,200 plant species, including food and medical crops, are afflicted by the common and destructive Cucumber Mosaic Virus***. Nearly 90 aphid species are capable of spreading CMV, and sap-sucking aphids are the main vector of transmission. It results in severe yield loss, stunted growth, deformed fruits, and mosaic discolouration. In India, CMV can infect up to 70% of cucumbers, melons, and pumpkins and cause 25–30% of banana crops to be lost.

In plants, double-stranded RNA causes the synthesis of tiny interfering RNAs, which in turn breaks down viral RNA and prevents infection. This process is known as RNA silencing. Double-stranded RNA is released when a virus infects a plant. This is seen by the plant as a warning indication. The dsRNA is subsequently broken up into tiny fragments known as siRNA by specialized enzymes known as Dicer-like enzymes. The plant uses these siRNAs to recognize and eliminate the virus's RNA.

18. 3D Microscope:

Background For the first time in India, a 3D microscope was used for minimally invasive glaucoma surgery at the Army Hospital (Research and Referral), located in New Delhi.

By magnifying minuscule objects, a microscope allows for visualization that is beyond the range of the human eye. It works by magnifying samples by the diffraction, refraction, or digital imaging of light or electrons. Light or electrons are focused by lenses or sensors to provide a magnified image of small structures.

Multiple focal planes are captured using a 3D digital microscope, producing a high-resolution, three-dimensional image of the sample. It makes use of a 55-inch 4K Ultra-HD screen and specialized 3D polarization glasses. It reconstructs a comprehensive, spatial 3D model by scanning many focal layers. It lessens the requirement for light exposure, which minimizes phototoxicity during operations.

19. Scheme for Manufacturing Electronic Components:

Context: The Electronics Component Manufacturing Scheme's guidelines and web site were introduced by the Union Minister of Electronics and IT.

Based in Bengaluru Under the IndiaAI Mission, Sarvam AI was chosen to develop India's first in-house AI foundational model.

The first Production-Linked Incentive program in India designed especially to increase the production of electronics components is called ECMS. By improving native capabilities, it seeks to increase India's position in the global electronics supply chain.

Its goals include increasing domestic value addition, integrating Indian industries into global value chains, attracting both domestic and foreign investments in the manufacturing of electronics components, creating over 91,600 direct jobs, and helping India reach its target of $500 billion in electronics production by 2030.

A Bengaluru-based business called Sarvam AI is dedicated to creating domestic artificial intelligence models for India. Under the IndiaAI Mission, it seeks to develop the country's first indigenous AI foundational model while bolstering its capacity for AI innovation.

20. National Mission for Clean Ganga:

Context: An annual master plan to incorporate river-sensitive urban design under the River Cities Alliance has been approved by the National Mission for Clean Ganga.

It is the National Ganga Council's implementation arm for controlling and revitalizing the Ganga River. In accordance with the Societies Registration Act of 1860, it was registered on August 12, 2011.

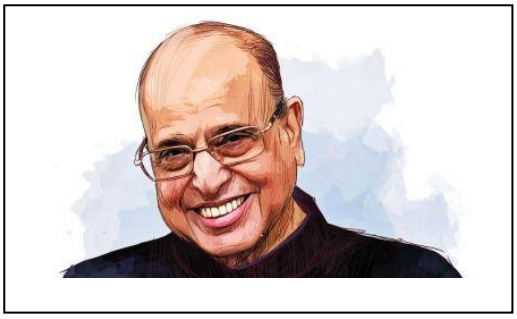
Its goals are to prevent and regulate pollution in the Ganga, guarantee steady, sufficient water flow for the Ganga's renewal, and put river basin management plans into action.

River Cities Alliance is a specialized forum for river cities to work together for sustainable urban river management, share best practices, and exchange ideas. It seeks to facilitate networking between river cities, improve capacity building for sustainable river management, and provide platforms for sharing innovations and technical assistance.

21. Dr. K. Kasturirangan

Context: Dr. K. Kasturirangan, a prominent person in India's space and education industries, died at the age of 84. The Prime Minister of India expressed his condolences for his demise.

In addition to being a ***distinguished astronomer and former chairman of ISRO, he was also a member of parliament, secretary to the Indian government, and recipient of the Padma Shri, Padma Bhushan, and Padma Vibhushan awards for his services.***



From 1994 to 2003, he led India's shift from experimental to operational satellite programs. He ***was essential to the PSLV and GSLV launch vehicles' operationalization***. In

1999, he leased INSAT-2E transponders to INTELSAT, promoting India's foray into commercial satellite services.

EDUSAT, INSAT/GSAT, RESOURCESAT, OCEANSAT, CARTOSAT, Meghatropiques, and ASTROSAT are among the important satellite missions he launched. ***He developed and oversaw Chandrayaan-1, India's first moon expedition.***

22. Control Line

Context: Following the Pahalgam terror assault, which claimed 26 lives, tensions along the Line of Control increased as a result of Pakistan's violations of the ceasefire.

The de facto military border between India and Pakistan in the areas of Jammu and Kashmir and Ladakh is known as the Line of Control. Under the Shimla Agreement, it is a mutually agreed-upon ceasefire line rather than an internationally recognized border. ***The Line of Control divides Indian-administered Jammu & Kashmir and Ladakh from Pakistan-Occupied Kashmir.***

23. Institute of Minerals and Materials Technology (CSIR-IMMT)

Context: In order to work together on vital mineral processing and sustainable resource development, CSIR-IMMT signed two joint declarations of intent with Rosatom, Giredmet, and NUST MISIS in Russia.

The ***Council of Scientific and Industrial Research, New Delhi, oversees the prestigious research institute known as CSIR-IMMT***. Sustainable resource development and mineral and material resource engineering are its areas of expertise

Its goals are to secure the socioeconomic benefits of mineral exploitation while safeguarding the environment, to support companies in reaching zero-waste mining, and to create innovative, sustainable technologies for mineral and material processing.

24. Pesticide Chlorpyrifos:

Background: Indian civil society organizations have called on the government to completely outlaw chlorpyrifos, a pesticide that is prohibited in more than 40 nations but is still in use in India, ahead of the ***Basel, Rotterdam, and Stockholm Conventions in Geneva.***

An organophosphate insecticide, acaricide, and miticide is chlorpyrifos. ***In crops like cotton, paddy, soy, wheat, and maize, it is used to manage insects that feed on the soil and leaves***. It interferes with the acetylcholinesterase enzyme, which is essential for nerve activity. Reduced IQ, memory

loss, developmental delays, and birth defects—particularly in fetuses—are all associated with it. In severe exposures, it might result in convulsions, respiratory failure, or even death.

It has a persistent and bio accumulative character. It can contaminate far-flung habitats, including arctic regions, over thousands of miles. It threatens food chains and biodiversity by harming pollinators and marine life.

Although chlorpyrifos is not yet formally included in the Stockholm or Rotterdam Conventions, international efforts are being made to include it.

25. Cabinet Committee on Security:

Background: The Cabinet Committee on Security declared a number of unprecedented retaliatory actions against Pakistan in reaction to the Pahalgam terror assault, which claimed 26 lives.
Small groups of ministers known as Cabinet Committees were established to lighten the workload of the Cabinet and facilitate targeted decision-making. The Prime Minister creates it in response to new demands.

It is led by the prime minister and consists of the ministers of home, defence, finance, and external affairs.

National security and defence policy is developed, strategic military operations and crisis response are decided, law and order and other internal security issues are supervised, major defence procurement and nuclear policy are authorized, and intelligence and international security issues are coordinated.

26. Egg Mayonnaise

Context: Citing significant health hazards associated with foodborne infections including Salmonella and E. Coli, the Tamil Nadu government prohibited the manufacture and distribution of mayonnaise produced with raw eggs for a year under the Food Safety and Standards Act, 2006.

A raw egg yolk, vegetable oil, acid, and seasoning are combined to create the semi-solid emulsion known as egg mayonnaise. It is thought to have started in France or Spain and is today a common ingredient in fast food around the world, appearing in sandwiches, burgers, wraps, and momos.

27. Exercise Aakraman and INS Surat:

Background: India strengthened its military readiness by having the Indian Air Force undertake "Exercise Aakraman," a full-spectrum combat exercise using Rafale fighters, and the Indian Navy test a surface-to-air missile from INS Surat.

Under Project 15B, INS Surat is a stealth-guided missile destroyer of the Visakhapatnam class. It was created in-house by Mumbai's Mazagon Dock Shipbuilders Ltd. Its goal is to improve India's readiness for coastal defence and marine strike capacity.

Up to 70 kilometres away, it can intercept aerial threats. Supersonic missiles are fitted to it for precise long-range attacks. It has a state-of-the-art multi-function radar for engaging and tracking targets. It carries out ongoing marine security and threat detection monitoring.

28. The 1972 Simla Agreement:

Context: In response to India's response to the Pahalgam terror assault and suspension of the Indus Waters Treaty, Pakistan blocked the Wagah border and suspended the 1972 Simla Agreement.

In order to formally establish peace following the 1971 war, ***India and Pakistan signed a bilateral treaty on July 2, 1972***. It established the foundation for amicable bilateral ties and conflict settlement. ***It is signed by Zulfikar Ali Bhutto and Indira Gandhi. It takes place in Himachal Pradesh's Shimla.***

Normalizing diplomatic ties and establishing enduring peace are its goals. It strengthens bilateralism as the cornerstone for settling conflicts, particularly those involving Kashmir.

29. Sevaka Jana:

Context: More than 350 property owners in Bengaluru's Purva Seasons community have had their e-Khata registrations made easier by Jana Sevaka, Karnataka's doorstep service delivery program.

The ***Karnataka government began the flagship Jana Sevaka initiative in 2019*** with the goal of providing individuals with basic government services at their doorstep, with a particular focus on senior citizens, people with disabilities, and other vulnerable groups.

Officials visit houses with biometric kits and documentation tools, and citizens can schedule services using a helpline or mobile app. Aadhaar updates, caste/income certificates, senior citizen cards, voter ID updates, and, most recently, e-Khata are all included. Services are provided at a certain fee announced by the government. For those who are not familiar with internet platforms, it encourages digital inclusion, particularly in urban governing procedures.

30. Suspension of Indus Water Treaty

Context: In the wake of the Pahalgam terror massacre, in which 26 Indian tourists were murdered by Pakistani terrorists, India suspended the Indus Water Treaty. The 1960 pact, which has survived wars and diplomatic crises between the two countries, is being suspended for the first time.

India said that unless Pakistan permanently stops supporting cross-border terrorism, the IWT would remain suspended. The Cabinet Committee on Security made five significant decisions, including the suspension. India may block Pakistani inspections of Indian projects such as the Kishanganga and Ratle Hydroelectric Project, stop exchanging hydrological data with Pakistan, exercise its right to reserve water on western rivers, and flush reservoirs to prolong dam life.

After partition-related water conflicts, the ***World Bank mediated the signing of the IWT, a water-sharing agreement between India and Pakistan, in Karachi on September 19, 1960. President Ayub Khan and Prime Minister Jawaharlal Nehru sign an agreement.***

Cooperative river management is made possible, future water disputes between the two countries are avoided, and fair distribution of water from the Indus basin is guaranteed.

The Sutlej, Beas, and Ravi rivers in the East are exclusively used by India. The Indus, Jhelum, and Chenab are the western rivers that enter Pakistan.

31. SAARC Visa Exemption Scheme

Background: In the wake of the Pahalgam terror assault, which claimed 26 lives, India halted the SAARC Visa Exemption Scheme for citizens of Pakistan.

A SAARC Visa Exemption Sticker is a regional travel facilitation tool that permits certain individuals from SAARC countries to travel throughout member countries without a visa.

Promoting interpersonal relationships, regional collaboration, and diplomatic amity among the eight SAARC nations—India, Pakistan, Bangladesh, Bhutan, Nepal, Sri Lanka, the Maldives, and Afghanistan—is its main goal.

Nepali and Bhutanese nationals can enter India without a visa.

32. ALH Helicopters Dhruv

Context: After being suspended in January 2025 following a deadly crash, India's domestic Dhruv ALH Helicopters began flying again in Anantnag, Jammu & Kashmir.

An indigenously developed ***twin-engine, multi-role utility helicopter***, the Dhruv ALH is intended for both military and civilian applications. With help from Germany's MBB, it was planned and developed by HAL.

Its goal is to offer a flexible platform for rescue, transportation, and combat support. It lessens India's reliance on imports and increases its aviation independence. It serves all three-armed forces in multi-mission roles.

33. Non-Tariff obstacles

Context: In order to improve market access for American goods, the US Vice-President asked India to remove non-tariff obstacles during his visit to Jaipur.

NTBs are trade restrictions that impede the free movement of goods and services across borders, aside from customs taxes. They consist of both non-technical and technical regulatory actions.

Exporters' compliance expenses are raised by the required testing, documentation, and redesign. Complex inspections and administrative procedures result in logistical delays at ports. Exporters, especially those from emerging nations, become less competitive as a result. It discourages small enterprises from joining international markets by generating risk and uncertainty.

34. Rising Gold Prices:

Background Concerns about global stagflation, tensions between the US and China, and growing demand from central banks, notably the RBI, have caused gold prices in India to reach all-time highs, surpassing Rs. 1 lakh per 10 kilos on the MCX.

The market price of gold, usually expressed in Indian rupees per ten grams, is referred to as the gold rate. For investors, commodity dealers, and jewellery buyers, it is a crucial signal.

Events, global supply, and demand all affect the price of gold in India. Gold imports become more expensive due to the rupee's depreciation versus the US dollar, which raises domestic costs. Due to India's heavy reliance on imports, pricing changes are directly impacted by changes in import taxes or GST. ***Due to a shortage of supply, demand spikes during festival and wedding seasons, driving up prices.***

India's gold prices differ greatly between states and cities due to a number of factors. Together, these factors—which range from local demand to transportation costs—determine the ultimate price that customers pay.

35. India's PM 10 pollution:

Context: According to a recent four-year investigation by Respirer Living Sciences, chronic air pollution was evident in all 11 major Indian metropolises, including Delhi and Patna, which consistently surpassed PM 10 safety standards between 2021 and 2024.

Particulate matter that can enter the respiratory system and has a diameter of 10 microns or smaller is referred to as PM 10. Dust, pollen, mold, and pollutants from automobiles, factories, and building projects are all included.

It has biological material, heavy metals, and inorganic chemicals. consists of both primary and secondary particles. Vehicle emissions, garbage combustion, construction, industrial operations, and stubble burning are some of the sources.

36. The Prime Minister's Awards for Public Administration Excellence

Context: The Prime Minister of India presented two e-coffee table books showcasing creative governance concepts and presented the Prime Minister's Awards for Excellence in Public Administration 2024.

The Government of India established the award program to recognize exceptional innovations and governance practices by districts, as well as state and federal government agencies. It seeks to inspire institutions and officials to provide effective and open public service.

In the aspirational block program for transformative development in infrastructure, education, nutrition, and health, Gamharia Block (Jharkhand) came in first place.

37. Axiom-4 and Water Bears Mission

Context: As part of the Axiom-4 mission, ISRO plans to transport tardigrades, or water bears, to the International Space Station. This will be India's first human experiment in microgravity utilizing these hardy micro-animals.

Under the ***Axiom Space program, the 14-day crewed Axiom-4 Mission will conduct research in microgravity biology, biotechnology, and sustainability aboard the International Space Station. It is a collaborative effort between ISRO, NASA, and ESA, with Captain Shubhanshu Shukla representing India as an astronaut.***

Moss piglets, another name for water bears, are tiny mammals. They are only visible under a microscope and range in size from 0.3 to 0.5 mm. Johann Goeze, a German naturalist, made the discovery in 1773. Extreme environments, such as deep waters and polar ice caps, are home to it. possess segmented bodies, strong outer skin, and eight clawed legs.

38. Sulphur Nanoparticle:

Context: TERI researchers have created nano sulphur, which dramatically increases mustard output by 30–40% and provides a workable remedy for India's persistently low oilseed productivity.

Applied as a foliar spray, nano-sulphur is a nano-formulation of sulphur that increases crop production and nutrient uptake. It delivers nutrients in an environmentally friendly, enzyme-driven manner by using microorganisms that promote plant development.

It reduces input costs and reliance on heavy sulphur fertilizers, increases oil content by 28–30%, increases mustard yield by 30–40%, and replaces 50% of conventional sulphur.

39. Health Management Information System of the Future

Context: With the introduction of its next-generation Health Management Information System, the Central Government Health Scheme will undergo a comprehensive digital transformation.

For the management and provision of CGHS services to central government employees, pensioners, and their dependents, it is a complete digital healthcare platform. It takes the place of the antiquated CGHS software, which was created in 2005. ***It is a component of the Ayushman Bharat Digital Mission's Digital Health Transformation.***

It is introduced by the Indian government's Ministry of Health and Family Welfare. The Center for Development of Advanced Computing is responsible for its development.

Its goals include modernizing CGHS service delivery, increasing transparency, getting rid of duplication, and giving beneficiaries real-time digital access.

40. The HEALD Project:

Context: The union Home minister opened India's first Integrated Liver Habilitation Center at ILBS, Delhi, and started the HEALD campaign to combat liver illnesses across the country.

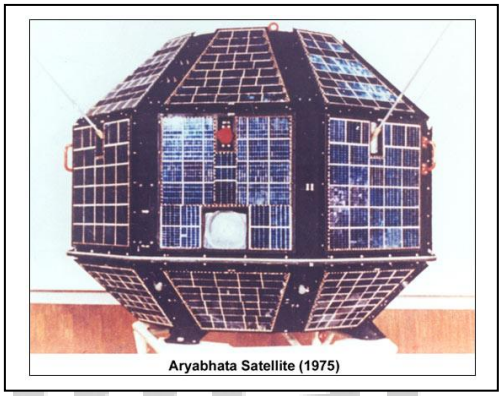
Healthy Liver Education and Alcohol-Associated Liver Disease Prevention is what HEALD stands for. It is the first multi-sectoral national initiative in India that focuses on early disease intervention, alcohol use disorders, and liver health.

The Institute of Liver and Biliary Sciences, New Delhi, a prestigious establishment under GNCT Delhi, is in charge of carrying it out.

By combining education, early screening, rehabilitation, and legislative changes, it aims to avoid liver failure. It also aims to lessen the stigma associated with alcohol-related liver disorders by offering community and mental health support.

41. 50 Years of the Aryabhata Satellite:

Background: India is commemorating the 50th anniversary of the launch of its first domestic satellite, Aryabhata, which was a turning point in the country's space exploration.


Aryabhata Satellite (1975)

Named for the famous Indian mathematician and ***astronomer of the fifth century, Aryabhata*** was India's first experimental satellite. The ISRO did all of the construction. ***On April 19, 1975, it was launched from the Russian launch site of Kapustin Yar on a Soviet Kosmos-3M rocket.***

It signalled India's admission into the exclusive group of spacefaring countries. It offered vital experience in systems integration and satellite technology mission planning. It cleared the path for historic missions like Aditya-L1, Chandrayaan, and Mangalyaan. It continues to be evidence of India's tenacity, inventiveness, and ambitions in space travel.

42. Khadi and Village Industries Commission, or KVIC

Context: For the first time in India's history, the Khadi and Village Industries Commission reached a milestone turnover of Rs. 1.7 lakh crore.

It is a legally mandated organization that was created to support and grow the Khadi and village industries in rural India. By combining the operations of the ***All-India Khadi and Village Industries Board under the KVIC legislation of 1956, it was established in April 1957***.

Its goals include increasing the production of marketable Khadi and village industry goods, maximizing rural job possibilities, and promoting a robust, self-sufficient rural economy.

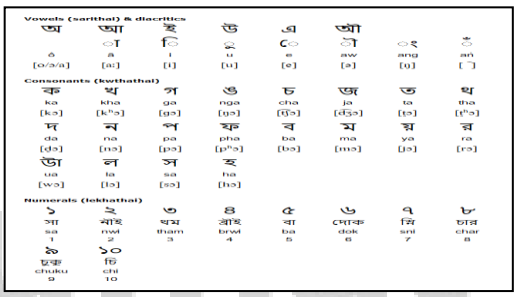
43. World Earth Day 2025:

Context: On April 22, World Earth Day 2025 will be observed worldwide with the theme "Our Power Our Planet."

Every year, Earth Day is observed ***to raise awareness of sustainability and environmental protection***. It brings people, governments, and organizations together to work for a more environmentally friendly future. After being suggested at the UNESCO Conference in 1969, it was first observed on April 22, 1970.

It emphasizes how urgent it is to triple the production of renewable energy by 2030. It places a strong emphasis on international cooperation to transition away from fossil fuels and invest in geothermal, hydro, wind, solar, and tidal energy.

44. Kokborok Language:



Background: The state administration has been encouraged by an indigenous literary organization from Tripura to include the Kokborok language in the Eighth Schedule of the Constitution in order to obtain constitutional recognition for it.

As a member of the ***Tibeto-Burmese linguistic family, Kokborok is the native language of the Borok (Tripuri) people.*** For the indigenous communities of Tripura, it is significant both historically and culturally. Although it is used in ***some areas of Assam and Mizoram, Tripura is where it is most often spoken***. ***On January 19, 1979, it was formally acknowledged as Tripura's state language.***

The languages that the Indian Constitution recognizes for official purposes are listed in the ***Eighth Schedule. comprises 22 languages at the moment, including Tamil, Telugu, Bengali, Bodo, Urdu, Assamese, and Hindi.***

45. Moonlight Solar Panel Technology

Background: Researchers at Stanford University have created a novel moonlight solar panel technology that enables the production of power even in the presence of clouds, rain, and darkness. a revolutionary technology that makes it possible for solar panels to produce power at night and in poor light. It makes use of radiative cooling, a natural phenomenon in which heat, particularly on clear nights, radiates from the Earth's surface into space. Modified solar panels are equipped with

thermoelectric generators, which use the heat that the panels emit to generate power. This technique generates energy by using the temperature differential between the panel and the surrounding air.

46. Bhutan Green Cryptocurrency

Context: In an effort to grow its economy and lessen the brain drain of young people, Bhutan is investigating the mining of green cryptocurrency using hydropower.

Digital currencies that are mined using renewable energy sources, such as solar, wind, or hydropower, rather than fossil fuels are known as "green cryptocurrencies." Because it only uses hydropower, mining is carbon neutral. It has an environmentally friendly footprint and utilizes blockchain technology. For businesses looking to satisfy environmental, social, and governance goals, it provides green digital assets.

47. Angstrom-scale Chip

Context: To establish India as a leader in next-generation chip technology, an IISc team has proposed to the government the development of angstrom-scale semiconductor chips employing 2D materials.

A semiconductor device constructed at the atomic scale, where one angstrom is equivalent to one nanometre, is referred to as an angstrom-scale chip.

The smallest processors available today (3 nm nodes) are roughly five times larger than these chips. created and suggested by researchers at Bengaluru's Indian Institute of Science.

Its atomic layers are extremely thin and electrically conductive. superior thermal stability, strength, and flexibility. allows for faster processing while using less electricity.

It is used in computing and electronics next-generation semiconductors. ***Quantum computing, wearable technology, and flexible electronics. facilitating heterogeneous integration in semiconductor designs, which is essential for space technologies, 5G/6G communications, and artificial intelligence.***

48. Automatic Number Plate Recognition

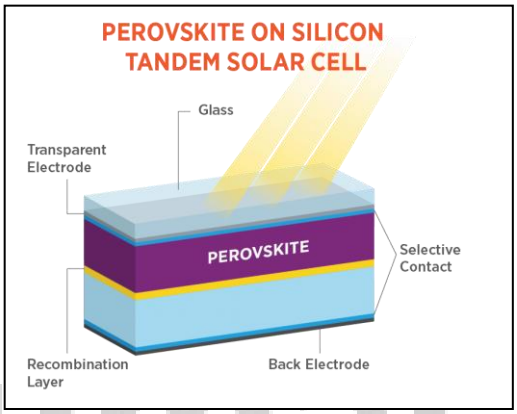
Context: According to the Ministry of Road Transport and Highways (MoRTH), there is currently no decision to switch to GNSS-based tolling starting on May 1, 2025. Instead, at a few plazas, a

barrier-less toll system based on Automatic Number Plate Recognition (ANPR) and FASTag will be implemented.

Vehicle number plates are captured and scanned by ANPR's high-performance cameras, allowing for automatic recognition without the need for human interaction. Charges will be applied to vehicles based on FASTag validation and number plate recognition. In accordance with VAHAN database standards, nonpayment may result in FASTag suspension or penalties, and violators may get electronic notifications.

49. Reusing hazardous perovskite solar cells using green water

Context: Toxic perovskite solar cells may now be recycled using a green water-based technique that recovers almost 99% of the components and maintains nearly full efficiency even after five cycles.



Perovskite-structured compounds, usually containing lead, are used as the light-harvesting active layer in perovskite solar cells, a type of photovoltaic technology. Compared to conventional silicon-based PVs, high power conversion efficiency was attained quickly.

50. Comprehensive Remote Sensing Observation on Crop Progress

Context: Based on the CROP framework, ISRO's satellites have predicted that India will produce 122.724 million tonnes of wheat during the Rabi season of 2024–2025, spanning eight main wheat-growing States.

It is a scalable, semi-automated remote sensing system designed to track the stages of crop planting, growth, and harvesting almost instantly. Accurate crop condition evaluations that support early agricultural planning and food security plans are among its goals, as is the ability to use satellite data to provide systematic, rapid, and scalable agricultural crop monitoring.

51. Declaration of Harare:

Background: The acceptance of the Harare Declaration, which called for immediate action to build climate-resilient health systems throughout Africa, marked the conclusion of the Climate and Health Africa Conference (CHAC) 2024 in Zimbabwe.

It is a historic commitment to addressing the health effects of climate change in Africa by means of inclusive policymaking, robust research, and resilient health systems. Climate change is acknowledged as a public health emergency. Through scientific, local, and traditional knowledge, it enhances Africa's ability to shape its own climate and health responses and promotes cooperation between communities, governments, researchers, and civil society.

52. The Atalanta Operation

Background: To improve maritime security cooperation in the Red Sea and Western Indian Ocean, the commander of EUNAVFOR ATALANTA (Operation Atalanta) suggested a joint naval exercise with the Indian Navy.

Launched in 2008, Operation Atalanta is the European Union's maritime security operation designed to safeguard international commercial lanes off the Western Indian Ocean and Somalia's coast. The Common Security and Defence Policy (CSDP) governs its operations.

Spain, Italy, Germany, France, and other EU member states are among the main players. At various stages, it receives support from affiliated partners such as Serbia and Norway.

It deters, prevents, and suppresses armed robbery and piracy at sea, and safeguards World Food Program ships transporting aid to Somalia. It assists other EU missions in the area and keeps an eye on fishing operations.

53. Kailash Mansarovar Yatra

Context: Following a four-year break brought on by COVID-19 and border tensions, the Ministry of External Affairs declared that the Kailash Mansarovar Yatra would resume in 2025.

It is a revered journey to Lake Mansarovar and Mount Kailash in China's Tibet Autonomous Region's Ngari Prefecture. ***Buddhism, Jainism, Hinduism, and the Bon religion all hold it in high regard.*** In Hindu mythology, it is thought to be the home of Lord Shiva.

54. Vehicles to Grid Technology:

Background: With the goal of integrating electric vehicles (EVs) into the state's power grid for improved renewable energy management, the Kerala State Electricity Board (KSEB) and IIT Bombay have started a pilot project to investigate Vehicle-to-Grid (V2G) technology.

It is a system that allows two-way electricity flow by allowing electric vehicles to interface with the power grid to return stored energy.

When there is little demand for electricity or a lot of renewable generation, EVs can be charged from the grid. Bi-directional charges allow EVs to return power to the grid when parked and connected during periods of high demand.

55. DPS Wetland:

Context: The Maharashtra State Wildlife Board has formally designated the DPS Wetland in Navi Mumbai as a Flamingo Conservation Reserve.

It is located in Navi Mumbai, Maharashtra's Seawoods. It was located next to the Thane Creek Ramsar reserve and covered an area of thirty acres.

The Thane Creek environment, a tidal body of water nourished by a variety of freshwater sources and marine impacts, includes DPS Lake. On the Central Asian Flyway, it provides habitat for migratory birds.

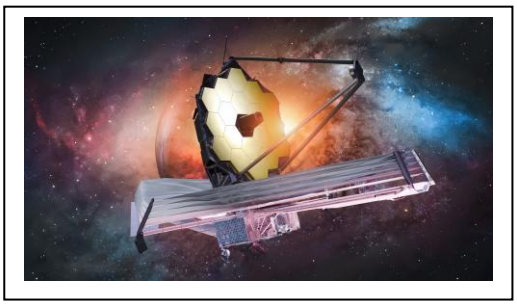
For ***thousands of migratory flamingos, it serves as an essential feeding and resting area.*** Initiatives to remove algae and restore tide flow were essential to recovering the wetland ecosystem. a delicate natural barrier that improves climate resilience against seawater incursion and floods.

Large, pink-hued wading birds, flamingos are distinguished by their long legs, elegant necks, and bills that bend downward. With comb-like structures inside their bills, they are specialized filter feeders that sieve diatoms, algae, and crustaceans. One or two eggs are placed in nests, which are

conical mud mounds, while both parents incubate them. They are very social birds that build big colonies and move in unison while nesting.

56. The James Webb Space Telescope:

Background: Dimethyl Sulphide and Dimethyl Disulphide, two probable biosignature chemicals found in the atmosphere of exoplanet K2-18b by scientists utilizing the James Webb Space Telescope, indicate a high likelihood of microbial life.



These mark the beginning of a new age of observational astrobiology and are the most compelling signs to yet of possible extrasolar life.

The largest and most sophisticated infrared space observatory ever constructed, the James Webb Space Telescope was created to investigate the early cosmos, stars, galaxies, and exoplanet atmospheres. NASA is working with ESA and CSA to create it.

57. Taurus Missiles:

Russia forewarned Germany that any attacks by Ukraine with Taurus missiles would be interpreted as direct involvement in the war.

Precision strikes on high-value and fortified targets are possible with the Taurus KEPD-350, ***a long-range cruise missile launched from the air.*** Saab Bofors Dynamics and the European Missile Manufacturer MBDA are working together to create it. It is intended for deep penetration attacks on strongly protected buildings, including command centers, bridges, and bunkers.

58. Flue Gas Desulphurization

Context: According to a report commissioned by the Principal Scientific Adviser's office, the 2015 order requiring the installation of flue gas desulphurization in all coal plants should be reinstated.

Only plants that burn imported or high-sulphur coal should be required to install FGD; not all coal plants should be subject to this requirement. In India, 92% of coal is low-sulphur. India's climate and stack heights naturally spread SO2 emissions, reducing the hazard to local air quality.

FGD is a technique used to improve air quality by removing sulphur dioxide from exhaust flue gases from fossil fuel power plants, primarily coal-fired stations.

59. UNESCO's Memory of the World Register now includes the Gita and Natyashastra

Context: UNESCO's Memory of the World Register now includes the manuscripts of the Bhagavad Gita and Bharat Muni's Natyashastra.

UNESCO's Memory of the World Register is a global effort to protect the priceless documentary legacy of humanity against deterioration, destruction, and neglect. Its goals are to safeguard rare collections, manuscripts, and archival buildings while also encouraging greater accessibility and awareness.

60. The National Critical Mineral Mission (NCMM)

Context: To speed up research, innovation, and extraction technologies in critical minerals, the Ministry of Mines has released guidelines for the establishment of Centres of Excellence under the National Critical Mineral Mission.

In order to guarantee the safe, robust, and sustainable supply of vital minerals required for India's renewable energy transition, technological development, defence, and key sectors, the National Critical Mineral Mission was established. For vital minerals like lithium, cobalt, rare earth elements, graphite, nickel, and others, it seeks to improve supply chains for exploration, mining, processing, recycling, and security.

In order to increase domestic supply, the Mission organizes more than 1200 exploration projects to find vital mineral reserves and auctions off more than 100 mineral blocks for commercial mining. In order to ensure strategic resource security, it makes it easier for Indian public and private sector businesses to purchase mineral assets overseas, especially in nations like Argentina, Australia, and Chile. By developing Standard Operating Procedures and providing incentives to lessen reliance on imports and environmental degradation, the Mission encourages the recycling of key minerals.

61. The Bombay Stock Exchange:

Context: On April 17, 2025, the BSE will celebrate its 150th anniversary in Mumbai, with the Indian Finance Minister in attendance.

The oldest stock exchange in Asia, BSE Ltd., is a significant marketplace for trading commodities, debt, mutual funds, stocks, and derivatives in India. In 1875, cotton merchant Premchand Roychand established what was once known as "the Native Share & Stock Brokers' Association."

The ***Securities Contract Regulation Act of 1956*** made it the first exchange to be recognized. replaced the open outcry system with electronic trading in 1995. In 2012, it joined forces with the UN Sustainable Stock Exchanges Initiative. In 2017, it became public on the National Stock Exchange.

62. Colossal Squid

Context: A historic milestone in marine exploration was reached when a juvenile enormous squid was captured on camera alive in its native habitat at a depth of 600 meters in the Southern Ocean, for the first time in more than a century.

The ***largest known invertebrate species is the giant squid***, a deep-sea predator that is rarely seen in its native environment. It is a member of the Cephalopoda class, which also contains cuttlefish, octopuses, and other squids. ***It lives in the Southern Ocean's frigid, deep waters, especially those surrounding Antarctica. Large fish like the Patagonian toothfish and other squids are its prey, and it sometimes engages in combat with sperm whales.***

63. PETA

Context: The Trump administration's recent decision to gradually phase out animal testing in federal research programs in favor of morally sound substitutes like organoids and AI models was applauded by PETA.

A worldwide non-profit organization dedicated to animal rights, PETA (People for the Ethical Treatment of Animals) works to prevent animal abuse and exploitation in a variety of sectors.

Maintaining the idea that "animals are not ours to experiment on, eat, wear, use for entertainment, or abuse in any other way" is its main goal.

It carries out investigations, runs public awareness campaigns, advocates for legislation, collaborates with celebrities, advocates for veganism, fights against animal testing, factory farming, fur farming, and the use of animals for entertainment, runs rescue operations, and strives to bring about changes in animal welfare around the world.

64. Ironwood TPU

Background: To speed up AI model processing, Google unveiled Ironwood, its seventh-generation Tensor Processing Unit.

An ASIC processor called Ironwood was created to process tensors, which are essential to machine learning. It drastically cuts the time needed to train AI models from weeks to hours. It manages neural networks and matrix computations and is more focused than CPUs and GPUs.

65. Birth and Death Registration

Context: In March, the Indian Registrar General sent out a circular reminding hospitals that they had 21 days to register births and deaths. Despite the 2023 modification to the Registration of Birth and Death Act requiring 100% digital registration, 10% of such occurrences remain unregistered, according to the circular.

Birth and death registration is a statutory procedure under the Civil Registration System that requires all births and deaths in India to be recorded. The system is supervised by the Ministry of Home Affairs' Registrar General of India. State governments appoint Chief Registrars, while Registrars function locally.

66. World Pandemic Treaty

Context: To improve global pandemic preparedness, WHO member nations finalized the draft World Pandemic Treaty following more than three years of talks.

It is an international agreement with legal force that aims to improve the world's response to pandemics in the future. The Intergovernmental Negotiating Body was established by the WHO in December 2021 to negotiate it.

Using a One Health strategy that incorporates environmental, animal, and human health, it seeks to enhance pandemic prevention, preparedness, and equitable response.

67. The First Full-Stack Quantum Computer in India:

Background The first full-stack quantum computer with 25 qubits in India was introduced by Bengaluru-based QpiAI on World Quantum Day 2025. The invention is a component of India's larger National Quantum Mission to lead the world in quantum technologies.

The first full-stack quantum system in India, QpiAI-Indus combines AI-enhanced hybrid computing, quantum hardware, and software. It was developed by QpiAI, a National Quantum Mission firm backed by DST.

A strategic national project, the National Quantum Mission aims to develop and implement quantum technologies in the fields of computing, communication, sensing, and materials. The Department of Science and Technology is in charge of its implementation.

68. AQUASAT

Background: The FAO commemorated the 30th anniversary of AQUASTAT, the premier water agricultural data platform globally. In line with SDG 6, the event included the inauguration of the new AQUASTAT Dissemination Platform, which will improve access to global water statistics.

It is the FAO's worldwide database on agricultural water management and water resources, offering publicly available information on over 180 variables across nations. Its primary goals are to track SDG 6.4 on water use efficiency and water stress, monitor irrigation and water consumption worldwide, and facilitate international collaboration on water governance through planning, policymaking, and monitoring.

69. The Marine Pollution Initiative between India and Norway

Context: Through effective interventions in the management of petha and footwear waste, the India-Norway Marine Pollution Initiative has assisted Agra in increasing trash circularity and lowering plastic leakage into the Yamuna River.

The governments of Norway and India are working together to combat marine trash, particularly microplastics and macro plastics originating from land-based sources.

70. Q-shield Platform:

The world's first unified platform for managing quantum-safe cryptography, Q-shield, was introduced by QNu Labs, a quantum-tech business affiliated with India's National Quantum Mission.

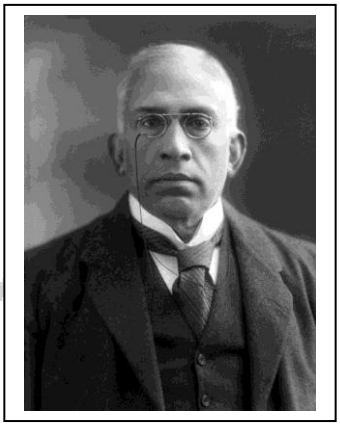
A complete cryptography management platform called Q-shield was created to protect vital infrastructure from upcoming quantum attacks. The Department of Science and Technology supports it.

Its goal is to provide businesses with solutions that provide cybersecurity and data privacy in noisy, on-premises, and hybrid settings in a way that is quantum-resilient.

71. Sir Sankaran Nair

Background: On the 106th anniversary of the Jallianwala Bagh Massacre, the Indian Prime Minister honoured Sir Sankaran Nair by remembering his legal fight against British atrocities.

A renowned jurist, statesman, and courageous nationalist, Sir Chettur Sankaran Nair was renowned for challenging colonial authority. Born in Palakkad, Malabar region, in 1857, he earned a legal degree from Presidency College in Madras.



Sankaran Nair became a judge of the Madras High Court in 1908 after being appointed public prosecutor in 1899. In 1912, the British Crown knighted him.

He supported India's self-governance and constitutional reforms. He chaired the Amraoti session of the Indian National Congress (1897). He served as the chairman of the All-India Committee, which met with the Simon Commission in 1928–1929 with little success. He was the Secretary of State for India's councillor. He opposed both the British Indian government's violent suppression of Mohandas K. Gandhi's Indian nationalist movement and the movement itself.

He wrote "Gandhi and Anarchy," which criticized Gandhi's non-cooperation movement as well as British atrocities. ***He vehemently accused O'Dwyer of the 1919 Jallianwala Bagh massacre,*** was sued for defamation in a British court, and showed moral bravery by refusing to issue an apology even though he lost the case. The case sparked Indian nationalist emotions and exposed British judicial bias.

72. GPS Spoofing

Context: Concerns regarding airspace cybersecurity were raised when Indian Air Force planes carrying relief to earthquake-affected Myanmar as part of Operation Brahma were allegedly subjected to GPS spoofing attacks.

False GPS signals are produced in order to deceive a receiver about its true location, a tactic known as GPS spoofing. GPS receivers use satellite signals to determine a user's location. False GPS signals that are more powerful than the real ones are sent by spoofers. Attackers may deceive aircraft, ships, cars, or even GPS-reliant apps by having the receiver lock onto these phony signals, which results in inaccurate location data.

73. Type-5 Diabetes

Context: At the World Diabetes Congress 2024 in Bangkok, the International Diabetes Federation formally recognized Type 5 Diabetes as a kind of diabetes associated with malnutrition.

Severe malnutrition is the main cause of this type of diabetes. Young, slender people from low- and middle-income nations frequently have it. An estimated 20–25 million individuals are impacted, primarily in Asia and Africa.

It results in long-term nutritional shortages, especially in protein and micronutrients, which may be connected to undernutrition in early life, poor metabolic adaption, and protein-energy malnutrition throughout crucial growth years.

74. Laser-Directed Energy Weapon System Mk-II (A)

Context: At Kurnool, Andhra Pradesh, India successfully tested the Mk-II (A) Laser-Directed Energy Weapon system, making it the fourth country to use laser technology to disable drones and missiles.

It is a powerful laser-based weapon system that eliminates aerial threats including drones, missiles, and sensors by using focused energy. In partnership with other DRDO agencies, business, and academia, the Centre for High Energy Systems and Sciences, a DRDO facility located in Hyderabad, is developing it. It is intended to provide quick-response, reasonably priced air defense.

75. The BatEchoMon gadget

Background: Using real-time acoustic analysis, BatEchoMon, India's first automated bat monitoring system, has been successfully built to identify and categorize bat species.

Bat echolocation calls are detected, analysed, and classified in real-time by this self-governing, artificial intelligence (AI)-powered acoustic monitoring system. The Indian Institute for Human Settlements in Bengaluru is responsible for its development.

With less manual labour, it seeks to streamline and expedite the processing of bat data, facilitating more in-depth studies of bat ecology and biodiversity.

76. The BIOCOM initiative of UNESCO

Context: By providing sustainable livelihoods and vocational skills to local youth, UNESCO's BIOCOM initiative in Madagascar is relieving the strain on forest ecosystems like the Montagne des Francais Reserve.

One of UNESCO's premier programs, Biodiversity Conservation and Sustainable Natural Resource Management for Integrated Community Development (BIOCOM), encourages the creation of livelihoods in Madagascar that are connected to conservation. It seeks to protect biodiversity while strengthening socioeconomic resilience in nearby communities that are at risk from unsustainable forest exploitation and climate change.

77. STELLAR Model

Context: To maximize energy generation, transmission, and storage planning across states, the Central energy Authority introduced STELLAR, India's first entirely indigenous resource adequacy model.

It is a cutting-edge software program for demand response, transmission, storage, and power generation planning. With assistance from the Asian Development Bank, the Central Electricity Authority is working with the Lantau Group to build it.

In order to guarantee a steady supply of electricity and system-wide efficiency, it attempts to assist states and power distribution corporations in creating yearly dynamic resource adequacy plans.

78. Gaurav Glide Bomb:

DRDO successfully tested the long-range glide bomb known as "Gaurav" from a Sukhoi-30 MKI fighter plane.

Gaurav is a long-range, precision-guided glide bomb designed to hit ground targets from a distance known as stand-off, or beyond the enemy's air defence range. It is

created by DRDO in association with Integrated Test Range and the Armament Research and Development Establishment Research Center Imarat.

It employs an inertial navigation system with satellite guidance and digital control, and its range is between 30 and 150 kilometres.

79. Paddy seeds that are hybrid

Background: In anticipation of the 2025 Kharif Season, the Punjab government has prohibited the selling of hybrid paddy seeds.

The ruling comes after rice millers rejected hybrid rice because of its poor milling efficiency and output of broken grains.

A hybrid paddy is a type of rice that was created by crossing two distinct parent lines in order to improve early maturity, yield, and water efficiency. These non-Basmati cultivars are grown for high-yield commercial production.

80. Small Modular Reactor based on Thorium

Context: In an unprecedented move by an Indian state in the field of nuclear energy, Maharashtra and Russia's ROSATOM inked a Memorandum of Understanding to work together on the development of a thorium-based Small Modular Reactor.

A small modular reactor is a scalable, compact nuclear reactor intended for flexible, safe, and effective power production. Thorium-based SMRs use the fertile element Thorium-232 to transmute it into Uranium-233 fuel.

81. Golden Tiger

Context: In Kaziranga National Park in Assam, a rare golden tiger—also called a golden tabby tiger—was recently spotted and captured on camera.

It is not a distinct subspecies, but rather a rare color variation of the Bengal tiger. There are only four known to exist in the wild, and they are all located in Assam's Kaziranga National Park.

It is brought on by a mutation in the wideband gene, which increases the synthesis of reddish-yellow pigment. For the golden hue to manifest, the mutant gene must be present in both parents. While inbreeding might result in genetic inferiority, color is not harmful.

82. ASEAN-India Agreement on Trade in Goods

Context: The eighth meeting of the ASEAN-India Trade in Goods Agreement Joint Committee, which focused on updating the agreement to increase trade, came to an end in New Delhi.

India and the ten ASEAN members have a free trade agreement. It deals with physical products trade, removing tariffs and lowering non-tariff obstacles. It seeks to improve bilateral commerce and economic cooperation.

83. The National Bank for Financing Development and Infrastructure, or NaBFID

Context: To strengthen collaboration in long-term infrastructure and renewable energy financing in India, the National Bank for Financing Infrastructure and Development and the New Development Bank inked a strategic Memorandum of Understanding.

It is a development finance organization that focuses on providing capital for long-term infrastructure initiatives in India. As an All-India Financial Institution, it is subject to RBI regulation.

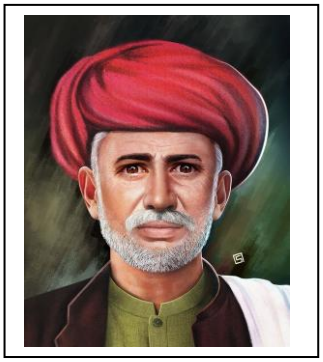
Its goals are to close gaps in long-term non-recourse infrastructure financing, boost the expansion of India's bond and derivatives markets, promote sustainable economic growth, and fortify the framework for financing clean energy, transportation, and water projects.

84. Blue Category of Industries:

Waste-to-Energy incinerators, which were formerly categorized as extremely polluting Red Category industries, are among the controversially introduced "Blue Category" of companies under Essential Environmental Services by the Central Pollution Control Board.

The CPCB created the Blue Category to categorize industries that are crucial for environmental management yet have comparatively low pollution levels; nevertheless, this has generated controversy.

85. Mahatma Jyotiba Phule



Context: April 11 marks the 198th anniversary of the birth of Mahatma Jyotiba Phule, a pioneering social reformer renowned for his unwavering struggle against gender inequity, untouchability, and caste prejudice.

He was a Maharashtra-born writer, thinker, educationist, and social reformer. He fought for the ***advancement of Dalits, women, farmers***, and

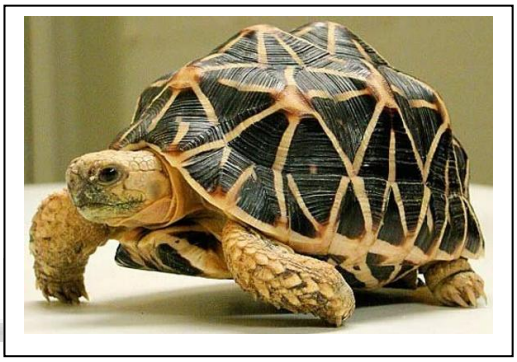
labourers and is regarded as the "Father of the Indian Social Revolution." He established the groundwork for anti-caste movements in India and was the first leader to refer to the downtrodden castes as "Dalit." He ***promoted obligatory, universal, and useful education for everyone, particularly for women and members of underprivileged castes.***

In 1873, he established the Satyashodhak Samaj with the goals of advancing social justice, equality, and reason. He advocated for Hindu orphanages, anti-infanticide facilities, and widow remarriage.

He recommended using military labour for rural development as well as building dams and bunds. He advocated for farmers' economic empowerment and agricultural education.

86. Star Tortoises from India

Context: The Turtle Rehabilitation Project achieved a significant milestone when 340 Indian Star Tortoises were successfully restored and returned to the wild at Jogapur Reserve Forest, Chandrapur.



It can be found in arid and semi-arid areas of South India, Sri Lanka, and Northwest India. Live in grasslands, lowland dry woods, semi-deserts, and thorn scrub forests.

Their high-domed shell's recognizable star-like markings are the reason for their name. In the illegal exotic pet trade, it is highly sought for. It mostly eats grasses, leaves, and flowers because it is a herbivore.

A state-level conservation effort called the Turtle Rehabilitation Project aims to combat the rise in the illegal trade and confinement of turtles and tortoises throughout Maharashtra. With its mass release in April 2025, the project, which had started in late 2024, gained momentum.

Rehabilitating rescued tortoises and getting them ready to return to their natural environments is its goal. Through biometric monitoring, environmental acclimatization, and medical treatment, it guarantees post-release survival. Through neighbourhood engagement and school participation, it raises awareness of the community.

87. Malabar Grey Hornbill

Context: For their community-based conservation project to save the Malabar Grey Hornbill, a Keralan research team was granted the Conservation Leadership Program's coveted Future Conservationist Award.

It is native to Southern India's Nilgiris, Wayanad, and Annamalai Hills, as well as the Western Ghats.

In addition to human-modified environments like coffee, rubber, and arecanut plantations, it can be found in evergreen forests. It is susceptible to habitat fragmentation and favors deep canopy cover.

88. The Pradhan Mantri Krishi Sinchayee Yojana's "Modernization of Command Area Development and Water Management" sub-scheme, which will cost Rs. 1600 crore in total and be implemented in FY 2025–2026, has been approved by the Union Cabinet.

A comprehensive nationwide irrigation program designed to increase irrigation coverage and boost farm-level water efficiency.

Its goals are to guarantee that grassroots irrigation investments are coordinated. It accomplishes the goal of ***"HarKhetKo Pani." Under the tagline "Per Drop More Crop,"*** it advocates for water-saving irrigation techniques including sprinkler and drip systems. In peri-urban agriculture, it promotes the reuse of treated wastewater and conserves water.

89. Nilgiri Thar

Context: To commemorate the 50th anniversary of Eravikulam National Park, Kerala and Tamil Nadu will work together to conduct a Nilgiri Thar census in April over 265 census units.

The state animal of Tamil Nadu and the sole mountain ungulate native to southern India is the Nilgiri Tahr.

It is native to Tamil Nadu and Kerala, which are part of the Southern Western Ghats. It favours rocky altitudes, shola forests, and montane grasslands. Its 400-kilometer historical range has been restricted to isolated areas.

90. One-Horned Rhinoceros

Context: The Wildlife Institute of India has put forth a national action plan for the reintroduction of one-horned rhinoceroses in five states' new protected areas in an effort to alleviate habitat strain in ***Assam's Kaziranga and Pobitora.***

Of all the Asian rhino species, it is the largest. It can be identified by its single black horn and folds of skin covered with armor.

91. Commodative Position

Context: In light of slow growth and moderate inflation, the Reserve Bank of India reiterated its accommodative approach to encourage economic recovery during its most recent meeting of the Monetary Policy Committee.

A monetary policy strategy used by central banks such as the RBI to boost economic activity is known as an accommodating stance. Generally speaking, it entails maintaining low interest rates and making sure the system has enough liquidity.

Its goals include encouraging private investment and credit flow, as well as lowering the cost of capital to stimulate borrowing and spending. revitalize the economy's demand. Assure stressed sectors of liquidity support.

92. Panchayat Advancement Index Report

Background: Gujarat and Telangana topped the rankings in the inaugural Panchayat Advancement Index report for 2022–2023 published by the Ministry of Panchayati Raj.

A composite, multi-sectoral index that evaluates the overall performance and advancement of more than 2.5 lakh Gram Panchayats in India. It is intended to assess grassroots local accomplishments of the nine sustainable development goals.

Its goals are to support evidence-based policy interventions in rural India, assist stakeholders in identifying development gaps, and facilitate data-driven governance at the panchayat level.

93. The India Skills Accelerator Program

Context: The India Skills Accelerator was introduced by the World Economic Forum in collaboration with the Ministry of Skill Development and Entrepreneurship.

It is a national public-private platform that emphasizes inclusive workforce development and future-ready skilling. By enhancing stakeholder coordination, modernizing policy frameworks, and developing scalable skilling paths, it seeks to facilitate systemic change.

Raising awareness of new skill demands, encouraging knowledge exchange and public-private collaboration, updating structures and regulations to be more flexible and responsive, and coordinating training with industries such as advanced manufacturing, AI, robots, energy, and the GCC are some of its goals.

94. 3D Printing

Context: In Arida City, Japan, the West Japan Railway Company debuted the first 3D-printed train station in history. In less than six hours, the new Hatsushima station was constructed, demonstrating innovative construction techniques.

The process of layering materials according to a digital model to create three-dimensional items is known as additive manufacturing, or 3D printing. It reduces waste and permits complex designs by adding material layer by layer, in contrast to traditional manufacturing.

95. Niveshak Didi program

Context: To increase women's financial literacy in rural areas of India, the Investor Education and Protection Fund Authority and India Post Payments Bank have inked a Memorandum of Agreement to begin Phase 2 of the Niveshak Didi program.

Through community-based financial education, this women-led financial literacy initiative aims to empower rural populations. It was introduced in 2023, and as of April 2025, it is moving into Phase 2.

Its goal is to use community-driven methods to help rural women develop sound money management practices and financial literacy. It uses local women influencers to promote digital literacy, inclusive banking, and fraud prevention.

96. One State-One RRB

Background: With effect from May 1, 2025, the Ministry of Finance has announced that 26 Regional Rural Banks in 10 states and one Union territory will merge under the "One State One RRB" policy, bringing the total number of RRBs to 28.

The Department of Financial Services launched this reform project with the goal of combining state-level RRBs into a single organization. The consolidation process was launched in the year 2005 as an off-shoot of ***Dr Vyas Committee recommendations.***

Its goals are to improve governance and operational efficiency, reduce expenses, maximize human and technology resources, and end competition between sponsor banks in a state.

The ***Regional Rural Banks Act of 1976 established RRBs in 1975.*** It is based on the 1975 report of the Narasimham Committee. Its goal is to improve institutional lending in rural India and close credit gaps in rural areas. The National Bank for Agriculture and Rural Development oversees them, while the Reserve Bank of India regulates them.

97. The Palna Scheme

Context: The government's Palna Scheme is being marketed as a crucial childcare intervention under Mission Shakti, and the 7th edition of Poshan Pakhwada kicked up in April with an emphasis on early childhood nutrition.

For working women in both urban and rural India, ***Palna is a centrally subsidized program that offers high-quality creche services for children ages six months to six years.*** The Ministry of Women and Child Development is in charge of carrying it out. Restructured from the previous National Creche Scheme, it is introduced in 2022.

Its goals include ensuring early childhood care, nutritional support, and early education for children, encouraging prolonged breastfeeding by placing creches close to homes or places of employment, and supporting working moms by offering safe, easily accessible, and reasonably priced daycare facilities.

98. Dire Wolf De-Extinction

Context: Colossal Biosciences, a biotech company based in the United States, announced the birth of three genetically modified wolf pups, the first attempt to "de-extinction" the extinct species after 12,500 years.

The act of bringing extinct animals back to life by sophisticated biotechnological techniques including gene editing, ancient DNA sequencing and reconstruction, cloning, and synthetic biology is known as "de-extinction."

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99. The Bear Market

The rise in US tariffs under President Trump caused the S&P 500 to briefly reach bear market territory, falling more than 20%. Investor panic and concerns of a worldwide recession were sparked by this loss, which is the first of its kind since 2022.

When a stock index drops 20% or more from its most recent peak, it is referred to as a bear market. This indicates a gloomy outlook for the economy and investor pessimism.

100. Biomass Satellite Mission

The Biomass satellite mission will be launched by the European Space Agency on board the Vega C rocket at the end of April 2025.

The seventh Earth Explorer satellite mission in ESA's climate and Earth systems program is called Biomass. In order to evaluate the health of forests and their function in the carbon cycle, it will map forests throughout the world and quantify carbon levels.

The mission's objectives are to use radar to measure the carbon content and biomass of forests from space, create precise 3D models of forest structures, and monitor changes in biomass over time.

101. Mirror

Context: A physicist from IIT Kanpur used quantum physics and electron behavior to illustrate mirror science. This marks the 100th anniversary of its discovery and falls during the International Year of Quantum Science and Technology 2025.

A mirror is a flat surface that creates sharp images by reflecting the majority of the light that strikes it. Specular reflection, in which light bounces at the same angle it comes, is the basis for its operation.

102. ZooWIN portal

Context: To track the real-time availability of anti-rabies and anti-snake venom vaccines throughout India, the Union Health Ministry recently launched the ZooWIN site.

It guarantees improved cooperation between healthcare systems, particularly in neglected and rural areas. With technical assistance from the United Nations Development Programme, it is created by the Ministry of Health and Family Welfare's National Centre for Disease Control.

Its goal is to improve zoonotic disease prevention, control, and treatment, including rabies and snakebite. For prompt availability and distribution, it guarantees real-time visibility of vaccine stocks.

103. The 2024 Digital Threat Report

Context: The Government of India launched the Digital Threat Report 2024 to boost cybersecurity in the Banking, Financial Services and Insurance industry.

This cybersecurity evaluation is sector-specific. It offers a thorough analysis of current security flaws, changing threat vectors, and cyber defence best practices. Together, CERT-In, CSIR-Fin, and SISA are developing it.

Because of the financial ecosystem's interconnectedness, it detects systemic hazards. It stresses the need for cooperative intelligence sharing to stop cascade cyber disasters, exposes AI-driven threats, compliance issues, and sophisticated fraud strategies, and provides actionable solutions across people, process, and technology domains.

104. The Parliament Union:

Background: In Tashkent, Uzbekistan, Speaker of the Lok Sabha Om Birla spoke at the 150th Inter-Parliamentary Union Assembly.

It is an international forum for parliamentary cooperation and diplomacy that was established to advance democracy, human rights, and peace. Its main office is in Geneva, Switzerland.

It encourages representative democracy, supports parliamentary institutions, helps parliaments communicate and work together to settle international disputes, advances gender equality, youth empowerment, and sustainable development, and protects parliamentarians' human rights around the world.

105. Program for Vibrant Villages II

Context: To promote security, development, and national unity, the Union Cabinet authorized Vibrant communities Programme-II, which will invest Rs. 6839 crores in border communities outside of the northern borders between 2024–2025 and 2028–2029 respectively.

Other than the northern boundaries already covered by VVP-I, it is a central sector program aimed at the full development of strategic communities close to international land borders.

The Ministry in Charge is the Ministry of Home Affairs. Enhancing the standard of living in border villages, providing livelihood opportunities for border dwellers, ensuring national security by enlisting locals as border force eyes and ears, reducing trans-border crimes, promoting border integrity, and bolstering connectivity and governance in key areas are its goals.

106. Meenakari skill

Context: The Indian prime minister gave the Thai prime minister and her spouse beautiful Indian handicrafts, including items exhibiting the traditional Meenakari skill, while he was in Bangkok for the 6th BIMSTEC meeting.

The art of enamelling ceramic or metal surfaces with intricate patterns and vibrant colours is known as meenakari. In order to create complex and long-lasting designs, coloured powdered glass is fused onto surfaces at high temperatures.

Safavid Iran is where it began, and the Mughals in India refined it. Originally introduced in India during the Mughal Empire, Iranian artisans helped to further improve it in the 20th century.

It incorporates geometric, floral, and animal patterns into jewelry, vases, figurines, crockery, décor, and even furniture. The final products frequently have a glassy, polished appearance with striking contrast, fusing traditional motifs with contemporary functionality. It uses precious metals like gold and silver, and occasionally copper or brass.

107. The Convention of Ottawa

Context: Citing growing security risks from Russia, a number of European countries, notably Poland, Finland, and the Baltic States, have declared their intention to leave the Ottawa Convention.

The legally binding worldwide pact to eradicate anti-personnel landmines is known as the Mine Ban Treaty. Along with provisions for victim relief, mine clearance, and international collaboration, it forbids the use, stockpiling, production, and transfer of such mines.

Israel, China, Russia, India, and the US are not members.

Ending the suffering caused by anti-personnel mines, preventing civilian casualties, particularly after hostilities are over, helping victims get back on their feet, and reclaiming mined territory for civilian usage are its goals.

108. HANSA-3 Trainer Aircraft

Context: Pioneer Clean amps Pvt. Ltd., a private company, has inked the first technology transfer agreement with CSIR-NAL to construct HANSA-3 (NG) trainer aircraft.

It is a two-seater, ab-initio trainer aircraft of the next generation designed for pilot training. CSIR-National Aerospace Laboratories in Bengaluru is responsible for its indigenous design and development.

It seeks to teach pilots for both private and commercial pilot licenses, offer a more affordable option to foreign trainer aircraft, and strengthen India's aviation industry in response to the rising need for skilled pilots.

109. The 2025 Report on Technology and Innovation

Context: According to the UNCTAD technology and innovation report 2025, India is placed 36th in terms of readiness for frontier technologies and 10th in terms of private AI investments worldwide. This international analytical analysis assesses how nations are investing in and ready for cutting-edge technologies like biotechnology, robots, artificial intelligence, and the Internet of Things.

In addition to tracking private investments, R&D, and innovation capacities across nations, its objectives include evaluating national preparedness for embracing cutting-edge and emerging technologies and offering policy insights for inclusive tech-driven growth.

In terms of private AI intelligence investments, India comes in at number ten globally. In 2023, India was awarded $1.4 billion in AI funding. China and India are the only emerging nations that have made large investments in AI.

110. Roadmap from Baku to Belem

Context: India called on all 11 BRICS countries to embrace the "Baku to Belem Roadmap," which seeks to raise $1.3 trillion a year by 2035 for climate action, during the 11th BRICS Environment Ministers Meeting in Brazil.

CoP 30 (Belem, Brazil) and CoP 29 (Baku, Azerbaijan) started the finance mobilization framework.

It seeks to provide developing countries with fair transition routes, pinpoint systemic issues including high capital costs and regulatory barriers, increase the involvement of multilateral development banks in concessional lending, and facilitate public-private co-finance.

111. Tariff

Context: Former US President Donald Trump announced a comprehensive "Liberation Day" tariff strategy that includes additional country-specific duties, such as 27% on Indian exports, and a 10% baseline levy on all imports.

In order to control international trade and safeguard home industries, governments apply tariffs, which are taxes on imported goods and services that are collected at customs.

Ad Valorem tariffs, specific tariffs, compound tariffs, anti-dumping tariffs, countervailing duties, and reciprocal tariffs are among the several tariff types.

Tariffs provide revenue, particularly for nations with poor tax bases, discourage excessive imports to close trade deficits, make imported goods more expensive to promote domestic goods, and are used as a form of retaliation or pressure in international trade discussions.

112. The Surface Thermophysical Experiment of Chandra (ChaSTE)

Context: During the Chandrayaan-3 mission, ChaSTE provided useful thermal data from the Moon's south pole, making it the first instrument to successfully penetrate and measure temperature beneath the surface of any celestial body.

It is a native thermal probe aboard the Vikram lander of Chandrayaan-3. created by the Space Physics Laboratory at VSSC in Trivandrum and the Physical Research Laboratory in Ahmedabad. It measures the lunar soil's temperature and thermal conductivity in-situ.

It seeks to identify the Moon's vertical temperature gradient. It supports the detection of water ice and subsurface composition, and it evaluates the thermophysical characteristics of lunar regolith in high-latitude locations.

113. The Region of Karaganda

Context: At the Kuirektykol location in the Karaganda region, Kazakhstan has found a significant rare earth element deposit with an estimated 1 million tons of REEs, potentially bolstering global clean tech supply chains.

The area is made up of hills, arid plains, and intermittent streams. The Karkaraly National Park, Mount Aksoran, and portions of the Kazakh Uplands are important landscapes. The Irtysh-Karaganda Canal supports the Ishim and Nura, two significant rivers. In the southeast is Lake Balkash. The area is still a mineral-rich industrial centre, despite its historical reputation for coal mining and Gulag camps during the Soviet era.

The 17 chemically related elements known as rare earth elements are essential for the production of defence technologies, smartphones, wind turbines, electric cars, and lasers. ***China remains the greatest producer, accounting for over 60% of global REE output, followed by the USA and Australia.***

114. Gorkha

Context: To resolve the long-standing identification and citizenship issues of Indian Gorkhas, the Ministry of Home Affairs convened a tripartite meeting with Gorkha leaders and the West Bengal administration.

Indians who speak Nepali are known as Gorkhas, and they are not the same as Nepali citizens. The word ***"Gorkha" describes a warrior race with a history of valour,*** particularly as a result of their service in the Indian and British forces. They are descended from Brahmins and Rajput's who came to Nepal from India in antiquity. The ***town of Gorkha in Nepal is essential to their historical identity, and the name "Gorkha" comes from Guru Gorakhnath. Following the Anglo-Gorkha War and the Treaty of Sugauli, the community expanded significantly.***

Darjeeling, Kalimpong, Assam, Sikkim, Dehradun, and Northeast India are among the major settlements.

They are renowned for their perseverance, discipline, and military duty. socially varied, including communities of Tamang, Gurung, Rai, Limbu, Magar, Chhetri, and Bahun. They speak Nepali, which is listed in the Indian Constitution's Eighth Schedule.

115. GI Tag for Kannadippaya

Context: Kerala's traditional tribal mat, known as Kannadippaya, is the first tribal handicraft from the state to be recognized with the Geographical Indication tag.

The handwoven mat known as Kannadippaya, or "mirror mat," is composed of delicate inner layers of reed bamboo. Tribal communities in the Keralan districts of Idukki, Thrissur, Ernakulam, and Palakkad create it.

It offers thermal comfort—warm in the winter and cool in the summer—and is renowned for its reflective pattern. It complies with worldwide sustainability trends and is biodegradable and environmentally friendly.

Indigenous tribes such as the Oorali, Mannan, Muthuva, Malayan, Kadar, and Ulladan are responsible for its preservation. For indigenous craftsmanship and livelihoods to continue, it must be revived.

116. Policy for Domestically Made Iron and Steel Products, 2025

Context: To reduce growing steel imports and encourage independence, the Center released the Domestically Manufactured Iron & Steel Products Policy-2025. Its reciprocal clause, which targets non-reciprocating countries like China, requires that Indian steel be used exclusively in government purchases.

Atmanirbhar Bharat is promoted, domestic production and procurement are encouraged to ensure steel self-reliance, rising imports that threaten Indian steel mills are addressed, Indian manufacturers are protected from foreign competition in government contracts, and capital goods used in steel manufacturing are sourced locally.

117. Devaraya I of Sangama Dynasty

Background: Falcon Coins Gallery and ASI released rare copper plates from 1406 CE that record the coronation of Devaraya I of Sangama Dynasty in Bengaluru.

One of the most prominent leaders of the Sangama Dynasty, Devaraya I is credited with enlarging the Vijayanagara Empire and fortifying its administrative foundation.

After a power struggle following the ***death of Harihara II, he ascended to the throne.*** In order to secure borders against the Bahamani sultanate, he spearheaded the expeditions into Tamil Nadu, the Konkan, and Tondaimandalam. ***He backed public works projects and constructed tanks and canals to enhance agriculture. By supporting trade and literature, he improved relations with Chinese and Arab traders.***

118. e-Marketplace for Government

Context: A significant turning point in digital public procurement was reached in FY 2024–2025 when more than 1 million human resources were hired via the Government e-Marketplace.

Government departments, PSUs, and ministers use GeM, a paperless, cashless, and contactless internet procurement platform, to effectively and transparently purchase products and services.

Its goals include improving public procurement's efficiency and transparency, accelerating procurement cycles with digital technologies, obtaining value through competitive bidding, and facilitating corporate transactions through streamlined, system-driven processes.

119. Cape Town Convention

Context: To encourage aircraft leasing in India, the Rajya Sabha passed the Protection of Interest in Aircraft Objects Bill, 2025, which gave the Cape Town Convention legal force.

The Cape Town Convention on International Interests in Mobile Equipment and its Aircraft Protocol is a 2001 international agreement that establishes consistent legal guidelines for asset-based financing and leasing of engines, aircraft, and helicopters.

Its goals are to simplify international aviation leasing by lowering cross-border legal complications and to safeguard lessors and creditors by guaranteeing legal remedies in default situations.

120. The Green Credit Initiative

Context: The Green Credit Program, which was introduced in 2023, has come under fire for perhaps encouraging plants on environmentally sensitive territory and diverting forests.

It uses tradable green credits to encourage voluntary environmental acts. It promotes environmentally beneficial behaviors in support of Mission LiFE. It enables businesses and organizations to apply credits for ESG compliance and compensatory afforestation.

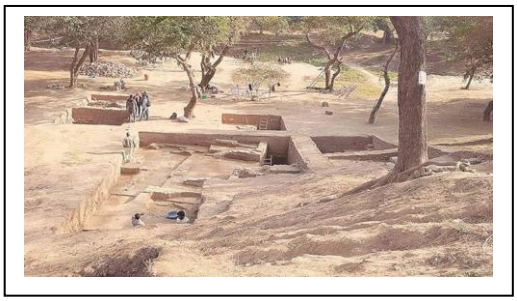
121. Bioluminescent Bloom

Context: Although the Bioluminescent Bloom in Kochi's backwaters is aesthetically beautiful, its detrimental impacts on local fishing communities and marine life have sparked ecological and economic concerns.

When disturbed, microscopic organisms in brackish and marine waters create a glowing effect, causing a natural light-emitting phenomenon. The sea sparkle, or Noctiluca scintillans, is the most prevalent bioluminescent organism. Bioluminescent bacteria, fungus, and dinoflagellates are further contributors.

Eutrophication—excessive nutrients in water from sewage, fertilizer runoff, and industrial waste—causes the phenomena. High salinity, warm temperatures, and turbidity speed up blooms.

122. Harappan Sites at Mitathal and Tighrana



Context: In accordance with the 1964 Haryana Ancient and Historical Monuments and Archaeological Sites and Remains Act, the Haryana government has formally designated the Mitathal and Tighrana sites in the Bhiwani district as protected archaeological sites.

They display robust red pottery with black painted designs, which are proof of Harappan urban planning. Mud bricks, possibly reinforced, and early ceramics manufactured with bichrome wheels are used to build houses.

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123. Monetary Policy

Context: In 1935, the RBI published its first monetary policy, which was ninety years ago today. This milestone is being commemorated under Sanjay Malhotra, the new RBI governor.

The approach used by central banks to regulate the money supply and interest rates in the economy in order to maintain stability and growth is known as monetary policy.

Through efficient liquidity and credit control, it seeks to prevent inflation, preserve currency stability, and stimulate economic growth.

124. Silicon-Carbon Batteries:

To improve device performance and efficiency, a number of Android smartphone makers have switched from using conventional lithium-ion batteries to silicon-carbon batteries in recent years. In place of graphite, silicon-carbon composite is used as the anode in next-generation lithium-based batteries. As with lithium-ion batteries, the cathode is still based on lithium. By switching to silicon-carbon anode, energy storage per gram is improved.

125. NITI NCAER States Economic Forum Portal

Overview: The Finance Minister will introduce the forum's website. The website provides 30 years' worth of aggregated data on the fiscal, social, and economic aspects of every Indian state.

Its objectives are to support researchers, policymakers, and academics in comparative analysis and development planning, to act as a centralized data hub for tracking state-level trends, to promote data-driven policy discussions, and to promote fiscal transparency.

126. Second International Conference on Air Pollution and Health:

In March 2025, WHO and the Colombian government sponsored the Second Global Conference on Air Pollution and Health in Cartagena. It sought to increase international support for cutting the number of deaths from air pollution by half by 2040 compared to 2015.

The ***WHO has established a high-level global platform to address public health, energy poverty, and air pollution using multi-sectoral, evidence-based approaches.***

It pledges to use coordinated, science-based policy action to cut the number of deaths from air pollution in half by 2040. To help with decision-making, they disseminate state-of-the-art research on how air pollution affects children's health, mental health, and brain development. It draws

attention to the interconnected advantages of clean air for public health equity, gender justice, and climate action.

127. BIMSTEC Summit:

With the theme "Prosperous, Resilient and Open BIMSTEC," the 6th BIMSTEC Summit will take place in Bangkok, Thailand on April 4, 2025. It seeks to support the Bangkok Vision 2030 and strengthen regional cooperation in the areas of connectivity, security, and trade.

In order to foster technological and commercial cooperation among countries bordering the Bay of Bengal, BIMSTEC is a regional organization that links South and Southeast Asia. It was created by the Bangkok Declaration. Its main office is in Dhaka, Bangladesh. Members include Bangladesh, Bhutan, India, Myanmar, Nepal, Sri Lanka, and Thailand.

Promoting economic cooperation amongst nations that border the Bay of Bengal is its main goal. In the areas of trade, technology, energy, transportation, and the environment, it makes sectoral cooperation easier. It tackles common regional issues like poverty, climate change, and terrorism.

Through digital connections and cross-border infrastructure, it promotes regional connectedness. It facilitates academic collaborations, cultural exchanges, and interpersonal relationships.

128. Nagarhole National Park:

The proposed land grants in the park's central region, particularly in its environmentally delicate swampy grasslands, have drawn criticism.

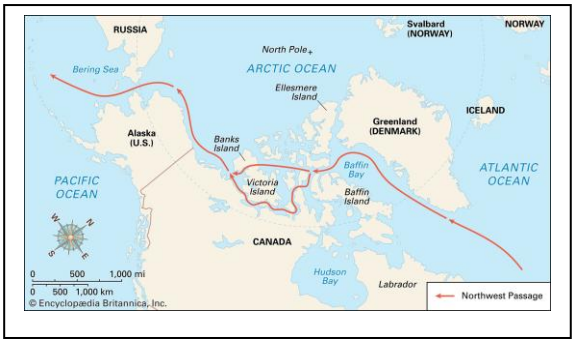
It is one of India's top Project Tiger locations and a designated Tiger Reserve. The Nagarahole stream inspired the park's official name, Rajiv Gandhi National Park. It covers the Karnataka districts of Kodagu and Mysuru. It has a border with Wayanad Wildlife Sanctuary and Bandipur Tiger Reserve. It is located between the Nilgiri Hills and the Mysuru Plateau.

It features swampy meadows, teak, rosewood, sandalwood, and tropical moist and dry deciduous woods. The following species can be found here: Gaur, Sambar, Chital, Mouse Deer, South-Western Langur, Asiatic Elephant, Tiger, Leopard, Wild Dog, Sloth Bear, and so on.

129. The Northwest Passage

Context: As geopolitical tensions increase, the Northwest Passage is once again in the spotlight. The United States and Canada are at odds about whether it is an international strait or an internal waterway.

The Arctic Circle delineates the northernmost polar region of Earth, which is centred around the North Pole. Extreme cold, tundra plants, polar climate, and permafrost are its defining features. Parts of eight nations—***Canada, Denmark, Finland, Iceland, Norway, Russia, Sweden, and the United States***—are included.



It has abundant natural resources, including large quantities of rare earths and fisheries, 30% of undiscovered gas, and 13% of undiscovered oil. Nearly four times as quickly as the world average, the region is warming. It is home to significant maritime lanes such as the Northeast and Northwest Passages. It is subject to UNCLOS but is not governed by a single treaty like Antarctica.

The primary intergovernmental venue for Arctic cooperation is the Arctic Council, which was established in 1996 by the Ottawa Declaration.

130. Vibe Coding

Context: After an OpenAI co-founder demonstrated how AI tools may generate code in response to user-friendly suggestions without requiring much technical knowledge, the term "Vibe Coding" gained popularity.

An informal, instinct-based approach to coding in which users instruct AI systems to produce code rather than writing it by hand. It is perfect for low-risk, artistic, or personal projects since it prioritizes experiencing the feelings over structured programming logic.

It enables novices with no technical experience to learn to code. It stimulates interest in programming among non-traditional learners, allows developers to automate simple activities so they can concentrate on more complex problems, and is helpful for developing small utilities or weekend coding hacks. It also encourages experimentation and creativity in tech-based personal projects.

131. Ice Stupas

Context: With the help of Ladakhi engineer ***Sonam Wangchuk***, farmers in the Gilgit-Baltistan region have effectively deployed ice stupas to combat water scarcity.

They are ***man-made, cone-shaped glaciers that hold frozen winter water.*** Because of its recognizable dome-like shape, it is called after Buddhist stupas.

It allows for several crop cycles per year rather than just one, and it alleviates water scarcity in arid mountain regions impacted by warming.

132. CAPTCHA System

Context: The significance and limitations of CAPTCHA systems in the rapidly changing cyber landscape of today are brought to light by discussions about their involvement in the recent spike in bot activity and digital security breaches.

"Completely Automated Public Turing test to tell Computers and Humans Apart" is what it stands for. The purpose of this human verification tool is to differentiate between automated bots and actual users.

Puzzles such as choosing pictures or recognizing warped language are shown to users. It defends websites against automated attacks, spam, and fraudulent registrations. It gives sensitive operations like payments, logins, and data recovery an extra degree of security. It is utilized for human validation in online polls, comment sections, forms, and e-commerce.

133. Project Varsha

Background: As part of Project Varsha, India intends to operationalize its third nuclear-powered submarine, INS Aridhaman, and commission its first dedicated nuclear submarine base, INS Varsha, in Andhra Pradesh, in 2026.

The construction of the Indian Navy's cutting-edge nuclear submarine base, INS Varsha, is a classified naval infrastructure project. It is situated in Andhra Pradesh, close to Rambilli, roughly 50 kilometres south of Visakhapatnam.

It seeks to improve India's ability to launch marine strikes in the Indian Ocean and Bay of Bengal. It serves as a check on China's strategic regional expansion.

134. Regulations 2025 Concerning the Recognition and Grant of Equivalency to Qualifications Obtained from Foreign Educational Institutions

Context: The Recognition and Grant of Equivalency to Qualifications Obtained from Foreign Educational Institutions Regulations, 2025, have been formally announced by the University Grants Commission.

In order to provide equivalency certificates for academic credentials earned from overseas educational institutions, the UGC established this regulatory framework. It guarantees that degrees from other countries are officially accepted for further education, research, and employment in India.

Simplifying, standardizing, and expediting the recognition of international academic credentials are its goals. By facilitating the equitable integration of foreign degree holders into Indian academics and the workforce, it advances the internationalization objectives of NEP 2020.

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