Gujarat to House India’s First State-Funded BSL-4 Lab for High-Risk Pathogens | National Current Affairs | 16 Jan 2026

Why in News?

The foundation stone was laid for **India’s first state-funded Biosafety Level 4 (BSL-4) laboratory** in **Gujarat**. This facility marks a significant leap in **India's decentralized high-containment research**, previously limited to **central government institutions**.

Key Points:

- **Integrated Complex:** The lab is designed as a multi-tier facility featuring **BSL-4, BSL-3, and BSL-2** modules.
- **Animal Research:** Crucially, it includes **ABSL-3 and ABSL-4** (Animal Biosafety Level) modules, allowing scientists to study how deadly viruses interact with living organisms—a vital step in vaccine development.
- **Funding Model:** Unlike India’s existing BSL-4 labs (such as the NIV in Pune), which are centrally funded by the ICMR, this is the **first project of its kind to be financed and managed by a State Government**.
- **Timeline:** Planning for the high-containment hub began in mid-2022 following the lessons learned during the **COVID-19 pandemic** regarding local diagnostic self-reliance.
- **Pandemic Preparedness:** The facility will allow Gujarat to identify and research "Disease X" or new viral outbreaks without having to send all samples to the **National Institute of Virology (NIV), Pune**, thereby saving critical response time.
- **One Health Approach:** By integrating **Animal Biosafety** (ABSL) modules, the lab supports the **"One Health" framework**, recognizing the link between human, animal, and environmental health in **preventing zoonotic spillover.**

Biosafety Levels (BSL)

- **BSL-1 & BSL-2:** Handle moderate-risk agents (like E. coli or common flu) that cause mild disease in humans.
- **BSL-3:** Deals with indigenous or exotic agents that may cause serious or potentially lethal disease through inhalation (e.g., Tuberculosis, SARS-CoV-2).
- **BSL-4 (High Containment)**: Reserved for the most dangerous and exotic agents that pose a high risk of life-threatening disease, have no known vaccine or treatment, and can be transmitted via aerosols.
- Examples include Ebola, Marburg, and Nipah viruses.

Read More:National Institute of Virology**,** One Health Approach

World Economic Forum Released Global Risks Report 2026 | National Current Affairs | 16 Jan 2026

Why in News

The **World Economic Forum (WEF)** released the **Global Risks Report 2026**, the 21st edition of its annual assessment of global risk perceptions and anticipated threats.

Key Points:

- **Age of Competition:** The report underscores "uncertainty" as the defining characteristic of the global risk landscape in 2026 and highlights a transition into an **"age of competition"** where **geopolitical and economic confrontations** are overtaking cooperation, and traditional multilateral systems are under strain.
- **Top Short-Term Threat:** In the immediate outlook (to 2028), economic and geopolitical tensions have overtaken environmental concerns in urgency
    - **Geoeconomic Confrontation:** Rising to the top spot (up from #3 in 2025), this includes the "weaponization" of trade through tariffs, sanctions, and investment restrictions.
    - **Misinformation and Disinformation:** Driven by AI-generated deepfakes, particularly during election cycles, threatening social stability.
    - **Societal Polarization:** Intensifying pressures on democratic systems and public trust.
    - **Extreme Weather Events:** Dropped from 2nd to 4th place in short-term salience, though they remain the top long-term threat.
- **Long-Term Risks (10-Year Horizon):** Environmental threats continue to dominate the decade-long outlook, with **Extreme Weather Events** and **Biodiversity Loss** ranked as the most severe.
    - Notably, **Adverse Outcomes of AI Technologies** saw the largest rise in severity, jumping from 30th in the short term to **5th place** in the 10-year horizon.
- **Key Findings for India:**The report identifies specific "hot spot" risks most likely to impact India over the next two years are
    - **Cyber insecurity:** Ranked as the top risk due to India's rapid shift toward digital payments and infrastructure.
    - **Wealth and Income Inequality:** A primary driver of internal social instability.
    - **Critical Infrastructure & Resource Security:** Highlights "water security" as a major flashpoint, specifically regarding the Indus River Basin.
    - **Economic External Shocks:** Susceptibility to global supply chain disruptions and international tariffs.
