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## Current Affairs - 15 December 2025

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### THE INVISIBLE EPIDEMIC: WHY AIR POLLUTION IS NOW INDIA'S LARGEST HEALTH THREAT

- Air pollution in India has shifted from a seasonal problem to a **chronic, nationwide public health emergency**.
- No longer confined to winter smog in the northern plains, toxic air now affects **all regions, age groups, and organ systems**.
- Persistent exposure is reshaping disease patterns, impairing childhood development, and silently shortening life expectancy.
- The crisis reflects deep-rooted structural failures and has become one of the most significant determinants of population health in India.

#### **Existing Policies to Tackle Air Pollution and Their Limitations**

- **The Graded Response Action Plan (GRAP)** is an emergency framework implemented in the National Capital Region to tackle severe air pollution through **stage-wise restrictions** based on AQI levels.
- Measures include **curbs on construction activity, bans on diesel generators, vehicle restrictions**, closure of schools, and suspension of polluting industrial operations as air quality worsens.
- However, **GRAP is largely reactive and episodic**, activated only after pollution reaches severe levels rather than preventing its build-up.

#### **Biological Pathways of Harm**

- **Cardiovascular damage**
  - Elevated exposure is linked to hypertension, atherosclerosis, heart attacks, arrhythmias, and ischemic stroke, acting as a powerful accelerant in a population already burdened by heart disease.
- **Respiratory Illness**
  - **Nearly 6% of Indian children have asthma**, and even small increases in PM2.5 cause sharp rises in paediatric emergency visits.



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- **Neurological Harm**

- PM2.5 can cross the **blood–brain barrier**, triggering neuroinflammation and oxidative stress.
- Exposure is linked to poorer academic performance, impaired memory, slower cognitive development, and a 35–49% higher risk of dementia per 10  $\mu\text{g}/\text{m}^3$  increase.
- Polluted air is increasingly recognised as a driver of **accelerated brain ageing**.

- **Maternal and Neonatal Health**

- High exposure increases the risk of **preterm birth, low birth weight, stillbirth, and neonatal mortality**, with long-term consequences that deepen health inequities across generations.

### The Path Forward

- **Towards a Health-Centred Policy Framework**

- **Transport transformation:** Large-scale electrification of buses, taxis, auto-rickshaws, and two-wheelers; shifting freight from diesel trucks to rail and electric fleets; real-world emissions monitoring; and low-emission zones and congestion pricing.
  - **Industrial control:** Strict enforcement of pollution-control technologies and a phased transition away from coal-based processes.
  - **Construction regulation:** Mandatory dust-suppression protocols, enclosure norms, and mechanised sweeping.
  - **Waste management reform:** Segregation at source, decentralised treatment, biomethanation, and scientific landfill remediation to eliminate open burning.
  - **Health-system integration:** District-level AQI-based advisories, lung-function testing in school health programmes, and screening for COPD and cognitive decline.
- Recognising clean air as a fundamental right and acting with urgency through health-centred, science-driven policy is essential to safeguard present and future generations.
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### MAHACRIMEOS AI CYBERCRIME INVESTIGATION TOOL

- MahaCrimeOS AI is an **AI-powered** crime investigation platform developed using Microsoft Foundry.
- First deployed in Nagpur Rural in April 2025, it helps police process complaints faster, analyse complex data, and streamline investigative procedures—especially in cybercrime cases.
- Recognising its effectiveness, the Maharashtra government and Microsoft announced recently that the platform will be rolled out across all 1,100 police stations in the state.

### **From CrimeOS to MahaCrimeOS AI**

- Working with Microsoft, MARVEL adapted **CrimeOS AI**—developed by CyberEye, a Microsoft AI partner—into **MahaCrimeOS AI**, fine-tuned to comply with Maharashtra’s investigation protocols.
- The system was also configured in Marathi to ensure easy adoption across the police force.
- An MoU between the Maharashtra government and Microsoft includes setting up three AI Centres of Excellence.
- **Advanced Capabilities of MahaCrimeOS AI**
  - MahaCrimeOS AI can ingest complaints in multiple formats, including PDFs, audio files, handwritten notes, and images.
  - Using multimodal intelligence, it extracts key information in any language, automates analysis, adapts investigation pathways, and rapidly profiles persons of interest, significantly enhancing investigative efficiency.
- **Transforming Governance Through AI**
  - MARVEL’s goal is to collaborate with global technology leaders to build AI copilots that fundamentally transform governance.
  - The initiative positions Maharashtra as a national leader in AI-driven, future-ready policing.



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### Benefits of MahaCrimeOS AI

- MahaCrimeOS AI **automates** routine administrative tasks, allowing investigating officers to focus more on solving crimes and assisting victims.
  - Officers access a dashboard showing active cases, updates, and pending actions, improving case management and efficiency.
  - In one case involving a ₹38 lakh bank fraud, the system helped analyse telecom data and open-source intelligence to trace and arrest accused across multiple states.
  - **AI-Generated Investigation Plans**
    - A key feature of MahaCrimeOS AI is its ability to read FIRs in Marathi and automatically generate detailed investigation plans.
    - These are based on Maharashtra Police protocols and guidelines issued by the High Court and Supreme Court for different crime categories.
  - **Investigation Copilot for Faster Decision-Making**
    - Developed with CyberEye and Microsoft, the AI-powered investigation copilot analyses case details, creates automated workflows, and suggests investigation pathways.
    - This reduces delays that earlier arose when officers waited for senior approvals in complex cases.
  - **Advanced Data Analysis and Court Readiness**
    - The platform analyses telecom data to identify interlinkages, gathers open-source intelligence by tracing phone numbers across digital platforms, and prepares time-stamped, date-wise case diaries for court submissions, embedding judicial best practices into investigations.
  - **Improved Experience for Complainants**
    - By speeding up investigations and reducing bottlenecks, MahaCrimeOS AI delivers quicker, more consistent outcomes for complainants.
    - Faster response times and smoother case handling enhance public trust and improve overall access to justice.
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### NEW INSURANCE BILL

- The Union Cabinet has approved a major change in India's insurance rules by allowing full foreign ownership in insurance companies.
- The decision aims to bring more capital, improve competition, and strengthen customer services across the sector.
- The Bill advances liberalisation, regulatory capacity, and ease of doing business in insurance, while strengthening policyholder protection.
- **100% Foreign Direct Investment (FDI) in Insurance**
  - Raises FDI cap from 74% to 100% in Indian insurance companies.
  - Aims to attract long-term foreign capital, enhance **insurance penetration**, promote technology transfer, and support the goal of '**Insurance for All by 2047**'.
  - **Expected impacts:** greater competition, product innovation, customer-centric services, and adoption of global best practices in underwriting, risk management, and digital claims.
- **Easing Entry for Foreign Reinsurers**
  - Reduces Net Owned Funds (NOF) requirement for foreign reinsurers from ₹5,000 crore to ₹1,000 crore.
  - Expected to boost reinsurance capacity, competition, and risk diversification.
- **Enhanced Powers for IRDAI**
  - Grants IRDAI disgorgement powers to recover wrongful gains—bringing it closer to SEBI's enforcement toolkit.
- **Greater Operational Autonomy for LIC**
  - Allows LIC to set up new zonal offices without prior government approval, enabling faster expansion and administrative efficiency.
  - Overall goal: modernise LIC's governance and enhance competitiveness domestically and internationally.

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### What the Insurance Amendment Bill Leaves Out?

- **No Composite Licence: A Major Miss**
  - The Bill is expected to exclude composite licences, a long-pending industry demand.
  - Currently, insurers are confined to strict silos: life insurers cannot sell non-life products and vice versa.
  - A composite licence would have allowed a single insurer to offer life, health, and general insurance under one roof.
- **No Reduction in Capital Norms for New Entrants**
  - The Bill is unlikely to lower minimum capital requirements (₹100 crore for insurers, ₹200 crore for reinsurers).
  - High entry barriers continue to deter small, niche, regional, and specialised insurers.
- **Dropped Proposals from Earlier Drafts**
  - Several reforms discussed in earlier versions appear missing:
    - Permission for insurers to distribute other financial products (mutual funds, loans, credit cards).
    - Greater flexibility in investment norms to improve policyholder returns.
    - Allowing individual agents to sell policies of multiple insurers, beyond the current one-life–one-general restriction.
- **No Provision for Captive Insurance Companies**
  - The Bill is silent on allowing large corporations to set up captive insurers.
    - A captive insurance company is a wholly-owned subsidiary created by a parent company to insure its own risks.
  - Captives are widely used globally to manage complex risks, reduce insurance costs, and improve underwriting control.
  - Their exclusion delays modernisation of India's corporate risk-management ecosystem.



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### HIGHER EDUCATION OVERHAUL - VIKSIT BHARAT SHIKSHA ADHISHTHAN BILL 2025

- India's higher education sector has long operated with multiple regulatory bodies, often resulting in overlapping mandates, fragmented standards, and inconsistent approval mechanisms.
- To address these structural challenges and align with the **National Education Policy (NEP) 2020** vision, the government has introduced the **Viksit Bharat Shiksha Adhishthan (VBSA) Bill, 2025**.
- The Bill aims to improve academic quality, streamline regulation, and modernise governance in universities and higher educational institutions across India.
- It marks one of the most significant policy interventions in the higher education domain in recent years.

#### **Core Objectives of the VBSA Bill**

- The Bill states that its primary purpose is to enable and empower universities to achieve excellence in teaching, learning, research, and innovation. This is to be achieved through:
  - Better coordination between regulatory bodies
  - Clear determination of academic and institutional standards
  - A unified governance mechanism for higher education
- The Statement of Objects and Reasons emphasises the NEP 2020 principle of a "light but tight" regulatory structure, ensuring reduced bureaucratic complexity while maintaining strong accountability.

#### **Institutions Covered Under the Bill**

- All Central and State universities
- Colleges and Higher Educational Institutions (HEIs)
- Institutions of national importance
- Institutions of eminence
- Technical and teacher education institutions

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### Key Changes Proposed Under the Bill

- **Replacing Existing Bodies**
  - The VBSA Bill seeks to subsume the UGC, AICTE, and NCTE, integrating their regulatory, accreditation, and standardisation functions under one framework.
- **Separation of Funding from Regulation**
  - A major shift is the removal of grant-disbursal powers from the UGC. Funding functions will now be performed through mechanisms devised by the Ministry of Education.
  - This separation aligns with NEP-2020's recommendation to delink academic regulation from financial control.
- **Enabling Foreign Universities and Global Outreach**
  - The Regulatory Council will:
    - Set standards for foreign universities to operate in India
    - Facilitate high-performing Indian universities to set up offshore campuses
    - Prevent the commercialisation of higher education
- **Strengthening Accreditation**
  - The Accreditation Council must develop an outcome-based framework, encouraging institutions to improve learning outputs rather than merely compliance inputs.

### Criticism and Concerns

- Earlier attempts to reform the higher education framework, such as the **2018 Higher Education Commission of India (HECI) Bill**, faced strong criticism for placing excessive central control and weakening the role of States. Similar concerns have resurfaced.
  - Key criticisms include:
    - The possibility of the Centre having disproportionate influence in appointments
    - Removal of grant-disbursal powers from an autonomous body
    - Risk of over-centralisation in standard-setting functions
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### MAN-PORTABLE AIR DEFENCE SYSTEMS (MANPADS)



The Indian Army is undertaking a major strategic shift in its air defence operations, repurposing its Man-Portable Air Defence Systems (MANPADS) to specifically counter the rising threat of sub-sonic cruise missiles.

- MANPADS are **surface-to-air missiles** that can be **fired by an individual or a small team** of people against aircraft.
- These weapon systems often are described as **shoulder-fired anti-aircraft missiles**.
- The **United States and the Soviet Union first deployed MANPADS**—the Redeye and Strela systems, respectively—in the 1960s to provide their infantries with portable anti-aircraft weapons.
- The militaries of many **countries across the world operate MANPADS**, although only few countries, including India, produce them.
- The **most famous MANPADS** are the **US-made ‘Stinger’** and the **Soviet 9K32 Strela-2**, or simply **‘SA-7’** with the **China-made ‘FN-16’** being the latest entrant.
- **Three general types** of MANPADS exist: **command line of sight, laser guided, and infrared seekers**.
  - Command line-of-sight MANPADS are **guided** to their targets through the use of a **remote control**.
  - **Laser-guided** or laser beam rider MANPADS **follow a laser projected onto the target**.
  - The **most common** MANPADS, frequently called **heat seeking missiles**, however, are **infrared seekers** that **acquire their target by detecting the heat** of an aircraft’s engine.
- Most MANPADS consist of:
  - a missile packaged in a tube;
  - a launching mechanism (commonly known as a “gripstock”); and a battery.