

## ● POLITY

## ● ECONOMICS

## ● TECHNOLOGY

## ● ECOLOGY

## GEOGRAPHY

## Monsoon sets in over Kerala and northeast

**CONTEXT:** The southwest monsoon arrived in Kerala on Thursday, two days earlier than usual and a day before the forecasted date, according to the India Meteorological Department.

**BACKGROUND:** The southwest monsoon began in Kerala on Thursday, two days ahead of the usual onset date and a day before the forecasted May 31. Unusually, it also began simultaneously in northeastern India. The monsoon has two branches: the Arabian Sea branch, typically starting over Kerala by June 1, and the Bay of Bengal branch, setting in by June 5.



### Early Onset of Monsoon in Northeastern States Linked to Cyclone Remal

- **Early Monsoon Arrival:** The eastern monsoon branch arrived early in several Northeastern states due to Cyclone Remal's influence, causing heavy rainfall.
- **Historical Context:** Simultaneous monsoon onset in Northeast India and Kerala is rare but has occurred in 1991, 1995, 1997, 2017, and 2024.
- **Onset Criteria:** Unlike Kerala, there are no defined criteria for monsoon onset in Northeast India, requiring rainfall and strong southerly winds evaluation.

### Significance of the Monsoon in India

- **Seasonal Wind Reversal:** The monsoon is a seasonal wind reversal causing the majority of rainfall in India and other regions.
- **Low-Pressure Formation:** In summer, fast solar heating over the subcontinent creates a low-pressure zone, drawing in moisture-laden breezes from the Indian Ocean.
- **ITCZ Influence:** The ITCZ shifts northward, bringing monsoon rains to the mainland by late May or early

June.

- **Monsoon Branches:** The monsoon splits into the Arabian Sea and Bay of Bengal branches, reaching most of India by early July.
- **Economic Importance:** The monsoon, vital for agriculture and water supply, is crucial to India's economy, affecting wells, aquifers, and overall economic health.

## SCIENCE AND TECHNOLOGY

## Start-up Agnikul launches world's first rocket with fully 3D-printed engine

**CONTEXT:** Chennai-based start-up Agnikul Cosmos Pvt. Ltd. launched the world's first rocket, Agnibaan SOrTeD, with a single-piece 3D-printed engine from Sriharikota.

**BACKGROUND:** The Agnibaan SOrTeD mission marks India's first private launch from the 'Dhanush' launchpad by Agnikul, featuring the world's first single-piece 3D-printed engine. It aims to test in-house technologies for Agnikul's orbital launch vehicle, Agnibaan. Despite a postponed April launch, ISRO lauded the mission's success on X.



- **SubOrbital Technological Demonstrator (SOrTeD)**
- **Engine Technology:** Single-stage rocket powered by Agnilet semi-cryogenic engine, differing from traditional sounding rockets with vertical lift-off.
- **Launch Mechanics:** Agnibaan SOrTeD follows a predetermined trajectory with precisely orchestrated flight maneuvers, avoiding guide rails.
- **Autopilot System:** Autopilot distinguishes engine ground test from actual flight, rotating thrust via a characterized gimbaling system.

- In-Loop Facility: Gimbaling system for thrust rotation characterized at an in-loop facility to aid autopilot functions.
- Mission Control Setup: Mission control room designed based on standalone rehearsals, replicating the SDSC SHAR control room.

## GOVERNANCE

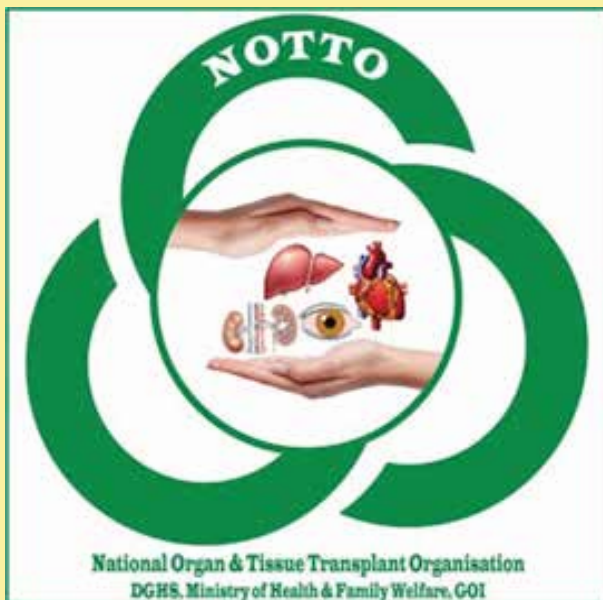
### Non-related organ donor's consent must be accepted, says Madras HC

**CONTEXT:** The Madras High Court ruled that donor consent for organ transplants must be accepted unless there's evidence of financial transactions, impacting transplantation regulations.

**BACKGROUND:** The Transplantation of Human Organs and Tissues Act of 1994 does not exclude donations by non-near relatives, emphasizing that altruistic motives should not be dismissed. Highlighting that love and charity are esteemed virtues in all religions, the judge asserted that not all actions are driven by selfishness and some statements should be taken at face value.

#### Organ Transplantation Framework in India

- Legislation: Transplantation of Human Organs Act (1994) regulates organ removal, storage, and transplantation to prevent commercial dealings.
- National Program: Implemented by the Directorate General of Health Services, Government of India.
- Objectives: Organize procurement, promote donation, train manpower, protect vulnerable, and monitor transplant services.
- Procurement and Distribution: Systematized for organs and tissues for transplantation purposes.
- Prevention Measures: Aim to prevent organ trafficking and ensure ethical practices in transplantation services.



### National Organ and Tissue Transplant Organization (NOTTO)

- National Level Organization: NOTTO is under the Directorate General of Health Services, Ministry of Health and Family Welfare, Government of India.
- Functions: Lay down policy guidelines, protocols, and network with regional and state organizations.
- Registry Operations: Compile and publish registry data of organ and tissue donation and transplantation.
- Awareness and Promotion: Create awareness and promote organ donation and transplantation activities nationwide.
- Apex Centre: NOTTO serves as the apex centre for coordination and networking of organ and tissue procurement and distribution.

## ECOLOGY AND ENVIRONMENT

### 'Monsoon croaks' project ropes in public to document frogs in farms and backyard

**CONTEXT:** The Centre for Citizen Science and Biodiversity Informatics at Kerala Forest Research Institute is hosting Monsoon Croaks Bioblitz 2024, a citizen science initiative to document Kerala's frogs during the monsoon.

**BACKGROUND:** Monsoon is a peak breeding season for frogs, crucial for ecosystem health. However, frogs face threats like climate change, habitat loss, and pollution, pushing 41% of global frog species to the IUCN Red List. Kerala, home to over 200 frog species, is organizing the Monsoon Croaks Bioblitz 2024 to document these species.



#### Monsoon Croaks Bioblitz

- Project Aim: Identify key habitats of frogs across various environments including forests, farms, gardens, and backyards.
- Duration and Participation: Four-month project from June 1 to September 30, encouraging public participation.



- Method: Participants upload frog photographs and sounds via the iNaturalist app.
- Data Utilization: Observations contribute to the Global Biodiversity Information Facility (GBIF) for biodiversity research and policy.
- Organizer: Coordinated by Peroth Balakrishnan from the Centre for Citizen Science and Biodiversity Informatics, KFRI.

## GEOGRAPHY

### New Delhi's extreme heat not Climate Change

**CONTEXT:** The temperatures people feel are influenced by factors like public ventilation, building density, and shade availability, affecting how bodies respond to heat.

**BACKGROUND:** On May 29, the Mungeshpur automatic weather station, north of New Delhi, recorded an unusually high temperature of 52.9°C. The India Meteorological Department later indicated a possible fault in the station's thermistor. Nonetheless, northern India has been experiencing intense heat. In response, New Delhi's Water Minister imposed fines for water wastage due to vehicle washing and overflowing tanks.

#### Challenges and Responses to Extreme Heat in New Delhi

- Complex Factors Influencing Heat: Temperatures in New Delhi influenced by public ventilation, urban density, and shade availability, not solely climate change.
- Lack of Preparedness: New Delhi lacks interstate cooperation and effective heat response mechanisms despite attribution of extreme temperatures to climate change.
- Inadequate Infrastructure and Oversight: Monitoring teams lack resources to manage illegal water connections and ensure fair water distribution in a city of New Delhi's scale.
- Energy and Water Demands: High heat increases power demand and water consumption; New Delhi's heat action plan needs to better integrate water availability and power generation.
- Comprehensive Heat Action Plan Needed: Recommendations include long-term water storage, improved water distribution systems, and passive cooling methods to manage extreme heat effectively.

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## INDIAN POLITY

### Defending Umar Khalid's right to protest

**CONTEXT:** Umar Khalid, a former university scholar, has been kept in prison for over three years due to legal restrictions and judicial decisions.

**BACKGROUND:** In another denial of bail, a Delhi Sessions Court refused to reconsider its decision, asserting that the accused's involvement in a "larger conspiracy" related to the 2020 north-east Delhi riots was prima facie true. The court rejected the argument of trial delays and cited earlier decisions, including a Delhi High Court ruling, despite limited evidence beyond WhatsApp chats.



#### Challenges in Bail Hearings for Dissenters

- Lengthy and Rejected Bail Hearings: Umar Khalid's bail hearings have been repeatedly adjourned and ended in rejection.
- Legal Precedents and UAPA: Delhi High Court granted bail to activists in similar cases, criticizing misuse of UAPA.
- Impact of UAPA: UAPA prevents bail if allegations are deemed prima facie true, with limited scrutiny of evidence.
- Unjust Incarceration: Umar Khalid's continued incarceration highlights flaws in the criminal justice system.
- Systemic Issues: The system sometimes supports personal liberty but also targets dissenters and denies bail.

#### Right to Peaceful Protest in Indian Constitution

- Constitutional Guarantees: Indian Constitution guarantees freedom of speech, assembly, and peaceful protest.
- Reasonable Restrictions: Article 19(2) allows restrictions in the interest of sovereignty, security, public order, etc.
- Supreme Court's Assertion: In the Ramlila Maidan Incident case (2012), SC affirmed citizens' fundamental right to peaceful protest.
- Protection Against Arbitrary Actions: Executive or legislative actions cannot arbitrarily curtail the right to assembly and protest.
- Legal Framework: The Constitution ensures that protests are protected unless restricted under specified circumstances.

## ARTICLE - SOCIAL JUSTICE

## India and the 'Managed Care' promise

**CONTEXT:** A prominent health-care chain in South India has launched an integrated health insurance service, resembling a managed care organization (MCO), combining insurance and health-care services.

**BACKGROUND:** Originating from rudimentary prepaid health-care practices in 20th-century United States, Managed Care Organizations (MCOs) gained prominence in the 1970s amidst rising health care costs. They integrated insurance and health services to control costs, focusing on prevention and early management, despite limited evidence on health outcomes. In India, health insurance has mainly covered hospitalization costs, neglecting the substantial outpatient consultation market.

### Challenges and Prospects of Managed Care in Developing Nations

- Characteristics of MCOs in Developing Nations: Urban-predominant, high-income cohort, arise in failing public sectors.
- Evolution of Indian Health Insurance: Targets urban well-off, informal outpatient practices, lacks clinical protocols.
- Barriers to Managed Care: Lack of consumer-driven cost control, unprofitable operations, unaffordable premiums.
- Role of Big Healthcare Brands: Urban patient-base, network and infrastructure investments, but limited contribution to UHC.
- Potential for Managed Care: Scope in reducing costs through comprehensive outpatient care coverage and early interventions.



### Potential of Managed Care Organizations in Indian Healthcare

- NITI Aayog's Endorsement: Report supports outpatient care insurance scheme, subscription model, integration of care.
- Benefits of Managed Care: Savings, consolidation of practices, management protocols, focus on preventive care.
- Incentives under Ayushman Bharat: Promote hospitals in underserved areas, cater to PMJAY beneficiaries, expand MCO reach.
- Expansion of MCOs: Insure PMJAY patients, self-paying clientele, increase awareness, grow demand base.
- Role in UHC: Part of complex healthcare solution, not perfect but contributes to Indian healthcare goals.

### Ayushman Bharat Pradhan Mantri Jan Arogya Yojana (AB PM-JAY)

- World's Largest Health Insurance Scheme: Fully government-financed, launched in 2018, provides Rs. 5 lakh per family.
- Health Benefit Packages: Cover surgery, medical and day care treatments, medicines, and diagnostics.
- Beneficiaries: Identified through Socio-Economic Caste Census (SECC) data, or similar socio-economic profiles.
- Funding Mechanism: Shared funding model: 60:40 for states/UTs with legislature, 90:10 in Northeast states and J&K, Himachal, Uttarakhand.
- Implementation Structure: National Health Authority (NHA) oversees with state governments; State Health Agency (SHA) manages at state level.

## ARTICLE - SOCIAL JUSTICE

## The tobacco epidemic in India

**CONTEXT:** India ranks second globally in terms of tobacco consumption, following China, with an estimated nearly 260 million users as of 2016-2017.

**BACKGROUND:** Tobacco is globally recognized as a leading preventable cause of disease and death, impacting both consumers and cultivators. India ranks second in the world for tobacco consumption after China, with nearly 260 million users as of 2016-2017. The health of over 6 million people employed in the tobacco industry is also at risk due to skin absorption of tobacco.

### Tobacco's Impact and Use in India

- Environmental and Economic Impact: Tobacco is highly erosive, depletes soil nutrients, and contributes to deforestation.
- Economic Burden: India incurs a loss exceeding ₹1.7 lakh crore annually due to tobacco's health effects.
- Waste Generation: Tobacco production and consumption generate nearly 1.7 lakh tonnes of waste yearly.
- Tobacco Use Surveys: GATS, GYTS, and NFHS indicate declining tobacco use, except among women.
- Post-Pandemic Challenges: No surveys have been conducted since COVID-19, affecting current data.

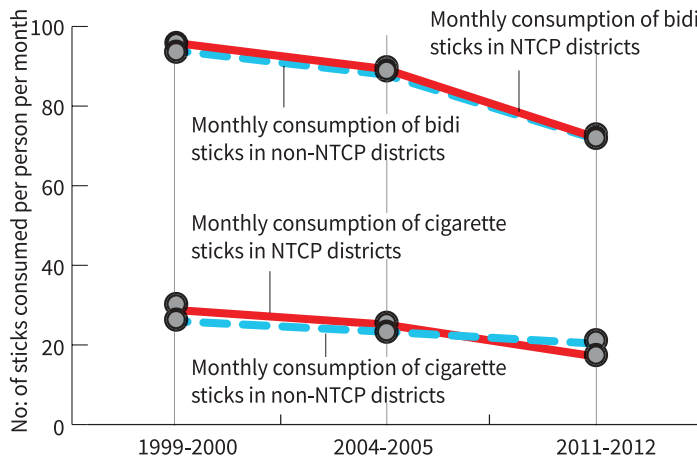
### Tobacco Control Measures and Challenges in India

- Framework Convention on Tobacco Control (FCTC): India is a signatory to the FCTC aimed at reducing global tobacco usage.
- COTPA 2003: Governed by the Cigarettes and Other Tobacco Products Act, it regulates tobacco production, advertisement, and distribution.
- National Tobacco Control Program (NTCP): Launched in 2007 to enhance implementation of COTPA and awareness about tobacco harms.
- Challenges in Implementation: Poor compliance with packaging guidelines, rampant smuggling, and outdated fines.
- Surrogate Advertisements: Indirect ads circumvent bans, promoting tobacco products through proxy products like elaichi.

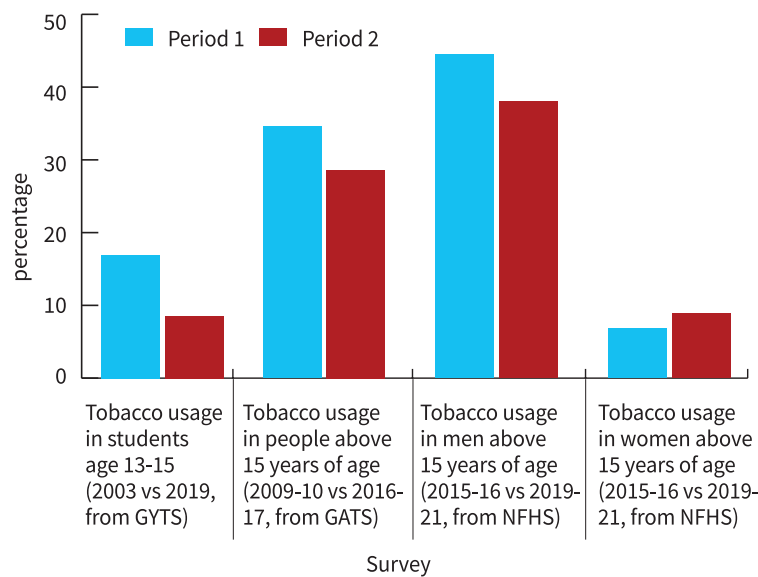
# To go up in smoke

Nearly 26 crore Indians are tobacco consumers, according to an estimate in 2016-2017. While usage and consumption has been going down, effective tobacco control is still a pipe dream

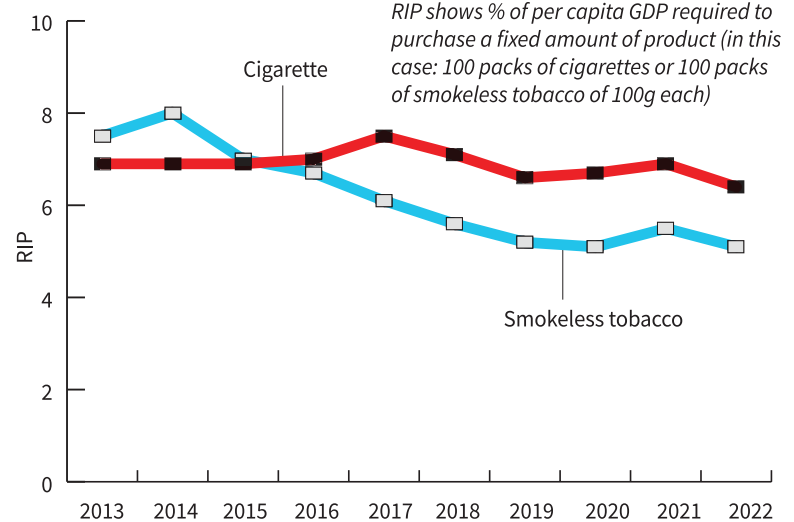
**Chart 1:** Comparison of monthly consumption of bidi and cigarettes between National Tobacco Control Program (NTCP) districts and non-NTCP districts



**Chart 2:** Trends in tobacco usage in different population groups



**Chart 3:** Trends in Relative Income Price (RIP) for cigarettes and smokeless tobacco



Source: Nazar, G.P. et al, 2020 doi:10.1136/tobaccocontrol-2018-054621, Health Taxes in India, The World Bank

## Challenges and Lobbying in Tobacco Control in India

- Amendments to COTPA: Proposed changes in 2015 and 2020 aimed at regulating advertisements and licensing.
- Effectiveness of NTCP: Questioned due to insufficient staffing, resources, and monitoring mechanisms.
- Tax Evasion and Affordability: Low tobacco taxes and tax evasion have kept tobacco products affordable.
- Role of Lobbying: Tobacco industry lobbying has influenced policy decisions and regulations.
- Prohibition of Electronic Cigarettes: Despite a ban, e-cigarettes remain a public health challenge in India.

*“Doing nothing is very hard to do. You never know when you’re finished.”—Leslie Nielsen*



## ECONOMICS

## RBI's income rises 17% to ₹2.75 lakh cr., spending falls 56%

**CONTEXT:** The Reserve Bank of India (RBI) announced that its income for FY24 rose by 17% to ₹2,75,572.32 crore, while expenditures decreased by 56.3% to ₹64,694.33 crore compared to FY23.

**BACKGROUND:** The RBI reported a substantial increase in its transferable surplus to ₹2,10,873.99 crore for the year, up from ₹87,416.22 crore in the previous year. This surplus was bolstered by gains from foreign exchange transactions amounting to ₹83,615.86 crore and increased interest income from foreign securities totalling ₹65,327.93 crore. The RBI's balance sheet expanded by ₹7,02,946.97 crore, reaching ₹70,47,703.21 crore in FY24, up 11% from ₹63,44,756.24 crore in FY23, as per its Annual Report.

### Strong showing

The RBI's balance sheet increased by ₹7,02,946.97 cr. to ₹70,47,703.21 cr. in FY24

- Foreign investments, gold, loans and advances rose by 13.9%, 18.3% and 30%, respectively, boosting assets

- On liabilities, notes issued, deposits and other liabilities increased by 3.88%, 27% and 92.57%, respectively



- Income lifted by ₹83,615.86 cr. in gains on forex transactions, ₹65,327.93 cr. in interest income from foreign securities

### RBI Financial Report and Economic Outlook Highlights

- Asset and Liability Growth:** Significant increases in foreign investments, gold, and loans on the asset side; growth in notes issued, deposits, and other liabilities on the liability side.
- Composition of Total Assets:** Domestic assets constituted 23.31%, while foreign currency assets, gold, and loans to financial institutions abroad constituted 76.69% in FY24.
- Contingency Fund Provision:** ₹42,819.91 crore transferred to the Contingency Fund.
- Economic Outlook:** RBI projects 7% real GDP growth for 2024-25 with balanced risks; optimistic about macroeconomic fundamentals, financial sectors, and external sector resilience.
- Inflation and External Sector:** Headline inflation easing, rural consumption demand expected to revive; foreign exchange reserves to shield domestic economy from global economic uncertainties.

## INDIAN SOCIETY - WOMEN EMPOWERMENT

## Ratio of women in leadership roles stagnating in India

**CONTEXT:** Representation of women in corporate roles in India, which has long been below 30%, has stagnated and possibly declined in the post-pandemic years, says a LinkedIn report.

**BACKGROUND:** The LinkedIn report, based on its over 100 million users in India, highlights a decline in hybrid or work-from-home job options, impacting female participation in the corporate labour market. Despite advancements, women continue to encounter barriers to leadership roles due to bias and societal norms. Industries like education and government administration show the highest female leadership representation: education at 30% and government administration at 29%, followed by administrative and support services and hospitals and healthcare, each with 23%.

### Women's Rights and Legislative Framework in India

- Mandatory Inclusion of Women Directors:** Introduced by the Companies Act, 2013, promoting gender equality on corporate boards.
- Constitutional Safeguards:** Prohibit discrimination based on religion, race, caste, sex, or place of birth.
- Positive Discrimination:** Empowers the state to enforce positive discrimination for women's empowerment.
- Panchayat Reservation:** 73rd and 74th Amendments mandate one-third reservation for women in Panchayats.
- National Commission for Women (NCW):** Established to review and safeguard women's constitutional and legal rights.
- Family and Mahila Courts:** Set up to provide speedy justice to women, especially in family and gender-related cases.
- Women-Specific Legislations:** Acts like Sexual Harassment at Workplace Act, Domestic Violence Act, and amendments in Succession and Criminal Laws to ensure gender justice.



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## SCIENCE AND TECHNOLOGY

## The rising incidence of paediatric inflammatory bowel disease in India

**CONTEXT:** 10-year-old child, from a village in Andhra, showed symptoms like weight loss, anaemia, and intestinal ulcers, leading to a diagnosis of Inflammatory Bowel Disease (IBD).

**BACKGROUND:** Nearly two decades ago, paediatric gastroenterologists in India found Inflammatory Bowel Disease (IBD) rare among children, compared to Western countries. However, rising cases among Indian-origin children in the West and increasing incidence across all demographics in India have highlighted its diverse nature. Research continues to unravel its causes, involving immune dysregulation, genetic predisposition, and alterations in gut microbiota due to factors like antibiotics and changing lifestyles.

### Inflammatory Bowel Disease (IBD)

- Common Symptoms of IBD: Persistent diarrhoea, abdominal pain, rectal bleeding, weight loss, and fatigue.
- Causes of IBD: Result of a weakened immune system,

triggered by environmental factors or genetics.

- Diagnosis of IBD: Combination of endoscopy or colonoscopy, imaging studies, stool samples, and blood tests.
- Treatment of IBD: Medications include 5-aminosalicylic acids, immunomodulators, corticosteroids, and biologics.
- Surgical Options: Surgeries may be necessary to remove damaged portions of the gastrointestinal tract.
- Environmental Triggers: IBD can be triggered by viruses or bacteria, causing inflammation in the GI tract.
- Genetic Component: Family history of IBD increases the likelihood of developing the condition.



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