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Daily News Analysis

The Hindu Important News Articles & Editorial For UPSC CSE

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Edition : International Table of Contents

The Western Ghats, a global biodiversity hotspot, has once again proven its ecological richness with the formal identification of a new dragonfly species: Lyriothemis keralensis. While first sighted in 2013, it was recently distinguished from its look-alike relatives in Northeast India. This discovery is particularly significant as it shifts the focus of conservation from protected forest zones to human-modified agricultural landscapes.

New species of dragonfly discovered in Kerala's rubber plantations, named *Lyriothemis keralensis*

The Hindu Bureau
KANNUR

Researchers stressed the importance of careful land-use practices to ensure the survival of the species. SPECIAL ARRANGEMENT

Researchers have discovered a new species of dragonfly from Kerala and named it *Lyriothemis keralensis*, recognising the State's exceptional biodiversity. The species was recorded from Varapetty near Kothamangalam in Ernakulam district, where it inhabits vegetated pools and irrigation canals within shaded pineapple and rubber plantations.

The study was conducted by Dattaprasad Sawant of the Indian Foundation for Butterflies, Bengaluru, A. Vivek Chandran of the Department of Wildlife Science College of Forestry, Kerala Agricultural University, Renjith Jacob Mathews of the Society for Odonate Studies, Kerala, and Krushnamegh Kunte of the National Centre for Biological Science, Bengaluru. The findings have been published in the International Journal of Odonatology.

According to Dr. Chandran the newly described dragonfly is seasonally visible only during the South-west monsoon from later May to the end of August. During the remaining months of the year, the species is believed to persist in its aquatic larval stage, surviving in the network of canals and pools inside shaded plantation landscapes.

He said *Lyriothemis keralensis* is a small dragonfly with distinct sexual dimorphism. The males are bright blood-red with black markings, making them visually striking, while the females are bulkier and yellow with black markings.

Although the species has been known to be found in Kerala since 2013, it had remained misidentified for over a decade as *Lyriothemis acigastra*, a species previously thought to be restricted to north-east India. The researchers confirmed its distinct identity through detailed microscopic examinations and comparisons with museum specimens, which revealed clear difference, including a more slender abdomen and distinctly shaped anal appendages and genitalia.

Dr. Chandran and other researchers highlighted the conservation concerns, nothing that most population of the species occur outside the protected area network.

They stressed the importance of careful land-use practices, especially in plantation-dominated landscapes, to ensure the survival of the species.

Key Facts for UPSC Prelims

1. Taxonomy and Identification

Scientific Name: Lyriothemis keralensis (Commonly called the Slender Bombardier).

Family: Libellulidae.

Confusion with L. acigastra: For over a decade, it was misidentified as Lyriothemis acigastra (Little Bloodtail), which is found in Northeast India.

Distinguishing Features: Sexual Dimorphism: Males are bright blood-red with black markings; females are bulkier and yellow with black markings.

Morphology: It possesses a more slender abdomen and distinct genital structures compared to its Northeast Indian counterpart.

2. **Habitat and Ecology**

Location: Primarily recorded from Varapetty (near Kothamangalam) in Ernakulam district, Kerala.

Non-Forest Habitat: Unlike many rare species, it thrives in human-dominated landscapes, specifically shaded rubber and pineapple plantations.

Micro-habitat: It inhabits vegetated pools and irrigation canals.

Seasonal Behavior: It is visible only during the Southwest Monsoon (May to August). During the rest of the year, it survives in its aquatic larval stage in canal networks.

3. Conservation Challenges

Protected Area Gap: Most populations exist outside the protected area network (National Parks/Sanctuaries).

Threats: Changes in land-use practices within plantations and the destruction of irrigation-based micro-ecosystems.

Ecological Role: Dragonflies are considered indicators of ecosystem health and act as natural pest controllers (e.g., mosquito larvae).

Comparative Analysis: Lyriothemis Species in India

Feature	Lyriothemis keralensis	Lyriothemis acigastra
Region	Western Ghats (Kerala)	Northeast India
Abdomen	More slender/lean	Relatively thicker
Habitat	Plantations & Irrigation canals	Tropical forests
Status	Newly identified (2026)	Long established in NE India

Conclusion

The discovery of Lyriothemis keralensis highlights two critical points for environmental policy: the need for rigorous taxonomic research to avoid misidentification of "cryptic species," and the urgent requirement for "landscape-level conservation."

UPSC Prelims Exam Practice Question

Ques: The discovery of Lyriothemis keralensis highlights which of the following conservation challenges in India?

1. Species conservation outside protected forest areas

2. Importance of micro-habitats such as irrigation canals

3. Over-dependence on wildlife sanctuaries for biodiversity protection

4. Lack of community participation in conservation

Select the correct answer using the code below:

(A) 1 and 2 only

(B) 1, 2 and 3 only

(C) 2, 3 and 4 only

(D) 1, 2, 3 and 4

Ans: (B)

Page 04 : GS II : International Relations

India and Greece have recently elevated their historical relationship to a modern Strategic Partnership. The visit of Greek Defence Minister Nikolaos-Georgios Dendias to New Delhi in February 2026 marks a pivotal moment, shifting the focus from purely diplomatic and cultural ties to a robust defence-industrial collaboration. This partnership is anchored in the shared heritage of two ancient seafaring nations and a mutual interest in maintaining a stable, rules-based order in the Mediterranean and the Indo-Pacific.

India and Greece agree to strengthen defence industrial cooperation in five-year road map

Saurabh Trivedi
NEW DELHI

Defence Minister Rajnath Singh held a bilateral meeting with Greece's Minister of National Defence, Nikolaos-Georgios Dendias, in New Delhi on Monday.

The meeting focused on strengthening defence cooperation under the India-Greece Strategic Partnership.

According to the Defence Ministry, both Ministers reiterated that the partnership was rooted in shared values of peace, stability, freedom, and mutual respect. They agreed to expand the capacities of their indigenous defence industries by aligning India's Aatmanirbhar Bharat initiative with Greece's defence reforms under Agenda 2030.

Defence Minister Rajnath Singh with Greek counterpart Nikolaos Georgios S. Dendias in Delhi on Monday. SUSHIL KUMAR VERMA

A Joint Declaration of Intent on strengthening defence industrial cooperation was signed, marking the beginning of work on a five-year road map. The two sides also exchanged a Bilateral Military Cooperation Plan for 2026, outlining future military engagements between the armed forces of both countries, the Ministry added.

Peace, security

The discussions covered regional peace and security, with both leaders acknowledging the steady deepening of bilateral defence cooperation and strategic ties. Convergence on key maritime issues was highlighted, reflecting the shared outlook of the two ancient seafaring nations.

The Greek side announced the deployment of a Greek International Liaison Officer at the Information Fusion Centre-Indian Ocean Region (IFC-IOR) in Gurugram, underlining enhanced maritime cooperation.

Earlier in the day, Mr. Dendias laid a wreath at the National War Memorial and paid homage to fallen soldiers. He also inspected a Tri-Service Guard of Honour at the Manekshaw Centre.

Key Pillars of the Five-Year Road Map

The centerpiece of the visit was the signing of a **Joint Declaration of Intent**, which outlines a five-year trajectory for defence cooperation.

- **Industrial Alignment:** The road map aims to synergize India's **'Aatmanirbhar Bharat'** (Self-Reliant India) initiative with Greece's **'Agenda 2030'** defence reforms.
- **Co-Production & Research:** Moving beyond buyer-seller dynamics, the two nations will focus on joint development, technology transfers, and co-production of military hardware.
- **Bilateral Military Cooperation Plan (2026):** A specific plan was exchanged to outline joint exercises, training programs, and service-to-service interactions for the upcoming year.
- **Maritime Security:** Highlighting their seafaring DNA, Greece announced the deployment of an **International Liaison Officer (ILO)** at India's **Information Fusion Centre–Indian Ocean Region (IFC-IOR)** in Gurugram.

Strategic Significance for India

Geopolitical: The Mediterranean Connection: Greece serves as India's "Gateway to Europe." By strengthening ties with Athens, India gains a strategic foothold in the Eastern Mediterranean—a region where Turkey (a close ally of Pakistan) has often challenged Indian interests. Greece, conversely, views India as a counterbalance in its own regional security architecture.

Economic: IMEC and Trade: The partnership complements the India-Middle East-Europe Economic Corridor (IMEC). Greece's Piraeus Port is a top contender to be the primary European entry point for this corridor, making security cooperation essential for safeguarding trade routes.

Maritime Domain Awareness (MDA): The inclusion of a Greek officer at the IFC-IOR enhances India's ability to monitor the "Global Commons." It facilitates real-time information sharing on piracy, illegal trafficking, and maritime movements from the Mediterranean to the Indian Ocean.

Defence Exports: As Greece modernizes its fleet and air force under Agenda 2030, India's indigenous platforms (like the BrahMos missile, Tejas aircraft, or Pinaka rockets) present cost-effective alternatives to Western equipment, supporting India's goal of reaching $5 billion in defence exports.

Challenges to Overcome

Implementation Gaps: Historically, India-Greece ties have lacked "economic depth." Both nations must ensure that the "road map" translates into actual contracts and joint ventures.

Turkey Factor: India must balance its strengthening ties with Greece without triggering a complete diplomatic breakdown with other regional players, though the current "tit-for-tat" diplomacy suggests a firmer Indian stance.

Conclusion

The India-Greece five-year defence road map is a testament to India's evolving "Strategic Autonomy," where it seeks partners beyond the traditional P5 powers. For India, Greece is no longer just an ancient civilization to be admired in history books; it is a vital security partner in the Mediterranean. This partnership effectively bridges the security architectures of the Indo-Pacific and Europe, reinforcing India's role as a "Net Security Provider" and a global manufacturing hub.

UPSC Mains Exam Practice Question

Ques: Discuss how the India–Greece defence partnership reflects India's evolving approach to Strategic Autonomy and minilateral cooperation beyond the P5 powers. **(250 words)**

Page 09 : GS III : Indian Economy

Using the example of Misty Milk, a mid-sized dairy processor in Erode, Tamil Nadu, economist Salman Soz highlights a critical paradox in the Indian economy: the existence of high-capacity infrastructure and market demand alongside stagnant job creation. The analysis shifts the focus from "Headline GDP" to the grassroots structural barriers that prevent Small and Medium Enterprises (SMEs) and small-scale producers from scaling up.

Key Structural Constraints Identified

The "Erode Model" reveals four primary bottlenecks that hinder the transition from a "mid-sized firm" to a "national champion":

- **The Credit Gap:** While Misty Milk has the capacity to process milk from 70,000 farmers, it is stuck at 2,000. The reason is not lack of demand, but the inability of small farmers to access formal, affordable credit to buy cattle and feed.
- **The "Missing Middle" Problem**: India has many micro-enterprises and a few massive corporations, but lacks a robust layer of mid-sized firms that can scale. Without solving credit at the producer level, scaling is impossible.
- **Regulatory & Compliance Burden:** SMEs face disproportionate costs regarding tax uncertainty and complex regulatory frameworks, which drain cash flow and discourage expansion.
- **Skill & Tariff Mismatches:** As production becomes more tech-heavy, a "skills gap" is emerging. Simultaneously, inverted tariff structures make raw materials expensive for small manufacturers.

Lessons about job creation from Misty Milk

A recent visit to a dairy processing plant in Erode taught us more about job creation than all the TV debates on the Indian economy. Erode has been key to Tamil Nadu's economic story for decades. Business owners mentioned multiple constraints holding them back: access to credit, skills gaps, regulatory complexity, tariff structures. To understand how these constraints operate in practice, we visited the main plant of Misty Milk, a mid-sized company in western Tamil Nadu. There, we found that even when ambition, demand, and infrastructure exist, structural barriers prevent growth. Yet the visit also revealed reasons for optimism about India's employment challenge.

The constraints

Misty Milk has an impressive capital-intensive facility, with a sophisticated plant designed to handle far more milk than it receives. It is not a startup – with over ₹2,500 crore in annual turnover, it is a serious operation. It sources milk from about 2,000 dairy farmers. Yet management estimates that the plant could integrate supply from nearly 70,000 farmers without significant additional investment at the processing end. The constraint is not demand for dairy products, nor is it a lack of infrastructure. It is the limited ability of small dairy farmers to expand production because they lack access to affordable and reliable credit.

For small dairy farmers, purchasing additional cattle, ensuring consistent feed supply, investing in basic sheds, and accessing veterinary care all require upfront expenditure. Reserve Bank of India data show that small and marginal farmers, who account for over 85% of operational landholdings, receive a disproportionately small share of formal agricultural credit. The alternative remains informal borrowing at high interest rates, which raises risk and discourages investment. Misty Milk and its supplier farmers can grow together – but only if policy enables those who can create output, jobs, and income.

Salman Soz
Economist, author, and member, Indian National Congress

Anand Srinivasan
Expert in personal finance and member, Indian National Congress

The lack of access to affordable and reliable credit is one of the factors at the heart of India's job crisis

Misty Milk has ambitious growth plans, inspired by the success of giants such as Amul. Amul's cooperative network today includes roughly 3.6 million dairy farmers. Daily milk procurement is close to 35 million litres, and the Amul group's turnover has crossed ₹80,000 crore. These numbers reflect not just consumer demand or brand strength, but the power of aggregation combined with institutional support. Amul's model reduces risk for farmers by ensuring predictable procurement and facilitating access to services and finance. The lesson is not that private firms must become cooperatives. It is that without solving credit constraints at the producer level, scaling up becomes nearly impossible. Misty Milk's experience highlights how much untapped potential exists between India's small private firms and its national champions.

Looking beyond dairy, Erode's broader industrial landscape reinforces the same pattern. The district has long been a hub for small and medium enterprises (SMEs), particularly in textiles and manufacturing, built on dense clusters shaped by reinvestment, local networks, and market responsiveness. During a meeting with around 50 SME owners, there was no shortage of ideas or demand. But nearly all of them pointed to constraints that limit growth and employment. Skill shortages are emerging as production becomes more technologically demanding. Regulatory complexity and compliance costs weigh disproportionately on smaller firms. Tax uncertainty strains cash flows, while tariff structures raise input costs for manufacturers dependent on imports. Together, these constraints determine whether firms can scale and integrate into national and global value chains – the process through which jobs-intensive growth is created.

International evidence shows that SMEs account for a disproportionate share of net job creation, particularly in labour-abundant economies. The World Bank estimates that SMEs provide nearly 70% of global employment and are the primary source of new jobs in developing countries. When these firms are unable to grow, employment creation slows even if headline GDP numbers look strong. Capital-intensive investments may raise output, but they cannot absorb labour at the scale India's demographics demand.

Demographic trajectory

The urgency of addressing these constraints is heightened by India's demographic trajectory. Most projections suggest that India's working-age population advantage will begin to narrow within the next two decades. If sufficient quality jobs are not created during this period, the opportunity will be lost. Large infrastructure projects and headline investment announcements, while important, will not by themselves absorb India's labour force. Employment at scale will come from MSMEs, agro-processing, and value chains that link small producers to markets.

When SMEs are enabled to grow, they strengthen the entire economic ecosystem. Firms scale organically, smaller suppliers raise incomes sustainably, and workers find better jobs closer to home. India's growth story won't be written by its largest corporations alone – it will be written by millions of smaller enterprises, farmers, and workers who are ready to grow right now. In Erode, that readiness is already visible.

The question is not whether India can create jobs at scale. It is whether it will remove the constraints, starting with credit access, before the demographic dividend expires. We likely have two decades. The clock is ticking.

Comparative Lessons: The Amul Model

The success of Amul (₹80,000 crore turnover) is not just about milk; it is about Institutional Support and Aggregation.

- **Risk Mitigation:** By ensuring procurement and providing veterinary/financial services, Amul reduced the risk for 3.6 million farmers.
- **Lesson for Policy:** Private firms like Misty Milk don't need to become cooperatives, but they need an ecosystem that mimics this "aggregation" to allow small producers to link into larger value chains.

Strategic Significance for India

A. Employment Elasticity: Capital-intensive projects (like large factories) raise GDP but don't always absorb labor. The World Bank notes that SMEs provide 70% of global employment. In India, labor-intensive sectors like agro-processing are the only way to absorb the massive workforce.

B. The Demographic Dividend "Clock": India has a window of roughly 20 years before its working-age population begins to shrink. If the "Erode pattern" of constrained growth persists, the demographic dividend could turn into a "demographic disaster" due to underemployment.

C. Inclusive Growth & Rural Economy

Strengthening firms like Misty Milk creates a virtuous cycle:

Small producers (farmers) earn stable incomes.

Rural demand increases.

Localized jobs reduce the burden of distress migration to overpopulated cities.

Conclusion

The Misty Milk story proves that India's job crisis is not a result of a lack of ambition or infrastructure, but a failure of the credit and regulatory pipeline. For India to transition into a developed economy, the focus must shift from supporting only "National Champions" to empowering the "Millions of Small Enterprises." Job creation at scale will happen only when a small farmer in Erode can get a bank loan as easily as a large corporate house.

UPSC Prelims Exam Practice Question

Ques: With reference to the "Missing Middle" problem in the Indian economy, consider the following statements:

1. It refers to the absence of medium-sized firms capable of scaling up production and employment.

2. It is primarily caused by lack of consumer demand in rural India.

3. Credit constraints at the producer level contribute significantly to this problem.

4. It results in over-dependence on large capital-intensive firms for growth.

Which of the statements given above are correct?

(A) 1, 3 and 4

(B) 1 and 2 only

(C) 2, 3 and 4 only

(D) 1, 2, 3 and 4

Ans: A)

UPSC Mains Exam Practice Question

Ques: Using the example of Misty Milk, a dairy processor in Erode, critically examine the structural constraints that prevent Small and Medium Enterprises (SMEs) in India from scaling up and generating employment. **(250 words)**

Page 09 : GS III : Indian Economy

The January 2026 RBI Consumer Confidence Survey reveals a striking divergence in India's economic sentiment. While urban India—traditionally the engine of discretionary spending—is retreating into a shell of financial caution, rural India is emerging as a driver of aspirational demand. This "Tale of Two Consumers" suggests that psychological optimism in the hinterlands is currently outweighing the actual income stability found in cities.

Tale of two consumers: Rural aspiration vs. urban caution

The demand among rural consumers for non-essentials remains strong despite weakening sentiments in urban areas

DATA POINT

Vignesh Radhakrishnan
Devyanshi Bihani

While rural Indians began the year feeling relatively confident, their urban counterparts remained cautious, according to a reading of the Reserve Bank of India (RBI)'s consumer confidence survey. While the rural population is driving consumption beyond essentials, urban consumers remain financially conservative, despite enjoying slightly better income stability, the survey results suggest. The conclusions are based on the January 2026 round of the survey.

Tables 1 and **2** summarise the survey findings based on the net responses of participants. A net response represents the difference between the share of respondents reporting optimism and those reporting pessimism on a specific subject. Values range from +100 (maximum optimism) to -100 (maximum pessimism), with any score above zero indicating optimism and any score below zero indicating pessimism. Tables show both current perceptions (how respondents felt compared to a year ago) and expectations (what respondents expect one year ahead).

Blue arrows represent positive sentiments: an upward arrow signals improvement from the last round, a downward arrow indicates deterioration, and a double-headed arrow signifies no change. Conversely, red arrows represent negative sentiments, while their directions have the same meaning.

Urban consumers are pessimistic about the economic situation, employment opportunities, and price levels, which keeps their Consumer Confidence Index in the negative sentiment category. In contrast, while rural consumers are pessimistic about income and price levels, they are upbeat about the general economic situation and employment opportunities; consequently, their overall index is in the positive sentiment category.

The directionality of the arrows offers an interesting reading. Urban consumers are not only pessimistic about the economic situation and price levels, but their pessimism has deepened since the last round. In contrast, positive sentiment regarding the economic situation has strengthened among rural consumers, as have outlooks on employment opportunities. Table 1 indicates that rural consumers are also positive about the future, whereas Table 2 shows that urban consumers are more cautious with discretionary spending.

A higher share of net respondents in both urban and rural areas reported an increase in spending compared to a year ago. However, the true distinction lies in what they are spending on. The RBI survey distinguishes between essential and non-essential items: generally, a rise in essential spending may point towards inflationary pressure, whereas an increase in non-essential spending possibly indicates an aspiration for a better lifestyle. Notably, a significantly higher share of rural consumers reported an increase in spending on non-essential items compared to their urban counterparts.

Charts 3 and **4** illustrate the proportion of rural and urban consumers who perceived an increase/improvement or a decrease/deterioration in various factors. The difference between these two figures constitutes the net responses presented in Tables 1 and 2. Interestingly, 25.9% of rural consumers reported a decrease in current income levels compared to a year ago, while only 22.6% reported an increase, resulting in a net response of -3.3%. In contrast, 23% of urban consumers reported a decrease against 26.3% who saw an increase, yielding a net response of +3.3%. Despite this pessimistic income outlook, the share of rural consumers with increased spending on non-essential items remains notably high.

Rural-urban spending gap

The data were sourced from the Reserve Bank of India's Urban Consumer Confidence Survey and Rural Consumer Confidence Survey

TABLE 1: Summary based on **net responses** across rural consumer confidence indicators (in %)

Rural confidence indicators	Current perceptions (Nov. '25)	Current perceptions (Jan. '26)	Change	One year ahead expectations (Nov. '25)	One year ahead expectations (Jan. '26)	Change
Economic situation	7.3	7.5	▲	40.4	42	▲
Employment	4.7	5.2	▲	40.6	41.6	▲
Price level	-87.4	-89	▼	-76.7	-77.1	▼
Income	-2.2	-3.3	▼	51.7	52	▲
Spending	81.5	82	▲	86.9	88	▲
Rural Consumer Confidence Index	100.8	100.5	▼	128.6	129.3	▲

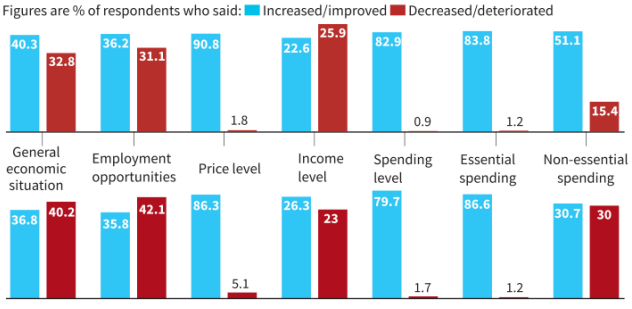
▲ Positive sentiments with a sign of improvement compared to last round
▼ Positive sentiments with a sign of deterioration compared to last round
◀▶ Positive sentiments with no change compared to last round
▲ Negative sentiments with a sign of improvement compared to last round
▼ Negative sentiments with a sign of deterioration compared to last round
◀▶ Negative sentiments with no change compared to last round

TABLE 2: Summary based on **net responses** across urban consumer confidence indicators (in %)

Urban confidence indicators	Current Perceptions (Nov. '25)	Current Perceptions (Jan. '26)	Change	One year ahead Expectations (Nov. '25)	One year ahead Expectations (Jan. '26)	Change
Economic Situation	-2.5	-3.5	▼	32.9	29.3	▼
Employment	-6.3	-6.3	◀▶	31.6	33	▲
Price Level	-78.9	-81.2	▼	-68.8	-75.2	▼
Income	3.5	3.3	▼	53.1	50.1	▼
Spending	76.1	78	▲	79.3	80	▲
Urban Consumer Confidence Index	98.4	98.1	▼	125.6	123.4	▼

CHART 3: **Rural** responses showing current perception across parameters in Jan. 2026 compared to a year ago

CHART 4: **Urban** responses showing current perception across parameters in Jan. 2026 compared to a year ago



2. Decoding the Sentiment: Urban Caution vs. Rural Aspiration

The survey uses "Net Responses" (Optimism minus Pessimism) to gauge the mood. The findings can be broken down into three critical areas:

The Confidence Gap: Urban consumers remain in the negative sentiment category (below zero), plagued by deepening pessimism regarding price levels and job security. Conversely, rural consumers have pushed their overall index into positive territory, buoyed by hope for general economic improvement.

The Income Paradox: Interestingly, urbanites actually have better income stability (Net +3.3%). Yet, they are spending less on non-essentials. Rural Indians, despite a negative income outlook (Net -3.3%), are showing a higher propensity for discretionary spending.

Spending Quality: Urban: Spending is largely driven by essentials, often a sign of "inflation-pushed" expenditure rather than choice.

Rural: High reports of spending on non-essential items, signaling an "aspirational" drive for a better lifestyle despite current financial constraints.

Why is this happening? (Strategic Insights)

Inflation Sensitivity: Urban households are more exposed to the volatile costs of services, rent, and high-end fuel, which directly impacts their "discretionary" surplus. Rural households, often insulated by self-produced food or government subsidies (Free food grains/PM-GKAY), may feel less "squeezed" by food inflation at the kitchen level.

Employment Expectations: The survey shows rural Indians are upbeat about future jobs. This could be linked to increased government capital expenditure in rural infrastructure or a shift in the labor market toward agro-processing and rural MSMEs (as seen in the "Misty Milk" case).

The "Pent-up" Aspiration: After years of lagging behind, rural markets are seeing a "catch-up" effect. Increased penetration of digital commerce and credit in rural areas is converting latent demand into actual purchases of non-essentials.

Implications for the Indian Economy

Monetary Policy: The RBI faces a challenge. If urban caution is due to high interest rates and inflation, the "hawkish" stance may continue. However, they must ensure this doesn't dampen the burgeoning rural demand.

Corporate Strategy: Fast-Moving Consumer Goods (FMCG) and automobile companies are likely to pivot their marketing and distribution focus toward Tier-2, Tier-3, and rural regions to sustain growth volumes.

Economic Stability: For India to maintain its 7%+ GDP growth, urban sentiment must recover. A "single-engine" growth (rural only) is rarely sustainable for a diversified economy like India.

Conclusion

The 2026 survey highlights that sentiment is not always a mirror of current income. Rural India's "aspirational spending" acts as a vital cushion for the economy at a time when urban centers are struggling with cost-of-living anxieties. However, for long-term

equilibrium, the government must address urban price pessimism while ensuring that rural aspiration is eventually backed by actual income growth, rather than just credit or hope.

UPSC Prelims Exam Practice Question

Ques: In the context of consumer demand analysis, an increase in essential expenditure is generally associated with:

(A) Rising disposable incomes

(B) Lifestyle upgradation

(C) Inflationary pressures

(D) Declining savings rate

Ans: (C)

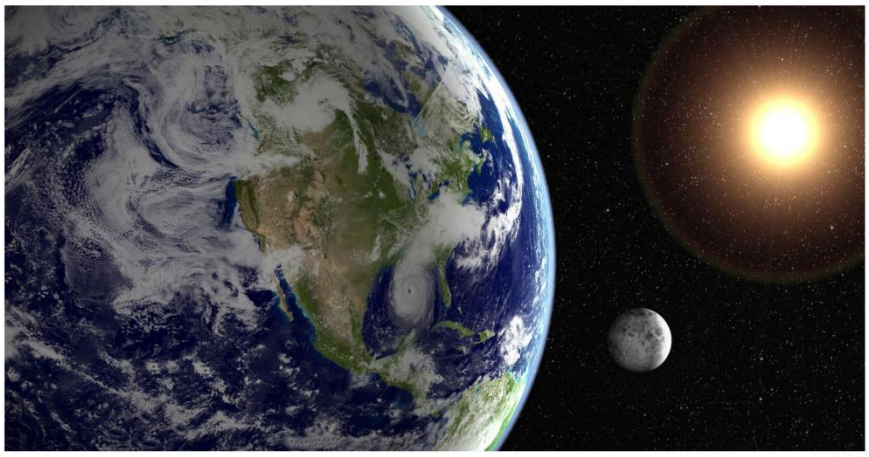
UPSC Mains Exam Practice Question

Ques: Discuss how sustained urban consumer pessimism can affect private investment, employment generation, and monetary policy transmission in India. **(150 Words)**

Page 11 : GS III : Science & Technology

The article reflects on the silent, powerful force of gravity that not only keeps life "grounded" on Earth but also acts as the cosmic engine for our planet's 107,000 km/h journey around the Sun. It highlights the transition from Newton's classical observations to the modern understanding of the vacuum of space, paying tribute to Indian legends like Prof. Jayant Narlikar.

BUILDING BLOCKS



GETTY IMAGES

On gravity's role in the earth's journey through space

Revisiting the significance of gravity as it keeps mankind grounded and enables earth's rapid movement through space at 1,07,000 kilometres per hour, emphasising the remarkable journey of life amidst the vast mysteries of the universe

Adhip Agarwala

A fresh year has just started, and we are already a month old. Year endings and startings are always occasions to ponder. Here in IIT Kanpur, where some of us teach, the first week of January is always hectic. A new semester just started, students are back after winter breaks, and people are rushing through foggy mornings towards their classes.

As people meet on the way, we invariably greet each other "Happy new year". However, if you belong to that category of people, who have felt that last year wasn't really that remarkable, let me try to convince you otherwise. The secret, as always, lies in the physics behind.

The discovery of gravity

As the common folklore states, Issac Newton, about 400 years back, discovered gravity while sitting beneath an apple tree. That things attract each other just because they have some weight is quite extraordinary. And we see this everyday – when we fall, we fall towards the floor and not towards someone else (unless, of course you are falling in love). This is because, on earth, the heaviest thing around us is the earth itself.

In fact all of us, animals, humans, oceans and even our air is essentially stuck to this massive piece of toffee-like liquid filled rock which we call earth. All life, our leaders, their wars, are essentially the result of this cohabitation – the result of gravity.

But then, when two things attract because of gravity, it's not necessary for them to get stuck to each other. A thing attracted to another may decide to just revolve around it. In the language of physics, we say this is when the gravitational pull acts as the centripetal force. Centripetal force is a force which acts towards a centre.

Roller coaster

That pulling something towards you can rotate it is not something unusual. For instance, imagine you are tying a strong rope to the seat of a kid riding a bicycle and try to pull the cycle towards you. As you pull, instead of the cycle coming directly at you, it will make the cycle circle around you. If you continue to do so, the cycle may make a full turn. Here your pull acts like a centripetal force. And this is what the earth does to the moon through gravitational pull. The moon is attracted by the gravitational force of earth, but it makes the moon revolve around us. This very behaviour is repeated by the earth and the sun.

The earth takes one whole year to make a complete revolution around the sun. Can you guess how much distance the earth travels in that one year? It's about 1,000,000,000 kilometres. If one travels from Delhi to Chennai – that's about 2,500 kms. And if one plans to travel via car and drive it at a high speed of 100 km per hour (all the time, with no breaks and no toll booth stops), it will take approximately a day. Now imagine travelling that same distance, 4,00,000 times. How much time would you take? About 1,000 years.

Well, earth covers it in just 365 days, that is one year. The earth moves at an extraordinary speed of 1,07,000 kilometres per hour. No roller coaster can ride you at such high speeds.

But who or what is fuelling the earth to continue on this speed? After all, even to maintain a car at 100kms/hr, one needs to keep supplying it with oil (one of the reasons why many countries are obsessed with oil).

Friction and aether

The reason one needs to supply oil to our car even to maintain it at some speed is because the road has friction. If we just leave the car on its own at some speed, it will eventually come to a stand-still. This friction is caused by the surroundings which pushes back a bit to anything which tries to move due to other forces. For instance, a car may feel it from the road, a bird by the air, a fish by the water it is in.

But then what about earth? Are planets or even the sun moving in some liquid?

This was a question which puzzled scientists for a long time. While we now know that the earth lies in vacuum – which means essentially nothing – at some point people thought that the earth and all celestial objects are in an invisible material called "aether". Michelson and Morley, two American scientists, did an experiment 140 years back (in 1887) trying to detect aether. The result is considered one of the most famous "failed" experiments: experiments which disprove something it was designed to prove. They showed that aether doesn't exist.

The earth thus continues to move at this extraordinary speed without anything to resist it or slow it down. And as it does, it continues to rotate around the sun.

The advent of space study

The study of planets, galaxies and the way they form is called astrophysics. One of the most celebrated Indian physicists working in this area was Prof. Jayant Narlikar who passed away last year. Apart from being a researcher, he wrote many science stories. He also became the founding director of the Inter-University Centre for Astronomy and Astrophysics (IUCAA) in Pune, an institute dedicated to astrophysics research in India and was awarded the Padma Vibhushan in 2004 by the Government of India.

Apart from being a cosmologist who came up with theories of how the universe came along, he also did experiments to disprove many of our superstitions which arise from celestial events. If you have a free weekend, and want to learn more about astrophysics and our everyday unscientific superstitions, consider watching "Brahmand" a TV series which was written by Prof. Narlikar which ran in Doordarshan between 1994-95. The episodes are now available on the YouTube channel of Doordarshan National.

One may still wonder how did scientists really disprove the existence of aether? You may also wonder if we are able to explain all the things we see in the night sky – the stars, how they form, how they die. Well, it turns out there are many things we still don't understand and if you are interested to learn more, you will need to learn physics, for example in an institute like ours, where there are undergraduate programmes in it.

Next time, on a serene morning, if you are staring at a water pond, as birds chirp next to you, wondering how calm everything around you is, imagine for a second how you are really on a rollercoaster traveling in space at an extraordinary speed.

And when this year ends; even if your regular earthly life has been ordinary, don't forget to congratulate yourself, and your fellow life forms on earth, on the extraordinary space travel you all have together completed.

Adhip Agarwala is an assistant professor of physics at IIT Kanpur.

Gravity as a Centripetal Force

A central theme is that gravity does more than just make things fall; it dictates the **geometry of motion** in the universe.

The Balancing Act: When an object (like Earth) has a high forward velocity, gravity doesn't pull it into the Sun. Instead, it pulls it toward the center, causing the path to curve into an orbit.

Physics Principle: In celestial mechanics, the **Gravitational Pull** (F_g) provides the necessary **Centripetal Force** (F_c) required for circular or elliptical motion.

The Tetherball Analogy: Just as a rope keeps a tetherball circling a pole, gravity acts as the "invisible rope" keeping Earth from flying off into the dark vacuum of space.

The Speed and the Fuel (Vacuum vs. Friction)

The article addresses a common mystery: Why doesn't Earth slow down?

1,07,000 km/h: This is Earth's orbital velocity. To cover 1 billion kilometers in a year, the planet moves at a speed nearly 1,000 times faster than a highway car.

The Absence of Aether: Early scientists believed space was filled with a substance called "aether" that might cause friction.

The Michelson-Morley Experiment (1887): This pivotal "failed" experiment proved that aether does not exist. Since space is a **vacuum**, there is no friction to slow the Earth down, allowing it to maintain its incredible speed without any "fuel."

Contributions to Indian Astrophysics

The article honors **Prof. Jayant Narlikar**, a towering figure in Indian science:

Academic Legacy: Founding Director of **IUCAA** (Pune).

Scientific Temper: Through his series Brahmand, he worked to dismantle superstitions related to celestial events (e.g., eclipses), promoting a rational, scientific outlook—a Fundamental Duty under the Indian Constitution (Article 51A).

Conclusion

Gravity is the ultimate architect of our existence. It provides the stability required for life to evolve while simultaneously facilitating a high-speed cosmic voyage. As Prof. Agarwala notes, understanding this "rollercoaster" allows us to appreciate the extraordinary nature of our "ordinary" lives. For a civil servant, this perspective fosters both scientific curiosity and a sense of stewardship for the "toffee-like liquid filled rock" we call home.

UPSC Prelims Exam Practice Question

Ques: The Earth revolves around the Sun at a speed of approximately 1,07,000 km/hour primarily because:

(A) Continuous energy is supplied by the Sun

(B) Absence of gravitational force in space

(C) Absence of frictional resistance in vacuum

(D) Presence of aether in interplanetary space

Ans: (C)

UPSC Mains Exam Practice Question

Ques: Explain the role of gravity in enabling stable orbital motion of celestial bodies. How does the absence of friction in space allow planets like Earth to move at extremely high speeds without continuous energy input? **(150 Words)**

A chance for India to polish the Kimberley Process

Himanshu Jaiswal

is Research Fellow at Infisum Modeling

Badri Narayanan

is the Founder and Director of Infisum Modeling

As chair of the Kimberley Process for 2026, India can steer meaningful reforms in global diamond governance

India has assumed the chair of the Kimberley Process (KP) for the year 2026. The KP is a multinational mechanism or structure for governing the trade of 'conflict diamonds' – the rough (or pre-polished) diamonds which are used illegally by rebel or insurgent groups across the world to undermine or threaten legitimate governments. The KP was initiated in May 2000 when the countries of southern Africa initiated dialogues to prevent the trade in conflict diamonds. Negotiations with 37 signatory parties, in 2003, led to the Kimberley Process Certification Scheme (KPCS). Today, the KP has 60 participants, representing 86 countries, and accounts for approximately 99.8% of the global rough diamond production.

The current structure

The KPCS is the mechanism to prevent the trade of conflict diamonds, which is enforced individually by KP participant countries to ensure that rough diamonds in the legitimate supply chain are KP-compliant. Each consignment is accompanied by a KP certificate corroborated by a participant country. The rough diamonds trade is permitted only between certified KP members who comply fully with these international standards. Additionally, participant countries are obliged to share timely and accurate statistical data for diamond production and trade.

Angola, Botswana, Canada, Congo, Namibia and Russia alone account for more than 85% of the production of rough diamonds, in quantity and value terms. Though India is not a producer, it is a major importer of rough diamonds, importing roughly 40% of the total global imports, both in quantity and value. As the world's leading cutting and polishing hub, centered in Surat and Mumbai, India re-exports polished diamonds to major markets which include China, Hong Kong, Israel, the United Arab Emirates and the United States. India's strategic position, at the heart of the global diamond value chain, gives it unique leverage within the KP to steer meaningful reforms in global diamond governance.

The core issues for India

The KP, a tripartite setup of governments, industry organisations and civil society, faces much criticism and challenges. First, a long-standing criticism is about the definition of 'conflict diamonds'. Its scope is very narrow, capturing only the financial mechanism between rebel groups and governments, while ignoring the illicit use of rough diamonds in state-linked abuses, human rights violations and human trafficking, environmental harm, abuses in artisanal mining, and illicit trade channels.

There are also fundamental questions about the decision-making process. Civil society asks how the KP can ever identify 'conflict diamonds' if any such decision is subject to political veto. Under the current system, any determination can be blocked. What happens when the KP identifies conflict diamonds?

The case of the Central African Republic, which was banned from exporting rough diamonds in 2013 and rejoined in 2024, shows that embargoes without strong support measures tend to increase smuggling and worsen violence rather than stop it. Additionally, while many governments highlighted the need to protect the mining communities, there was less agreement on whether the KP should also address state-related violence. A more inclusive approach would better reflect the full range of challenges communities experience.

Going forward, India may broaden the agenda, without reopening political fights, by forming a technical working group on violence and human rights risks beyond rebel insurgencies. The findings/recommendations from this group may build a consensus before any re-definition of conflict diamonds.

India can leverage its technological strengths to promote digital, tamper-proof KP certificates and harmonised customs data exchange. A blockchain-based certification system, where each shipment carries a unique, immutable and time-stamped digital record linked to key shipment details, would significantly reduce fraud, enhance transparency, and modernise KP operations.

At the same time, India can support producer countries by establishing regional KP technical hubs in key producing areas, particularly in central and eastern Africa, offering training, IT support, certification assistance and forensic capacity. Such capacity-building would make reforms more feasible and collaborative rather than punitive.

Additionally, India can advance institutional reforms by adopting independent or third-party audits in a subset of participants and push for full public release of granular KP statistics from participant countries. This is a step towards greater transparency. Since the KP's strength is its tripartite structure, India can ensure that civil society engagement remains robust by facilitating open communication channels.

Focus on Africa

To address the community challenges, India can highlight how diamonds contribute to livelihoods in Africa. It can push the KP to explicitly acknowledge this reality by aligning its work with relevant Sustainable Development Goals, such as decent work, poverty reduction and responsible consumption. India can help ensure that the KP framework channels diamond revenues toward community development, supporting health, education, and local infrastructure, rather than allowing mining regions to be bypassed. This would help shift the KP's narrative from blocking bad diamonds to enabling a responsible and inclusive diamond trade.

India, as the KP chair and the leader of the Global South, should start pursuing the reform agenda more aggressively to make it a more inclusive, progressive, sustainable, and rule-based multilateral body.

GS Paper II : International Relations

UPSC Mains Practice Question: India assumed the Chairpersonship of the Kimberley Process in 2026. Discuss the global governance challenges faced by the Kimberley Process and evaluate India's proposed reform agenda. **(250 Words)**

Context :

In January 2026, India officially assumed the Chairpersonship of the Kimberley Process (KP) for the third time. The KP is a unique tripartite multilateral mechanism involving governments, the diamond industry, and civil society. Its primary mandate is to administer the Kimberley Process Certification Scheme (KPCS), which prevents "conflict diamonds"—rough stones used by rebel movements to finance wars against legitimate governments—from entering the global market.

India's Strategic Leverage

While India is not a major producer, it sits at the "heart" of the global diamond value chain:

Cutting & Polishing Giant: India processes approximately 90% of the world's diamonds, centered in hubs like Surat and Mumbai.

Market Influence: India imports nearly 40% of the global rough diamond supply, giving it immense "buyer's leverage" to demand higher ethical standards from producer nations.

Key Challenges & The "Reform Agenda"

The KP has faced criticism for becoming stagnant. India's 2026 chair serves as a "polishing" opportunity to address several structural flaws:

Broadening the Definition: Currently, "conflict diamonds" only include stones used by *rebels*. It ignores state-sponsored violence, human rights abuses by private security, or environmental damage.

The Veto Problem: The KP operates on consensus, meaning any single participant can block an embargo or a reform, leading to institutional inertia.

Smuggling & Transparency: As seen in the Central African Republic, embargoes often drive trade underground rather than stopping it.

India's Proposed Roadmap for 2026

As the leader of the Global South, India is pushing for a more inclusive and technologically advanced KP:

Digitalization: Leveraging India's IT prowess to introduce Blockchain-based, tamper-proof certificates. This replaces paper trails with immutable digital records, making smuggling nearly impossible to hide.

Technical Hubs in Africa: Instead of punitive measures, India proposes setting up KP Technical Hubs in Africa (Central and Eastern regions) to provide forensic capacity and IT training to small producers.

Alignment with SDGs: India aims to shift the narrative from "blocking bad diamonds" to "enabling responsible trade" by linking diamond revenues to Sustainable Development Goals (SDGs) like poverty reduction and local infrastructure in mining communities.

Independent Audits: Promoting third-party audits and the public release of granular trade data to enhance global trust.

Significance

Aspect	Significance
Ethical Trade	Demonstrates India's commitment to "Integrity in Trade" (rebranding India as an ethical manufacturing hub).
Soft Power	India's role as a mediator between African producers and Western consumers solidifies its

Aspect	Significance
	"Voice of the Global South" status.
Economy	Ensuring a "conflict-free" tag is vital for the survival of the Indian diamond industry amidst rising global demand for ethical sourcing.

Conclusion

India's chairpersonship of the Kimberley Process in 2026 is a critical moment for the global diamond trade. By moving the needle on the definition of "conflict" and integrating modern technology like blockchain, India can transform the KP from a "ritual box-ticking exercise" into a robust, 21st-century governance model. For India, a "clean" diamond industry is not just a moral choice; it is an economic imperative to secure its $20 billion export sector.