





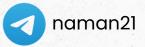
Daily **CURRENT AFFAIRS**

📅 June 12th, 2025









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Recounting Velpur's story in ending child labour

Why in the news?

On June 12, the world observes World Day Against Child Labour, as designated by the International Labour Organisation (ILO).

- The day, global attention attracts the situation of children trapped in exploitative labour and attempts to galvanise efforts to eradicate it in all forms.
- While global figures reflect serious realities - more than 160 million children still engage in labour, a significant success story from Velpur Mandal comes in the Nizamabad district (now in Telangana). Once a hotspot for child labour,
- Velpur has maintained its "child labourfree" status for more than two decades, one performance through a justified collection, policy implementation and institutional cooperation.



Background: The Global and Indian Context of Child Labour

Child Labour: A Global Perspective

Child labour deprives millions of children of their basic rights to education, health, and development.

According to the ILO:

- 160 million children were involved in child labour as of 2020.
- Asia-Pacific and Africa regions account for the majority.
- The COVID-19 pandemic worsened child vulnerability by forcing many into the labour force due to school closures and loss of family income.
 Sustainable Development Goal 8.7 explicitly aims to end child labour in all

explicitly alms to end child labour in all its forms by 2025. Yet, given the current pace, this target is far from being achieved.

Child Labour in India

India has a long and complex history with child labour:

- According to Census 2011, 43.53 lakh children (ages 5–14) were engaged in labour.
- Industries like beedi-making, carpet weaving, fireworks, and agriculture rely disproportionately on child labour.
- Children often serve as collateral for debts or loans taken by parents, thus perpetuating intergenerational exploitation.

Legal and Policy Framework India has taken several legal and institutional steps to curb child labour:

 Child Labour (Prohibition and Regulation) Act, 1986, and its 2016 Amendment prohibit employment

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- of children under 14 and restrict adolescent labour in hazardous occupations.
- The Right to Education Act, 2009, mandates free and compulsory education for children aged 6 to 14.
- The National Child Labour Project (NCLP) provides transitional education, vocational training, and health support to rehabilitate child labourers.
- National Policy on Child Labour, 1987, proposed a gradual and holistic approach, combining enforcement with rehabilitation.

Features of the Velpur Model

The Velpur model is a pioneering example of how local leadership, grassroots mobilisation, and community ownership can achieve what many top-down policies struggle to do: bring about sustained behavioural change.

Beginning of the Campaign

- The campaign began in June 2001, when the District Administration, under the leadership of then-Collector Asok Kumar G, launched a 100-day drive to identify and enrol all children aged 5–15 in school.
- The goal was to ensure that no child remained in the labour force.

Community Resistance and Transformation

- Initial reactions were hostile. Rumours about child trafficking were spread to discredit the campaign.
- Hoteliers and employers refused cooperation, mocking the initiative and denying services to the volunteers.
- With continuous dialogue, public meetings, and cultural outreach, the tide turned. Resistance became participation, and employers became allies.

Bridge Schools and Rehabilitation

• Children working in shops, homes, and farms were shifted to Bridge Schools under the NCLP, where they were given education, mid-day meals, vocational training, and counselling.

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• These bridge schools played a vital role in reintegrating children into the formal school system.

Public Accountability and Peer Pressure

- Public declarations by former employers included writing off debts taken by the children's families (an estimated ₹35 lakh).
- Community elders distributed stationery kits, school bags, and uniforms to encourage school attendance.
- Boards were installed across all villages with the inscription: "There is no child labour in our village."

Institutional Collaboration

- A Memorandum of Understanding was signed between sarpanchs and the District Education Officer under the Andhra Pradesh Compulsory Primary Education Rules, 1982.
- The government pledged to provide schools, teachers, and infrastructure.
- The local bureaucracy, panchayats, and civil society organisations worked in tandem.

Recognition and Legacy

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- In 2021, the VVGNLI, under the Ministry of Labour and Employment, honoured all sarpanches and campaign contributors.
- Former President A.P.J. Abdul Kalam and the National Human Rights Commission (NHRC) commended the effort.

The success story has been incorporated into national training curricula and



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presented before the Parliamentary Standing Committee on Labour, Textiles and Skill Development in 2022.

Challenges in Replicating the Model

While Velpur's story is inspiring, its replication elsewhere is hindered by systemic and contextual challenges:

Socio-Economic Insecurity

- In many rural areas, poverty, debt bondage, and lack of social protection drive families to push children into work.
- Unlike Velpur, many regions lack alternative income sources or social safety nets.

Weak Community Ownership

- Many anti-child labour initiatives fail because they are driven solely by government directives, without community buy-in.
- Velpur succeeded because it became a people's movement, not a bureaucratic mission.

Implementation Gaps

- Laws like the CLPRA are often poorly enforced due to resource constraints, lack of trained inspectors, and corruption.
- Bridge schools under NCLP have declined in number, and rehabilitation services remain inadequate in many states.

Urban-Rural Divide

- Urban child labour, particularly in domestic work, construction, and street vending, is harder to monitor due to high mobility and informality.
- Velpur's rural setting made community tracking feasible—a challenge in urban centres.
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Post-COVID Regression

• The pandemic reversed many gains, with increased school dropouts, child marriages, and child labour resurging due to economic stress.

Way Forward

Velpur offers a replicable and scalable blueprint, but only if tailored to local realities and backed by policy, resources, and civil engagement.

Strengthen Legal Enforcement

- Increase the number of labour inspectors and ensure their training and independence.
- Mandate real-time digital tracking of inspections and child labour complaints.

Invest in Rehabilitation and Education

- Revive and expand the National Child Labour Project, with funding for bridge schools, mid-day meals, uniforms, and psychosocial counselling.
- Improve the quality of public schools to retain children, especially in tribal and remote areas.

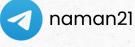
Community-Led Governance

- Institutionalise community education pacts, like Velpur's MoU between sarpanchs and the district administration.
- Set up Child Rights Committees at the village and ward levels to monitor, report, and support at-risk children.

Social Security for Families

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 Ensure universal access to the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA), Public Distribution System (PDS), Ayushman Bharat, and PM-KISAN to reduce the economic compulsion to employ children.





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 Promote women's SHGs and microcredit to empower mothers financially.

Data-Driven Intervention

- Conduct updated Child Labour Surveys in all states to generate real-time data and map high-incidence zones.
- Integrate data across ministries- labour, education, women and child development- to track school dropouts and workplace exploitation.

Media and Behavioural Campaigns

- Use radio, TV, social media, and street theatre to raise awareness and shift public norms around child labour.
- Recognise local champions like Velpur's sarpanchs to inspire others.

Rewarding Best Practices

- Launch an annual "Child Labour Free Panchayat" award by the Ministry of Labour.
- Create interstate knowledge exchanges where districts can learn from Velpurtype models.

Conclusion

The story of Velpur demonstrates that eliminating child labour is not a utopia, but an achievable goal -if the community, government, and civil society come together with shared conviction and purpose. It is a rare case where a policy idea became a social revolution, reinforced by community pride and institutional support.

Main Question

"Community participation is the cornerstone of sustainable social reform." In light of this statement, critically analyse the Velpur model of eradicating child labour. What lessons does it offer for policy implementation in India?



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Q1. Which of the following best explains why the Velpur model is considered sustainable in the context of child labour eradication?

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A. It was enforced solely through punitive legal measures under the CLPRA. B. It relied on continuous external funding from central schemes. C. It embedded accountability through legally binding MoUs between local governance and the state. D. It functioned exclusively through bridge schools run by NGOs.

Correct Answer: C. It embedded accountability through legally binding MoUs between local governance and the state.





Violent Crimes by Juveniles on the Rise in India

Why in the news?

June 12 symbolises the World Day against Child Labour, highlighting children's rights and weaknesses. Nevertheless, another dangerous question involving children - the emergence of violent crimes committed by young girls - has begun to make headlines in India.

• Recent data from the National Crime Records Bureau (NCRB) suggests that about half of all teens arrested in India in 2022 (49.5%) were involved in violent crimes; there was a faster increase in 32.5% 2016.

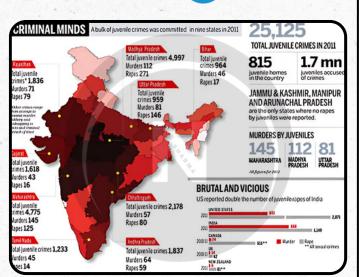
Background: Juvenile Crime and Legal Architecture in India Defining Juvenile Justice

In India, individuals under the age of 18 who commit a crime fall under the juvenile justice system, governed by the Juvenile Justice (Care and Protection of Children) Act, 2015.

The Act aims to balance two objectives:

- Ensuring rehabilitation and reintegration of children in conflict with the law.
- Recognising the gravity of heinous crimes, especially by children aged 16–18.

The Act allows for juveniles aged 16–18 to be tried as adults for heinous offences (e.g., rape, murder), but only after a preliminary assessment by the Juvenile Justice Board (JJB).



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Rising Concerns Globally

- Across countries like the UK and the US, there has been a rise in adolescent-perpetrated violent crimes, often involving knives, sexual violence, and group assaults.
- While juvenile crime overall may be falling due to demographic and technological shifts, the proportion of violent crimes is steadily increasing.

Features: The Emerging Pattern in India

Statistical Evidence of the Surge

- Rising Share of Violent Offences: NCRB data shows that while the absolute number of juveniles in conflict with the law declined from 37,402 in 2017 to 33,261 in 2022, the share involved in violent crimes rose from 32.5% in 2016 to 49.5% in 2022.
- **Types of Violent Crimes**: These include rape, sexual assault, murder, grievous hurt, robbery, and dacoity. Minor offences like theft and pickpocketing are not included in this category.
- **Hubli (2024)**: A 13-year-old stabbed a friend over an argument related to snacks.
- Chennai (2024): 7 minors among 12 accused of raping a 13-year-old girl.

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These incidents point to a worrying normalisation of extreme aggression among adolescents.

State-wise Disparities High-Contribution States (2017–2022):

- Madhya Pradesh: 20% of all juvenile violent crimes
- Maharashtra: 18%
- Rajasthan: 9.6%
- Chhattisgarh: 8.4%
- Tamil Nadu: 5%

Despite its small size, Delhi accounted for 6.8%- possibly due to improved reporting mechanisms and awareness.

Highest Proportion of Violent Juvenile Offences Within States:

- Jharkhand: 67% of juvenile crimes were violent
- Tripura, West Bengal, Chhattisgarh, Madhya Pradesh: Over 60% violent

These trends suggest that central and eastern Indian states are emerging as hotspots for violent juvenile crimes.

Profile of Juvenile Offenders

- Age: The Majority fall in the 16–18 age group, the transitional phase to adulthood.
- Gender: Over 90% are male, reflecting gendered expressions of aggression.
- Socioeconomic Background: Predominantly from poor, lowliteracy, and broken family structures.
- Education: Many are school dropouts, or irregular in attendance.
- Repeat Offenders: A rising number are repeat offenders, showing gaps in reformative intervention.

Challenges

Legal and Procedural Limitations Discretionary Trials as Adults: Under the JJ Act 2015, a juvenile aged

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SCO 173-174, Sector 17C Chandigarh 16–18 may be tried as an adult only after an assessment by the JJB, which lacks clear guidelines, leading to inconsistencies.

• Lack of Rehabilitation Infrastructure: Observation homes and special homes are overcrowded and underfunded, lacking professional psychological and educational support.

• Underreporting and Inconsistent Data: Many cases are not registered due to stigma, family reluctance, or police apathy. There is also no disaggregated data on motivations, social triggers, or post-rehabilitation outcomes.

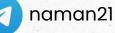
Societal and Psychological Factors

- Exposure to Online Violence: Easy access to violent games, misogynistic content, and cyberbullying has created a hyper-masculine, aggressive adolescent culture.
- Incel and Extremist Subcultures: Emerging online communities like incels (involuntary celibates) foster misogyny and encourage violent fantasies.
- **Neglect and Abuse:** Many juvenile offenders come from homes with domestic violence, alcoholism, or child abuse, creating a cycle of trauma.
- Peer Pressure and Gang Culture: Adolescents in urban slums often join gangs as a form of identity and belonging.

Systemic and Structural Challenges

- Urbanisation without Inclusion: Rapid urbanisation has created informal settlements where basic education and family welfare are missing.
- Education Deficit: Many adolescents either drop out or are unable to relate to the rigid schooling system.
- Unemployment and Idleness: With no meaningful engagements, juveniles often turn to crime out of boredom or desperation.







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 Delayed Justice: Slow judicial processes fail to instil a sense of accountability or reformation in time.

Way Forward

Reimagining Juvenile Justice Reform

- Strengthen Juvenile Justice Boards: Provide them with trained psychologists, criminologists, and child protection officers to ensure nuanced assessments.
- Improve Correctional Infrastructure: Observation and special homes must become rehabilitation centres, not just custodial spaces. Invest in counselling, education, and skillbuilding.
- Fast-Track Hearings: For heinous crimes, ensure time-bound trials and decisions on trying as adults to maintain credibility and deterrence.

Social and Educational Interventions

- Early Warning System: Schools and Anganwadi centres must be trained to identify at-risk youth through changes in behaviour, absenteeism, or aggression.
- Digital Literacy and Online Safety: Include modules in school curricula to counter cyberbullying, online grooming, and incel ideologies.
- Gender Sensitisation: Launch targeted campaigns and peer mentorship programmes to dismantle toxic masculinity narratives.
- Alternative Education: Create nonformal, vocational, and arts-based education options for students unable to cope with traditional academic systems.

Community-Centric Approaches

 Engage Families: Counselling parents and building local support systems can reduce neglect and abuse at home.

- Local Mentorship Networks: Use NGOs and youth leaders to mentor and channel adolescent energy into sports, arts, or community projects.
- Youth Clubs and Safe Spaces: Establish recreational hubs in urban slums and rural belts where youth can engage positively.

Governance and Policy Framework

- Integrated Child Protection System (ICPS): Must be strengthened at the district level with better funding and inter-departmental coordination.
- Data Collection and Monitoring: Use tech-based dashboards to track juvenile crime trends in real-time, map hotspots, and trigger local responses.
- Policy Review: Consider a national review of the JJ Act, especially in terms of trial procedures, rehabilitation timelines, and postrehabilitation monitoring.

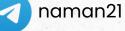
Conclusion

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The rising graph of violent crimes committed by juveniles in India is a reflection of deeper structural, social, and psychological challenges that adolescents are facing today. From online toxicity to family neglect, from broken education systems to peer radicalisation, the risk factors are manifold. While the current juvenile justice framework provides a constitutional and rights-based approach, the real transformation lies in making juvenile justice both preventive and rehabilitative. As India gears up to become a young superpower, ignoring the psycho-social needs and behavioural trends of its adolescent population will only deepen the crisis.



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Main question

"What are the underlying causes behind the increasing incidence of violent crimes committed by juveniles in India, and how can policy, legal, and societal interventions work together to address this growing challenge?"

Q. Consider the following statements about the Juvenile Justice (Care and Protection of Children) Act, 2015:

- 1. It allows for children aged 16–18 to be tried as adults in cases of heinous crimes.
- 2. The preliminary assessment is conducted by the Child Welfare Committee.
- 3. The Act makes a distinction between heinous, serious, and petty offences.

Which of the above statements is/are correct?

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

Correct Answer: C. 1 and 3 only

(Explanation: Preliminary assessment is done by the Juvenile Justice Board, not the CWC.)



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Aadhaar mandatory for Tatkal bookings from July 1

Why in the News?

In a significant move to streamline the Tatkal ticket booking process and prevent misuse by touts and booking agents, the Indian Railways announced on June 12, 2025, that Aadhaar authentication will be mandatory for all Tatkal bookings starting July 1.

- This rule applies to both online bookings via IRCTC and offline reservations at Passenger Reservation System (PRS) counters. Additionally, authorised agents will be barred from booking Tatkal tickets during the first 30 minutes of the Tatkal quota opening, to ensure fair access for genuine passengers.
- This development reflects a larger trend in public service delivery - tightening identity verification systems to improve transparency, reduce fraud, and ensure benefits reach the intended beneficiaries.

Background

Understanding the Tatkal Scheme

- Introduced in 1997, the Tatkal scheme is designed to provide emergency or lastminute ticket booking facilities for railway passengers.
- Typically, Tatkal tickets become available one day before the train's departure and command a premium fare.
- However, the system has long been vulnerable to misuse by agents and touts, who deploy high-speed software and identity proxies to book tickets in bulk during the initial moments of availability.

Historical Issues

 Bulk agent bookings during peak times have prevented ordinary users from getting Tatkal tickets.

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- The use of bots and automated tools has given an unfair advantage to touts.
- There is evidence of fake identity use in some bookings.
- Indian Railways has had to continuously tweak rules to prevent misuse: restrictions on agent logins, captcha verifications, and transaction limits.

Feature: Key Provisions of the New System

The revised guidelines, to be rolled out from July 1 and July 15 in a phased manner, include the following core elements:

Aadhaar-Based Authentication

- Online Bookings (IRCTC): Only users who have completed Aadhaarbased OTP verification will be allowed to book Tatkal tickets from July 1.
- Offline Bookings (PRS Counters and Agents): From July 15, Aadhaar OTP authentication will be required even at physical counters and through authorised agents.

OTP Verification

- At the time of booking, the system will send a One-Time Password (OTP) to the mobile number linked with the Aadhaar number or provided during booking.
- The booking will only be completed once the OTP is entered correctly.

Agent Restrictions

 To prevent early cornering of Tatkal quotas, agents (even authorised ones) will be barred from booking

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- Tatkal tickets during the opening window:
 - 10:00 AM to 10:30 AM for AC classes
 - 11:00 AM to 11:30 AM for Non-AC classes

System-Level Changes

- The Centre for Railway Information Systems (CRIS) and IRCTC have been directed to make the necessary backend modifications.
- All Zonal Railways and field offices are being informed to ensure seamless implementation.

Challenge: Potential Issues and Criticisms

While the move is hailed as a pro-user and anti-tout reform, it does pose logistical, ethical, and digital challenges: **Digital** Divide

- Millions of passengers, particularly in rural areas or economically weaker sections, may not have easy access to smartphones or OTP-receiving mobile numbers.
- Not all users are digitally literate to complete Aadhaar linking and verification independently.

Privacy and Data Security

- Mandatory Aadhaar linkage raises questions about data privacy and surveillance.
- India still lacks a robust data protection law to safeguard biometric and identity information.

Operational Delays at Counters

 PRS counter bookings may become slower due to mandatory OTP generation and verification, especially in areas with poor network connectivity.

Dependence on Aadhaar Infrastructure

 If Aadhaar authentication services are temporarily down due to technical glitches or UIDAI server issues, ticketing operations may come to a standstill.

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Exclusion of Vulnerable Groups

 Marginalised groups who don't have Aadhaar (e.g., migrants, the homeless, transgender individuals without proper documents) may find themselves excluded from Tatkal facilities.

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Agent Protests

• Travel agents may protest against the first 30-minute embargo, as their business margins rely heavily on Tatkal and premium bookings.

Way Forward: Striking a Balance **Between Security and Inclusion**

• To ensure this initiative succeeds without excluding legitimate users, a multi-pronged approach is essential:

Public Awareness and Help Desks

- Railways must run information campaigns urging users to link Aadhaar with IRCTC and explaining the new system.
- IRCTC and PRS counters should offer help desks and support staff for onthe-spot Aadhaar authentication support.

Strengthening UIDAI Services

 UIDAI must ensure uptime, reliability, and redundancy of Aadhaar authentication systems, particularly during peak Tatkal hours.

Digital Inclusion Programs

• Railways can work with NGOs and Digital India programs to digitally empower senior citizens, rural travellers, and first-time users.

Data Privacy Measures

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• The government must accelerate the implementation of the Digital Personal Data Protection Act, 2023, and ensure:



- Informed user consent
- No storage of biometric data by third parties
- Secure encryption standards

Agent Audit and Compliance

• Authorised agents must undergo regular audits to ensure they are not bypassing booking windows or hoarding tickets using proxy IDs.

Grievance Redressal

• A Tatkal Booking Grievance Portal with real-time ticket booking issue tracking can increase public trust and improve user experience.

Alternative Verification for Special Cases

 For people without Aadhaar (such as NRIs or children), alternate ID-based verification mechanisms should be allowed temporarily.

Conclusion

The Railways' decision to mandate Aadhaar authentication for Tatkal bookings marks a significant shift toward digital accountability, passenger fairness, and anti-corruption efforts in public services. While it strengthens the booking system's integrity, ensuring digital and procedural inclusion will be key to preventing the exclusion of vulnerable populations. Like all governance reforms, the success of this initiative will lie in the nuanced implementation, timely grievance resolution, and proactive stakeholder engagement.

Main Question

Q. Critically examine the implications of making Aadhaar-based authentication mandatory for Tatkal ticket bookings in India. Do you think it balances efficiency with inclusivity? Substantiate your view.



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Q. About the new rules related to Tatkal booking from July 1, 2025, consider the following statements:

- Aadhaar-based OTP authentication will be mandatory only for online bookings via IRCTC.
- Authorised agents will be allowed to book Tatkal tickets during the first 30 minutes of the booking window.
- The new Aadhaar mandate will also apply to Tatkal tickets booked at Passenger Reservation System (PRS) counters.
- CRIS and IRCTC are responsible for implementing technical modifications under the new system.

Which of the statements given above are correct?

A. 1 and 2 only B. 1, 3 and 4 only C. 3 and 4 only D. 2, 3 and 4 only

Correct Answer: B. 1, 3 and 4 only Statement 2 is incorrect – agents are barred from booking tickets in the first 30 minutes.



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Axiom Space Mission Postponed

Why in the News?

On June 11, 2025, SpaceX officially postponed the launch of the Axiom Mission 4 (Ax-4) to the International Space Station (ISS) due to a liquid oxygen (LOx) leak discovered during post-static fire inspections of the Falcon 9 rocket booster.

- The mission was historic, notably because Group Captain Shubhanshu Shukla. India's first astronaut under the Axiom program, was part of the crew.
- The decision to postpone, while disappointing, underscored the safetyfirst approach in human spaceflight.
- The Indian Space Research Organisation (ISRO) confirmed the postponement and emphasised that rectifying the LOx leak and re-validating the propulsion system was necessary before giving a final clearance.

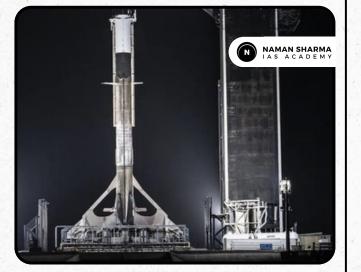
The mission marks a significant milestone for India's commercial human spaceflight ambitions and collaboration with private space players such as SpaceX and Axiom Space.

Background What is Axiom Mission 4 (Ax-4)?

Axiom Mission 4 is a private crewed mission to the ISS organised by Axiom Space, a Houston-based company focused on commercial space exploration and building the first private space station. Axiom collaborates with SpaceX for launch services using the Falcon 9 rocket and Crew Dragon capsule.

The Ax-4 crew includes:

- Group Captain Shubhanshu Shukla (India)
- Peggy Whitson (USA, former NASA) astronaut and Ax-4 mission commander)



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- Sławosz Uznański-Wiśniewski (Poland, ESA astronaut)
- Tibor Kapu (Hungary, ESA astronaut)

India's Role

- Group Captain Shukla, an IAF test pilot, was selected as India's first commercial astronaut to fly to the ISS under a foreign collaboration.
- This mission represents a precursor to India's Gaganyaan program, showcasing ISRO's capability to participate in global human spaceflight projects.

Falcon 9 & Static Fire Testing

- The Falcon 9 rocket is SpaceX's workhorse for satellite launches and human spaceflights. Before every crewed mission, a static fire test is conducted- essentially a full engine firing on the launch pad without liftoff - to check the rocket's systems.
- During this routine test, a liquid oxygen leak was detected in the propulsion bay, prompting postponement.



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Feature Technical Excellence and Global Collaboration

- The Ax-4 mission exemplifies the fusion of advanced private aerospace technology (SpaceX), international collaboration (ESA, NASA, ISRO), and commercial human spaceflight.
- It's part of a larger trend toward democratizing access to space, where astronauts no longer need to rely solely on national agencies like NASA or Roscosmos.

Rise of Commercial Spaceflight

Axiom Space represents a shift in the space sector: from state-led missions to privatesector innovation. Companies like SpaceX and Blue Origin are not only launching satellites but also ferrying humans into orbit.

Axiom's long-term vision includes:

- Building a private space station module attached to the ISS.
- Eventually detaching to operate independently, offering space tourism, microgravity research, and manufacturing opportunities.

India's Evolving Space Diplomacy

India's inclusion in Axe-4 enhances its soft power in space diplomacy. With Group Captain Shukla onboard, India not only advances its technical presence but also opens the doors for collaborative training, technology exchange, and visibility in global space governance.

Challenges

Technical Vulnerability: LOx Leak

• The detection of a liquid oxygen leak post-static fire demonstrates the inherent risks in rocket propulsion systems, especially when involving human lives. • LOx is used as an oxidiser in rocket engines, and leaks can cause fire hazards or mission failure.

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• Despite the routine nature of such delays in space missions, it reflects the high precision and stringent validation necessary in crewed missions.

Crew Training and Mission Readiness

Human spaceflight requires months of specialised astronaut training. Any mission postponement can affect:

- Crew synchronization
- Mission readiness
- Long-term psychological stress for astronauts

Also, rescheduling within the tight window of ISS docking schedules and orbital dynamics can be complex.

Dependence on Foreign Platforms

- Though India is sending its first commercial astronaut to the ISS, the mission is completely dependent on SpaceX and Axiom infrastructure.
- This reflects India's current infrastructural gap in human spaceflight, as Gaganyaan is still in development.

Way Forward

Strengthening Human Spaceflight Capabilities

- India must expedite Gaganyaan, its indigenous human spaceflight mission. Lessons from Ax-4 should be integrated into:
- ISRO's astronaut training frameworks
- Pre-launch validation protocols
- Space medicine and emergency procedures

The Ax-4 delay, although unfortunate, is also a learning opportunity for ISRO. Greater Collaboration in Space Missions



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The future of space is collaborative. India should:

- Pursue more astronaut exchange programs
- Engage with NASA, ESA, Roscosmos, and JAXA
- Explore bilateral crew training agreements

This will help India build confidence before independently ferrying astronauts into space.

Focus on Safety as Non-Negotiable Postponement due to LOx leak, while inconvenient, underscores that safety must remain the top priority.

India should invest in:

- Redundant safety systems
- AI-based leak detection tools
- More simulation-based testing to identify pre-launch flaws

This would benefit not only Gaganyaan but also upcoming Indian human-rated launch vehicles.

Commercial Ecosystem Development

India must create a robust commercial space ecosystem to eventually reduce its reliance on foreign platforms. This includes:

- Allowing private Indian firms to enter launch vehicle development
- Setting up human spaceflight incubators
- Providing fiscal and policy support for space startups

The Indian National Space Promotion and Authorisation Centre (IN-SPACe) must enable public-private human spaceflight partnerships in the long term.

Public Awareness and STEM Inspiration

The story of an Indian astronaut travelling to the ISS via a private American mission is a strong narrative to boost youth interest in STEM fields. This opportunity should be used to:



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- Promote space education
- Celebrate Indian scientific talent
- Encourage girls and boys alike to aspire toward careers in aerospace and science

Conclusion

The postponement of the Axiom Mission 4 due to a LOx leak is a reminder that space is hard, and safety is paramount. Yet, the broader significance of the mission- for India, for commercial space exploration, and international cooperation- remains intact. Group Captain Shubhanshu Shukla's inclusion signals a new era in Indian space diplomacy.

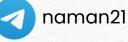
As India continues to rise as a space power, the lessons from Axe-4 can bridge the gap between ambition and capability, laying the foundation for a future where Indian astronauts launch from Indian soil aboard Indian rocketsconfident, capable, and completely independent.

Main question

Why was the Axiom Mission 4 (Ax-4) postponed, and what are the broader implications of this delay for India's space ambitions and international collaborations in space exploration?

Q. Consider the following statements regarding the Axiom Mission 4 (Ax-4):

- 1. The mission includes astronauts from India, Poland, Hungary, and the United States.
- 2. The mission was delayed due to a fuel tank explosion during the launch countdown.
- 3. Group Captain Shubhanshu Shukla is the first Indian Gaganyaan astronaut selected by ISRO to fly under the Axiom program.
- 4. Axiom missions are a part of NASA's Artemis moon-landing program.





Which of the above statements is/are correct?

A. 1 and 3 only B. 1 only C. 1 and 2 only D. 2, 3, and 4 only

Answer: B. 1 only Explanation:

- **Statement 1 is correct:** The crew includes astronauts from India, Poland, Hungary, and the U.S.
- Statement 2 is incorrect: The delay was due to a liquid oxygen leak, not an explosion.
- **Statement 3 is incorrect:** Shubhanshu Shukla is part of Axiom's commercial mission, not Gaganyaan.
- **Statement 4 is incorrect**: Axiom missions are private missions to the ISS, unrelated to NASA's Artemis program.





Tribute to Sant Kabir Das: Celebrating a Saint of Harmony and Reform

Why in the News?

On the occasion of Sant Kabir Das Jayanti, Prime Minister Narendra Modi paid tributes to the 15th-century mystic-poet and reformer, acknowledging his profound spiritual influence and contribution to India's Bhakti movement.

The day serves to commemorate his message of social equality, religious harmony, and inner devotion, which remains highly relevant in today's fragmented social fabric.

Background

- Birth and Life: Sant Kabir was likely born between 1398 and 1440 in Kashi (Varanasi). Legend narrates that he was born to a Brahmin widow and adopted by a Muslim weaver couple, Niru and Nima. Raised in the Julaha (weaver) caste, Kabir's marginalised background deeply informed his worldview and teachings.
- **Spiritual Journey:** Though raised a Muslim, Kabir became a disciple of Swami Ramananda, a Hindu Bhakti saint. He was also influenced by Sufi mysticism, especially by Shaikh Taqqi, creating a unique synthesis of Hindu Advaita and Islamic monotheism.
- Death and Legacy Site: Kabir passed away in 1518 at Maghar, Uttar Pradesh. A legend narrates that after his death, his body turned into flowers, which were divided between Hindus and Muslims. Today, a temple and a dargah stand at the site, symbolising interfaith unity.



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Features

Literary Contributions

• Kabir composed poetry in Hindi, Khari Boli, Bhojpuri, Punjabi, Urdu, Persian, and Marwari.

He is most famous for:

- Dohe (couplets): concise and philosophical verses.
- Pads: devotional songs with mystical meanings.

Spiritual Philosophy

- Nirguna Bhakti: Advocated devotion to a formless, attributeless God, transcending name and religion, calling God Ram, Allah, or Shabda.
- Inner Realisation: Rejected rituals, scriptures, and clergy; emphasised direct personal experience of the Divine.

Incorporated elements of:

Advaita Vedanta (non-dualism) from Hindu philosophy.

Tawhid (monotheism) from Islam.

Social Reformer

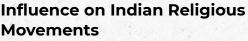
- Opposition to Casteism: Strongly criticised caste-based discrimination and the priestly monopoly on religion.
- Critique of Ritualism: Denounced empty practices like idolatry, pilgrimage, fasting, and sectarianism.
- Urged people to seek truth within, and break the shackles of social and religious orthodoxy.

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 His verses are included in the Guru Granth Sahib, demonstrating his impact on Sikhism.

Influenced spiritual leaders such as:

- Guru Nanak
- Dadu Dayal
- Ravidas
- Jiwan Das

Cultural and Religious Legacy

- The Kabir Panth, a sect based on his teachings, boasts over 9.6 million followers today.
- Kabir is venerated by Hindus, Muslims, and Sikhs, symbolising India's syncretic spiritual traditions.

Challenges

Misinterpretation of Teachings:

Kabir's messages are often co-opted into narrow political or religious narratives, diluting their universality.

Caste and Social Discrimination Persist:

• Despite Kabir's firm stand against caste, Dalits and backwards classes continue to face systemic inequalities, contradicting his vision of an egalitarian society.

Erosion of Syncretic Culture:

• The polarisation of communities undermines the composite culture that Kabir symbolised, where spiritual truths transcend religious divides.

Lack of Institutional Support:

• Kabir's legacy is insufficiently integrated into mainstream education or public policy, despite its enduring relevance.

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Fragmentation of the Kabir Panth:

• The sect itself suffers from regional and ideological divisions, reducing its collective influence in modern social discourse.

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Way Forward Reviving Kabir's Teachings through Education:

Incorporate Kabir's philosophy in school and college curricula, especially in subjects like Ethics, Philosophy, and Social Studies, to instil values of unity and justice. Promoting Interfaith Dialogue:

Use Kabir's legacy to foster communal harmony through interfaith platforms, especially in religiously tense regions.

Art, Literature, and Digital Media:

• Encourage creative re-interpretations of Kabir's works through theatre, films, digital content, and vernacular storytelling, making them accessible to the youth.

Empowering Marginalised Communities:

 Channel state and civil society efforts to realise Kabir's egalitarian vision by strengthening affirmative action, social mobility, and dignity for backwards classes.

Recognition and Preservation

- Preserve Kabir's sites of legacy, such as Maghar and Kashi, as cultural heritage zones.
- Recognise Kabir Jayanti as more than a ritual - a platform for public awareness and dialogue.

Conclusion

Sant Kabir remains one of India's most radical spiritual reformers, whose message of unity, equality, and inner devotion cuts across time, caste, and creed. As India grapples with social divisions and religious polarisation, Kabir's legacy offers a pathway for healing and harmony.



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Main Question

What is the significance of Sant Kabir Das Jayanti, and how do his teachings on spiritual unity, social reform, and antiritualism remain relevant in contemporary India?

Q. Consider the following statements:

1. Saint Nimbarka was a contemporary of Akbar.

2. Saint Kabir was greatly influenced by Shaikh Ahmad Sirhindi.

Which of the statements given above is/are correct?

Options:

(a) 1 only

(b) 2 only

(c) Both 1 and 2

(d) Neither 1 nor 2

The correct answer is (d) Neither 1 nor 2.

Explanation: Saint Nimbarka lived centuries before Akbar, and Saint Kabir lived before Shaikh Ahmad Sirhindi, making both statements incorrect. **Saint Nimbarka:** He was a Vaishnavite saint who lived in the 13th or 14th century. Akbar ruled in the 16th century.

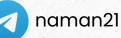


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Poson Poya festival in Sri Lanka

Why in the News?

Sri Lanka is currently celebrating the Poson Poya festival, one of the most revered Buddhist observances in the country. The festival commemorates the arrival of Buddhism in Sri Lanka in 236 BCE, when Arahat Mahinda, son of Emperor Ashoka, converted King Devanampiyatissa to Buddhism at Mihintale. This event marks the beginning of Sri Lanka's transformation into a Theravāda Buddhist nation.

Background Religious Significance:

Poson Poya is the second most important Buddhist festival in Sri Lanka, after Vesak Poya. It is observed on the full moon day of June, corresponding to the seventh lunar month of the Sinhalese calendar.

Historical Origin:

The festival celebrates the arrival of Arahat Mahinda in Sri Lanka, following the Third Buddhist Council convened by Emperor Ashoka in 250 BCE. Mahinda's mission led to the conversion of King Devanampiyatissa and the establishment of Buddhism as the island's dominant religion.

Role of Sanghamitra:

 Mahinda's sister, Sanghamitra, later travelled to Sri Lanka to ordain royal women into the monastic order and brought a sapling of the Bodhi tree from Bodh Gaya. She was instrumental in establishing the Bhikkhuni Sangha (order of Buddhist nuns).



Major Sites:

Mihintale: Site of Mahinda's meeting with the king.

• Anuradhapura: The ancient capital, now a UNESCO World Heritage Site, remains central to Poson Poya rituals.

Festivities

- Spiritual rituals: Temple visits, almsgiving (Dana), meditation, and sermons.
- Cultural expressions: Free food stalls (Dansalas), lanterns, and illuminated panels depicting Buddhist stories.

Challenges

- Commercialisation and Tourism
 Pressure:
- The spiritual core of Poson Poya is often overshadowed by tourist-oriented displays and mass-scale consumption, diluting its ethical and religious values

Environmental Impact:

 Lantern decorations, food stalls, and mass gatherings generate significant plastic waste and pollution, especially around sacred sites.

Religious Nationalism and Exclusivism:

• In recent decades, Buddhist nationalism



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in Sri Lanka has caused tensions with minority communities, undermining the inclusive spirit of Buddhism propagated by Mahinda and Sanghamitra.

Erosion of Historical Understanding:

• The younger generation is increasingly unaware of the historical significance of the festival, seeing it more as a social event than a marker of cultural identity.

Declining Monastic Influence:

 With modernity, monastic institutions in Sri Lanka face reduced influence in social and political discourse, affecting the spread of Poson's core teachings on compassion, non-violence, and mindfulness.

Way Forward Reviving Historical Consciousn<mark>ess:</mark>

• Promote awareness of Arahat Mahinda and Sanghamitra's legacy through education, documentaries, and literature, especially for the youth.

Sustainable Celebrations:

• Encourage eco-friendly practices during Poson, such as using biodegradable materials for decorations and proper waste disposal mechanisms at pilgrimage sites.

Interfaith Dialogue and Unity:

• Use the inclusive teachings of early Buddhism to foster communal harmony and counteract extremist interpretations of religion.

Digital Engagement and Cultural Preservation:

- Promote Poson Poya digitally through virtual tours, Buddhist story animations, and interactive
- 9

SCO 173-174, Sector 17C Chandigarh • platforms to reach global audiences and diaspora communities.

Government and Institutional Support:

• The Sri Lankan state can institutionalise Poson Poya as a national cultural heritage celebration, ensuring state support for preservation, security, and inclusive participation.

Revitalising the Role of Monasteries:

• Empower monastic institutions to play active roles in social welfare, ethical guidance, and environmental awareness in line with Buddhist principles.

Conclusion

The Poson Poya festival is not merely a religious observance but a civilizational milestone that marked the spiritual and cultural transformation of Sri Lanka. At a time when the world struggles with identity conflicts, religious intolerance, and ecological crises, the message of peace, wisdom, and compassion brought by Arahat Mahinda and Sanghamitra deserves renewed relevance. Preserving the essence of Poson Poya in its pure, inclusive, and ethical form is crucial for both Sri Lanka's cultural integrity and the global Buddhist heritage.

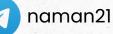
Main Question

What is the historical and cultural significance of the Poson Poya festival in Sri Lanka, and how does it continue to shape the island's Buddhist identity and interregional religious links?

Sanghabhuti, an Indian Buddhist monk who travelled to China at the end of the fourth century AD, was the author of a commentary on:

Options:

- (a) Prajnaparamita Sutra
- (b) Visuddhimagga
- (c) Sarvastivada Vinaya
- (d) Lalitavistra





India Joins 2nd IALA Council Session as Vice President

Why in the News?

India is serving as Vice President at the 2nd Session of the International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA) Council held in Nice, France.

• This reinforces India's commitment to maritime safety, technological innovation, and global marine governance.

Background About IALA:

The International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA) is the premier global authority for standardising marine aids to navigation (AtoN) such as

lighthouses, buoys, VTS systems, and enavigation tools.

Founded: 1957 as an NGO; became an Intergovernmental Organisation (IGO) on August 22, 2024.

Headquarters: Saint-Germain-en-Laye, near Paris, France.

Mission: To enhance the safety, efficiency, and sustainability of marine navigation through uniform global standards and cooperation. India's Role:

A founding member of IALA.

Represented by the Directorate General of Lighthouses and Lightships (DGLL) since 1980.

India has modernised its marine navigation infrastructure, including Integrated VTS systems at major ports.

Key Features and Highlights

Organizational Structure



- Members: Over 80 countries, including national maritime authorities, commercial entities, and academic institutions.
- General Assembly: Meets every 4 years; defines strategic direction.

Council: 24 elected members; oversees execution and governance. Technical Committees: Specialising in:

- Digital/electronic navigation systems
- Marine engineering
- Maritime safety regulations
- Environmentally sustainable aids

Technological Innovations

Maritime Buoyage System: Standardised 30 regional systems into two unified global zones (Region A and Region B).

Advanced Navigation Tools:

- Differential GPS (DGPS)
- Automatic Identification System (AIS)
- VHF Data Exchange System (VDES)
- e-Navigation frameworks
- India's Contributions

National Achievements:

- VTS implementation at 12 major Indian ports.
- Use of DGPS and modern lighthouse systems.

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• Future Events:



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- Hosting the 3rd IALA General Assembly in December 2025.
- Hosting the IALA Conference in Mumbai in 2027.

Way Forward

Strengthen India's Maritime Diplomacy

- Leverage leadership in IALA to promote India's SAGAR (Security and Growth for All in the Region) doctrine.
- Build strategic maritime partnerships with littoral nations via IALA cooperation.

Technological Upgradation

- Invest in AI-enabled vessel tracking, enavigation, and smart lighthouses.
- Develop indigenous solutions for VDES and cyber-secure navigation.

Capacity Building & Training

- Collaborate with IALA to train professionals from developing coastal nations in South Asia and Africa.
- Establish India as a regional hub for marine navigation skill development.

Sustainability and Environment

- Promote green marine AtoNs, solarpowered buoys, and eco-friendly port infrastructure.
- Lead IALA initiatives on climateresilient maritime systems.

Enhanced Coastal Security

 Use IALA's standards to reinforce India's coastal surveillance, fisheries monitoring, and anti-piracy capabilities.

Conclusion

India's vice presidency at the 2nd Session of the IALA Council symbolises its rising leadership in global maritime governance. As the nation prepares to host IALA's next major events, this moment offers an opportunity to showcase its blue economy vision, technological innovation, and commitment to safe and sustainable oceans. Strengthening India's position within IALA aligns with broader maritime goals, including Make in India, Sagarmala, and Maritime India Vision 2030.

Main Question

How does India's participation in the 2nd Session of the IALA Council reflect its growing maritime leadership and commitment to global navigation safety and innovation?

[UPSC 2017] Consider the following in respect of the Indian Ocean Naval Symposium (IONS):

1. The inaugural IONS was held in India in 2015 under the chairmanship of the Indian Navy.

2. IONS is a voluntary initiative that seeks to increase maritime co-operation among navies of the littoral states of the Indian Ocean Region.

Which of the above statements is/are correct?

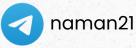
(a) 1 only (b) 2 only (c) Both 1 and 2 (d) Neither 1 nor 2

The correct answer is (b) 2 only. Explanation:

The Indian Ocean Naval Symposium (IONS) is indeed a voluntary initiative aimed at enhancing maritime cooperation among the navies of littoral states in the Indian Ocean region.



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BBX32 Protein

Why in the News?

Researchers at IISER Bhopal have discovered the critical role of a single protein, BBX32, in helping plant seedlings transition safely from darkness underground to sunlight above. This finding can revolutionise how we approach crop survival and early-stage plant development under challenging soil and climate conditions.

Background

- **BBX Proteins:** BBX32 belongs to the B-box family of zinc finger transcription factors, known for regulating light signalling, seed germination, flowering time, and stress responses.
- Germination Challenge: For a seedling, emerging from the soil is perilous. The soft shoot tip must be protected until it reaches the surface, typically through a protective hook formed by the hypocotyl.
- Role of Hormones and Light: Plant hormones like ethylene and external cues like light synchronise complex molecular responses that guide this delicate process.

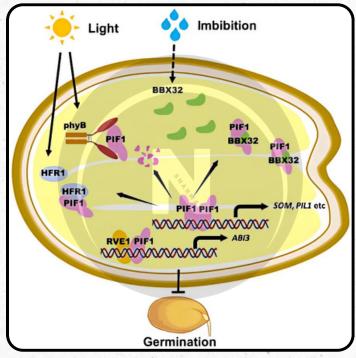
Feature: How BBX32 Functions in Plants

Protection:

- BBX32 ensures the hook remains closed during soil emergence, shielding the shoot tip.
- It delays premature opening, especially in rough soil conditions.

Activation Mechanism:

• Ethylene, produced under soil pressure, activates BBX32.



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- In darkness, COPI degrades BBX32, but ethylene slows this down.
- On light exposure, BBX32 becomes stable and accumulates on one side of the hook.

Molecular Cascade:

- BBX32 activates PIF3, which in turn stimulates HLS1, the key protein that maintains the hook bend.
- Experimental Findings:
- In sand-simulated soil, only 25% of BBX32-deficient seedlings broke through.
- Normal seedlings had a 40% emergence rate; those with extra BBX32 had 80% success.

Challenge

Climate-Driven Soil Stress:

- Harder, compacted soils due to irregular rainfall or drought may hinder seedling emergence.
- BBX32-dependent mechanisms must adapt to varying soil and environmental conditions.

Limited Crop Integration:

• BBX32's application is still in early research stages.

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Complex Regulatory Pathways:

- BBX32 interacts with multiple light and hormone pathways; modifying it might affect other traits like flowering or root development.
- Gene Editing Concerns:
- CRISPR-based editing to enhance BBX32 must be safe, scalable, and socially acceptable, especially in food crops.

Way Forward Crop Breeding & Gene Editing:

- Use BBX32 as a target in breeding programs or CRISPR-based enhancement for crops like rice, wheat, and maize.
- Focus on varieties grown in floodprone or clay-heavy soils.

Stress-Responsive Crop Design:

• Develop crop lines that delay hook opening under specific stress conditions (e.g., high pressure, low oxygen).

Soil-Simulation Field Trials:

• Conduct multi-location field trials in challenging soil zones to test.

BBX32-enhanced varieties.

- Integrating with Precision
 Agriculture:
- Combine BBX32 research with sensor-based tools to time germination or watering cycles.

Public Research Investment:

 Promote interdisciplinary studies integrating plant physiology, molecular biology, and agricultural engineering.

Conclusion

The discovery of BBX32's role in managing seedling emergence is a



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milestone in plant biology. As India gears up for climate-resilient agriculture, such molecular insights offer hope for stronger crops, better early growth, and improved food security.

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Q. Why is the BBX32 protein considered crucial for seedling emergence in plants?

A. It triggers seed germination by breaking dormancy enzymes
B. It helps protect the shoot tip by maintaining the apical hook until light exposure

C. It facilitates nutrient absorption through root hair development D. It initiates flowering by sensing photoperiod signals

Correct Answer: B. It helps protect the shoot tip by maintaining the apical hook until light exposure.

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Spathaspina Noohi

Why in the News?

A new species of beetle, named Spathaspina noohi, has been discovered in the Umran forests of Ri Bhoi district, Meghalaya.

Background

- Location of Discovery: Umran, Ri Bhoi district, Meghalaya, at an elevation of 781 metres
- Family: Curculionidae (Weevil family – includes over 60,000 species globally)
- Subfamily: Ceutorhynchinae a group with just over 1,300 species worldwide
- Global Distribution of Subfamily: Found across the world except New Zealand, Oceania, Antarctica, and southern South America

Feature Highlights: Spathaspina noohi

- New Genus and Species: The beetle was so morphologically unique that it was placed under a new genus within its subfamily.
- Name Origin: "Spathaspina" is derived from Latin words spatha (sword) and spina (spine), referring to its distinct sword-like spine on its back.

Morphological Traits:

- Robust body typical of Ceutorhynchinae beetles
- Ability to fold the snout (rostrum) between the front legs when at rest
- Visible mesanepimera from the back, a typical identification marker (except for some genera)



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Challenges

- Habitat Threats: Rapid deforestation, land-use changes, and human encroachment threaten fragile ecosystems in northeast India.
- **Taxonomic Gaps**: Many insect species remain undocumented due to a lack of entomological expertise and research infrastructure.
- **Misconception of Weevils:** While some are pests, many weevils, like Spathaspina nooh, play beneficial roles in controlling invasive plants and maintaining ecological balance.
- **Climate Vulnerability:** Changes in rainfall and temperature patterns may threaten niche habitats where endemic beetles thrive.

Way Forward

- Increased Taxonomic Surveys: More focused biodiversity surveys in Northeast India are crucial to uncover hidden species.
- Insect Conservation Policies: Include insect species in India's conservation priorities, particularly under the Wildlife Protection Act.

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- Ecological Role Awareness: Promote understanding of how beetles contribute to ecosystem services like pest control and nutrient recycling.
- Integrating Local Knowledge: Involve indigenous communities in conservation efforts and biodiversity mapping.
- **Capacity Building:** Train more entomologists and support institutions like ZSI (Zoological Survey of India) and forest departments in insect documentation.

Which of the following leaf modifications occur(s) in the desert areas to reduce water loss?

- 1. Hard and waxy leaves
- 2. Tiny leaves
- 3. Thorns instead of leaves

Select the correct answer using the code given below:

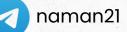
Options: (a) 2 and 3 only (b) 2 only (c) 3 only (d) 1, 2 and 3

The correct answer is (d) 1, 2, and 3. Explanation:

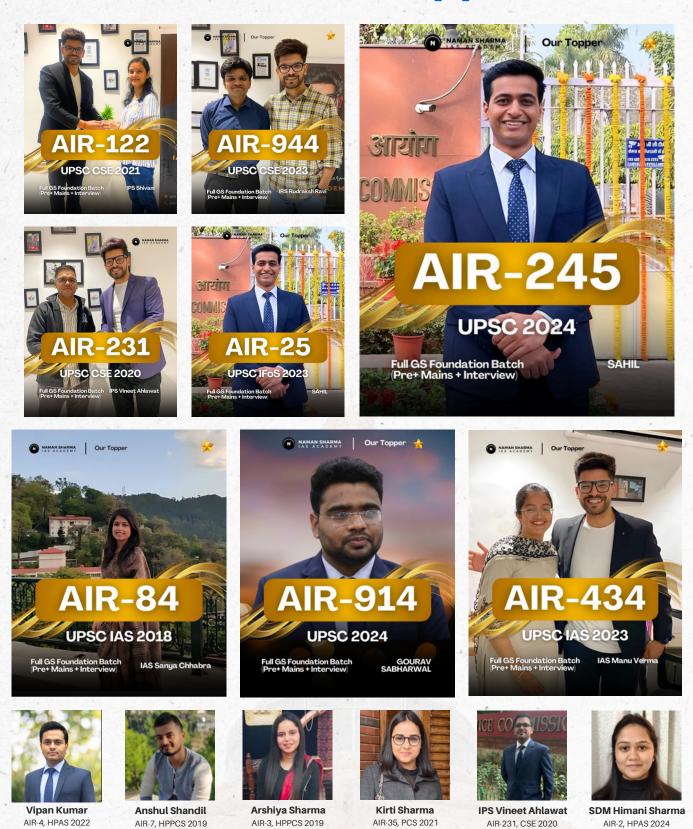
Desert plants have evolved various adaptations to minimise water loss in the arid environment. These adaptations include:







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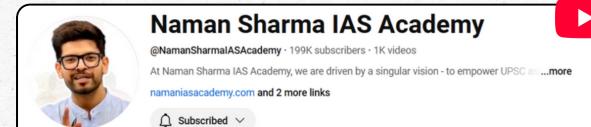


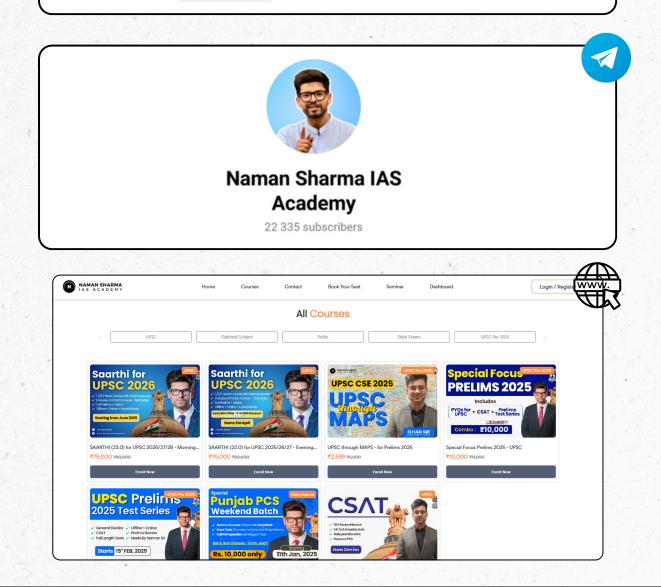
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