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The Hindu Important News Articles & Editorial For UPSC CSE

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Edition : InternationalTable of Contents

Page 01 :GS II:International Relations/ Prelims Exam

The announcement on April 28, 2026, that the **United Arab Emirates (UAE)** will withdraw from the **Organization of the Petroleum Exporting Countries (OPEC)** and the wider **OPEC+** group marks a watershed moment in global energy geopolitics. As the cartel's third-largest producer, the UAE's exit signals a shift from collective price-fixing toward individual strategic autonomy.

UAE announces exit from OPEC group weakening cartel's bargaining power

Associated Press
DUBAI

The United Arab Emirates said Tuesday it will leave the Organization of the Petroleum Exporting Countries (OPEC) effective May 1, stripping the oil cartel of its third-largest producer and further weakening its leverage over global oil supplies and prices.

The UAE's decision had been rumored as a possibility for some time, as it pushed back in recent years against OPEC production quotas it felt had been too low – meaning it wasn't able to sell as much oil to the world as it had wanted. "Having invested heavily in expanding energy production capacity in recent years, the bigger picture is that the UAE has been itching to pump more oil," Capital Economics wrote in an analysis.

"The ties binding OPEC members together have loosened," it said, particularly after Qatar withdrew from the cartel in 2019.

Regional politics are also likely at play. The UAE has had increasingly frosty relations with Saudi Arabia, OPEC's largest producer, over political and economic matters in the Mideast, even after both came under attack by fellow OPEC member Iran during the war.

The UAE's withdrawal from OPEC won't necessarily have any immediate effects in markets because oil supplies are sharply constrained by the war in Iran, which has closed off the Strait of Hormuz, a waterway through which one-fifth of global oil supplies – including much of the UAE's – is transported. On Tuesday, Brent crude, the international benchmark, traded above $111 a barrel, or more than 50% above its prewar price.

OPEC accounts for roughly 40% of the world's oil output, but its market power had been waning in recent years as the United States ramped up production. While Saudi Arabia had been producing more than 10 million barrels of oil a day before the war, the U.S. pumps more than 13 million barrels a day.

U.S. President Donald Trump has been a steady critic of the cartel during his two terms.

The UAE, which joined OPEC through its emirate of Abu Dhabi in 1967, had been producing around 3.4 million barrels of crude a day just before the U.S.-Israeli war with Iran began on Feb. 28. Analysts say it has capacity to produce 5 million barrels a day.

In its announcement on Tuesday, made via its state-run WAM news agency, the UAE said it also would leave the wider OPEC+ group, which Russia had led to try to stabilize oil prices.

"This decision reflects the UAE's long-term strategic and economic vision and evolving energy profile, including accelerated investment in domestic energy production," the UAE said, adding that it would bring "additional production to market in a gradual and measured manner, aligned with demand and market conditions."

The UAE's exit removes one of OPEC's few members with the ability to quickly raise production, said Jorge Leon, head of geopolitical analysis at Rystad Energy.

"A structurally weaker OPEC, with less spare capacity concentrated within the group, will find it increasingly difficult to calibrate supply and stabilise prices," he said.

While Saudi Arabia and OPEC had no immediate reaction, Emirati Energy Minister Suhail al-Mazrouei insisted his country's decision did not stem from any dispute with its Gulf neighbour.

CRUDE OIL IMPORTS SLIP
» PAGE 12

The move had been rumoured as a possibility for some time with the UAE pushing back against production quotas in recent years. AFP

President Trump 'unhappy' with Iran's peace proposal

Reuters
DUBAI/WASHINGTON

U.S. President Donald Trump is unhappy with the latest Iranian proposal on resolving the two-month war, a U.S. official said.

Iran's latest proposal would set aside discussion on its nuclear programme until the war, on hold following a ceasefire is ended and disputes over shipping from the Gulf are resolved.

FULL REPORT ON
» PAGE 14

1. The Drivers of Departure: Why Now?

The UAE's decision is rooted in a combination of long-term economic strategy and immediate geopolitical friction:

- **Production Capacity vs. Quotas:** The UAE has invested billions to expand its production capacity to **5 million barrels per day (mbpd)**. However, OPEC's strict production quotas meant the UAE was pumping significantly below its potential (around 3.4 mbpd). To maximize returns on its massive infrastructure investments, the UAE needed to "pump more oil."
- **Economic Diversification:** Under its long-term strategic vision, the UAE aims to monetize its oil reserves as quickly as possible to fund its transition to a post-oil economy, a strategy that directly conflicts with OPEC's price-stabilization (and often supply-limiting) goals.
- **Divergence with Saudi Arabia:** Once close allies, the UAE and Saudi Arabia have seen "frosty relations" emerge over regional dominance, economic competition, and differing approaches to the conflict with Iran. This exit removes the UAE from a group traditionally led by Riyadh.

2. Impact on OPEC's Bargaining Power

The exit of the UAE follows the departure of Qatar (2019) and Angola (2024), indicating a "loosening of ties" within the cartel.

- **Loss of Spare Capacity:** The UAE was one of the few members with significant "spare capacity"—the ability to quickly ramp up production during global shortages. Without the UAE, OPEC's ability to "calibrate supply" is severely diminished.
- **Waning Market Share:** OPEC's influence was already being challenged by the **United States**, which now pumps over **13 million barrels per day**, surpassing Saudi Arabia. The UAE's exit further fragments the group's control over global benchmarks like Brent crude.

- **The Future of OPEC+:** By also leaving the wider OPEC+ group (which includes Russia), the UAE has signaled that it no longer wishes to align its energy policy with Moscow or Riyadh's geopolitical maneuvers.

3. Global Energy Security and the "Strait of Hormuz" Factor

While the exit weakens the cartel, immediate market effects are muted by the ongoing **U.S.-Israeli war with Iran** (begun Feb 2026).

- **Supply Constraints:** Global oil prices remain high (Brent above **$111/barrel**) because the **Strait of Hormuz** is effectively closed. Since one-fifth of global oil flows through this narrow waterway, the UAE's ability to "pump more" is currently physically restricted by the conflict.
- **Price Volatility:** In the long term, a structurally weaker OPEC may lead to higher price volatility, as the group will have less leverage to intervene during market crashes or spikes.

4. Significance

Aspect	Impact
Geopolitics	Signals the end of the "unipolar" energy leadership of Saudi Arabia in the Gulf.
Global Trade	Increases the importance of non-OPEC producers (USA, Brazil, Guyana) in price discovery.
Energy Transition	Highlights the "race to monetize"—nations are rushing to sell oil before the global green transition reduces demand permanently.

Conclusion

The UAE's exit from OPEC is a declaration of **Energy Sovereignty**. It highlights a fundamental tension: while OPEC seeks to keep prices high by limiting supply, ambitious producers like the UAE want to maximize volume to fund future transitions. For India, a major oil importer, a weaker OPEC could eventually lead to more competitive pricing once regional conflicts subside. However, in the short term, the combination of a fragmented cartel and the closure of the Strait of Hormuz suggests a period of prolonged energy uncertainty and high inflationary pressure.

UPSC Prelims Exam Practice Question

Ques:Consider the following statements regarding Organization of the Petroleum Exporting Countries:

1.It controls more than 70% of global oil production.

2.UAE is one of the founding members of OPEC.

3.OPEC+ includes countries like Russia.

Which of the statements given above is/are correct?

(a) 1 and 2 only

(b) 2 only

(c) 3 only

(d) 1, 2 and 3

Ans: c)

UPSC Mains Exam Practice Question

Ques: The UAE's exit from OPEC marks a shift from cartel-based energy governance to strategic autonomy.Discuss the geopolitical implications of this development.**(150 Words)**

Page 01:GS III :Indian Economy/ Prelims Exam

Growth in India's **Index of Industrial Production (IIP)** decelerated to **4.1%** in March 2026, marking a five-month low. This data is particularly significant as it represents the first full month of industrial performance since the outbreak of the **West Asia crisis** on February 28, 2026

1. Understanding the IIP Data (March 2026)

The IIP is a key economic indicator that measures the volume of production in various industrial sectors.

- **Overall Growth:** 4.1% (March 2026), down from higher rates in preceding months.
- **Manufacturing Sector:** Slowed to a five-month low of **4.3%**. This sector is highly sensitive to input costs, which have spiked due to tightened supplies of petroleum and natural gas following the regional conflict.
- **Core Sector Contrast:** The "Eight Core Industries" (which comprise roughly 40% of the IIP weight) actually **contracted by 0.4%** in March. The fact that the overall IIP remained positive at 4.1% suggests resilience in non-core manufacturing segments.

2. Sectoral Divergence: The "K-Shaped" Industrial Trend

The March data reveals a sharp contrast between investment-driven sectors and consumer-driven sectors:

Industrial output growth hits 5-month low of 4.1%

Slowdown in construction and consumer-centric sectors pull down Industrial Production growth in the first month of data since the war began in West Asia, with construction growth almost halving

T.C.A. Sharad Raghavan
NEW DELHI

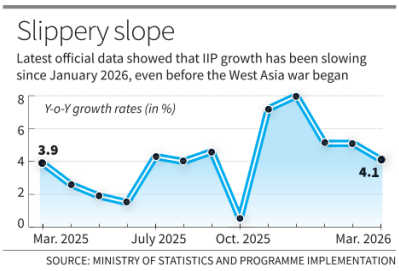
Growth in the Index of Industrial Production (IIP) slowed to a five-month low of 4.1% in March 2026, the first month of data after the West Asia crisis began, pulled down by a near-halving in construction sector growth rates and low growth in consumer-centric sectors.

Data released by the Ministry of Statistics and Programme Implementation on Tuesday showed that growth in the IIP has been slowing since January, even before the West Asia crisis broke out on February 28.

Economists point out that the full economic impact of the crisis will play out over the next few months.

For the full financial year 2025-26, growth in the IIP stood at 4.1%, marginally faster than the 4.07% recorded in 2024-25.

According to Madan Sabnavis, chief economist at



SOURCE: MINISTRY OF STATISTICS AND PROGRAMME IMPLEMENTATION

growth of 4.1% in March is "impressive given that the core sector growth was negative for the month".

Data released earlier this month had shown the eight core sectors, which make up about 40% of the IIP, had contracted 0.4% in March.

Manufacturing hit

Within the IIP, the manufacturing sector slowed to a five-month low of 4.3% in March, although this was faster than the 4% recorded last March.

"Domestic manufacturbrunt of costlier and tighter supplies of petroleum products and natural gas," Dipti Deshpande, principal economist at Crisil, said.

Growth in the capital goods sector, notably, accelerated to a 29-month high 14.6% in March from an already-robust 12.4% in February. While growth in the infrastructure and construction sector slowed to a nine-month low of 6.7%, economists still felt it highlighted strength in the economy. "Importantly, the strength in capital goods and infrastructure goods vestment-led demand remains intact, even as consumer non-durables posted a muted 1.1% rise," Vikrant Chaturvedi, associate director of research at Brickwork Ratings said. The 1.1% rise in consumer non-durables came on a low base as the sector had contracted 4% in March last year.

According to Ms. Deshpande, this is not the first data point showing the stress in the manufacturing sector.

"The Purchasing Managers' Index also slipped in March from February but remained in the expansion zone, indicating the likely uneven impact of the conflict across sectors and time based on their ability to absorb the shock."

"The March data captures only a part of the shock as uncertainty and weak producer sentiment have yet to fully manifest in production data," she added.

"The deeper impact is expected to show up down the road, particularly in the

Sector	Growth Rate	Status	Significance
Capital Goods	**14.6%**	29-month High	Indicates robust **investment-led demand**; companies are still buying machinery and equipment for long-term expansion.

Sector	Growth Rate	Status	Significance
Infrastructure/Construction	**6.7%**	9-month Low	A sharp deceleration (nearly halved). High input costs (steel, cement, energy) are stalling projects.
Consumer Non-Durables	**1.1%**	Muted	Reflects weak **rural and urban consumption**. This growth came on a "low base" (the sector had contracted 4% last year), making the 1.1% figure even more concerning.

3. Impact of the West Asia Crisis

Economists warn that the March data is just the "tip of the iceberg."

- **Supply Chain Disruptions:** As a major importer of energy, Indian manufacturing is bearing the brunt of costlier petroleum products.
- **Producer Sentiment:** The **Purchasing Managers' Index (PMI)**, while still in the expansion zone (above 50), has begun to slip, indicating that uncertainty is dampening the outlook for factory managers.
- **The Lag Effect:** Much of the "shock" to the supply chain and trade routes (especially if the Strait of Hormuz remains contested) will likely manifest more clearly in the **First Quarter (Q1)** of the 2026-27 fiscal year.

4. Significance

- **Investment vs. Consumption:** For a sustainable 7-8% GDP growth, India needs both "engines" to fire. Currently, the **Capital Goods** sector (investment) is doing the heavy lifting, while **Consumer Non-durables** (consumption) is dragging.
- **External Shocks:** This serves as a case study in how geopolitical instability in West Asia directly impacts India's domestic inflation (via energy costs) and industrial volume (via input availability).
- **Base Effect:** UPSC often tests the understanding of "base effects." The low growth in consumer goods, despite a negative base from the previous year, highlights a deep-seated demand issue.

Conclusion

While a 4.1% growth rate is described as "impressive" by some given the core sector's contraction, the underlying details suggest a cooling economy. The resilience of the **Capital Goods** sector provides hope for future capacity building, but the slowdown in **Construction** and **Consumer Goods** indicates that high energy prices and global uncertainty are beginning to hurt the common man's consumption and the nation's infrastructure momentum. The upcoming quarter will be a "litmus test" for the Indian industry's ability to absorb external geopolitical shocks.

UPSC PrelimsExam Practice Question

Ques: Which of the following best explains a "K-shaped recovery"?

(a) All sectors grow equally

(b) Economy contracts uniformly

(c) Some sectors grow while others decline

(d) Growth driven only by exports

Ans:c)

UPSC Mains Exam Practice Question

Ques:"Investment-led growth without consumption revival cannot sustain high GDP growth."Examine in the context of recent industrial data.(**150 Words)**

Page 04 :GS II :International Relations / Prelims Exam

On April 28, 2026, Defence Minister Rajnath Singh addressed the **Shanghai Cooperation Organisation (SCO)** Defence Ministers' meeting in **Bishkek, Kyrgyzstan**. His address underscored India's consistent "Zero Tolerance" policy toward terrorism and called for a fundamental shift in how the international community, and specifically the SCO, perceives global security.

1. Key Pillars of India's Address

- **Zero Tolerance & No Justification:** Singh asserted that terrorism has "no nationality and no theology." He emphasized that no grievance—whether real or perceived—can justify violence against innocents.
- **The "Double Standards" Challenge:** India took a sharp aim at **state-sponsored cross-border terrorism**. Singh noted that the credibility of the SCO depends on members rejecting double standards and dismantling safe havens for terror networks.
- **The "Three Evils":** He reaffirmed the SCO's collective focus on tackling **Terrorism, Separatism, and Extremism**.
- **Orderly World vs. New World Order:** In a significant philosophical distinction, he called for an **"Orderly World"** based on dignity, respect, and peaceful coexistence, rather than a "new world order" which often implies a shift in power dynamics without a shift in ethical conduct.

Rajnath Singh calls for unified SCO approach to eliminate terrorism

The Minister says the real test for SCO members lies in maintaining consistency and rejecting double standard, particularly in addressing state-sponsored cross-border terrorism; he calls for a more 'orderly world' rather than a 'new world order'

Saurabh Trivedi
NEW DELHI

Defence Minister Rajnath Singh addressing the SCO Defence Ministers' meet in Bishkek on Tuesday. ANI

Terrorism remains the most serious threat to global peace and the emerging world order, Defence Minister Rajnath Singh said while addressing the Shanghai Cooperation Organisation (SCO) Defence Ministers' meeting in Bishkek.

Emphasising zero tolerance, he called for a unified and consistent approach to eliminate terrorism, extremism, and radicalism in all forms.

Mr. Singh underscored that terrorism cannot be justified under any circumstances, asserting that it has no nationality and no theology. He stressed that no grievance, real or perceived, can excuse violence against innocent people.

Highlighting the importance of credibility, he said the real test for SCO member states lies in maintaining consistency and rejecting double standard, particularly in addressing state-sponsored cross-border terrorism and safe havens.

Referring to the Pahalgam terror attack, Mr. Singh said the carnage had shaken the conscience of humanity and reaffirmed India's resolve to hold perpetrators accountable. He noted that through Operation Sindoor, India demonstrated that terrorism epicentres were no longer immune from response. He also recalled the Tianjin Declaration, which reflects the collective commitment of SCO nations to combat terrorism decisively.

'Three evils'

The Defence Minister highlighted the role of SCO's Regional Anti-Terrorist Structure in countering radicalisation and extremism.

He said tackling the "three evils" – terrorism, separatism and extremism – required a unified front, stronger cooperation, and decisive action against those who supported or sheltered terror networks.

Beyond security concerns, Mr. Singh pointed to the broader global context marked by increasing unilateralism, conflicts, and a fractured world order. He noted that nations were becoming more inward-looking, weakening global consensus, and cooperation. In such a scenario, he said, the SCO has a pivotal role to play in promoting stability, dialogue and mutual respect.

Describing the SCO region as home to some of the world's most ancient civilisations, Mr. Singh said it reflectd a shared heritage of cultural exchange, trade and cooperation. He emphasised that this legacy should guide member nations in addressing present-day challenges collectively.

Calling for a more "orderly world" rather than a new world order, Mr. Singh stressed the need for dignity, respect, and peaceful coexistence among nations. He urged SCO members to prioritise diplomacy over conflict and ensure that the current era was defined by peace and prosperity, not war.

Reaffirming India's commitment, Mr. Singh invoked the philosophy of '*Vasudhaiva Kutumbakam*' – the world is one family – and expressed confidence that stronger cooperation within the SCO could transform regional security challenges into opportunities for lasting peace and stability.

2. Strategic Context: Operation Sindoor and RATS

- **Operation Sindoor:** The Minister cited this recent operation as proof of India's resolve, stating that "terrorism epicentres are no longer immune from response." This reflects India's proactive defense posture (strategic autonomy/active deterrence) following terror incidents like the one in Pahalgam.

- **SCO-RATS:** He highlighted the **Regional Anti-Terrorist Structure (RATS)** based in Tashkent. For India, RATS is a vital platform for intelligence sharing and counter-radicalization efforts among member states, including Central Asian partners.

3. Philosophical & Global Outlook

- **Vasudhaiva Kutumbakam:** Invoking the "World is one Family" philosophy, Singh positioned India as a bridge-builder in a fractured global order marked by increasing unilateralism.
- **Diplomacy Over Conflict:** He urged the SCO to prioritize diplomacy, asserting that the current era must be defined by **peace and prosperity, not war**. This aligns with the "not an era of war" sentiment previously expressed in global forums.

4. Significance

Topic	Relevance
SCO's Role	As a key Eurasian forum, the SCO allows India to engage with Central Asia and balance its relations with Russia and China.
Cross-Border Terrorism	India uses this platform to build a regional consensus against the support structures of terrorism, often implicitly referencing regional neighbors.
Multilateralism	The call for an "Orderly World" highlights India's preference for a rules-based international order over unilateral actions.

Conclusion

India's participation in the 2026 SCO Defence Ministers' meet reflects a **pragmatic security-first approach**. By focusing on "accountability" and "consistency," India is challenging SCO members to move beyond the **Tianjin Declaration** rhetoric and into decisive, unified action. For India, the SCO is not just a consultative body but a vital instrument to ensure that the Eurasian heartland remains stable, allowing for the "lasting peace" required for regional economic growth.

UPSC Prelims Exam Practice Question

Ques:The term "Three Evils" in SCO framework refers to:

(a) Poverty, Illiteracy, Unemployment

(b) Terrorism, Separatism, Extremism

(c) War, Climate Change, Migration

(d) Drugs, Arms, Human Trafficking

Ans:b)

UPSC Mains Exam Practice Question

Ques:"India's engagement with SCO reflects a balance between security concerns and strategic autonomy."Discuss.**(150 Words)**

Page :07:GS III :Science and Tech/ Prelims Exam

Modern science is often presented as a linear path of discovery, yet its reality is rooted in trial and error. The culture of "Publish or Perish" has created a **Publication Bias**, where only positive results are showcased, while inconclusive or "failed" experiments are discarded. To foster true innovation and maintain scientific integrity, there is an urgent need to institutionalize the "Ethics of Failure."

Why science and scientists must learn to celebrate failures

Narratives that present scientific experiments as a smooth story of success are counter-effective; to ensure science remains dynamic, innovative, and honest, it is necessary to foster a culture of appreciating and learning from failure rather than hiding it

Biju Dharmapalan

Failure is part and parcel of research but many scientists consider discussing it in a scientific forum to be taboo.

Laboratories are littered with unfinished experiments and inconclusive facts and theories that failed to stand the test of study. However, when science is being communicated – whether to funding bodies, professional journals, or audiences – it comes across as a smooth story of success. Just narratives are counter-effective.

To ensure science is dynamic, innovative, and honest, we have to foster a culture of appreciating and learning from failure rather than hiding it.

In its essence, science progresses by trial and error. A scientist postulates hypotheses while anticipating that many of them will be discarded. Every unsuccessful experiment sharpens the edges of knowledge and guides further investigation.

However, systems of science such as funding, publication, and career progression are skewed towards successes alone. Grants are generally awarded on the basis of promising results and a large volume of papers, and in favour of those with positive results. Unsuccessful or negative outcomes are often overlooked, leading to a biased ecosystem in which only success is allowed to be seen.

Not to be stigmatised

In the early 1980s, Australian scientists Barry Marshall and Robin Warren claimed that a bacterium called *Helicobacter pylori* caused peptic ulcers. Papers on the idea were however rejected by journals and dismissed by the gastroenterological establishment; the latter had long held that the stomach was too acidic for microbes. (Of course, there was also reasoned scepticism in pockets of the research community, which did not think that the duo had provided sufficient evidence for their hypothesis.)

They were unable to get their findings published and were also not taken seriously, but they had reasons to believe they were right. Then, in 1984, Mr. Marshall famously drank a broth containing *H. pylori* bacteria, expecting he would develop ulcers in around a year and thus prove to the research community that their idea had merit. Rather than a year, he developed symptoms of gastritis within a few days.

The duo won a Nobel Prize in 2005 for their work on identifying *H. pylori* as a cause of gastritis and peptic ulcers. It was a testament to how publication bias allowed a treatable condition to go untreated for years because the system had no process or culture to deal with what it perceived to be a failure.

To really embrace failure, science may need to draw inspiration from domains beyond academia. The technology sector, particularly in entrepreneurial ecosystems, has long embraced a "fail fast, fail often" philosophy. Here, failure is not to be stigmatised but treated as a stepping stone, an essential part of iterative learning.

Knowledge gambit: Science progresses by trial and error and every unsuccessful experiment guides further investigation. SASIN BIJIDHARYAN/UNSPLASH

Psychological aspect

While academic science cannot replicate this model entirely, given its different stakes and responsibilities, it can certainly adopt its underlying mindset: that failure is informative rather than shameful. Another valuable analogy is in sports. Athletes incorporate replays and coaching sessions to analyse their failures and convert them into learning opportunities. However, failures in science do not tend to include well-orchestrated reflection.

Some changes are commendable. New publication formats like 'registered reports' – where scientists commit to publishing the results of an experiment even before they begin it, whether they are positive or negative – are shifting the focus from results to research design and thus to methodological rigour. Nonetheless, these efforts are still spreading their wings. The major transformation the enterprise as a whole requires in mainstream practice is pending.

There is always the possibility that experiments do not pay off without a clear explanation, and researchers internalise failure as personal rather than as a natural occurrence in the process of intricate enquiry. This psychological aspect is especially important to novice researchers.

There is always the possibility that experiments do not pay off without a clear explanation, and researchers internalise failure as personal rather than as a natural occurrence

In a highly competitive environment where not everyone feels safe at work, the fear of failure may lower the incentive to take risks. This makes researchers more inclined towards safer, incremental projects rather than risky, innovative ideas. Such a fear of risk can eventually impede the pace of scientific development.

Communicating science

A culture change is thus much needed. Younger scientists would like to see their senior counterparts and principal investigators set good examples by talking openly about their failures and uncertainties. Mentorship should also not be limited to success: it should also openly deal with setbacks. People can become more resilient and honest in their intellectual practices by acknowledging that doubt and failure are parts of science.

Funding bodies and institutions can also play a role. The criteria of evaluation need to shift from the success of specific research outcomes to the quality of the research questions, research methods, and the lessons learnt. Grant proposals and academic CVs can include sections that document and articulate failures as part of the research experience. Establishing platforms to share negative findings and failed experiments could also contribute to a richer scientific ledger. Through open science projects and online archives, novel possibilities are available to share such knowledge, minimise repetition, and foster collaboration.

Notably, the public communication of science needs to change as well. The representation of science as a succession of discoveries creates unrealistic expectations and diminishes confidence in the face of failure. Scientists can raise a more informed and appreciative population by showing that science is a messy, iterative, and sometimes uncertain process. This is necessary, especially in the case of developing drugs or going to space, where errors are bound to happen, and it could be the most important lesson to go through.

Science in practice is a long journey characterised by perseverance, failure, and slow success. Science should not conceal these features but accept them. That is when every failure can serve as a stepping-stone to significant and hopefully sustainable breakthroughs.

(Biju Dharmapalan is Dean (Academic Affairs), Garden City University and an adjunct faculty member at the National Institute of Advanced Studies, Bengaluru. bijudharmapalan@gmail.com)

THE GIST

Science in practice is a long journey characterised by perseverance, failure, and slow success

In a highly competitive environment where not everyone feels safe at work, the fear of failure may lower the incentive to take risks which can eventually impede the pace of scientific development

A culture change is thus much needed where mentorship is not limited to success with criteria of evaluation focused on quality of the research

2. The Problem: The "Success-Only" Ecosystem

- **Publication Bias:** Journals and funding bodies prioritize statistically significant "positive" results. This leads to the **"File Drawer Problem,"** where negative results remain hidden, causing other researchers to waste resources repeating the same failed experiments.
- **Funding Hurdles:** Grants are often tied to "promising results," discouraging scientists from taking high-risk, high-reward paths.
- **Stigmatization:** Failure is often viewed as a lack of competence rather than a natural part of the scientific process, leading to psychological pressure, especially on early-career researchers.

3. Historical Lessons: The Marshall-Warren Case

The article cites **Barry Marshall and Robin Warren**, who were initially dismissed by the scientific community regarding H. pylori causing ulcers.

- **Systemic Failure:** Their inability to publish initially shows how "prevailing wisdom" can block revolutionary ideas.
- **Resilience:** Marshall's decision to experiment on himself (drinking the bacteria) highlights the perseverance required when the "system" fails to support unconventional hypotheses.

4. Cross-Domain Lessons for Science

Domain	Philosophy	Application to Science
Technology/Startups	"Fail Fast, Fail Often"	Encourages rapid iteration and reduces the cost of long-term failure.
Sports	Video Analysis/Coaching	Treats "losses" as data points for tactical improvement.
Aviation	Black Box Thinking	Investigating errors without blame to improve systemic safety.

5. Why Celebrating Failure Matters for India (UPSC Perspective)

- **Scientific Temper (Article 51A):** Developing a scientific temper involves questioning and accepting when a hypothesis is wrong.
- **Resource Efficiency:** India spends roughly **0.6-0.7% of its GDP on R&D**. Sharing failures prevents the duplication of unsuccessful research, saving precious public money.
- **Risk-Taking (Innovation):** If failures are penalized, researchers will stick to incremental "safe" science, hindering India's goal of becoming a "Global Innovation Hub."
- **Ethical Integrity:** Hiding data (selective reporting) borders on scientific misconduct. Transparency about failures ensures honesty in the scientific ledger.

6. The Way Forward: Structural Reforms

- **Registered Reports:** Adopting formats where the research design is peer-reviewed and accepted for publication before the results are known.
- **Open Science Platforms:** Creating archives for "Negative Results" (e.g., the Journal of Negative Results in BioMedicine).
- **Redefining Merit:** CVs and grant applications should value the **rigor of the process** and the **quality of the question** rather than just the final output.
- **Mentorship:** Senior scientists must normalize discussions about setbacks to build resilience in the next generation.

Conclusion

The progress of science is not measured solely by the number of trophies (Nobel Prizes or Patents) but by the depth of the collective knowledge gained. By shifting the focus from "what worked" to "what was learned," the scientific community can create a more honest, dynamic, and risk-resilient environment. As the article suggests, every failure is not a dead end but a "sharpening of the edges of knowledge."

Page 09 :GS II : Social Justice / Prelims Exam

Cervical cancer is a unique public health challenge: it is a devastating disease that is almost entirely preventable. Following the Nobel Prize-winning discovery that persistent **Human Papillomavirus (HPV)** infection is the primary cause, the world has moved toward an ambitious elimination goal. On **February 28, 2026**, India took a definitive step by launching its first nationwide **National HPV Vaccination Campaign**.

The fight to eliminate cervical cancer

Neerja Bhatla

Professor Emeritus, National Cancer Institute Jhajjar, Former Head of Department of Obstetrics & Gynaecology, All India Institute of Medical Sciences, Delhi

In 2008, Professor Harald zur Hausen received the Nobel Prize for his discovery that persistent infection with high-risk strains of the Human Papillomavirus (HPV) is the cause of cervical cancer, an important cause of morbidity and mortality globally, but more so in low and lower-middle-income countries (LMICs). His discovery paved the way for the development of prophylactic vaccines as well as tests to detect the infectious agent. A decade later, in 2018, the World Health Organization (WHO) announced an initiative for the elimination of cervical cancer, and the global strategy was formally launched on November 17, 2020, endorsed by 194 countries, India among them.

Disease and prevention

Cervical cancer is a source of extreme physical misery, emotional strife and financial hardship. It is the second most common cancer among women in India, with approximately one lakh new cases every year, and half as many deaths, which is one quarter of the global burden. The years of life lost to cervical cancer are more than that of other cancers as these women are relatively younger, with active family and social responsibilities. Women diagnosed with stage 4 cervical cancer could develop urinary fistulas, postmenopausal bleeding, extreme sciatic and lumbar pain, obstruction to their ureters and renal failure. If one is lucky enough to get diagnosed at an earlier stage, the cancer is curable, but only with radical surgery or chemo and radiation therapy. There is also a risk of recurrence which will require even more difficult exenteration procedures, stomas etc. That is, while the cancer is curable by providing symptom relief, hormone replacement and other supportive care, it comes at a physical and financial cost.

However, such suffering was preventable. Since the 1940s, secondary prevention by regular pap smear screening had been set up in the West, enabling detection of not just cancer but also precancerous stages. The natural history of cervical cancer has been well documented for over a century. It has a long precancerous phase of 10-15 years termed Cervical Intraepithelial Neoplasia (CIN) which can be detected by the microscopic examination of cells collected on a slide by brushing the cervix. At this stage, the cancer can be easily treated by simple day care procedures that do not require the removal of the uterus.

However, in India and other LMICs, we lacked the infrastructure and manpower to implement a screening of all women over the age of 30 years even once, let alone the recommended three-year interval period. Even in good tertiary centres, the laboratory placed a limit on the number of women that could be screened in a day. Outreach camps were conducted at regular intervals by gynaecologists and pathologists around the country, but these were merely a drop in the ocean. Even today, despite a national programme for screening with visual inspection, the screening coverage does not exceed 5%. Moreover, bringing women who test positive into the hospital for a confirmatory biopsy and treatment has extremely poor compliance rates.

The promise of a vaccine

HPV vaccination entered this scenario in 2006 like a superhero for the primary prevention of cervical cancer. Starting off as a three-dose vaccination, research showed that it could be reduced to two, and then it was found that just one dose was sufficient to provide protection against 85-90% of cancers. Over 500 million doses have been delivered worldwide, and nearly four million in India.

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Cumulative data from systematic trials and post-marketing surveillance show no increase in adverse events among vaccinated women than in the general population. Transient mild reactions have been observed that are common to all vaccines. There have been no negative effects on reproductive performance, fertility rates, congenital malformations or menstrual patterns. The efficacy of the HPV vaccine is remarkable, with nearly complete protection against the strains which are present in the vaccine. The first generation of vaccines were directed against the two most virulent strains, HPV 16 and 18, that account for 70% of cervical cancers globally but 85% in India. Countries like Australia and the U.K. which introduced the HPV vaccine soon after its launch in 2007-8 have already witnessed significant reductions in pre-cancer and cancer. Similar reports have come from other countries like Sweden, Denmark, Canada and the U.S.

Widespread accessibility

The WHO's cervical cancer elimination initiative envisions making cervical cancer a rare cancer, with an incidence rate of four per 1,00,000. To reach this goal, we must achieve certain targets by 2030: HPV vaccination of 90% of girls before the age of 15 years, screening of 70% of women with an HPV test at 35 and 45 years, and treatment of 90% of those detected with lesions. While the country has already crossed the halfway point since the launch of the global declaration, we are still far away from reaching these targets. However, the launch of the National HPV Vaccination Campaign on February 28, 2026 by the Prime Minister himself signals the highest political commitment to women's health and reproductive rights. All parents need to be aware of this opportunity so that their 14-year-old daughters can avail free vaccination at the nearest government health facilities. One small jab will take us towards a cervical cancer-free future and a Viksit Bharat by 2047.

1. The Global and National Burden

- **The Global Scale:** Cervical cancer is the fourth most common cancer in women globally. Nearly 94% of deaths occur in low- and middle-income countries (LMICs).
- **The Indian Context:** * It is the **second most common cancer** among Indian women.
    - India accounts for **25% of global cervical cancer deaths** (approximately 80,000 fatalities annually).
    - One in every 50 girls born in India is expected to develop the disease in her lifetime without intervention.

2. The WHO "90-70-90" Elimination Strategy

The WHO initiative aims to reduce the incidence rate to below **4 per 100,000 women** to effectively eliminate it as a public health problem. The targets for 2030 are:

- **90% Vaccination:** Of girls by age 15.
- **70% Screening:** Of women using a high-performance test (like HPV DNA) at ages 35 and 45.
- **90% Treatment:** Of women identified with pre-cancer or invasive cancer.

3. Primary Prevention: The HPV Vaccine

The most significant shift in 2026 is the adoption of the **single-dose schedule** in the national program, a move backed by the WHO and India's NTAGI (National Technical Advisory Group on Immunization).

- **The National Campaign (Feb 2026):** Launched in Ajmer, Rajasthan, the drive targets **1.15 crore girls aged 14**.
- **The Vaccine:** India is utilizing the **quadrivalent Gardasil-4**, protecting against HPV types 16 and 18 (which cause ~85% of cases in India) and types 6 and 11 (which cause genital warts).
- **Efficacy:** Research confirmed that a single dose is **non-inferior** to multi-dose regimens, providing 93–100% protection for life.
- **Safety:** Over 500 million doses globally show no negative impact on fertility or reproductive health.

4. Secondary Prevention: From Pap Smears to HPV DNA Testing

Early detection of **Cervical Intraepithelial Neoplasia (CIN)**—the precancerous stage—is vital as it can take 10–15 years to turn into invasive cancer.

- **The Screening Gap:** India's current screening coverage is below 5–10%, far from the 70% target.
- **Visual Inspection (VIA):** Currently used in rural centers, VIA is low-cost but has lower sensitivity compared to lab tests.
- **The 2026 Shift:** A "hub-and-spoke" model is being piloted (e.g., the Amethi project) where samples are collected at local **Ayushman Arogya Mandirs** and sent to central labs for high-throughput **HPV DNA testing**.
- **Self-Sampling:** New 2026 guidelines permit women to self-collect samples, overcoming cultural barriers and privacy concerns.

5. Challenges and the Path Ahead

Challenge	Strategy for 2026-2030
Misinformation	Intensive awareness campaigns on vaccine safety and non-impact on fertility.

Challenge	Strategy for 2026-2030
Logistics	Utilizing the existing U-WIN platform (modeled on Co-WIN) to track every girl's vaccination.
Compliance	Transitioning from "Outreach Camps" to "Routine Immunization Days" and school-based drives.
Rural Access	Scaling thermal ablation devices at the block level for same-day treatment of lesions.

Conclusion

The elimination of cervical cancer in India is no longer a scientific question but an implementation challenge. With the launch of the **National HPV Vaccination Campaign** in 2026 and the scaling of high-performance screening, India is finally aligning its massive health infrastructure with global best practices. Achieving a **Viksit Bharat by 2047** requires a healthy female workforce; eliminating a cancer that specifically targets women in their most productive years is a prerequisite for that vision.

UPSC Prelims Exam Practice Question

Ques:The WHO "90-70-90" strategy for cervical cancer elimination refers to:

(a) Vaccination, Screening, Treatment targets

(b) Nutrition, Sanitation, Immunization

(c) Infant mortality reduction

(d) TB elimination targets

Ans : a)

UPSC Mains Exam Practice Question

Ques:"Cervical cancer is a preventable disease, yet it remains a major public health burden in India." Discuss the challenges and recent policy measures to address it.**(150 words)**

Page :08 : Editorial Analysis

The RTE Act and the idea of social inclusion

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In its January 2026 judgment, the Supreme Court of India reaffirmed the purpose of Section 12(1)(c) of the Right to Education (RTE) Act, 2009, the landmark provision that reserves 25% of seats in private schools for students from economically weaker sections and socially disadvantaged groups. In words that are deeply symbolic, the Court observed that this provision makes it possible for "the child of a multi-millionaire or even of a Judge of the Supreme Court of India to sit in the same classroom and at the same bench as the child of an autorickshaw driver or a street vendor". The judgment reasserted that this provision is a deliberate constitutional strategy to operationalise equality of status by creating shared learning spaces for all children.

This sentiment of social integration often comes alive in thousands of stories across the country. Take Karthik, a footwear vendor, and his wife, Sunita, for example. They always dreamed of providing their children with quality education despite their modest income. This became possible when their younger son joined a reputed private school through this provision. The boy thrived in the new environment, excelling in academics and his favourite sport, kabaddi. Teachers nurtured his growth, while classmates became close friends. For Karthik and Sunita, the RTE Act did not just change their son's future; it altered their family's life trajectory, with the potential to lift them out of poverty. Stories such as Prem's are often told as narratives of access – of doors opened and opportunities unlocked. But at stake is not simply where a child studies, but whether the circumstances of their birth continue to determine the boundaries of their social world.

A constitutional strategy

Despite its intent, Section 12(1)(c) is frequently mischaracterised as a tool to promote private schooling or to allow the state to outsource its constitutional duty to public education, citing falling government school enrolment alongside rising private school admissions.

The Supreme Court of India's judgment strengthens the vision of a socially integrated education system

This reading is misplaced. First, Section 12(1)(c) does not dilute the state's duty to invest in public schools, but recognises that the right to free and compulsory elementary education, and the creation of shared learning spaces, must be realised within a schooling ecosystem where private schools are not incidental actors but natural participants in fulfilling a constitutional mandate. The RTE Act does not create a zero-sum contest between public and private institutions; it seeks to foster integrated educational spaces.

Second, the shift towards private schooling predates the RTE Act. The Annual Status of Education (ASER) Report of 2006 documents significant movement into private schools "at the expense of government school enrolment". Declining admissions in government schools are rooted in deeper concerns around infrastructure, teacher presence, and perceived quality – not in Section 12(1)(c) itself.

Evidence from the ground

Since its rollout, over five million children have walked through the doors of educational spaces previously out of reach, with retention rates averaging over 90%. In cities such as Delhi and Ahmedabad, blended classrooms are no longer exceptions; they are the norm. Research (such as that by Rao, Gautam, 2019) indicates that mixed classrooms lead to increased generosity, reduced discrimination, and stronger pro-social behaviour, without any adverse impact on academic outcomes or classroom discipline. At scale, implementation has also stabilised: reimbursements under Section 12(1)(c) are centrally streamlined, and State-level online Management Information Systems (MIS) ensure transparent, low-discretion processing.

For children from disadvantaged backgrounds, these classrooms offer more than just academics. They provide access to social capital, previously unexplored aspirations, peer networks, and institutional cultures. These experiences translate into higher self-belief, enhanced ambition, and a broader worldview.

Acknowledging challenges

There is no denying the challenges that persist in the implementation of Section 12(1)(c). Some private schools continue to resist full inclusion, while families often bear hidden costs for uniforms, books and materials. Implementation remains uneven across States, with persistent gaps in transparency, grievance redress, and last-mile outreach and disbursements.

These challenges do not change the fact that Section 12(1)(c) was not meant to rely solely on moral persuasion – it requires clear, enforceable rules to succeed. Encouragingly, recent experience demonstrates that these gaps are neither inevitable nor insurmountable. State-driven digital admission systems and improved monitoring mechanisms – particularly in Rajasthan, Gujarat, and Delhi – have significantly strengthened access and accountability.

The Court's reaffirmation of Section 12(1)(c) makes clear that it is neither a retreat from public education nor an endorsement of private schooling. The challenge now is administrative. States must ensure timely reimbursements, remove hidden costs by private schools, strengthen grievance redress, and enforce inclusion norms so that equality is experienced. The real test is whether we can operationalise the constitutional promise of social integration with the seriousness needed to match the ambition we hold for our children.

GS PaperII :Governance

UPSC Mains Exam Practice Question: Evaluate the effectiveness of the Right to Education Act in addressing educational inequality in India.**(150 Words)**

Context : The Right to Education Act, 2009, was a watershed moment in Indian legislative history, making education a Fundamental Right under **Article 21A**. Section 12(1)(c), specifically, mandates that private non-minority schools reserve **25% of their entry-level seats** for children from Economically Weaker Sections (EWS) and Disadvantaged Groups (DG). The 2026 Supreme Court judgment reaffirms this as a tool to bridge the deep-seated socio-economic chasm in Indian society.

2. Core Objective: Beyond "Access" to "Inclusion"

The article argues that the goal is not merely putting a child in a classroom but **Social Integration**.

Shared Learning Spaces: Bringing children from diverse backgrounds (e.g., a judge's child and a street vendor's child) together to break down class and caste silos.

Pro-Social Behavior: Research indicates that mixed classrooms foster empathy, reduce discrimination, and increase generosity among students from privileged backgrounds without compromising academic standards.

Social Capital: For disadvantaged children, these schools provide access to networks and aspirations that were previously inaccessible, potentially breaking the intergenerational cycle of poverty.

3. Addressing Common Misconceptions

Misconception	Reality/Counter-Argument
Outsourcing State Duty	The Act does not dilute the state's duty to improve government schools; rather, it enlists private schools as "natural participants" in a constitutional mandate.
Cause of Public School Decline	As per ASER 2006, the shift to private schools predated the RTE. Declines are due to infrastructure and quality issues in government schools, not Section 12(1)(c).
Zero-Sum Game	It is not "Public vs. Private" but an integrated "Schooling Ecosystem."

4. Positive Outcomes & Ground Reality

Scale of Impact: Over 5 million children enrolled with a high retention rate (>90%).

Technological Integration: States like Rajasthan, Gujarat, and Delhi have used **MIS (Management Information Systems)** and digital portals to streamline admissions and reimbursements, reducing corruption and discretion.

Administrative Stability: Centralized reimbursement systems have made the process more predictable for private institutions.

5. Challenges in Implementation

Despite successes, several "last-mile" hurdles remain:

Hidden Costs: While tuition is free, families often struggle with the costs of uniforms, books, transport, and extracurricular activities.

Resistance from Institutions: Some private schools resist full integration, leading to "social exclusion" within the school (e.g., separate sections or discriminatory treatment).

Inter-State Variation: Implementation is uneven across India; some states have robust portals, while others lag in grievance redressal and timely fund disbursement.

Psychological Barriers: The "fear of not fitting in" for EWS students and the "prejudice of parents" from affluent backgrounds.

6. UPSC Perspective: The "Constitutional Strategy"

From an exam viewpoint, Section 12(1)(c) aligns with several **Directive Principles of State Policy (DPSPs)**:

Article 38: Promoting a social order based on justice and reducing inequalities in status and opportunity.

Article 39(f): Ensuring children are given opportunities to develop in a healthy manner and in conditions of freedom and dignity.

Article 46: Promoting the educational and economic interests of the weaker sections.

Conclusion

The Supreme Court's 2026 reaffirmation serves as a reminder that the RTE Act is a transformative tool for **Social Engineering**. However, for this "Constitutional Promise" to be realized, the focus must shift from mere legislative compliance to administrative excellence. Ensuring timely reimbursements, eliminating hidden costs, and fostering a truly inclusive school culture are the next steps in making the "same bench" philosophy a reality for every Indian child.