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PAPER-II: HISTORY, CULTURE AND GEOGRAPHY

Museum of Word- ShabdaloK



India's first immersive language museum is the **Museum of Word**, also known as **ShabdaloK**.

Inaugurated on **July 19, 2026**, by Union Home Minister Amit Shah, this state-of-the-art museum is dedicated to celebrating the country's rich multilingual heritage and tracing the evolution of its oral and written traditions.

Key Details

- **Location:** It is housed in the historic **Belvedere House** inside the [National Library Campus](#) in Alipore, Kolkata.
- **Developed By:** The project was developed by the National Library under the aegis of the **Union Ministry of Culture**.
- **Cost:** The initial Phase 1 was built at a cost of roughly **₹14 crore**, out of an estimated total project cost of ₹41 crore.
- **Languages Featured:** The museum showcases the depth, history, and status of nearly **380 languages**. This includes all 22 officially recognized languages of India alongside rare or historical dialects.

The Immersive Experience

Unlike conventional museums that serve as static repositories, ShabdaloK relies entirely on high-tech digital exhibits to provide a fully sensory experience:

- **Cutting-Edge Tech:** It integrates **Artificial Intelligence (AI), Augmented Reality (AR), Virtual Reality (VR)**, holograms, motion-sensor technology, and hand-gesture tracking.
- **Interactive Elements:** Visitors can listen to acoustic hallways featuring audio-visual loops comparing ancient and modern pronunciations.
- **Historic Artifacts:** The museum blends digital technology with real history, showcasing rare **11th-to-14th-century copper plates**, palm-leaf manuscripts, and historical regional literature.



India's first integrated oil palm complex Telangana



Godrej Agrovet Limited officially inaugurated India's first integrated oil palm complex in **Khammam, Telangana**.

Key Project Details

- **Location:** Spread across a 113-to-130-acre campus in **Gubbagurthi/Anjanapuram village**, Konijerla mandal, Khammam district.
- **Investment:** A cumulative investment of **₹300 crore**.
- **Employment:** Designed to generate more than **700 direct and indirect local jobs**.

Integrated Ecosystem Facilities

- **Seed Garden & Nursery:** Features a first-of-its-kind seed garden developed with global partners to bring advanced oil palm genetics to India, reducing reliance on seed imports from Malaysia and Indonesia.
- **Research & Development (R&D):** A dedicated center to develop hybrid planting material specifically optimized for Telangana's local climate conditions.
- **Processing Mill:** It is the first private sector oil palm mill in the state. It has commenced operations with a crushing capacity of **30 tonnes per hour (TPH)**, expandable to **60 TPH**.
- **Refinery:** Features an upcoming state-of-the-art oil refining unit.
- **Samadhan Centre:** A flagship farmer support hub offering advisory support, technical guidance, and direct access to agricultural inputs.

Strategic Significance

The complex strongly aligns with the **Telangana Oil Palm Mission**. Godrej Agrovet aims to use this facility to scale up its oil palm plantation coverage in the state from the current 10,000 hectares to **30,000 hectares by 2030**. This initiative serves as a major step toward boosting domestic production and reducing India's massive edible oil import dependency.

Indiramma Indlu-LIG Flats initiative



The **Indiramma Indlu - LIG Flats initiative** is the urban, apartment-based extension of Telangana's flagship housing mission, launched on **July 20, 2026**, by Housing Minister Ponguleti Srinivasa Reddy.

Designed specifically for the urban poor within the **Core Urban Region Economy (CURE)** area of Hyderabad, the scheme aims to construct **1 lakh affordable flats** in a phased manner.

Flat Structure and Financial Layout

The initiative eliminates land procurement hurdles for lower-income groups by utilizing high-value government land entirely free of cost.

- **Flat Specifications:** Single-bedroom flats built in multi-storey high-rise towers. Each unit spans a **528 sq. ft. built-up area** (400 sq. ft. carpet area).
- **Total Project Cost:** Estimated at **₹11 lakh** per flat.
- **Government Subsidy:** The state government bears a non-refundable Direct Benefit Transfer (DBT) subsidy of **₹5 lakh** per unit.
- **Beneficiary Contribution:** The applicant pays the remaining **₹6 lakh**.
- **Installment Breakdown:** The ₹6 lakh share is spread across **four distinct installments** corresponding to various construction phases (₹1 lakh, ₹2 lakh, ₹2 lakh, and the final balance amount).

Stringent Eligibility Criteria

To secure an allotment via this initiative, applicants must clear a strict 360-degree verification process:

- **Income Ceiling:** Total annual household income must not exceed **₹6 lakh**.
- **Urban Residency:** The applicant must prove continuous residency within the Hyderabad (CURE) region for at least the **last 10 years**.
- **Asset Ceiling:** Neither the applicant nor their immediate family members can own any residential house, flat, or plot within the **Outer Ring Road (ORR)** or the CURE area.
- **No Prior Allocation:** Applicants must not have previously received any double-bedroom (2BHK) flats or state-sponsored housing benefits.
- **Resale Restriction:** Allotted flats are subject to a **10-year lock-in period** during which they cannot be sold or transferred.

However, the flat can be used as collateral to secure formal bank housing loans.

- **Gender Focus:** A **30% horizontal reservation** is mandated exclusively for women applicants, along with categorical reservations for SC, ST, BC, and minority groups.

📍 First Phase Implementation Localities

The initial roll-out involves **7,680 LIG flats** distributed equally across **16 Assembly constituencies** where prime government land has been secured.

📱 How to File an application

The state government has authorized multiple digital and physical channels to process submissions:

1. **Required Fees:** A flat **₹100 application fee** must be paid alongside a **₹10,000 Earnest Money Deposit (EMD)**. The EMD is fully refunded if you are not selected in the digital lottery, or adjusted into your ₹6 lakh contribution if selected.
2. **MeeSeva Centers & Portal:** You can physically apply at any authorized local MeeSeva center or access the online portal.
3. **WhatsApp Application:** Alternatively, citizens can text application to the official MeeSeva WhatsApp number at **8096958096** to prompt an automated setup link and initiate registration directly from their smartphones

PAPER –III – INDIAN SOCIETY, CONSTITUTION AND GOVERNANCE

All India Survey on Higher Education (AISHE)



While India added teachers, Telangana lost nearly 7,400 of them in a decade amid rising student enrolments

According to the latest **All India Survey on Higher Education (AISHE) 2023–24** data released in **July 2026**, Telangana has witnessed a **concerning 8% decline in the number of higher education teachers** over the past decade. This drop stands in sharp contrast to the national trend, where faculty recruitment numbers have grown significantly.

Key Findings of the Teacher Deficit

The state's higher education system is grappling with severe structural changes marked by dropping faculty counts alongside rising student enrolment:

- **Overall Faculty Numbers:** The number of higher education teachers in Telangana **dropped from 91,932 in 2014–15 to 84,568 in 2023–24**. This represents a net loss of nearly 7,400 educators.
- **National Contrast:** While Telangana shed **8% of its teaching staff**, the rest of India experienced a **17.6% rise in higher education teachers** over the same period.

- **Contractual Positions:** Temporary or contract-based teaching staff numbers also suffered, **dipping 10% from 3,250 down to 2,907.**
- **Gender Disparity:** The decline is overwhelmingly concentrated among male educators, whose numbers **fell 21.6% (from 59,146 to 46,360).** Conversely, female faculty numbers **increased by 16.5% (from 32,786 to 38,208).**

Collateral Impact on Higher Education

The shrinkage of academic staff is triggering secondary challenges across state institutions:

- **Worsening Pupil-Teacher Ratio (PTR):** At its formation in 2014, Telangana boasted an ideal PTR of **14:1**. Driven by the teacher shortage and a 20.8% boom in student enrolment, the ratio has **skewed to 17:1**, limiting individual student attention.
- **Disappearing Colleges:** The contraction of faculty has coincided with a **11.8% drop in the total number of colleges**, collapsing from 2,450 to 2,160 institutions.
- **Loss of Density Ranking:** Telangana previously held the highest college density in India at **60 colleges per lakh eligible population**. It has now slipped to second place behind Karnataka at **56 per lakh**

The Supreme Court (Number of Judges) Amendment Bill, 2026



The Supreme Court (Number of Judges) Amendment Bill, 2026 seeks to increase the sanctioned strength of the Supreme Court judges from 34 to 38. Introduced in the Lok Sabha on July 20, 2026, by Union Law Minister Arjun Ram Meghwal.

This ordinary legislation replaces the temporary ordinance promulgated by the President on May 16, 2026.

🔑 Key Provisions of the 2026 Bill

- **Statutory Amendment:** The Bill amends Section 2 of the Supreme Court (Number of Judges) Act, 1956.
- **Judicial Expansion:** It adds 4 new judge seats, increasing the number of puisne judges from 33 to 37.
- **Ordinance Replacement:** It replaces the Supreme Court (Number of Judges) Amendment Ordinance, 2026.
- **Financial Outlay:** According to its Financial Memorandum, the expansion entails a one-time cost of ₹3.47 crore and an annual recurring expenditure of ₹10.56 crore drawn from the Consolidated Fund of India.

📖 Constitutional and Legal Framework

- **Article 124(1):** Explicitly empowers Parliament to alter the strength of the Supreme Court by law.
- **Type of Legislation:** It is passed as an ordinary bill requiring a simple majority in both Houses of Parliament.

It does not require a Constitutional Amendment under **Article 368**.

- **Executive vs Legislative Power:** Unlike High Courts, where the President can alter judge strength via executive orders based on workload (**Article 216**)

The Supreme Court's strength can strictly be changed only through parliamentary legislation.

- **Article 123:** The interim ordinance was promulgated under the President's ordinance-making powers because immediate action was requested by CJI Surya Kant while Parliament was not in session.

Historical Evolution of Supreme Court Strength

Parliament has incrementally increased the number of judges via amendments to the 1956 Act:

Year of Amendment	Total Sanctioned Strength (Including CJI)
1956 (Original Act)	11
1960	14
1977	18
1986	26
2008	31
2019	34
2026 (Current Bill)	38

1. Rationale Behind the Expansion

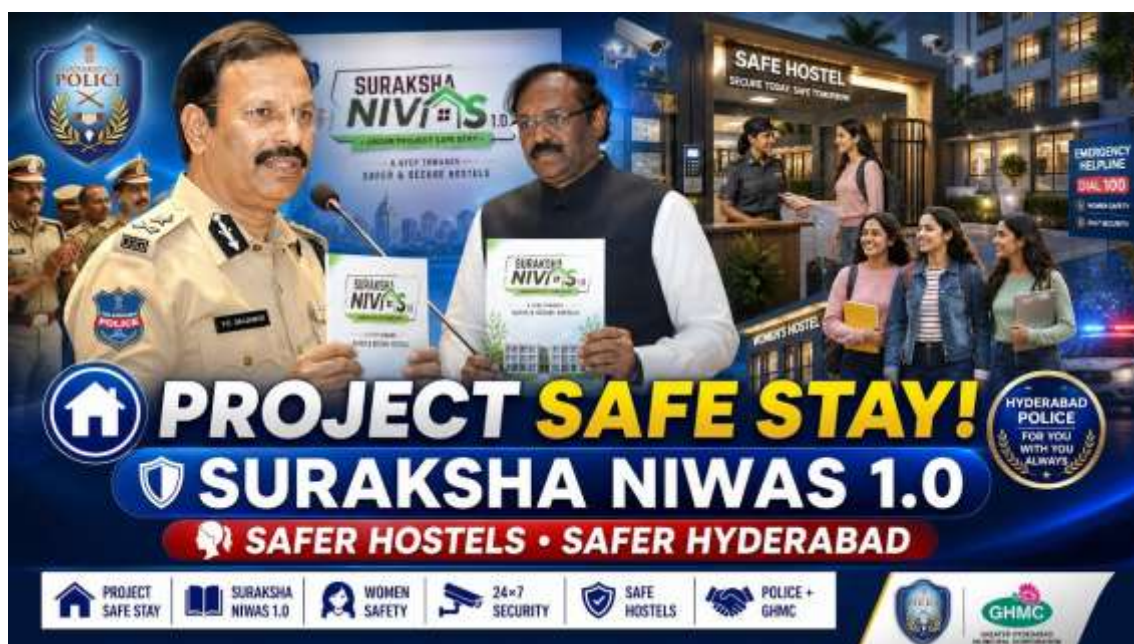
- **Severe Case Backlog:** The apex court faced a massive pendency of over 92,000 cases by mid-2026.
- **Constitution Benches:** More judges allow the CJI to regularly constitute 5-judge (or larger) Constitution Benches to clear critical legal interpretations without halting ordinary appellate work.

2. Associated Criticisms and Limitations

- **The "Vacancies" Paradox:** Historically, increasing the *sanctioned* strength does not solve the issue if the *working* strength lags. Delays in the Collegium-Executive appointment system often keep seats vacant anyway.
- **Ignoring the 229th Law Commission Report:** The 18th Law Commission (2009) stated that simply adding judges does not yield structural access to justice. It recommended setting up a permanent Constitution Bench in Delhi and four regional Benches (Appellate Benches) in Mumbai, Kolkata, Chennai, and Hyderabad.
- **Demand for a National Court of Appeal:** A long-standing demand to split the Supreme Court into a purely Constitutional Court and a separate National Court of Appeal to filter routine civil/criminal appeals.

Over 80% of its time is consumed by routine appellate matters, such as Special Leave Petitions (SLPs)

Suraksha Nivas 1.0



Suraksha Nivas 1.0 is a major safety regulatory framework and guidelines initiative launched by the **Hyderabad City Police**. Unveiled in **July 2026** under "**Project Safe Stay**,"

The initiative establishes strict minimum safety standards for all women's hostels and PG accommodations in Hyderabad.

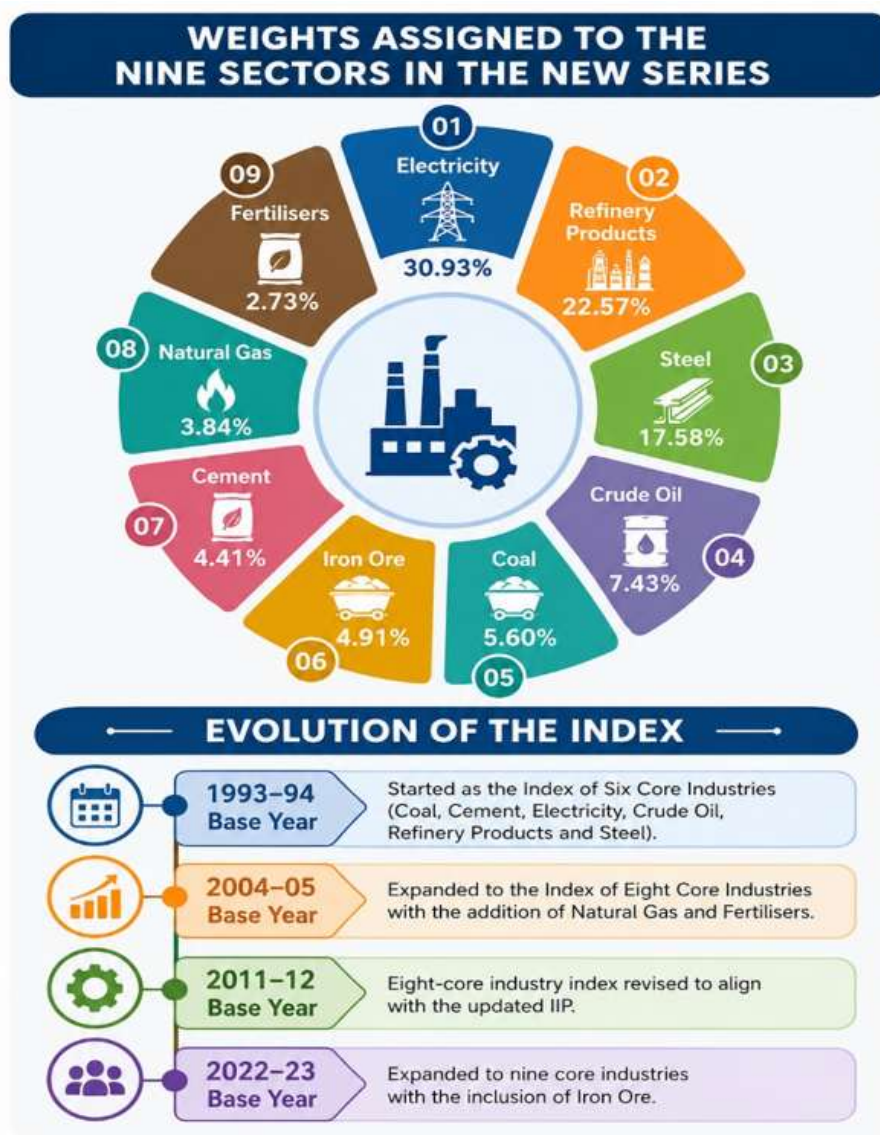
As per safety audit conducted by the police's Women Safety Wing. The audit inspected 446 hostels and revealed critical lapses: **62% of women's hostels scored below 40 in safety assessments**, over 30% of installed CCTV cameras were non-functional, and none of the accommodations possessed a fire exit plan.

Mandatory Directives for Hostel Operators

- **Police Registration:** All establishments must register at their local police station using the newly introduced Form A.
- **Business Licensing:** Must obtain a municipal trade license from the GHMC.
- **Food Safety Certification:** Any hostel providing meals must hold a valid **FSSAI License**.
- **Surveillance Standards:** Continuous monitoring via fully functional, high-definition CCTV systems.
- **Staff Verification:** Complete background checks and formal police verification are mandatory for all managers, watchmen, and cleaning staff.
- **Physical Infrastructure:** Management must establish secure perimeter walls, implement fire safety equipment, and adopt a "Safe Bathrooms Concept" utilizing structurally secure windows and fixtures.

PAPER –IV – ECONOMY AND DEVELOPMENT

Index of Core Industries (ICI)



The **Index of Core Industries (ICI)** measures the individual and combined monthly production volume performance of India's foundational infrastructure sectors.

The **Ministry of Commerce and Industry** recently revised the ICI series, introducing a new base year, expanding the sectors, and updating the overall weightages.

Key Authority & Frequency

- **Released By:** [Office of Economic Adviser \(OEA\)](#), Department for Promotion of Industry and Internal Trade (DPIIT), **Ministry of Commerce and Industry**.
- **Frequency:** Released **monthly** (usually on the 20th day of the following month).

- **Nature:** Acts as a **lead indicator** for the broader [Index of Industrial Production \(IIP\)](#).

Landmark Revisions:

The index is based on the recommendations of the **Praveen Mahto Committee:**

1. **New Base Year:** Shifted to **2022-23 = 100** (replacing the outdated 2011-12 series). This aligns it cleanly with India's GDP, WPI, and IIP calculations.
2. **Expansion to 9 Sectors:** The basket expanded from **8 to 9 core industries** due to the strategic inclusion of **Iron Ore**.
3. **Weight in IIP:** These 9 core industries now collectively account for **32.88% of the total weight** in the IIP (down from 40.27% in the previous series).
4. **Methodological Corrections:**
 - Tracks only **Raw Coal** to eliminate the double-counting of washed or middling coal.
 - Adopts **Gross Production Data** for Steel to match IIP frameworks.
 - Establishes a permanent **Linking Factor of 1.47** to connect historical datasets seamlessly.

Sector Weightages (Decreasing Order)

Electricity has overtaken Refinery Products as the highest weightage component:

Sl. No.	Core Industry Component	New Weightage (%)
1	Electricity Generation	30.93%
2	Petroleum Refinery Products	22.57%
3	Steel Production	17.58%
4	Crude Oil Production	7.43%
5	Coal Production	5.59%
6	Iron Ore (<i>Newly Added</i>)	4.90%
7	Cement Production	4.41%
8	Natural Gas Production	3.84%
9	Fertilizers Production	2.73%
Total Combined Weight		100.00%

Difference Between Index of Core Industries (ICI) and Index of Industrial Production (IIP)

Aspect	Index of Core Industries (ICI)	Index of Industrial Production (IIP)
Scope	Narrow index covering 9 core infrastructure industries .	Broad index measuring short-term changes in output across Mining, Manufacturing, and Electricity , covering hundreds of industrial products.
Purpose	Tracks the performance of key infrastructure sectors that drive the economy.	Measures overall industrial growth and production trends in the economy.
Publishing Agency	Department for Promotion of Industry and Internal Trade (DPIIT), Ministry of Commerce & Industry.	National Statistical Office (NSO), Ministry of Statistics and Programme Implementation (MoSPI).
Coverage	Covers only the 9 core industries , which have about 32.28% weight in the IIP (base year 2022-23).	Covers the entire industrial sector, including Mining, Manufacturing, and Electricity .
Frequency	Released monthly , usually earlier than IIP.	Released monthly , generally after the ICI release.
Usefulness	Serves as a leading indicator of industrial activity and infrastructure growth.	Used to assess overall industrial performance , economic growth, and policy formulation.

Structural Modifications (2022-23 Revision)

- **Addition of Iron Ore:** Included as the 9th sector owing to its massive surge in production, input demand for steel, and close alignment with infrastructure frameworks like PM Gati Shakti and Make in India.
- **Raw Coal Exclusivity:** To fully eliminate double-counting within calculations, the new series tracks only *Raw Coal* production, completely dropping washed coal and coal middlings.
- **Gross Steel Accounting:** Shifts from evaluating "net" steel production to capturing "gross" production data, standardizing its calculations with the overall IIP metric.

New Employees Health Scheme (NEHS)



The Telangana government officially launched the **New Employees Health Scheme (NEHS)** on **July 17, 2026**, replacing the old medical reimbursement model. The scheme covers **17.88 lakh beneficiaries**, including state government employees, 3,61,955 pensioners, and their dependent family members.

Key Features of the Scheme

- **Cashless Treatment:** Access to entirely **cashless medical and surgical procedures** across network hospitals without any upper financial capping.
- **Package Coverage:** Includes **1,816 medical and surgical packages** priced in alignment with Central Government Health Scheme (CGHS) rates.
- **Hospital Network:** Offered across **886 private empanelled hospitals and 114 government hospitals** throughout Telangana.
- **Funding Model:** Mandatory **1.5% deduction from the basic pay** of employees or basic pension of retired personnel, with the state government matching an equal contribution amount.
- **Administration:** Managed by the **Employees Health Care Trust (EHCT)** under the leadership of the State Chief Secretary, composed of representatives from the government, employee unions, and pensioners.

Digital Portal & Health Cards

Beneficiaries must use [Telangana NEHS Portal](#) to download their essential medical documentation:

- **Login Process:** Access the system using your official **Employee ID** paired with a password or an OTP sent to your registered mobile number.

- **Card Download:** Navigate to the "**Quick Actions**" panel on the dashboard to immediately download your new **Digital Health Card**.
- **Hospital Directory:** The web portal lists district-specific network options alongside contact coordinates for dedicated **Aarogya Mithra** coordinators stationed at individual hospitals.
- **Wellness Centres:** The state plans to expand outpatient wellness centres from 12 to 36 locations to provide localized diagnostic care and chronic disease medication.



Hyderabad – Global Capability Centre



Hyderabad has officially cemented its position as India's fastest-growing Global Capability Centre (GCC) powerhouse, surpassing traditional technology hubs like Bengaluru in new center setups.

Backed by proactive governance and industry-friendly frameworks like the TS-iPASS policy, the city has shifted into high-value global engine for Artificial Intelligence (AI), product ownership, and deep-tech innovation.

Over the last two and a half years alone, the city has attracted **197 new GCCs**, expanding its ecosystem to more than **450 operational centers**.

The Data Behind Hyderabad's GCC Dominance

According to the **Telangana IT Department** and the [NASSCOM GCC Landscape Report](#), Hyderabad's meteoric rise is backed by incredible economic and structural momentum:

- **Market Share Surge:** The city has secured **46% of all new greenfield GCCs** set up across India over the past two years.

- **Real Estate Economics:** Office spaces in corridors like HITEC City, Gachibowli, and Nanakramguda offer up to a **42% cost advantage in Grade-A rentals** compared to Bengaluru's outer ring road averages.
- **Massive Financial Influx:** The Hyderabad Economic Forum 2026 reported a staggering **\$24.3 billion in total pledged capital** explicitly linked to new tech ecosystems, AI Centers of Excellence, and life sciences expansions.
- **Talent Retention:** Tech parks in Hyderabad report an **18% higher employee retention rate**, offering an average daily commute of 34 minutes compared to the gridlocks seen in rival tech corridors.

Sector-Wise Breakdown & Major Global Giants

BFSI Analytics & Capital Markets: Over **50% of all new Banking, Financial Services, and Insurance (BFSI) GCCs** entering India. Global heavyweights like [Vanguard](#) (hiring 2,500+ professionals), [DBS Tech India Hub](#), UBS, and Charles Schwab drive global asset algorithms from the city.

- **Life Sciences & Pharma-Tech:** The city hosts tech-innovation bases for **23 of the world's top 50 life sciences companies**. Notable milestones include US pharma giant Eli Lilly and Company's core nerve-center, Sanofi's massive €400 million expansion, Roche Diagnostics, and Novartis.
- **AI & Next-Gen Engineering Hubs:** Companies like Bosch Global Software Technologies use their Hyderabad base to anchor [Agentic AI development, embedded software, and global patent filings](#). Consumer giants like [Nestlé Business Solutions](#) (partnering with Genpact) and L'Oréal—which established its **first-ever global Beauty Tech Hub** in Hyderabad.

PAPER- V – SCIENCE & TECHNOLOGY AND DATA INTERPRETATION

100-Days Enforcement Milestone for H-FAST



H-FAST stands for the **Hyderabad Food Adulteration Surveillance Team**, an enforcement unit. It was launched by the [Hyderabad City Police](#) to eradicate the food adulteration mafia and protect public health. Along with the **Greater Hyderabad Municipal Corporation (GHMC)** and the **Food Safety Department**.

Core Mission & Operations

- **Targeted Crackdowns:** Focuses on dismantling illegal food units.
- **Inter-Departmental Force:** Operates with a dedicated 28-member police task force alongside active Food Safety Officers.
- **Massive Seizures:** Seizes tons of hazardous materials like fake paneer, synthetic colors, adulterated ginger-garlic paste, and reused cooking oil.
- **Strict Legal Action:** Action under the Food Safety and Standards Act, 2006, also Preventive Detention (PD) Act for repeat offenders.

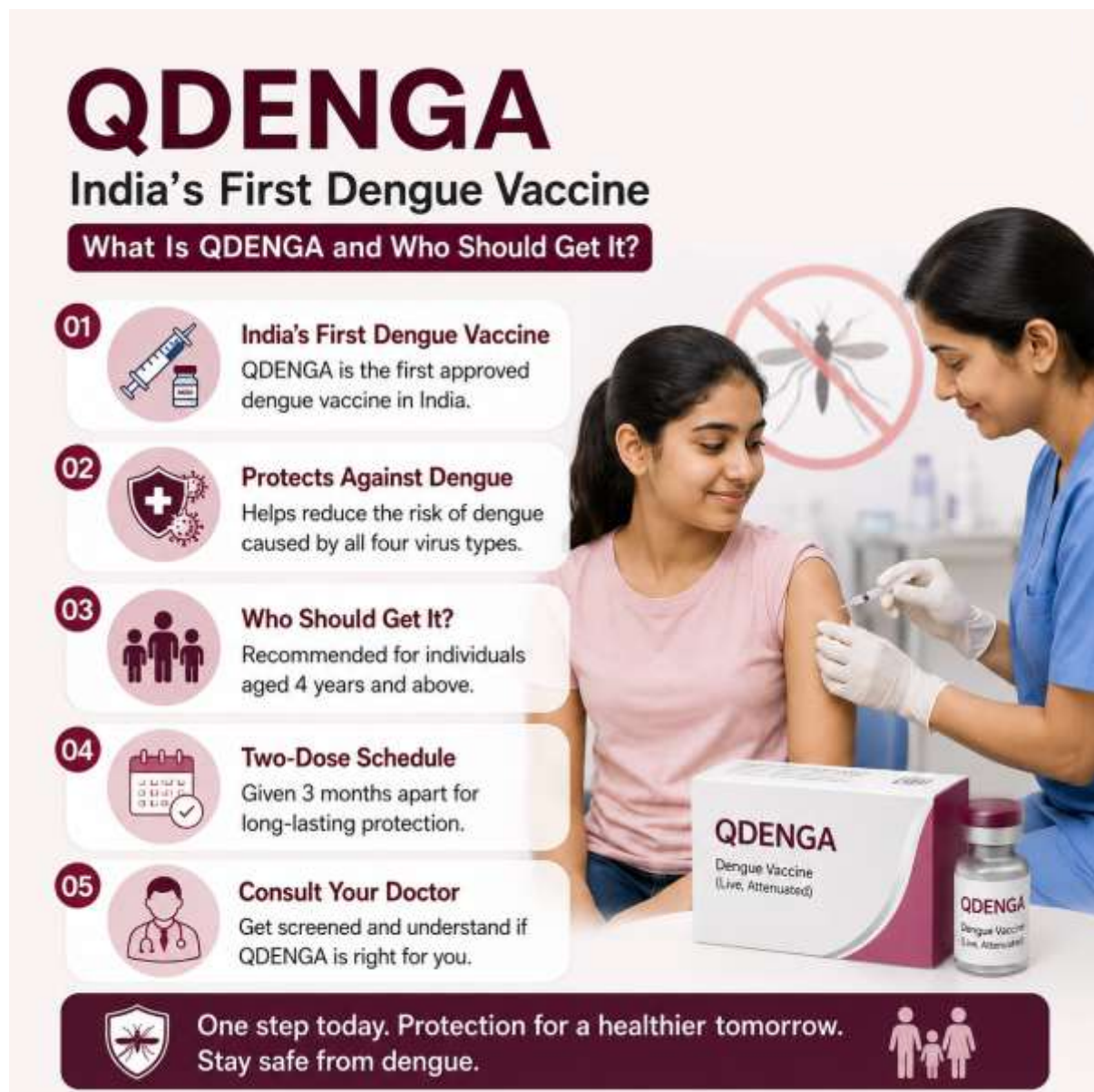
Recent Major Enforcement Milestones

- **100-Day Milestone:** Celebrated its first 100 days of operations by booking **185 criminal cases** and seizing over **121.87 tonnes** of toxic and substandard food.

- **Zone-Wise Distribution:** The highest frequency of adulteration cases was recorded in the **Rajendranagar Zone (55 cases)**, Golconda (44 cases) and Secunderabad (35 cases).
- **Recent Intensive Raids:** Uncovered severe cockroach and pest infestations, missing FSSAI licensing, and unhygienic environments at multiple local fast-food stalls, various food manufacturing units.



Indias first dengue vaccine



QDenga

India's First Dengue Vaccine

What Is QDenga and Who Should Get It?

- 01 India's First Dengue Vaccine**
QDenga is the first approved dengue vaccine in India.
- 02 Protects Against Dengue**
Helps reduce the risk of dengue caused by all four virus types.
- 03 Who Should Get It?**
Recommended for individuals aged 4 years and above.
- 04 Two-Dose Schedule**
Given 3 months apart for long-lasting protection.
- 05 Consult Your Doctor**
Get screened and understand if QDenga is right for you.

One step today. Protection for a healthier tomorrow. Stay safe from dengue.

QDenga (TAK-003) is India's first approved dengue vaccine. The **Drug Controller General of India (DCGI)** and the **Central Drugs Standard Control Organisation (CDSCO)** officially granted market authorisation for the vaccine under the provisions of the **Drugs and Cosmetics Act, 1940**.

Developed by the Japanese biopharmaceutical firm **Takeda**, previously India relied solely on vector control and symptomatic treatment.

Scientific Profile and Mechanism

- **Vaccine Type:** It is a **recombinant, live-attenuated tetravalent vaccine**.
- **Target Serotypes:** It utilizes a weakened dengue virus type-2 (DENV-2) genetic backbone engineered to provide broad-spectrum immunity against **all four distinct dengue virus strains:** DENV-1, DENV-2, DENV-3, and DENV-4.

- **No Pre-Screening Needed:** Unlike older generation vaccines (like Dengvaxia), QDENGGA **does not require prior blood testing** to check for historical dengue exposure.

It can be safely administered to both individuals who have never had dengue and those who have been infected before.

Administration and Eligibility

- **Approved Age Group:** Indicated for individuals aged **4 to 60 years**.
- **Dosage Schedule:** Administered as a **two-dose regimen** (0.5 mL per dose) via spaced **three months apart**.
- **Efficacy:** Global clinical trial data showed **80.2% efficacy** against virologically confirmed dengue at 12 months, and **90.4% efficacy** against dengue-related hospitalisation at 18 months post-vaccination.

Local Production and Indian Footprint

- **Manufacturing Partnership:** To cater to India's massive domestic demand, Takeda has partnered with Hyderabad-based **Biological E** to scale up local manufacturing. The facility is set to produce up to **50 million doses annually**.
- **Clinical Verification:** The regulatory clearance was granted following a rigorous local **Phase III safety and immunogenicity trial** conducted specifically on the Indian population to verify safety across local demographics.

What about India's Indigenous Dengue Vaccine?

While QDENGGA is the first *approved* vaccine, India is also developing its own **indigenous single-dose vaccine candidate called Dengi All**.

- Developed by **Panacea Biotec** in collaboration with the Indian Council of Medical Research (ICMR), DengiAll is undergoing extensive **Phase III clinical trials** across 18 states.
- Once approved, DengiAll could potentially become one of the world's first highly accessible single-dose solutions against the virus.

Vikram-1: "Mission Aagaman"



Vikram-1 is India's first privately developed **orbital-class rocket**, which successfully completed its historic maiden test flight on **18 July 2026**. Developed by the Hyderabad-based startup [Skyroot Aerospace](#) under "**Mission Aagaman**"

The rocket lifted off from [ISRO](#)'s Satish Dhawan Space Centre in Sriharikota and successfully placed multiple payloads into a 450 km Low Earth Orbit (LEO).

This milestone makes India only the third country in the world—after the United States and China—to establish private orbital launch capabilities.

Key Specifications of Vikram-1

- **Dimensions:** Standing approximately 20 to 22 metres tall (about 7 storeys) with a diameter of 1.7 metres.
- **Payload Capacity:** It delivers small satellites weighing up to **350 kg** to Low Earth Orbit.
- **Structure:** Constructed using an elite **all-carbon composite** airframe to maximize structural strength while keeping overall mass exceptionally low.
- **Propulsion System:** A four-stage expendable configuration, where the first three stages are solid-fuel rocket booster and a 3D-printed liquid engine (Raman-1) for final orbital injection.

Mission Aagaman Details: The flight carried six unique technology-demonstration payloads into space, which included:

- Active debris removal and soft-robotic capture mechanisms from Cosmoserve.

- A microscopic art installation featuring **rice-grain-sized sculptures** of India's iconic scientists (Sir C.V. Raman, Dr. Vikram Sarabhai, and Dr. A.P.J. Abdul Kalam) encased inside a 18k gold micro-rocket.

Difference between Vikram-S and Vikram-1

Feature	Vikram-S	Vikram-1
Purpose	Technology demonstrator	Operational orbital launch vehicle
Mission Type	Suborbital	Orbital
Stages	Single-stage	Three-stage
Satellite Deployment	No orbital deployment	Yes
Role	Validate technologies	Commercial satellite launches

The Evolution: Vikram-S vs. Vikram-1

Vikram-S (November 2022): India's first privately built sub-orbital rocket. It crossed the boundary of space temporarily to test basic flight systems but was not powerful enough to enter continuous orbit.

Vikram-1 (July 2026): It is the first private rocket to achieve a stable **orbital path**, full-scale multi-stage vehicle designed to stay in space, successfully offering a commercial "**cab service to orbit**" for global satellite operators.