

## Lead exposure causes \$6 trillion in economic losses from premature cardiovascular disease (CVD) mortality: Study

It was highlighted in Lancet Public Health study titled 'Removing lead from the global economy'.

### About Lead (Pb)

- Soft metal with properties like low melting point, corrosion-resistant, poor conductor of heat; do not react with water at all, highly malleable, dense, and ductile.
- Usually found in ore with zinc, silver and copper.
- Used in production of batteries (automobiles and invertors), ammunition, metal products (pipes), etc.
- Naturally occurring toxic metal found in Earth's crust. Smelting units and Paints are sources of lead poisoning.

### Impact of Lead Pollution

- On Human growth: Lead reduces intelligence quotient (IQ) points and increases risk of heart disease, kidney failure, and premature death.
  - Its exposure leads to 5.5 million premature adult deaths from CVD and 765 million lost IQ points among children.
  - Toxic neurodevelopmental effects begin in womb from foetal exposure to lead in maternal plasma.
- Toxic to plants: Increase in lead concentration in soil from 0 ppm (parts per million) to 1000 ppm reduced germination rate of wheat seeds from 98% to 50% and reduced biomass generated by 44%.
- On Birds: They develop anaemia, and brain damage and can have difficulty flying, landing, and walking, and face increased mortality.

### Initiatives to control Lead Poisoning

- Global Alliance to Eliminate Lead Paint, led by WHO and UNEP.
- WHO Guidelines on clinical management exposure to lead.
- Banning on use of leaded petrol.

### Recommendations for Lead elimination

- Global political structure could be funded by states in proportion to lead that they mine and export.
- Lead should be taxed optimally, increasing year by year to shift demand to substitutes.
- Governments should classify lead as toxic waste that must be safely disposed of, rather than allowing recycling with large associated emissions.

## Concerns raised with declining fertility rates in some states

Recently, Chief Ministers of Andhra Pradesh and Tamil Nadu have raised concerns about the low fertility rates, slowing population growth in their respective states.

### Fertility Rate in India

- NFHS-5 in 2019-21 showed a decline in Total Fertility Rate (TFR) to 2.0, with TFR being the average number of children born to women during their child-bearing years.
  - This is below replacement level fertility of 2.1, at which population can maintain its size across generations.
- Decrease in fertility rates is not uniform across India with southern States and smaller northern States seeing a much sharper decrease in TFR.
  - For instance, Tamil Nadu and Andhra Pradesh have TFR of 1.4 and 1.5 respectively, while Uttar Pradesh and Bihar have TFR of 2.7 and 3 respectively.

### Factors behind declining fertility rates

- Family Planning: Implementation of family planning policies and increase in its demand among married women from 66% in 2015-16 (NFHS-4) to 76% in 2019-21 (NFHS-5).
- Educational Empowerment of Women: Consequent increase in labour market participation led to a higher opportunity cost for having more children.
- Increasing Living Costs: Concerns about increasing cost of living and housing become barrier to having more children.

### Concerns with decline in fertility rate

- Ageing societies: Places significant social and economic pressures on government to increase expenditures on pension and health services.
  - Increasing old age dependency ratio burdens young workers economically and emotionally.
- Political Challenges: Potential loss of political representation of states having slow population growth after the expiry of current freeze on number of seats of Parliament in 2026.
- Labour shortages: Declining fertility rate can create labour shortages. E.g. Japan.

## The State of Food and Agriculture 2024' report released by FAO

Report emphasizes on value-driven transformation of agrifood systems and builds on the estimates of the previous edition on global hidden costs of agrifood systems (journey of food from farm to table).

- Hidden cost refers to external costs (i.e., negative externalities) or economic losses triggered by other market or policy failures.

### Key findings of the report

- Hidden Costs: Industrial and diversifying agrifood systems contribute maximum to global quantified hidden costs (around 5.9 trillion 2020 PPP dollars), dominated by health hidden costs linked to non-communicable diseases.
  - Unhealthy dietary patterns (like low intake of whole grains, high intake of sodium, etc.) account for 70% of all quantified hidden costs.
  - Other contributing factors include: Social costs (due to undernourishment and poverty); environmental costs (emission of greenhouse gases, etc.).
- India-related findings: India's total hidden costs stands around \$1.3 trillion annually (3rd largest after China and the USA), largely driven by unhealthy dietary patterns.

### Major Recommendations on transforming the Agri-food value chains

- In industrial agrifood systems (Long value-chains with high urbanization): Upgrade food-based dietary guidelines to an agrifood systems approach, mandatory nutrient labels and certifications, and information campaigns, etc.
- In traditional agrifood systems (Short value-chains with low urbanization): Complement conventional productivity-enhancing interventions with environmental and dietary levers to avoid the increase in environmental footprint.

### India's Initiatives to reform Agrifood Systems

- Sustainable Farming Practices: Parampragat Krishi Vikas Yojana (PKVY), Per Drop More Crop (PDMC), National Bamboo Mission (NBM), etc.
- Agricultural Infrastructure: Agriculture Infrastructure Fund (AIF); Agricultural Marketing Infrastructure (AMI) scheme, etc.
- Boosting Farmers' Welfare: Pradhan Mantri Kisan Samman Nidhi (PM-KISAN); Formation and Promotion of Farmer Producer Organizations (FPOs), etc.

## Supreme Court upholds accessibility for PwDs as a Human and Fundamental Right

A 3-Judge bench of the Supreme Court in *Rajive Raturi vs. UoI & Ors.* case confirmed that disabled persons' right to access environments, services and opportunities is an essential human and fundamental right.

- The judgement is based on a report submitted by the Centre for Disability Studies, NALSAR University of Law and upholds the social model of disability.
- Social model of disability focuses on social change for inclusion and equality of PwDs by removing social barriers preventing their full participation.

### Issues faced by PwDs (as per CDS NALSAR Report)

- Accessibility barriers: Lacunae in accessibility measures in courts, prisons, schools, public transport, etc.
- Intersectionality and compounded discrimination: Overlap of multiple disabilities like caste, gender etc. with disabilities faced by PwDs compounds discrimination and marginalization.
- Inconsistency in legal framework: RPwD Act, 2016 requires mandatory compliance with a set of non-negotiable rules whereas, Rule 15 under RPwD Rules, 2017 prescribes only self-regulatory guidelines.

### Key Highlights of the Judgment

- Rule 15(1) ultra vires the scheme and legislative intent of mandatory compliance of the RPWD Act.
- Court listed principles of accessibility to be considered - Universal design, Comprehensive inclusion across Disabilities, Assistive Technology Integration and Stakeholder consultation.
- Two-pronged approach: Ensuring accessibility in existing institutions/activities and transforming new infrastructure and future initiatives.

### Initiatives for Accessibility for PwDs

- Rights-based approach: Right of Persons with Disabilities Act, 2016 giving effect to the United Nations Convention on the Rights of Persons with Disabilities.
- Article 9 of the Convention on the Rights of Persons with Disabilities.
- Accessible India Campaign (Sugamya Bharat Abhiyan)

### Important Judicial Pronouncements

- *State of Himachal Pradesh v. Umed Ram Sharma (1986)*: Inclusion of right to accessibility under Right to Life (Article 21).
- *Disabled Rights Group v. Union of India (2017)*: Directions to ensure reservation of seats in educational institutions for PwDs.

## Parliamentary Standing Committee on Communications and Information Technology to review mechanism to curb fake news

Although not defined legally, “fake news” generally refers to news stories that are false or misleading, without verifiable or accurate facts, quotes, or sources.

- It may include misinformation (accidental spread of inaccurate information) and disinformation (intentional spread of misinformation).

### Need for regulating fake news

- Right to Information (RTI): Fake news undermines Citizen’s RTI which is upheld as a fundamental right under article 19(1)(a) of Constitution by Supreme Court in ‘Raj Narayan vs. Uttar Pradesh Government.’
- Threats to Democracy: Fake news can influence voters’ behavior, incite riots, and cause social unrest.
- Information Bubbles: Algorithms due to online fake news reinforce prejudices such as racism, misogyny, etc.

### Challenges in Regulating Fake News

- Increasing Internet penetration (more than 55% of the Indian population had access to Internet in 2023, according to IAMAI report)
- Digital illiteracy (Only 38% of households in India are digitally literate)
- Potential of curtailing free speech.
  - For example, recently Bombay High Court struck down Fact Check Unit (FCU) of the PIB introduced to flag “fake news” pertaining to the business of the government on social media platforms

### Initiatives that can prevent spread of fake news

- Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021: Prescribe a framework for the regulation of content by online publishers of news and current affairs content, and curated audio-visual content.
- Bharatiya Nyaya Sanhita: Section 353 criminalizes spreading false information or rumors, including electronically, with intent to cause public harm.
- Information Technology Act, 2000: Section 66D of the Act prescribes punishment for cheating by personation by using computer resources.

## Drone seizures at Punjab border double to 'unprecedented' 200: BSF

The BSF attributes this rise to improved anti-drone strategies and advanced technical measures.

- Previously, Pakistani syndicates were using land routes but now they are using Chinese-made drones to smuggle drugs, arms, and ammunition to destabilize India
  - This is because traditional security measures such as surveillance cameras may not be capable of detecting drones at a distance.

### Other security threats posed by drones

- **Weaponization of drones:** Modification of small commercial drones allows for easy carrying of explosives or weaponry.
- **Disruption of Critical Infrastructure:** Drones can carry out cyber-attacks, electronic jamming or physical attacks to disrupt infrastructure networks.
- **Privacy concerns:** Drones loaded with high-definition cameras can threaten privacy of common citizens.
- **Drone Swarms:** This refers to a situation where large number of drones operate autonomously in coordinated formations, potentially overwhelming defence systems.

### Anti-drone technologies

- **Radio Frequency sensors** that can detect known drone radio signals over wide areas
- **High-Power Microwave (HPM) systems** emit stream of microwave energy in a wide area and are best suited for area denial operations against personnel or small electronics.
- **Integrated drone detection and interdiction systems (IDD&IS)** deployed along the northern borders with China provide both “soft kills” through jamming and “hard kills” using lasers.

### Other Steps taken to counter security threats from drones

- **Anti Rogue Drone Technology Committee (ARDTC)**, established by Ministry of Home, to evaluate and certify technology available to counter rogue drones.
- **Drone Rules 2021:** It divides the Indian airspace into three zones **Green, Yellow and Red** (red zones are no go zone for drones).
- **Detailed vulnerability mapping** along Indo-Pak border to strengthen surveillance.

## Justice Sanjiv Khanna takes oath as 51st Chief Justice of India (CJI)

The oath of office was administered by President Droupadi Murmu during a ceremony at Rashtrapati Bhavan.

### About appointment of CJI

- The senior-most Supreme Court judge, considered fit for the role, is usually appointed as CJI on the recommendation of the outgoing CJI.
  - This convention was breached in 1964, 1973, and 1977.
- The Union Minister of Law, Justice and Company Affairs seeks this recommendation, which is then sent to the Prime Minister, who advises the President on the appointment.
  - Under Article 124 (2), every Judge of the SC be appointed by the President and shall hold office until he attains the age of 65 year.

### Key Role of CJI

- First amongst the equals: SC in the State of Rajasthan v Prakash Chand (1997) ruled that the CJI is the head of the judiciary and holds a leadership position, they do not hold any superior judicial authority over the other Supreme Court judges.
- Master of the Roster: It is the exclusive power of the CJI to constitute Benches (including Constitution benches), to hear cases
- Head of Collegium: CJI heads the Collegium for judicial appointments and transfers in the higher judiciary.
- Appointment officers and servants of SC: It shall be made by the CJI or such other Judge or officer of the Court as he may direct (Article 146).

### About Collegium

- It is a system for making recommendations for appointment of judges of SC and HC.
  - Judges are appointed by President under Article 124 and 217 (respectively for SC and HC) of Constitution.
- For appointment in SC: Collegium consists of CJI and four other senior-most judges of the SC.
- For appointment in HC
  - Collegium at HC consists of Chief Justice of HC and two senior judges of the concerned HC.
  - Collegium at SC consists of CJI and two seniormost Judges of the SC.

## Critical Information Infrastructures targeted by ransomware attacks in 2023: DoPT report

According to report, 2023 marked registration of complex cyber-dependent crimes with national security implications. E.g. Malware attack in a ministry, Data breaches and a massive DDOS attack on critical Infrastructure and airport.

- DDOS stands for distributed denial-of-service, a malicious attempt disrupting normal traffic and making website unavailable to legitimate users.

### Critical Information Infrastructure (CII):

- Definition: Section 70 of IT Act 2000 defines CII as a computer resource, incapacitation or destruction of which, shall have debilitating impact on national security, economy, public health or safety.
  - E.g. Banking, Transportation systems, Water supply, Mobile networks, Defense etc.

### Previous cases of Cyber-attacks on CII:

- AIIMS ransomware attack (2023), Kudankulam Nuclear Power Plant cyberattack (2019), ICMR Data breach(2023) etc.
  - Apart from this an Overall surge in Cyber-attacks has been observed in India e.g. India reported ~1.6 million security incidents in 2023 compared to ~53,000 in 2017 (CERT-IN).

### Key Reasons behind Vulnerability of India's Critical Infrastructure:

- Budget constraints, relying on third parties, difficulties in continuous monitoring and real-time threat detection, lack of specialized cyber security personnel.

### Steps taken for Protection of CII

- National Security Council Secretariat: Now, it provides overall coordination and strategic direction for Cyber Security.
- National Critical Information Infrastructure Protection Centre (NCIIPC): Established to protect the Critical Information Infrastructure (CII).
- Indian Cyber Crime Coordination Centre (I4C): A framework for law enforcement to deal with cybercrimes.
- Others: Cyber Surakshit Bharat Initiative, Defence Cyber Agency (DCyA) etc.