

11th July 2025: DSC

12 Die After Key Bridge Collapse in Vadodara

Incident Overview

- **Time and Place:** In the early hours of July 10, 2025, the bridge over the Gambhira River, close to Padra in Vadodara district, Gujarat, gave way.
- **Impact:** Twelve fatalities were confirmed, with nine individuals rescued and five undergoing hospital treatment.
- **Nature of Failure:** A 15-meter reinforced concrete section between two supporting piers collapsed.
- **Vehicles Affected:** Multiple trucks, vans, and private cars plunged into the Mahisagar River below.

Relevance: GS Paper 3 (Disaster Management)

Bridge Background

- **Age and Design:** Approximately four decades old, this RCC bridge was constructed with pre-1991 standards that don't align with today's stress tolerances.
- **Role:** Served as a critical corridor connecting Central Gujarat with Saurashtra, essential for moving agricultural and industrial freight.

Likely Causes

- **Wear and Tear:** Gradual deterioration of concrete and neglected maintenance of support piers.
- **Weather:** Intense monsoon rainfall may have undermined foundational supports.
- **Oversight:** No thorough structural health assessments have been publicly reported in recent years.

Wider Administrative Context

1. Chronic Infrastructure Neglect

- Auditors like CAG and parliamentary panels have consistently warned about:
 - Lapses in routine assessments of old bridges.
 - Poor adoption of comprehensive Bridge Management Systems across states.

2. Reactive Rather Than Preventive Approach

- Authorities typically prioritize repairs and compensation after incidents, rather than proactive maintenance.
- No consolidated public record tracks load ratings, traffic volumes, or stress levels of aging bridges.

3. Urban–Rural Divide in Infrastructure Oversight

- Semi-urban and rural bridges often face:
 - Lower prioritization.
 - Less frequent inspections.
 - No real-time monitoring devices.

Examples of Other Recent Failures

Location	Year Cause	Deaths
Morbi, Gujarat	2022 Corrosion and overcrowding	135+
Ganga Bridge, Bihar	2024 Design flaw in construction	3
Mizoram	2023 Railway bridge failure	26
Gambhira, Gujarat	2025 Age and neglect	12+

Pattern: India averages 10–15 major bridge collapses annually, often preventable.

Anticipated Administrative Actions

- Investigations likely targeting the Public Works Department and state infrastructure bodies.
- Potential legal cases against contractors responsible for inspections and upkeep.
- Public confidence in infrastructure is expected to erode further.
- Political pressure will intensify on the Gujarat government as it plans budgets linked to the 2026 Census.

Recommended Solutions

- Mandate annual certified safety audits for bridges older than 20 years.
- Digitally track bridge conditions with geo-tagging and sensor-based systems.
- Establish an independent safety authority separate from state PWDs.
- Launch a transparent public dashboard showing bridge health status.
- Allocate at least 1% of state GDP each year for retrofitting and modernization.

ASI Permits Retired Tamil Nadu Archaeologist to Finish Keeladi Excavation Reports

Keeladi's Importance

- **Location:** Sivaganga district, Tamil Nadu.
- **Discoveries:** Urban settlement remains—brick buildings, inscribed pottery, industrial remnants.

- **Significance:** Suggests a thriving Sangam-era city (6th century BCE–3rd century CE), indicating:
 - Long continuity of Tamil civilisation.
 - Advanced urban life along the Vaigai River.
 - Early trade and literacy predating many northern Indian sites.

Relevance: GS Paper 1 (Culture, History, Heritage)

Excavation Timeline

Phase	Year	Agency / Lead Archaeologist	Key Outcomes
I–II	2015–16	K. Amarnath Ramakrishna (ASI)	Urban brick structures, early graffiti
III	2017	P.S. Sriraman (ASI)	Claimed no continuity—controversial
IV+	2018–25	Tamil Nadu State Archaeology Dept	Continued discoveries, ongoing work

Institutional Tensions

- 2017: ASI transferred Ramakrishna to Assam despite his pioneering work.
- Sriraman’s Phase III results were criticized for minimizing the site’s importance.
- 2024–25: ASI allowed Sriraman to finish delayed reports on Keeladi and Kodumanal.
- Ramakrishna was asked to revise his earlier reports but refused, standing by his interpretations.

Comparison with Kodumanal

- **Kodumanal:** Located in Erode district; famous for beads, iron tools, and Roman trade.
- Sriraman excavated here too; final documentation is pending.

Current Status

- Ten excavation phases completed under state leadership.
- Hundreds of artifacts stored in Chennai for study.
- Reporting and publication still ongoing.

Governance Challenges

- Differing scholarly interpretations and allegations of ideological interference.
- Central–state tussles over excavation authority.
- Persistent delays in publishing excavation results.

Historical Implications

- Undermines Aryan-centric narratives by establishing early Dravidian urbanism.

- Bolsters the authenticity of Sangam literature about trade and governance.
- Demonstrates the effectiveness of decentralised heritage management.

How Catastrophe Bonds Can Finance Disaster Response

Definition and Purpose

- Cat bonds combine insurance and debt by turning disaster risk into tradable securities.
- Governments and agencies transfer risk (cyclones, earthquakes) to investors.
- Issued via entities like the World Bank or reinsurers.
- Payments are triggered by objective disaster measures (parametric triggers).

Relevance: GS Paper 3 (Economy, Environment, Disaster Management)

Mechanics of Cat Bonds

Role	Function
Sponsor	The government paying premiums and defining risks
Issuer	Intermediary that sells bonds to investors
Investor	Provides capital and earns high interest if no disaster occurs
Trigger	Disaster event activates payout, reducing government burden

Why Investors Participate

- Diversification: Catastrophe risk is uncorrelated with financial markets.
- High yields: Coupons can exceed typical fixed-income returns.
- Scale: Over \$180 billion issued globally, \$50 billion still active.
- Favored by: Pension funds and large asset managers.

India's Rationale for Adoption

- Highly disaster-prone (earthquakes, floods, cyclones).
- ₹1.8 lakh crore spent on disaster relief over a decade.
- Low insurance penetration leaves households financially exposed.
- Predictable funding reduces strain on public budgets.

Regional Collaboration Idea

- India could sponsor a South Asian cat bond pooling risks across:
 - Nepal and Bhutan (earthquakes)
 - Bangladesh and India (cyclones)

- Bay of Bengal (tsunamis)
- Shared risk would lower premiums while elevating India's regional profile.

Potential Challenges

- Trigger mismatch: For example, a bond tied to a 6.6M quake might not pay for a 6.5M disaster.
- Public perception: Criticism if payouts never happen.
- Solution: Clear cost-benefit comparisons with traditional relief spending.

Policy Steps

- Pilot bonds for high-risk hazards like Assam floods.
- Collaborate with World Bank/ADB for credibility.
- Bundle with early warning and mitigation measures to reduce premiums.
- Build awareness among state disaster managers.

How Himachal Pradesh Climbed NAS Rankings

About NAS

- **Conducted by:** Ministry of Education every three years.
- **Scope:** Evaluates students in Classes 3, 5, 8, and 10 across government and aided schools.
- **Subjects:** Language, Maths, Environmental Science, Science, Social Science.
- **Purpose:** Serves as a diagnostic measure of state-level learning achievements.

Relevance: GS Paper 2 (Governance, Education)

Why Himachal's Improvement Stands Out

- **2021 Rank:** 21st.
- **2025 Rank:** Top 5.
- **Change:** A dramatic 16-place improvement—the largest positive shift among all Indian states.
- **Context:** A reversal of nearly twenty years of declining public education quality since liberalisation.

Key Reforms Driving the Change

- **Structural Consolidation:**
 - Over 1,000 small, underutilised schools were merged to optimise teachers and infrastructure.

- Created a unified education department governing pre-primary through Class 12.
- **Greater Accountability:**
 - Re-focused attention on Class 12 performance to lift outcomes in the final schooling stage.
 - Gave schools more autonomy in day-to-day decisions.
 - Organised national and international exposure trips for teachers and top-performing students.
- **Cluster-Based Management:**
 - Encouraged peer collaboration, resource sharing, and community engagement.
 - Strengthened local connections and identity with schools.
- **Political Commitment:**
 - Leadership publicly prioritised education, breaking a long cycle of neglect.

What NAS Measures—and What It Doesn't

Captures

Language, Maths, Science levels

Comparative academic performance

State-level disparities

Omits

Socio-emotional and civic development

Teacher-student relationship quality

Equity issues in marginalised communities

Interpretation: High test scores alone don't mean quality education—Himachal's real success was restoring public confidence in state-run schools.

Broader Educational Context

- **Historic Strengths:** Post-independence, Himachal followed Y.S. Parmar's model focusing on village education.
- **Period of Decline:** Contractual hiring and dilapidated facilities led to the rise of private schools, even in remote areas.
- **Demographic Pressure:** A falling birth rate (per NFHS-5) made consolidation, rather than expansion, necessary.

Next Steps

- Stabilise teacher employment by regularising appointments.
- Broaden evaluation metrics to include creativity, emotional intelligence, and critical thinking.
- Prioritise equity so rural and SC/ST learners aren't left behind in funding and access.
- Keep strengthening parent and community engagement in school governance.

India's Inequality Debate: 10 Core Insights

Gini Index and the Equality Narrative

- In July 2025, India cited a World Bank brief ranking it as the 4th most equal country globally, based on a consumption Gini coefficient of 0.29.
- Yet deeper evidence from the World Inequality Database shows India has among the world's highest income and wealth gaps.
- **2023 Data:**
 - Top 1% earned 22.6% of all income and owned 40.1% of total wealth.
 - Bottom 50% earned just 14.6% and held 6.4% of wealth.
- The consumption Gini ignores capital income and asset inequality—leading to an overstated picture of fairness.

Relevance: GS Paper 3 (Economy, Inequality, Gini Coefficient)

Reality Check: Interpreting Gini

- The World Bank's figure is based solely on household consumption.
- A Gini of 0.29 appears low but masks:
 - Rising income inequality.
 - Extreme wealth concentration.

Rising Income Disparity

- **2023 Snapshot:**
 - Top 1% earned over a fifth of all national income.
 - Top 10% took nearly 58%.
 - Bottom 50% received less than 15%.
- This reflects a huge imbalance in earnings.

Severe Wealth Concentration

- The richest 1% own 40% of India's personal wealth.
- Top 10% control two-thirds of all assets.
- The gap has widened steadily since the 1990s.

Shortcomings of Consumption Gini

- Smooth consumption hides volatile incomes (poorer households borrow, richer ones save).
- Surveys underestimate elite consumption.

- They fail to adjust for rural-urban price variations and home ownership benefits.
- They don't capture intergenerational transfers or capital gains.

Survey Distortions

- NSSO and NSO data suffer from:
 - Bias from non-responding high-income households.
 - Old consumption baskets no longer reflecting reality.
- This makes aggregate equality claims unreliable.

Income and Wealth Data Are Absent

- India does not officially release Gini figures for income or wealth.
- Other global measures consistently rank India far more unequal.

Taxation Fails to Redistribute

- There is little difference in top earners' pre-tax and post-tax income shares.
- India's tax system is only weakly progressive.
- Limited direct and wealth taxes, coupled with inadequate subsidies, leave inequalities intact.

Structural Disparities Overlooked

- Gini coefficients do not reflect:
 - Caste and gender discrimination.
 - Unequal access to health and education.
 - Barriers to upward mobility.

Flawed Comparisons

- Nordic countries score well on consumption and income equality.
- India's narrative collapses when wealth and opportunity are considered.

Policy Takeaways

- Combine consumption, income, and wealth data for a clearer picture.
- Make taxation more progressive.
- Publish transparent inequality statistics.
- Expand safety nets and redistribute assets to tackle long-term disparities.

IAF Jaguar Crash in Rajasthan

Incident Details

- A Jaguar fighter jet of the Indian Air Force crashed near Churu, Rajasthan on July 9, 2025, during a routine training mission.
- Both crew members—Wing Commander R. Takle and Flight Lieutenant A. Dixit—died.
- This marked the third Jaguar loss since March 2025.

Relevance: GS Paper 3 (Disaster Management, Defence)

Technical and Operational Issues

- **Fleet Age:** Jaguars were inducted in 1979—many airframes are over 40 years old.
- **Recent Crashes:**
 - March 2024: Crash near Ambala—pilot survived.
 - March 2025: Fatal crash in Rajasthan.
- **Operational Role:** Jaguars specialise in low-altitude penetration strikes—a mission profile that heavily stresses old aircraft.

Significance

- **Obsolescence:** Jaguars are no longer being upgraded—the DARIN-III modernisation was halted.
- **Attrition:** Of 160 inducted, fewer than 100 remain operational.
- **Safety Concerns:** Jaguars lack modern ejection seats and avionics, lowering survivability compared to newer fighters.

Future Plans

- Jaguars will gradually be replaced by:
 - HAL Tejas Mk1A.
 - Modernised Su-30MKIs.
 - Rafales.
- India's Advanced Medium Combat Aircraft (AMCA) is being developed but won't fly until around 2030.
- The phase-out creates the risk of gaps in deep-strike capabilities.

India's Fighter Inventory (Approx.)

Type	Induction Status		Quantity
Jaguar	1979	Phasing out	~90
Mirage 2000	1985	Mid-life upgrade	~50
Su-30MKI	2002+	Backbone fleet	~270

Type	Induction Status		Quantity
Rafale	2020+	Operational	36
Tejas Mk1A	2024+	Entering service	83 ordered

Strategic Implications

- Routine training fatalities highlight the need for more rigorous safety checks and stress testing.
- Repeated accidents could tarnish IAF's international reputation, especially as India seeks defence export markets.
- Young pilots flying outdated jets face disproportionate risks, potentially harming morale and readiness.

11th July 2025 Daily MCQs

1. Question

Regarding the collapse of the Gambhira bridge near Padra, Gujarat in July 2025, consider the following statements:

1. The bridge was constructed before India's independence using cast iron beams and stone masonry.
2. Structural fatigue combined with soil weakening during the monsoon are believed to have caused the failure.
3. India maintains a centralized public database detailing load-bearing capacity and stress records for all bridges over 30 years old.
4. Reports to Parliament and official audits have repeatedly criticized States for poorly implementing Bridge Management Systems (BMS).

How many of the above statement is/are correct?

- A. Only one
- B. Only two
- C. Only three
- D. All four

Correct Answer: (B) Only two

Explanation:

- **Statement 1:** Incorrect. The bridge was built around 40 years ago (post-independence) and made from reinforced cement concrete (RCC), not cast iron or stone.
- **Statement 2:** Correct. Investigations have cited age-related fatigue and monsoon-triggered soil weakening as likely causes.

- **Statement 3:** Incorrect. No centralized public record exists in India documenting the structural health or load limits of ageing bridges.
- **Statement 4:** Correct. The CAG and Parliamentary committees have consistently flagged inadequate execution of BMS by various State authorities.

2. Question

Consider the following statements regarding archaeological sites in Tamil Nadu:

1. Excavations at Keeladi have uncovered evidence of urban settlements linked to the Sangam Age, including brick structures and Tamil-Brahmi inscriptions.
2. Discoveries at Kodumanal point to bead-making, iron tool manufacturing, and trade relations with the Roman Empire.

Which of the above statements is/are correct?

- A. 1 only
- B. 2 only
- C. Both 1 and 2
- D. Neither 1 nor 2

Correct Answer: (C) Both 1 and 2

Explanation:

- **Statement 1:** Correct. Keeladi in Sivaganga district has revealed advanced urban features, inscriptions, and artefacts dating back to the Sangam Age (6th century BCE–3rd century CE).
- **Statement 2:** Correct. Excavations at Kodumanal in Erode district have yielded evidence of craftsmanship and long-distance commerce, including Roman goods.

3. Question

Consider the following statements regarding Catastrophe Bonds (Cat Bonds):

1. These instruments are typically issued by financial entities like the World Bank or reinsurance companies rather than governments themselves.
2. Investors in Cat Bonds earn higher interest but risk losing their principal if predefined disaster conditions occur.
3. India has already issued Cat Bonds to fund disaster relief during major floods in Assam and Odisha.

Which of the above statements is/are correct?

- A. 1 and 2 only
- B. 2 and 3 only
- C. 1 and 3 only
- D. All three

Correct Answer: (A) 1 and 2 only

Explanation:

- **Statement 1:** Correct. Cat Bonds are often facilitated through intermediaries (World Bank, ADB, reinsurers) to manage risk more effectively.
- **Statement 2:** Correct. Because of the disaster-trigger clause, these bonds pay higher coupons but carry significant principal risk.
- **Statement 3:** Incorrect. India has not yet issued Cat Bonds for flood response; discussions remain at the proposal stage.

4. Question

Consider the following statements regarding the National Achievement Survey (NAS) and Himachal Pradesh's performance:

1. NAS is conducted every year by NITI Aayog to assess teacher effectiveness across public and private schools.
2. Himachal Pradesh ranked first in the 2021 NAS and maintained its top position in 2025 with minimal changes to its school system.
3. NAS includes measures for creativity, emotional intelligence, and social skills alongside academic learning.

Which of the above statements is/are correct?

- A. 1 and 2 only
- B. 2 and 3 only
- C. 1 and 3 only
- D. None

Correct Answer: (D) None

Explanation:

- **Statement 1:** Incorrect. NAS is conducted triennially by the Ministry of Education and measures student achievement—not teacher performance.
- **Statement 2:** Incorrect. Himachal Pradesh ranked 21st in 2021 but rose to the top five in 2025 due to major reforms such as school mergers and administrative overhauls.
- **Statement 3:** Incorrect. The survey focuses on academic subjects like Math, Language, Science, Social Science, and EVS. It does not assess creativity or emotional skills.

5. Question

With reference to inequality measurement and India's Gini Index ranking, consider the following statements:



1. In 2025, India was rated as the fourth most equal country worldwide using the income-based Gini index from the World Bank.
2. According to the World Inequality Database (2023), the richest 1% of Indians earned over 20% of national income and controlled over 40% of total wealth.
3. Consumption-based Gini indices often understate inequality as they fail to account for wealth accumulation, savings, and inheritance.

Which of the above statements is/are correct?

- A. 2 only
- B. 2 and 3 only
- C. 1 and 3 only
- D. All three

Correct Answer: (B) 2 and 3 only

Explanation:

- **Statement 1:** Incorrect. India's ranking as the 4th most equal country in 2025 was based on consumption data, not income data. This measure ($Gini = 0.29$) tends to mask actual disparities.
- **Statement 2:** Correct. The database reported that the top 1% earned about 22.6% of total income and held over 40% of wealth.
- **Statement 3:** Correct. Consumption-based Gini metrics smooth over income and asset disparities, overlooking factors like capital gains and inheritance-driven wealth concentration.



ESTD 2022
CREATING LEADERS OF TOMORROW