



**UPSC
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DAILY CURRENT AFFAIRS

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SOURCES



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Geography

Why is Delhi's air quality deteriorating? | Explained

Why in News?

Factors like stubble burning and urban vehicle emissions worsen Delhi's winter air quality. A coordinated approach is crucial to effectively combat the air pollution crisis.

Overview

With the onset of winter and the withdrawal of the southwest monsoon, Delhi's air quality sharply declines, primarily due to a mix of local and external pollution sources.

Key contributors include stubble burning in neighbouring states and urban emissions from vehicles and industries.

Addressing Delhi's pollution requires a multi-state coordinated response and long-term solutions.

Contributors to Delhi's Air Pollution

Pollution Source	Contribution to PM2.5	Description
Stubble Burning	15-35% (seasonal high in Oct-Nov)	Burning of paddy stubble in Punjab and Haryana contributes significantly, especially when wind flows towards Delhi.
Urban Emissions (Vehicles)	17-18%	Includes emissions from vehicles within Delhi and those transiting through.
Secondary Inorganic Aerosols (SIA)	32% (84% originates outside Delhi)	Pollutants from sources like sulphur dioxide, nitrogen oxides, and ammonia react to form harmful compounds.
Biomass Burning	24%	Combustion of organic materials contributes to Delhi's pollution load.

Way Forward:

To improve Delhi's air quality, a multi-faceted strategy is essential.

This includes:

- Coordinated Multi-State Action:** States should collaborate on stubble burning regulations and share best practices to minimise agricultural burning impacts.
- Strengthening Urban Emission Controls:** Implement stricter vehicle emission standards and promote public transportation and electric vehicles to reduce urban emissions.
- Enhancing Air Quality Monitoring:** Expand real-time air quality monitoring networks to provide accurate data, enabling timely interventions during pollution spikes.
- Public Awareness Campaigns:** Educate the public about pollution sources and promote practices like reducing biomass burning and responsible vehicle use.
- Investing in Green Technologies:** Encourage the adoption of clean technologies in industries and promote sustainable agricultural practices to reduce dependence on stubble burning.
- Long-Term Policy Frameworks:** Develop comprehensive policies that address both immediate and long-term air quality challenges, integrating health, environmental, and economic considerations.

Conclusion

Delhi's air pollution crisis is a complex issue, driven by both local sources and external factors. Winter's meteorological conditions trap pollutants close to the surface, necessitating collaborative state actions.

Question: Discuss the seasonal and anthropogenic factors contributing to air pollution in Delhi and the NCR region.

Source: [The Hindu](#)



Polity

Rural Development Ministry defends Aadhaar-based wage payment

Why in News?

The Ministry stated that Aadhaar-based wage payments in MGNREGA enhance transparency, refuting claims linking it to worker deletions from the program.

Context

The Union Rural Development Ministry issued a statement defending the implementation of the Aadhaar-Based Payment System (ABPS) for wage payments under the Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS).

This comes amid reports highlighting a significant deletion of workers from the program since the introduction of ABPS.

Aim of Government to initiate ABPS

- To provide a robust, secure, and efficient payment mechanism using Aadhaar for authentication, especially in rural and semi-urban areas.
- To enhance financial inclusion by providing access to banking services and government welfare schemes

How ABPS Works:

- Users authenticate transactions through their Aadhaar numbers linked to their bank accounts.
- Payment can be made via various channels such as point-of-sale (POS) devices, mobile applications, and biometric authentication.

Benefits of ABPS

- **Financial Inclusion:** ABPS enables unbanked populations to access financial services using Aadhaar as a single identity.
- **Cost-Effective:** Reduces transaction costs for banks and service providers, promoting affordable banking solutions.
- **Direct Benefit Transfer (DBT):** Facilitates seamless transfer of subsidies and benefits directly to beneficiaries, minimising leakages.

Challenges to introduce

- **Privacy and Data Security:** Concerns regarding the protection of personal data and potential misuse of Aadhaar information.
- **Technological Infrastructure:** Requires robust internet connectivity and

technical infrastructure, which may be lacking in rural areas.

- **Awareness and Literacy:** Many beneficiaries lack awareness about the system and digital literacy to utilize it effectively.

Ministry's Justifications on ABPS

- **Transparency and Efficiency:** The Ministry states that ABPS enhances transparency by directly crediting wages to workers' bank accounts, thereby minimising bureaucratic layers and delays.
- **Targeting and Inclusion:** The system is designed to better target beneficiaries, curb leakages, and ensure greater accountability in fund utilisation.

Concerns Raised

Despite the Ministry's defence, a report by Lib Tech, a consortium of activists and academics, highlighted alarming trends:

- **Worker Deletions:** From January to September 2024, 84.8 lakh workers were removed from MGNREGS, while only 45.4 lakh new workers were added, resulting in a net deletion of 39.3 lakh workers.
- **Misconceptions:** The Ministry refuted claims that non-ABPS-enabled accounts prevent workers from registering for jobs or receiving wages, emphasising that job card verification is a continuous process facilitated by Aadhaar for de-duplication.

Conclusion

The Rural Development Ministry maintains that the ABPS is a crucial reform for improving the efficiency and accountability of wage payments under MGNREGS. However, concerns regarding the deletion of workers and its implications for rural employment remain significant issues that need further scrutiny and public discussion.

Question : Analyse the relationship between the introduction of technology in welfare programs and its impact on beneficiaries in rural India.

Source : [The Hindu](#)



Science

Sustainability science for FMCGs

Why in News?

FMCGs should be a priority target sector for ANRF, the new public-private partnership initiative, and the BioE3 policy of the government

Overview

With rising environmental challenges, India's public-private partnerships (PPP) in research, such as the Anusandhan National Research Foundation (ANRF) and the BioE3 Policy (Biotechnology for Economy, Environment, and Employment), aim to foster a bioeconomy. This approach emphasises sustainable practices in Fast-Moving Consumer Goods (FMCGs) and seeks to align with India's climate commitments.

Components of the Initiative

Component	Description
ANRF	Public-Private Partnership supporting R&D for sustainable practices across industries.
BioE3 Policy	Focuses on converting chemical-based industries into bio-based ones and promotes sustainable bio-technology.
National Mission on Edible Oils (NMEO)	Targets increasing sustainable palm oil production to reduce dependence on imports and minimize ecological damage.

FMCGs and the Challenge of Palm Oil

The soap industry exemplifies the sustainability issues in FMCGs, particularly in relation to palm oil, a major ingredient with severe environmental impacts:

- **Palm Oil Impact:** Accounts for 40% of global vegetable oil demand, with plantations primarily in Southeast Asia, leading to deforestation.

• Innovative Substitutes

- **Synthetic Biotechnology:** Produces artificial fatty acids for soap structuring, potentially reducing palm oil usage.
- **Local Bio-Based Materials:** Plant-based polysaccharides could partially replace palm oil without compromising product quality.

Policy Recommendations

- **Local Sustainable Palm Oil Production:** Through the National Mission on Edible Oils-Oil Palm (NMEO-OP) launched in 2021, aiming for 10 lakh ha production by 2025-26.
- **Regulatory Reforms:** Encourage horizontal performance-based standards over vertical material content standards, improving consumer awareness and eco-friendly practices.
- **Fiscal and Regulatory Support:** For FMCGs adopting sustainable practices, including fiscal incentives and revised grading standards.

Conclusion

- The combined efforts of the ANRF, BioE3 policy, and sustainable agriculture initiatives like NMEO-OP represent a shift toward an eco-friendly bioeconomy.
- Through robust PPPs, regulatory changes, and targeted incentives, India's FMCG sector can lead sustainable innovation, aligning with the country's climate commitments and economic goals.

Question : Discuss the role of public-private partnerships in promoting sustainable industrial practices in India's FMCG sector.

Source : [The Hindu](#)



New rocket, plus moon and Venus missions, herald new beginnings

Why in News?

'India in Space' is a monthly column collecting and analysing developments in the country's space, spaceflight, and allied sectors

Overview

India's space program is poised for significant advancements with the recent approval of multiple projects, including a new rocket, missions to the Moon and Venus, and the launch of notable satellites like NISAR and Proba-3.

Mission to be accomplish

Mission	Objective	Launch Date	Highlights
Bharatiya Antariksh Station 1	India's first space station	2028	Includes four technology-testing missions for future human space missions
Next Generation Launch Vehicle (NGLV)	New launch vehicle with enhanced payload capacity	2034-35	First three development flights to be in partnership with private industry
Venus Orbiter Mission	Study Venus' atmosphere and surface evolution	March 2028	Scientific insights into planetary evolution
Chandrayaan-4	Lunar sample-return mission	2027	Sample collection to study Moon's geology
LUPEX (Lunar Polar Exploration Mission)	Joint mission with Japan to explore lunar poles	2025	Development of an advanced moon lander

Major Space Initiatives and Collaborations

- Gaganyaan Missions:** The Union Cabinet approved an additional uncrewed mission, bringing the total number of Gaganyaan missions to three. Additional funding will further enhance ISRO's human spaceflight capabilities.

- Space Based Surveillance (SBS) Phase 3:** With a budget of Rs 26,968 crore, the third phase will enhance India's surveillance capabilities, deploying 52 satellites from both ISRO and private sector players.



3. **Axiom-4 Mission:** Indian astronaut Sudhanshu Shukla's participation in Axiom-4, a private mission to the ISS,
4. **NISAR and Proba-3 Satellites:** The NASA-ISRO Synthetic Aperture Radar (NISAR) satellite and European Proba-3 mission reflect India's international collaborations in space science, with objectives spanning from earth observation to solar corona studies.

marks a significant milestone in India's human spaceflight capabilities.

Ananth Technologies	Space Docking Experiment (SpaDEX)	Assembly, integration, and testing of docking satellites for ISRO
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Recent Technological Contributions by Private Sector

Company	Project	Technology/Innovation
Manastu Space	LEAP-3 Mission	Hydrogen-peroxide-based green propulsion technology
Bellatrix Aerospace	Project 200	Ultra-low Earth orbit satellite prototype

Conclusion

India's strategic investments in space exploration signal a commitment to expanding its capabilities, fostering international collaborations, and enhancing technological advancements.

The synergy between public and private sectors will be crucial for achieving ambitious goals in the coming years.

Question : Evaluate India's approach to self-reliance in space technology. How is ISRO fostering collaboration with the private sector to achieve this goal?

Source: [The Hindu](#)

How tardigrades are able to resist high levels of radiation

Why in News?

The findings could one day be harnessed to help protect astronauts from radiation during space missions, clean up nuclear pollution or improve cancer treatment, according to a report in Nature.

Introduction

Tardigrades, microscopic organisms known for their resilience, have been found to possess unique genetic mechanisms that enable them to withstand extreme levels of radiation.

This discovery could have significant implications for space exploration, nuclear waste management, and cancer treatment.



Characteristic	Details
Species Name	<i>Hypsibius henanensis</i>
Genomic Composition	14,701 genes; 30% unique to tardigrades
Key Proteins	TRID1 (for DNA repair)
Antioxidant Production	Betalains (to mitigate reactive oxygen species generated by radiation)
Research Implications	Potential applications in protecting astronauts and improving cancer treatment

Study Methodology

1. Discovery and Analysis:

- The species was discovered six years ago from moss samples collected in Funiu Mountain, Henan province, China.
- Scientists sequenced its genome and analyzed its responses to gamma radiation.

2. Radiation Exposure:

- Tardigrades were subjected to radiation doses significantly higher than what humans can tolerate.

Genetic Mechanisms of Resistance

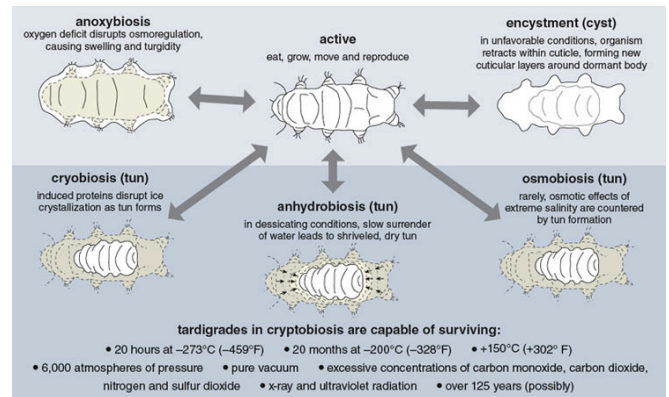
The study identified 2,801 genes associated with DNA repair mechanisms in *Hypsibius henanensis*.

Three critical factors were highlighted:

- Rapid DNA Repair:** The organism's capability to repair double-strand breaks in DNA, aided by the protein TRID1.
- Mitochondrial Synthesis:** Activation of genes that produce proteins crucial for

mitochondrial function, which also supports DNA repair.

- Antioxidant Production:** Production of betalains, which neutralize harmful reactive chemicals generated by radiation exposure.



Potential Applications

The findings suggest various applications for human benefit:

- Astronaut Protection:** Enhancing the resilience of human cells against space radiation.
- Nuclear Cleanup:** Developing strategies for bioremediation in nuclear-affected areas.
- Cancer Treatment:** Improving the efficacy of radiation therapy for patients.

Conclusion

- The research on tardigrades opens up new avenues in biotechnology and medicine, particularly in the fields of space exploration and health sciences.
- Understanding how these organisms survive extreme conditions may lead to innovative solutions for human challenges.

Question : Discuss the significance of tardigrade research in the context of space exploration and cancer therapy. How can such biological studies contribute to technological advancements?

Source : [The Indian Express](https://www.thehindu.com/news/international/tardigrades-discovered-in-moss-samples/article17441441.html)



Spain PM Pedro Sanchez reaches today for inaugural of India's first pvt facility for military aircraft

Why in News?

The Vadodara facility is India's first private military transport aircraft production plant, a partnership between Tata Advanced System Limited (TASL) and Airbus Defence and Space (Airbus DS).

Introduction

Spanish Prime Minister Pedro Sanchez arrived in Vadodara, India, for the inauguration of the **Final Assembly Line (FAL)** plant dedicated to the **C295 medium-lift tactical transport aircraft**.

This facility marks a significant milestone as it is **India's first private military transport aircraft** production plant, established through a collaboration between **Tata Advanced**

Systems Limited (TASL) and Airbus Defence and Space (Airbus DS).

The establishment of the Vadodara facility is part of India's "Make in India" initiative aimed at enhancing self-reliance in defence manufacturing. The C295 aircraft, known for its versatility and capability to operate from short or unprepared airstrips, will significantly bolster the IAF's operational readiness.

Objectives of the Visit:

- **Bilateral Talks:** Discuss various aspects of India-Spain relations, focusing on defence, trade, investment, renewable energy, and cultural collaboration.
- **Official Engagements:** Sanchez will participate in events such as the 4th Spain-India Forum, fostering connections between the media and entertainment sectors of both countries.

Conclusion:

- This collaboration signifies a substantial leap in India's defence manufacturing capabilities and reflects the growing strategic partnership between India and Spain.
- The establishment of the C295 production facility aligns with India's broader goals of enhancing indigenous defence production and creating a sustainable industrial ecosystem.

Question : Discuss the significance of the C295 aircraft translocation project in the context of India's defence self-reliance.

Source : [The Indian Express](#)



**C295 Aircraft:
Versatile Tactical Transport**

Missions: Carrying troops and cargo, Maritime patrol, Airborne warning, Surveillance and reconnaissance, Armed close air support, Medical evacuation, VIP transport, Airborne firefighting.

Payload Capacity: Up to 9 tonnes or 71 personnel.

Maximum Cruise Speed: 260 knots.

Air-to-Air Refuelling: Compatible with fixed-wing aircraft and helicopters.

Engines: Powered by two Pratt & Whitney turboprop engines.

Altitude Range: Cruises at altitudes of up to 30,000 feet.

Versatility: Swift takeoff and landing on unpaved, soft, sandy, or grassy airstrips.

Reliability: Over 500,000 flight hours in various operational contexts.



Economy

New investments see a boom in second quarter

Why in News?

Government capex recovers from a lull in the first quarter; overall investments jump 42.5% in the second quarter of 2024-25 to ₹9.21 lakh crore; private investors also step up, at a slower pace

Overview

In the second quarter (Q2) of the 2024-25 fiscal year, India experienced a significant resurgence in investment activity.

Government capital expenditure (capex) rebounded from a slowdown in the first quarter (Q1), and private sector investments grew, although at a more moderate pace.

Overall, investment announcements jumped by 42.5% in Q2 compared to Q1, reaching ₹9.21 lakh crore.

This resurgence is expected to have long-term benefits for economic growth and employment generation in India.

Government vs. Private Investments

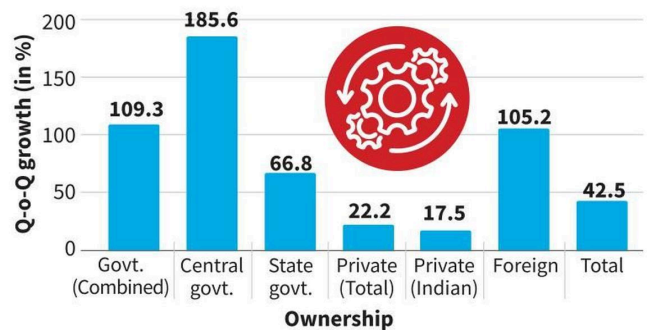
- Government Investments:** The central and state governments increased their capex, addressing the investment lull in Q1 caused by the election code of conduct. Notably:
 - State Government Capex:** Rose by 67% to ₹1.62 lakh crore.
 - Central Government Capex:** Recorded an impressive 185.6% increase, reaching ₹1.54 lakh crore.
- Private Investments:** While private sector growth was more subdued at 22.2%, it accounted for 66% of total investments.
 - Domestic Private Capital:** Saw a 17.5% increase, contributing ₹5.51 lakh crore.
 - Foreign Direct Investment (FDI):** Foreign investors doubled their planned investments from Q1 to Q2, reaching ₹54,519 crore.

State-Wise Investment Distribution

- Maharashtra led with investments of ₹2.81 lakh crore.
- Gujarat secured the second position, attracting ₹1.39 lakh crore.
- Karnataka and Tamil Nadu followed, with ₹97,740 crore and ₹46,662 crore respectively.
- Jammu and Kashmir, entering the top 10 list for the first time, attracted ₹18,592 crore in new investments.

Govt. capex rebounds in Q2

While new project investments have increased by 42.5% in Q2 FY25 compared with the previous quarter, investments by the Centre have tripled and exceeded ₹1.5 trillion in the period



Sectoral Investment Insights

While **mining investments dropped by 18.1%**, other sectors saw substantial growth:

- Manufacturing:** Investment rose by 79%, totaling over ₹2.22 lakh crore.
- Infrastructure:** Increased by 45%, reaching around ₹4.17 lakh crore.
- Electricity and Irrigation:** Grew by 24.2% and 24.7%, respectively.

Conclusion

Investment growth in Q2 FY 2024-25 reflects a recovering economy and investor confidence, with government capital expenditure boosting employment and supporting long-term economic growth.

Question : Analyse the recent surge in investment in India, comparing government and private sector roles. Discuss the potential impact on economic growth and job creation.

Source : [The Hindu](#)



The private sector holds the key to India's e-bus push

Why in News?

If there is to be scale in the electric bus market in India, private sector participation is critical

Introduction

The Indian government's PM Electric Drive Revolution in Innovative Vehicle Enhancement (PM E-DRIVE) scheme has allocated significant funds toward achieving climate goals by expanding electric vehicles (EVs) in public transportation.

However, the subsidy framework currently excludes private bus operators, which limits the scalability of electric mobility in India.

Given that private buses constitute a significant portion of India's public transport, their involvement is critical for achieving nationwide EV adoption.

PM E-DRIVE

This scheme is a government initiative aiming to accelerate the adoption of electric vehicles (EVs) in India. It supports innovation and manufacturing in EV technologies, contributing to reduced pollution and the shift toward clean energy.

- **Objective:** To promote electric mobility, reduce greenhouse gas emissions, and make India a global EV manufacturing hub.
- **Incentives:** Offers subsidies for EV manufacturing, R&D, and infrastructure, such as charging stations.
- **Focus Areas:** Encourages production of efficient batteries, electric motors, and critical EV components.
- **Targeted Beneficiaries:** Automotive manufacturers, startups in EV technology, and infrastructure providers.
- **Environmental Impact:** Expected reduction in fossil fuel dependency, lower emissions, and improved air quality.

The PM E-DRIVE scheme aligns with India's commitment to achieving carbon neutrality by 2070, fostering an eco-friendly transition in the transportation sector.

Challenges Facing Private Sector EV Bus Deployment

1. **High Financial Barriers :** High upfront costs and uncertain resale values for EV buses impact financing options.
2. **Limited Charging Infrastructure :** FAME-funded facilities are restricted to State transport depots, making

investment prohibitive for small private operators.

3. **Unstable Power Supply :** Grid limitations and power outages add to operational challenges, particularly in intercity routes.

Potential Solutions

1. **Financial Incentives:** Subsidised interest rates, extended loan periods, and credit guarantees could make electric buses more accessible.
2. **Shared Charging Infrastructure:** Shared facilities on high-traffic corridors can reduce individual investment burdens.
3. **Battery-as-a-Service (BaaS):** Separating battery ownership from vehicle ownership, as in China and Kenya, could alleviate high upfront costs.

Emerging Business Models for EV Expansion

- The Battery-as-a-Service (BaaS) model offers a way forward by separating battery ownership from vehicle ownership.
- This setup allows operators to lease batteries, lowering initial investment requirements.
- Additionally, shared charging stations along high-traffic intercity routes could be structured under design-build-operate-transfer (DBOT) models, which would further support scalability and sustainability for private sector involvement.

Conclusion

Evolving policies to involve the private sector is essential for accelerating EV adoption, particularly electric buses, through financing, infrastructure, and innovative business models for sustainability.

Question : Discuss the role of the private sector in India's electric vehicle expansion and identify the barriers it faces in adopting electric buses.

Source : [The Hindu](#)



Environment

Tigress from Maharashtra brought to improve gene pool amid worries over ‘inbred’ tigers in Odisha’s Similipal reserve

Why in News?

The Odisha Tiger Estimation conducted this year found that out of the total 24 adult tigers in Similipal, 13 are pseudo-melanistic. Also, 10 of the 24 are males and 14 are females.

Context

The translocation project aims to improve the gene pool of tigers in Odisha's Similipal Tiger Reserve (STR) due to concerns about inbreeding among the existing population of melanistic tigers.

Translocation Origin : Tadoba-Andhari Tiger Reserve, Maharashtra

Similipal Tiger Reserve (STR)

- Located in Mayurbhanj district in Odisha, near the borders of Jharkhand and West Bengal.
- STR is part of the larger Mayurbhanj Elephant Reserve, which encompasses three protected areas:
 1. Similipal Tiger Reserve
 2. Hadagarh Wildlife Sanctuary
 3. Kuldiha Wildlife Sanctuary.
- The name “**Similipal**” originates from the vibrant red silk cotton trees commonly found in the region.
- Similipal is a habitat for various species, including the Bengal tiger, Asian elephant, gaur, and chausingha.
- Since 2009, it has been recognized as part of UNESCO’s World Network of Biosphere Reserves.
- STR holds the distinction of being the second-largest biosphere reserve in Asia (following the Gulf of Kachchh in Gujarat) and is the only known natural habitat for melanistic (black) royal Bengal tigers.

Understanding Black or Melanistic Tigers

- Melanism is a genetic condition leading to excessive melanin production, giving animals a darker pigmentation in their skin, hair, or feathers.
- In Similipal, several royal Bengal tigers display a rare form of melanism that causes their coat to feature darker, black and yellow-striped patterns.
- These tigers are not fully black but are instead pseudo-melanistic due to the unique arrangement of their markings.
- According to the 2022 All-India Tiger Estimation, Similipal had 16 recorded tigers, with 10 of them being melanistic. The state government’s ongoing tiger survey is expected to show a higher tiger count for the reserve.

Causes of Melanism in Similipal Tigers

- Research by the National Centre for Biological Sciences (NCBS), Bengaluru, reveals that a single mutation in the gene Transmembrane Aminopeptidase Q (Taqpep) is responsible for the enlarged or spread-out black stripes on these tigers.
- Genetic studies and computer modelling indicate that Similipal’s melanistic tigers may have originated from a small, isolated population and are highly inbred due to the lack of genetic exchange with other tiger populations.

Background

The Odisha Tiger Estimation 2024 revealed that a significant portion of the tiger population in Similipal is pseudo-melanistic, suggesting genetic isolation and inbreeding risks.

The National Tiger Conservation Authority (NTCA) approved the introduction of new genetic stock to enhance the existing population's diversity.

The current project follows a previous unsuccessful translocation effort in 2018 to the Satkosia Tiger Reserve.

Importance of Genetic Diversity

Genetic diversity is crucial for the survival and adaptability of species, helping them cope with environmental changes and diseases.

SAFARI OF SPECIAL CATS

> National Tiger Conservation Authority (NTCA) has approved the melanistic (black stripes) tiger safari at Baripada in Mayurbhanj district

> Similipal Tiger Reserve in Mayurbhanj is the only habitat in the world to have melanistic big cats

> The melanistic tiger safari is expected to boost tourism

> Growth of melanin (pigmentation) on body increases width of black stripes thus making the animal look different from other Royal Bengal Tigers (RBT)

> In 1975, melanistic tigers were discovered in Similipal but it was confirmed in 1993, when a black skin of a tiger was found. In 2007, the tigers were captured on camera for the first time




The introduction of tigers from populations with higher heterozygosity is expected to mitigate the risks associated with inbreeding.

Future Plans

Another tigress from Maharashtra will be introduced to STR soon, aiming to establish a more genetically diverse tiger population.

Question : Critically examine the challenges and outcomes of previous tiger translocation attempts in India, with specific reference to the Satkosia Tiger Reserve case.

Source : [The Indian Express](#)



Editorial, Opinions & Ideas

Beyond intoxication: On alcohol regulation, judicial verdict

Why in News ?

Batting for States, the Supreme Court of India holds federal balance on regulating alcohol

Overview

The Supreme Court of India recently upheld the federal principle by affirming the States' exclusive rights over alcohol regulation, including industrial alcohol, which reinforces the balance of legislative power between the Centre and the States.

This decision focuses on **Entry 8 in the State List of the Seventh Schedule**, which grants States regulatory control over "intoxicating liquors," covering both potable and industrial alcohol.

Context and Background

- **Judgement Focus:** Whether "intoxicating liquors" in Entry 8 of the State List also applies to industrial alcohol.
- **Central Law:** Industries (Development and Regulation) Act (IDRA), 1951, listing "fermentation industries" as Union-regulated.
- **Judicial Verdict:** A nine-judge bench of the Supreme Court ruled that the State List entry includes both consumable and industrial alcohol, thus removing these industries from IDRA's Union oversight.
- **Significance:** Reinforces federalism by limiting Union interference in State matters, similar to the Supreme Court's previous mineral rights ruling in July 2024.

Key Points

Aspect	State Position	Union Argument	Supreme Court Ruling
Scope of "Intoxicating Liquors"	Includes industrial and potable alcohol	Limited to potable alcohol only	Covers both forms

Constitutional Provision	Entry 8, State List - Alcohol control	IDRA - Central control over fermentation industries	States retain regulatory control
Federal Principle	Supports State autonomy in alcohol industry	Central regulation over industrial processes	Limits Centre's legislative reach

Implications of the Verdict

- **State Legislative Competence:** States retain power over both potable and industrial alcohol, allowing for tailored policies.
- **Economic Impact:** Upholding States' control aids local industries, especially in States with substantial alcohol-related industries.
- **Precedent for Federal Balance:** Aligns with the Supreme Court's commitment to federalism, similar to its mineral rights ruling.

Conclusion

The Supreme Court's ruling affirms States' exclusive rights over both potable and industrial alcohol, strengthening federalism and enhancing State autonomy in regulating the alcohol industry.

Question : How does the distribution of powers in the Seventh Schedule impact economic governance in India? Critically evaluate using recent judicial rulings.

Source : [The Hindu](https://www.thehindu.com)



Daily Quiz

Q1. Which of the following statements is correct regarding new investment projects in Q2 of FY 2024-25?

1. Jammu and Kashmir entered the top 10 states for investment for the first time.
2. Tamil Nadu attracted more investments than Karnataka in Q2.

Select the correct answer using the code given below:

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

Q2. Consider the following statements about the Faster Adoption and Manufacturing of (Hybrid &) Electric Vehicles in India (FAME India) scheme:

1. FAME I was implemented between 2015-2019, and FAME II ran from 2019-2024.
2. FAME schemes provided subsidies only for electric buses used by private operators.
3. The schemes aimed to increase electric vehicle adoption across different public transport segments.

Which of the statements given above is/are correct?

- A. 2 only
- B. 1, 2, and 3
- C. 1 only
- D. 1 and 3 only

Q3. Assertion (A): The Supreme Court's ruling supports State autonomy in regulating both potable and industrial alcohol.

Reason (R): The Constitution grants exclusive rights to States over intoxicating liquors under Entry 8 of the State List.

Select the correct option:

- A. Both A and R are true, and R is the correct explanation for A.
- B. Both A and R are true, but R is not the correct explanation for A.
- C. A is true, but R is false.
- D. A is false, but R is true.

Q4. Consider the following statements regarding palm oil production:

1. Palm oil plantations contribute to deforestation primarily in Southeast Asia.
2. The National Mission on Edible Oils-Oil Palm (NMEO-OP) seeks to make India self-sufficient in crude palm oil production.

Which of the statements given above is/are correct?

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

Q5. Consider the following statements regarding the 'airshed approach':

1. It involves coordination between multiple regions to manage shared air quality challenges.
2. It requires monitoring and regulating only the sources within the city limits of Delhi.

Which of the statements given above is/are correct?

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

Q6. Consider the following statements regarding Secondary Inorganic Aerosols (SIA):

1. SIAs primarily form from sulfur dioxide (SO₂), nitrogen oxides (NO_x), and ammonia (NH₃).
2. In Delhi's winter season, the majority of SIAs originate from sources within Delhi.

Which of the statements given above is/are correct?

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

Q7. The 'Gaganyaan' program includes which of the following?

1. Crewed mission to the ISS
2. Technology testing missions for space stations



3. **Additional uncrewed flight for mission preparedness**

Select the correct option:

- A. 1 and 2 only
- B. 1 and 3 only
- C. 2 and 3 only
- D. All of the above

Q8. **Which of the following statements regarding the Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) is/are correct?**

- 1. MGNREGS guarantees 100 days of unskilled wage employment in a financial year to every rural household.
- 2. The scheme is funded entirely by state governments.
- 3. The Aadhaar-Based Payment System (ABPS) has been made mandatory for wage payments under MGNREGS from January 1, 2024.

Select the correct answer using the code below:

- A. Only 1 and 2
- B. Only 1 and 3

- C. All of the above
- D. Only 2 and 3

Q9. **What is the primary purpose of the translocation of the tigress from Maharashtra to Similipal Tiger Reserve?**

- A. To introduce more tiger cubs to the reserve
- B. To monitor the health of the tiger population
- C. To relocate tigers to a new habitat
- D. To improve the gene pool of tigers in the reserve

Q10. **What is the primary focus of the recent research on tardigrades published in Science?**

- A. Their habitat preferences
- B. Genetic mechanisms of radiation tolerance
- C. Evolutionary history
- D. Dietary habits



Solutions

1. Option A is Correct

Explanation

Statement 1 is correct. The report indicates that Jammu and Kashmir made its debut in the list of top 10 states attracting investment, with investment plans totaling ₹18,592 crore in Q2 of FY 2024-25. This is a notable development, as it marks the first time Jammu and Kashmir entered this top 10 list.

Statement 2 is incorrect. In Q2, Karnataka attracted higher investment totals (₹97,740 crore) compared to Tamil Nadu (₹46,662 crore). This makes Karnataka the third highest in investment attraction, while Tamil Nadu ranks fourth.

2. Option D is Correct

Explanation

Statement 1 is correct : FAME I was indeed operational from 2015 until 2019, and FAME II started in April 2019 and is set to continue until 2024.

Statement 2 is incorrect : The FAME schemes provide subsidies for a variety of electric vehicles, not just electric buses. They cover electric two-wheelers, three-wheelers, four-wheelers, and buses used in public transportation systems, focusing on public and shared transportation

Statement 3 is correct : The primary objective of the FAME India scheme is to enhance the adoption of electric vehicles across multiple segments of public transportation

3. Option A is Correct

Explanation

Assertion (A): True : The Supreme Court has often upheld the principle that states have the authority to regulate alcohol production, distribution, and consumption, which aligns with the federal structure of India.

Reason (R): True : Entry 8 of the State List in the Seventh Schedule of the Indian Constitution explicitly provides states with the authority to legislate on the subject of intoxicating liquors, which includes both potable (consumable) and industrial alcohol.

The reason (R) correctly explains the assertion (A) because the constitutional provision (Entry

8 of the State List) is the basis for state autonomy in regulating alcohol.

4. Option C is Correct

Explanation

Statement 1 is Correct : The expansion of palm oil plantations has been a significant driver of deforestation in countries like Indonesia and Malaysia. Forests are often cleared to make way for these plantations, leading to biodiversity loss and increased greenhouse gas emissions.

Statement 2 is also Correct : The NMEO-OP was launched by the Government of India to promote oil palm cultivation and increase domestic production of palm oil. The initiative aims to reduce the country's dependence on imported edible oils, including palm oil.

5. Option A is Correct

Explanation

Statement 1 is correct : The airshed approach recognizes that air pollution does not respect political boundaries; therefore, effective management requires collaboration among multiple regions and stakeholders to address shared air quality issues. This includes monitoring emissions and implementing strategies that can help improve air quality across a broader geographic area.

Statement 2 is incorrect : While Delhi's air quality is influenced by sources within the city, the airshed approach emphasises that monitoring and regulating must also consider sources outside city limits, as pollution can travel long distances. Thus, to effectively address air quality, there must be a focus on both local and regional sources of pollution.

6. Option A is Correct

Explanation

Statement 1 is correct : Secondary inorganic aerosols are formed through chemical reactions involving precursor gases such as sulphur dioxide (SO₂), nitrogen oxides (NO_x), and ammonia (NH₃). These gases undergo transformations in the atmosphere, leading to the formation of aerosols like sulphate, nitrate, and ammonium.



Statement 2 is incorrect : While some secondary inorganic aerosols may originate from local sources in Delhi, many also come from regional and transboundary sources, particularly during the winter months. Factors such as atmospheric conditions and pollution transport can lead to significant contributions from surrounding areas, including industrial activities and agricultural burning in nearby regions.

**7. Option C is Correct
Explanation**

Statement 1: Incorrect : The Gaganyaan program aims to send Indian astronauts (Gagannauts) into space, but the primary goal is not a crewed mission to the International Space Station (ISS). Instead, it focuses on establishing India's capability for human spaceflight. Although future missions might include trips to the ISS, it is not a specific component of the Gaganyaan program itself.

Statement 2: Correct : The Gaganyaan program includes technology testing missions to validate various technologies necessary for human spaceflight. These missions are crucial for ensuring safety and success in future manned missions, which may involve interactions with space stations.

Statement 3 Correct : The program includes uncrewed test flights designed to demonstrate various systems and technologies before any crewed missions. These tests are essential for mission preparedness and to ensure the safety and functionality of the spacecraft.

**8. Option B is Correct
Explanation**

Statement 1 is correct : The MGNREGS provides a legal guarantee for at least 100 days of unskilled wage employment in a financial year to every rural household whose adult members volunteer to do unskilled manual work.

Statement 2 is incorrect : The MGNREGS is funded jointly by the central and state governments. The central government bears a significant portion of the expenditure, especially for wage payments.

Statement 3 is correct : The government has mandated the use of the Aadhaar-Based Payment System for wage payments under MGNREGS, starting from January 1, 2024, to

ensure transparency and efficiency in the payment process.

**9. Option D is Correct
Explanation**

To improve the gene pool of tigers in the reserve : This statement is correct : As One of the main objectives of translocating tigers between reserves is to enhance genetic diversity. The existing tiger population in Similipal might suffer from inbreeding due to a limited gene pool. Introducing a new tigress from Maharashtra can help strengthen the gene pool, which is vital for the long-term health and viability of the population.

**10. Option B is Correct
Explanation**

Genetic mechanisms of radiation tolerance Correct. Recent studies on tardigrades, particularly those published in prominent journals like Science, have delved into their remarkable ability to tolerate extreme conditions, including high levels of radiation. Researchers are particularly interested in understanding the genetic and molecular mechanisms that enable tardigrades to survive such stresses, which includes studying their DNA repair systems and other biochemical pathways.





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