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Republic Day showcases diversity, military might

President Droupadi Murmu leads the celebrations, with Indonesian President Prabowo Subianto as special guest; tableaux celebrating 150 years of tribal activist Birsa Munda and 75 years of the enactment of Constitution were the key highlights; more than 77,000 passes issued, with 32,000 passes sold to citizens, according to the Defence Ministry

Samridhi Tewari
Satvika Mahajan
NEW DELHI

Stately celebrations: President Droupadi Murmu arrives for the Republic Day parade with Indonesian President Prabowo Subianto on Kartavya Path in New Delhi on Sunday; an aerial view of the marching contingents and Army tanks. ANI & PIB/PTI

India showcased its military might and cultural diversity with a parade keeping special focus on the 75 years of the enactment of the Constitution and *Jan Bhagidari*, at the Republic Day celebration here on a cold winter morning that continued into a bright sunny afternoon on Sunday.

President Droupadi Murmu led the celebrations, with Indonesian President Prabowo Subianto as the special guest.

The theme for this year was "*Swarnim Bharat: Virasat aur Vikas*" (Golden India: heritage and development).

The parade began at 10.30 a.m., with the visit of Prime Minister Narendra Modi to the National War Memorial, where he led the nation in paying solemn tributes to the fallen heroes. The President and her Indonesian counterpart were escorted by the President's Bodyguard, the senior-most Regiment of the Army. While the invitees stood still, the National Flag was unfurled, followed by the playing of the National Anthem with a thunderous 21-gun salute using 105-mm light field guns, an indigenous weapon system. The Indonesian Army graced the event with a music band.

Tableaux celebrating 150 years of tribal activist Birsa Munda and 75 years of the Constitution spotlighting the "father of the Indian Constitution" Dr. B.R. Ambedkar were key highlights.

Nearly 10,000 special guests from various walks of life were invited. According to the Defence Ministry, over 77,000 passes were issued, with 32,000 passes having been sold for citizens. The parade was heralded by 300 cultural artists playing "*Sare Jahan Se Achha*" with musical instruments. Lieutenant-General Bhavnish Kumar, General Officer Commanding, Delhi Area, commanded the parade.

Slowly, the Brigade of the Guards, the Jat Regiment, the Garhwal Rifles, the Mahar Regiment, the Jammu and Kashmir Rifles Regiment, the Corps of Signals, and others marched down Kartavya Path, with patriotic music and beats. Over 31 tableaux added colour to the show. For the first time, a tri-services tableaux rolled down Kartavya Path, displaying the spirit of jointness and integration.

The ceremony culminated with the National Anthem and the release of balloons carrying banners with the official logo depicting 75 years of enactment of the Constitution in both English and Hindi.

'REPUBLICAN JOURNEY'
» PAGE 8
RELATED REPORTS
» PAGE 5

DGCA move sparks interest in air taxi pilot training

Step closer: Senior officials pointed out the guidelines can accelerate the rollout of air taxi services. AFP

Rohit Vaid

Aspiring air taxi pilots in India may soon begin their training as the Directorate General of Civil Aviation (DGCA) is set to unveil licensing guidelines for electric vertical take-off and landing (eVTOL) aircraft, a senior official told *businessline*.

In aviation parlance, advanced air mobility vehicles, or air taxis, refer to a wide variety of eVTOL aircraft. Senior officials pointed out the guidelines can accelerate the rollout of air taxi services, bringing India closer to its vision of urban air mobility. The guidelines, sources said, will define the qualifications, medical fitness, and training requirements for eVTOL flight crew.

International best practices

According to one official, drawing from international best practices, the guidelines are set to include provisions for converting existing licences, recognising military pilot experience, and accepting licences issued by third countries.

The exercise to frame guidelines, the official said, is part of a broader regulatory framework being developed by the DGCA to integrate eVTOLs into Indian airspace.

While the initial guidelines have addressed issues surrounding operational safety and airworthiness, upcoming regulations will focus on maintenance, repair, and overhaul (MRO) certification, as well as navigation and airspace management. The official said since eVTOLs promise faster, eco-friendly commutes, DGCA's proactive measures aim to create a safe and efficient ecosystem for this futuristic mode of transport.

Global race

"As training programmes take off, India is poised to become a key player in the global race for urban air mobility," the official said.

Regulatory sandbox

Besides, in an another boost to the nascent sector, the Centre is expected to soon designate a few locations as 'regulatory sandbox' sites for testing and evaluating eVTOL prototypes.

A 'regulatory sandbox' site is a controlled environment used to test new products without the administration of regulatory requirements.

Potential sites are being scouted in Andhra Pradesh and Gujarat. "One such location was recently surveyed in Gujarat, close to Mandvi, which is a beach town in the Kutch district of Gujarat," the official said. In Andhra Pradesh, a site near Vijayawada is reportedly under consideration as a 'regulatory sandbox' for eVTOLs and drones. The official said 'regulatory sandbox' will speed up the testing and standardisation of eVOTLs. Several companies have come out with prototypes for eVTOL vehicles, even as the civil aviation regulator works on framing the guidelines for operations, licences, and safety standards of such aircraft.

(The writer is with The Hindu businessline)

Should Governors head State universities?

The Governor's role as Chancellor of State universities has become politicised, undermining university autonomy and causing governance issues, especially in States with Opposition-led governments; various reform models have been proposed to reduce political interference and improve university administration

LETTER & SPIRIT

K. Ashok Vardhan Shetty

The role of the Governor as Chancellor of State universities is a subject of intense debate. It is often misconstrued as a post-Independence measure to safeguard universities against political interference. This role has not been assigned to the Governor by the Constitution of India but by State university laws. Inherited from British colonial rule, it was designed to restrict university autonomy rather than promote it.

In 1857, the British established the first three universities in Calcutta, Bombay, and Madras, appointing Governors of the respective presidencies as their ex-officio Chancellors to maintain direct control. As Chancellor, the Governor became the head of the university and was granted powers such as appointing Vice-Chancellors, nominating members to university bodies like the Syndicate, approving delegated legislation under the university law, and presiding over convocations. Unfortunately, this model of "Governor as Chancellor" was adopted wholesale for State universities even after Independence, without reassessing its relevance in a democratic and federal context.

GETTY IMAGES

A politicised office

Initially, from 1947 to 1967, the dominance of the Congress party at both the Centre and State levels ensured that Governors remained ceremonial figures, with Chief Ministers wielding real power. Consequently, there was little impetus to amend the colonial-era provision of "Governor as Chancellor."

However, the political landscape changed after 1967 when several States were ruled by parties other than the ruling party or coalition at the Centre. Governors increasingly transformed from neutral constitutional functionaries to political instruments of the Central government. This change saw them asserting control over university affairs, which often resulted in clashes with State governments. Efforts to amend university laws for change of Chancellor faced roadblocks, as Governors either delayed approving such amendments or referred them to the President. Only a few States succeeded in getting the amendments passed.

Even the Centre's First Administrative Reforms Commission (1966-77) criticised the politicisation of the Governor's office, highlighting the appointment of defeated politicians, which eroded the office's dignity. The Sarkaria Commission (1983-88) on Centre-State Relations, revealed that over 60% of Governors had been active politicians, many of them immediately before their appointment, with quality declining steeply after the Nehru era. Professor Ashok Pankaj's study (1950-2015) found that 52% of Governors were politicians, 26% were retired bureaucrats, and only 22% hailed from academia, the judiciary, or the armed forces. It highlighted a growing trend of appointing Governors based on political loyalty, undermining the office's credibility and exacerbating its misuse.

Governor's dual role

Constitutionally, a Governor's powers are divided into two categories: those exercised as Governor, where he is bound to act on the advice of the Council of Ministers as per Article 163(1), and those conferred by statutes, such as the role of Chancellor of State universities, where he can act at his discretion, independent of ministerial advice, unless the statute mandates otherwise. The Supreme Court has upheld this distinction. This has enabled Governors to bypass ministerial advice in critical university matters like appointing Vice-Chancellors, nominating members to university bodies, and approving subordinate legislation, particularly in Opposition-ruled States.

Governor and the President

Despite similar legal frameworks, a stark contrast exists between the Governor's role as Chancellor of State universities and the President's role as Visitor of Central universities. The key difference is the level of consultation and legislative oversight.

The President maintains a cordial relationship with the Centre. He functions through the Ministry of Education and consults with it for appointments of Vice-Chancellors, nomination of members to university bodies, and approval of 'statutes' (a type of delegated legislation under the university law). Central university laws require the statutes, along with other types of delegated legislation called 'ordinances' and 'regulations', to be laid before the Parliament.

In contrast, the Governor acts unilaterally while performing similar functions for State universities, often bypassing the State's Ministry of Higher Education entirely, particularly in Opposition-ruled States. State University laws do not mandate laying delegated legislation – statutes, ordinances, and regulations – before the Legislature. This is a significant flaw rooted in the continuation of colonial-era practices.

Existing challenges

The persistence of the "Governor as Chancellor" model has caused numerous problems in the governance of State universities.

While State governments fund these universities, Governors wield substantial power without corresponding accountability. This creates a dual authority system, forcing university leadership to serve two masters, often with conflicting demands.

Disagreements between Governors and State governments, particularly in Opposition-ruled States, lead to delays in appointing Vice-Chancellors, causing administrative paralysis. These delays affect areas such as the appointment of staff, the implementation of projects, and even the awarding of degrees.

Many Governors lack the academic qualifications or experience necessary to effectively guide educational institutions. They tend to rely on limited, non-transparent advice, leading to questionable decisions.

Rather than insulating universities from politics, some Governors exacerbate political interference, often prioritising the Centre's political agenda over the universities' autonomy and interests.

Allowing Governors – appointed by the Centre – to control State institutions compromises the principle of federalism. State universities should be fully accountable to elected State governments.

Insights from Commissions

Various commissions have examined the Governor's role as Chancellor and proposed reforms. The Rajamannar Committee (1969-71) on Centre-State relations, appointed by the Government of Tamil Nadu, argued that the Governor's statutory functions are included within the meaning of 'functions' under Article 163(1). So, the Governor should perform his statutory functions as Chancellor also on the advice of the State government. However, the Supreme Court has not upheld this interpretation.

The Sarkaria Commission (1983-88) on Centre-State relations, recognised that the Governor's role as Chancellor is statutory, not constitutional, and must be defined by State laws. It recommended that Governors consult with Chief Ministers while retaining independent judgment in university matters.

The National Commission to Review the Working of the Constitution (2000-02), headed by Justice M.N. Venkatachaliah, advocated for political neutrality, a clearer definition of the Chancellor's functions, a supportive rather than authoritative role, and greater university autonomy.

The M.M.Punchhi Commission (2007-10) on Centre-State relations recommended that the Governor focus on constitutional responsibilities, avoiding statutory roles like that of Chancellor to preserve the dignity of the office. It suggested that States appoint eminent academics or experts as Chancellors to ensure academic independence and prevent conflicts.

Alternative models

The ideal Chancellor model, based on global best practices, envisions the Chancellor as an eminent public figure who provides ceremonial leadership, presides over convocations, acts as an institutional ambassador, and has no executive authority. Universities in the U.K., from whom we borrowed the concept of Chancellor, exemplify this model. There are several ways to amend State university laws to implement this reform: The Governor as Ceremonial Chancellor model removes the Governor's discretionary powers, mandating him to act on the advice of the State Council of Ministers in university matters. Gujarat (1978), Karnataka (2000), and Maharashtra (2021) have adopted variations of this approach.

In the Chief Minister as Chancellor model, critics argue that a ceremonial role does not suit a powerful political figure like the Chief Minister. West Bengal and Punjab passed Bills in 2023 to adopt this system, but they await Presidential assent. In a variation, Tamil Nadu passed a Bill in 2022 substituting 'Government' for 'Chancellor'. It also awaits Presidential assent.

The State-appointed Chancellor model, implemented in Telangana in 2015, has the State government appoint a ceremonial Chancellor. A similar Bill was passed by Kerala in 2022, but it is still awaiting Presidential assent. The Kerala Bill specifies that the appointee should be an eminent academician or public figure.

The Chancellor elected by the University Bodies model empowers university bodies and alumni to elect a ceremonial Chancellor as in Oxford, Cambridge and Edinburgh universities.

In the Chancellor appointed by the University's Executive Council model, several universities in the U.K. (Birmingham), Canada (McGill) and Australia (Melbourne) appoint ceremonial Chancellors through their Executive Council or Board of Governors, following transparent selection processes.

Among these, the State-appointed Chancellor model is the most practical for India, provided the appointees are distinguished academicians or public figures, excluding politicians. The M.M.Punchhi Commission had recommended it.

Dismantling a colonial legacy

Reforming State universities in India demands a careful balance of key principles: ensuring accountability to elected State governments, minimising political interference, promoting institutional self-governance, and fostering academic freedom and excellence. The vital first step is divesting the Governor of his colonial-era role as Chancellor.

While States like Gujarat, Karnataka, Telangana, and Maharashtra have implemented reforms, others such as Tamil Nadu, Kerala, West Bengal, and Punjab face indefinite delays in obtaining Presidential assent for their proposed changes. This disparity underscores the need for impartial treatment by the President and Government of India. There is no valid reason for withholding approval of the pending Bills and resolving such matters through the Supreme Court under Article 131 should be avoided. The Centre should facilitate progressive reforms that seek to dismantle colonial-era administrative structures, guide States towards aligning their university governance models with global best practices, and enable universities to focus on academic excellence free from political entanglements.

The author is a retired IAS officer and a former Vice-Chancellor of the Indian Maritime University, Chennai

THE GIST

- The Governor's role as Chancellor of State universities has led to political interference and diminished university autonomy, particularly in Opposition-ruled States.
- Over the years, Governors have increasingly become political appointees, undermining the credibility of the office and exacerbating conflicts between State governments and the Centre.
- Various commissions have recommended reforms such as appointing academics or public personalities as Chancellors to preserve university autonomy and reduce political influence.

India and U.S. lead Courseera enrolments for Gen AI courses

Corporate sponsorship plays a significant role in boosting enrolments in India

DATA POINT

The Hindu Data Team

The demand for generative AI training has grown significantly among learners and enterprises, according to Coursera data, highlighted in the Future of Jobs Report 2025. India and the U.S. are leading this global trend in enrolments, but the factors driving demand differ between the two countries. While individual learners primarily drive demand in the U.S., corporate sponsorship plays a significant role in boosting enrolments in India.

Globally, individual learners on Coursera are focusing on foundational generative AI skills and conceptual topics, such as prompt engineering, trustworthy AI practices, and strategic decision-making around AI. Meanwhile, institution-sponsored learners are prioritising practical workplace applications, including using AI to enhance productivity in tools such as Excel or developing applications with AI-driven solutions.

Chart 1 shows the Generative AI enrolment trend in 2022-2024 in Coursera. The demand for generative AI training is not happening in isolation but is closely tied to broader technological shifts reshaping industries worldwide. The survey reveals that among nine transformative technologies, AI and information processing technologies are expected to have the most significant impact on businesses by 2030, with 86% of employers identifying them as likely to drive business transformation. This surpasses the anticipated influence of robots and autonomous systems (58%) or energy generation and storage technologies (41%).

Chart 2 shows the technology trends driving business transformation, as answered by the surveyed employers.

Since the release of ChatGPT in November 2022, investment flows into AI technologies have increased nearly eight-fold, driving significant advancements in the field. This influx of capital has been matched by investment in the physical infrastructure required to support these technologies, such as servers.

The growing demand for generative AI training is also closely tied to the shifting landscape of job roles driven by technological advancements. Employers expect technological developments such as AI and robotics to play a pivotal role in shaping the workforce, says the survey. By 2030, roles such as Big Data Specialists, FinTech Engineers, AI and Machine Learning Specialists, and Software and Applications Developers are projected to experience the fastest net growth. **Chart 3** shows the top jobs by fastest net growth as projected by surveyed employers.

The interplay of humans, machines, and algorithms is fundamentally reshaping the nature of work. Automation and advancements in technology are driving a shift in how tasks are performed across industries. According to the survey, 47% of tasks today are completed primarily by humans, while 22% are handled mainly by technology, and 30% involve a mix of both. By 2030, tasks are expected to be more equally divided.

This shift is driven largely by increased automation. Of the nearly 15% point reduction expected in the proportion of work tasks performed solely by humans between 2025 and 2030, approximately 82% will be attributable to advancing automation, while the remaining 19% will result from expanded human-machine collaboration.

Chart 4 shows the share of work tasks expected to be delivered predominantly by human workers, by technology, or by a combination of both.

This transition highlights the growing importance of equipping the workforce with the skills needed to thrive in a world increasingly shared with intelligent machines.

Shifting landscapes

The charts are sourced from the 'Future of Jobs Report 2025' released by the World Economic Forum

Chart 1: The chart shows the Generative AI enrolment trend for 2022-2024. The chart reveals significant growth in demand for Generative AI training among both individual learners and enterprises

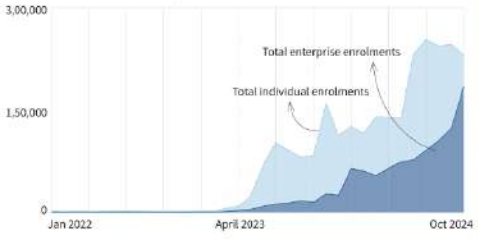


Chart 2: Share of employers surveyed who identify the stated technology trend as likely to drive business

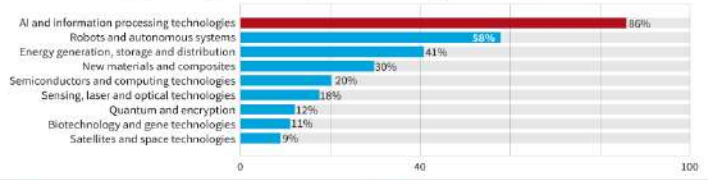


Chart 3: The chart shows the top jobs by fastest net growth by surveyed employers. The fastest growing job roles by 2030 tend to be driven by technological developments.

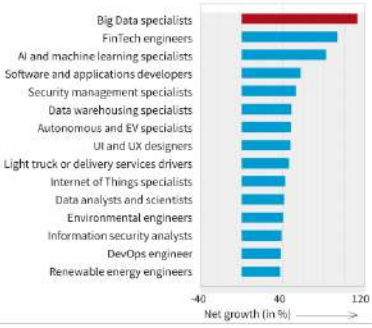
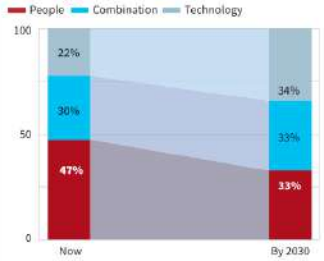


Chart 4: Share of total work tasks expected to be delivered predominantly by human workers, by technology, or by a combination of both



Today, 47% of work tasks are performed mainly by humans, 22% by technology, and 30% by a combination of both. By 2030, employers expect these proportions to be nearly evenly split across these three categories

Genocide and the world's averted gaze

Priyanjali Malik

writes on international affairs, security and defence, with a special focus on nuclear politics

Eighty years ago, on January 27, 1945, Soviet soldiers stumbled upon the barbed wire surrounding Auschwitz-Birkenau. Inside they found 8,000 emaciated prisoners, along with 44,000 pairs of shoes, piles of spectacles, and mounds of cooking utensils. This was all that remained of the approximately 1.1 million people, mainly European Jews, who were killed at Auschwitz. As the retreating Nazis destroyed their meticulous records along with much evidence of the brutally efficient killing operation, a precise figure is not available. This year, on the anniversary of the liberation, the few remaining survivors and world leaders have been invited to remember the dead and to renew the international community's pledge of never again allowing genocide to take place.

A stain in human history

As the Genocide Convention of 1948 recognises, the crime of genocide – 'acts committed with the intent to destroy, in whole or in part, a national, ethnical, racial or religious group' – has stained human history down the ages. The United Nations Secretary-General, António Guterres, said on December 9, 2020, on the international day to commemorate victims of genocide, 'Genocide always has multiple clear warning signs.'

The Soviet soldiers who liberated Auschwitz later said they were wholly unprepared for what they found. However, while the industrial scale of the killing that would eventually claim six million Jewish lives, in addition to tens of thousands of Roma, Sinti, and other people deemed inferior or political opponents, was not known in its entirety, the Allies were not entirely unaware.

On assuming power in 1933, the Nazis codified the persecution of Jews in hundreds of laws, culminating in the Nuremberg Laws of 1935 that took away German citizenship from Jews and others considered 'non Aryan'. Yet, when those Jews who could overcome restrictive German emigration laws tried to leave (until 1941, when Germany forbade Jewish emigration), they encountered bureaucratic obstacles, xenophobia and antisemitism.

Following the 1929 Stock Market Crash, the United States tightened already restrictive immigration quotas. The United Kingdom required those entering until 1938 to be self-supporting or sponsored; after the Anschluss it introduced a visa system. Neither made provisions for refugees. After 1938, Britain also restricted Jewish immigration into Palestine, then a British mandate. Some Jews moved to neighbouring European countries, only to be caught in Hitler's net as German tanks rolled over Europe. France, Belgium and the Netherlands were particularly assiduous in following Nazi orders to round up Jews for concentration camps.

As world leaders gather at Auschwitz, they must ponder over why 'never again' continues to be breached

The reality of 'Never again'

The Allies responded to the growing refugee problem by gathering at Evian in July 1938; apart from sympathetic statements, the 32 delegates offered little else. By the time the U.K. and the United States met at the Bermuda Conference of April 1943, reports of mass Jewish killings were unambiguous. The World Jewish Congress had submitted a report outlining Hitler's plans that Jews, 'after deportation and concentration in the East, be at one blow exterminated' (Riegner telegram, December 1942). The Polish Government-in-Exile in London published a pamphlet in December 1942 titled 'The Mass Extermination of Jews in German Occupied Poland.' Escapees from the concentration camps brought their own harrowing stories. The evidence for genocide was mounting, but the Allies would not, or could not, look too closely.

Never again, they declared in 1945. And yet, between 1975 and 1979, the Khmer Rouge in Cambodia are estimated to have killed over two million people by execution, starvation, disease and exhaustion as they sought to recreate Cambodian society in some communist ideal. As refugees fled to neighbouring countries and a new regime was installed in Phnom Penh after Vietnam's invasion, the international community's responses were conditioned by Cold War calculations: China and the West supported the fleeing Khmer Rouge while Vietnam and the Union of Soviet Socialist Republics (USSR) supported the newly installed communist government.

Never again. And yet, in Rwanda, in 1994, between 8,00,000 to 10,00,000 people, mostly minority Tutsi with some moderate Hutu, were murdered over 100 days while UN peacekeepers watched helplessly. In July 1995, 8,000 Bosnian Muslim men and boys were herded from a UN compound in Srebrenica – a place declared a safe zone (it is inescapable that safe zones were also created to prevent refugees flooding out of the former Yugoslavia) – and executed, as part of a careful campaign of ethnic cleansing. The Dutch UN commander requested reinforcements from both the UN and the North Atlantic Treaty Organization, which never arrived. It was the culmination of three years of indecision by Europe and America on how to respond. This year is the 30th anniversary of Srebrenica (July 11).

Never again. Less than a decade later, violence broke out in Darfur, Sudan. Approximately 2,00,000 people were killed in 2003-05 in what the International Criminal Court (ICC) and some states have recognised as genocide. The violence in Sudan continues and there are renewed fears of genocide occurring now while the international community's attention is focussed on Ukraine and Gaza.

In Gaza

Then there is Gaza. As world leaders gather at Auschwitz on January 27 to commemorate the 80th anniversary of its liberation, Gazans will attempt returning to the rubble of their homes. Some will be sifting through the debris to locate the remains of family still buried underneath, part of the 10,000 estimated to be missing. The International Court of Justice is examining whether Israel is guilty of genocide under a case brought by South Africa. The ICC has issued arrest warrants for the Israel Prime Minister, Benjamin Netanyahu, and the former Israel Defence Minister, Yoav Gallant, for war crimes and crimes against humanity committed in Gaza in response to Hamas' October 7, 2023 attacks. There are arrest warrants for Hamas leaders too.

And, yet, America's and western Europe's response was to criticise the ICC, expressing outrage that there should be any semblance of equivalence in the arrest warrants for the leaders of Hamas and Israel. In some perversion of international norms, there seems to be an acceptance of a hierarchy of suffering. Arms have continued to flow to Israel, even as the death toll in Gaza crosses 47,000, mostly women and children. The UN estimates that 92% of all homes have been destroyed, health-care infrastructure and 87% of schools destroyed, and entire populations forcibly displaced multiple times. All this happened while Gaza was under siege, the foreign press was barred from entering, and the world acquiesced in looking away.

Israel has a right to defend itself, and Hamas' actions in October 2023 are completely indefensible. Yet, when does self-defence cross over into genocide? Where is that line? Arguably, that line is where we avert our gaze.

Indian space programme breaks into 2025 in 'mission mode'

The PSLV-C60 mission laid the foundations for Chandrayaan-4 and the Bharatiya Antariksh Station. Forthcoming test flights will move India closer to human spaceflight, soon to receive a helping hand from a third launch pad at Sriharikota, continuing work on NGLV, and a change of guard at ISRO

INDIA IN SPACE

Pradeep Mohandas

Just as 2024 was the year India developed a vision for its space programme, 2025 is likely to have the programme in mission mode. The PSLV-C60 mission, underway as the year began, laid the foundations for Chandrayaan-4 and the Bharatiya Antariksh Station.

Forthcoming test flights will move India closer to human spaceflight, soon to receive a helping hand from a third launch pad approved for construction at Sriharikota, continuing work on the Next-Generation Launch Vehicle (NGLV), and a change of guard at ISRO.

SpaDeX, a team effort

On December 30, 2024, the PSLV-C60 mission lifted off from the Satish Dhawan Space Center (SDSC) in Sriharikota. About 15 minutes after liftoff, the rocket delivered the Space Docking Experiment (SpaDeX) satellites at slightly different velocities into a 475-km circular orbit.

Then ISRO chairman S. Somanath said the nominal date for the docking attempt would be January 7, 2025. M. Sankaran, director of the UR Rao Satellite Centre (URSC), said this was to allow the satellites to power up their solar cells.

Indian private company Kepler Aerospace provided ground station-as-a-service support for the mission alongside ISRO. It was able to simultaneously command the two SpaDeX satellites and provided "comprehensive mission support in under a month."

Swiss space situational awareness company s2a systems also shared details of the distance between the two satellites on social media.

This separation reached far rendezvous conditions, i.e., 10-20 km, on January 2, 2025, and started moving closer on January 6. ISRO had originally planned a webcast for January 7 but rescheduled by two days before calling it off altogether.

On January 8, the organisation said when the inter-satellite distance was reduced from 500 m to 225 m, the drift between the satellites was greater than expected. So it re-increased the separation to 6-8 km on January 9 and started over.

On January 10, the satellites were put on 'hold' mode to maintain an inter-satellite distance of 1.5 km then moved closer together on January 11 and 'held' at 230 m. On January 12, the inter-satellite distance was reduced further to 105 m, subsequently to 15 m, and then to 3 m. At this point, ISRO decided to move the satellites apart once again so it could analyse data from the satellites' sensors before the next attempt.

According to s2a systems, the inter-satellite separation grew to 10.9 km on January 12, and from there the next docking attempt was launched. They came within 2.6 km of each other on January 13 and to 900 m on January 15.

Finally, on January 16, ISRO issued a statement saying the two satellites had successfully docked and stabilised themselves in orbit. ISRO thus made history by completing its first in-orbit rendezvous and docking. Later that day, both satellites were controlled together from one of them, a feat necessary for lunar and space-station docking.

ISRO said the next steps involved transferring power from one satellite to the other and, later, undocking.

POEM4, the orbital testbed

After the PSLV-C60 mission deployed the SpaDeX satellites, the rocket's fourth stage was moved to a 350-km circular orbit and had its fuel dumped (a process called passivation, done so that the fuel doesn't explode and create a debris field). In this form, it was ready for the PSLV Orbital Experimental Module (POEM-4) phase of its mission, when the fourth stage was to orbit the earth like a satellite. It carried 24 payloads: 14 from ISRO and 10 from academia and private industry.

ISRO's Relocatable Robotic Manipulator-Technology Demonstrator tested its movement and relocation capability by moving from one part of POEM4 to another. The Debris Capture Robotic Arm Manipulator also moved its arm, but ISRO wasn't clear about whether it managed to capture the piece of debris tethered to the payload. The Compact Research Module for Orbital Plant Studies (CROPS) had cowpea seeds germinate in orbit and studied the leaves.

On December 31, 2024, Manastu Space's Vyom 20 payload fired its green propulsion system for 30 seconds, tilting the POEM4 stage by 24°. The system used the company's proprietary green fuel MS289. Manastu fired the system once again on January 13, this time having POEM4 perform a somersault with an angular velocity of 1.5° per second.

Similarly, Bellatrix Aerospace fired its RUDRA payload for 60 seconds to impart an angular velocity of 1.4° per second and turn POEM4 around by 80°.

N Space Tech's payload, SwetchaSAT-V0, established communications with its ground station. The payload, designed and built in-house, tested communications in the UHF to Ku bands.

The SJC Institute of Technology and the Upagraha Amateur Radio Club at URSC said they had successfully received data from BGS-ARPIT, their jointly-developed amateur radio messaging payload. Many amateur radio operators also shared images received from BGS-ARPIT on amateur radio mailing lists.

GalaxEye also announced the successful performance of its payload, GLX-SQ. The company said it had achieved all mission objectives, including using GLX-SQ to create a synthetic-aperture radar (SAR) image.

TakeMe2Space successfully conducted an in-orbit demonstration of its MOI-TD payload. An artificial intelligence unit, it uploaded "large models from the ground station, [executed] external code on the satellite, and [downlinked] the ... results." The company said it faced "a critical failure in the camera hardware," however.

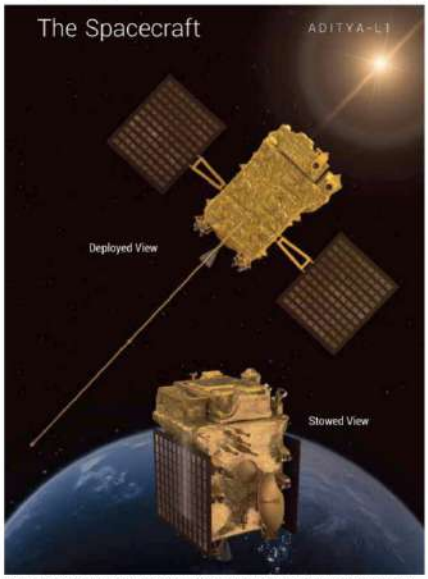
Amity University said its Amity Plant Experimental Module in Space (APEMS) yielded positive results in its attempt to grow a plant in controlled conditions onboard POEM4.

Change of guard

While the SpaDeX and POEM4 missions were being executed in space, V. Narayanan took over from Somanath as ISRO chairman on January 14.

Narayanan was director of the Liquid Propulsion Systems Center, Thiruvananthapuram, and led work on the cryogenic and semi-cryogenic engines. He also chaired a committee to examine the failure of the Chandrayaan-2 moon-landing attempt.

ISRO launches the PSLV-C60 from the Satish Dhawan Space Centre in Sriharikota on December 30, 2024. AFP



Aditya-L1 is India's first space-based observatory to study the sun. This artist's impression shows the spacecraft in its deployed and stowed configurations. ISRO

On January 16 the two satellites docked and stabilised in orbit. Later both satellites were controlled together from one of them, a feat necessary for lunar and space-station docking. ISRO said next steps involved transferring power from one to the other and undocking

Aboard Transporter 12

Three Indian companies flew their payloads onboard SpaceX's Transporter 12 mission on January 15. They were part of another 131 payloads that the Falcon 9 rocket delivered to orbit.

First, **Pixxel Space**'s three Firefly hyperspectral satellites became the first private Indian satellite constellation; three more are to fly in the future. The company announced on social media that all three satellites had deployed their solar arrays and had started generating power, were stabilised, and had established two-way communication links.

Second, **Digantara** launched its Space Camera for Object Tracking for space situational awareness and to augment its ground capabilities. The company said the satellite was generating solar power and had stabilised. The satellite will now move to its commissioning phase to prepare for its mission: to precisely track objects in low-earth orbit.

Third, **XDLINX Labs**' Elevation 1 miniaturised communications satellite, built for US-based Almagest Space Corporation on its XDSATNS platform, was assembled, integrated, and tested by Ananth Technologies. The satellite has a small E-band satellite communications payload that sent a "hello from space" message to mark the start of its mission.

Space tech and science

The Union cabinet approved the construction of a third launch pad at SDSC at a cost of ₹3984.86 crore. It's expected to be built by 2029, to serve as a backup for the second launch pad as well as support for human spaceflight facilities and ISRO's NGLV.

ISRO also successfully tested its Vikas engine's ability to restart, i.e., stop firing, then start again, at its propulsion complex in Mahendragiri. The engine was fired for 60 seconds, shut off for 120 seconds, and fired again for seven seconds. ISRO has more tests planned ahead of certifying the engine's readiness to operate in this way in the atmosphere.The fourth-stage liquid engine of the PSLV already has restart capability in the vacuum of space.

Finally, on January 6, ISRO released the first tranche of data collected by its Aditya-L1 mission, exactly a year after the mission had started to study the sun and its effects on the inner solar system.

(Pradeep Mohandas is a technical writer and space enthusiast in Pune. pradeep.mohandas@gmail.com)

Remains of *Mbiresaurus raathi*, which was only about one metre tall, with a long tail, and weighed up to 30 kilograms, were found in Zimbabwe in 2019. AFP

Where did dinosaurs first evolve?

Reuters

Dinosaurs long dominated the earth's land ecosystems with multiple forms, including plant-eating giants like Argentinosaurus, meat-eating brutes like Tyrannosaurus, and weirdos like Therizinosaurus, with its Wolverine-like claws. But the origin of dinosaurs – precisely when and where they first appeared – remains a bit of a puzzle.

Researchers are now proposing a surprising location for the birthplace of dinosaurs, based on the locations of the currently oldest-known dinosaur fossils, the evolutionary relationships among these early forms, and the earth's geography during the Triassic Period. This locale spans the modern-day Sahara desert and Amazon rainforest regions, now separated by thousands of kilometres and an ocean thanks to a geological process called plate tectonics.

"When dinosaurs first appear in the fossil record, all the earth's continents were part of the giant supercontinent Pangaea. Dinosaurs emerged in the southern portion of this landmass, known as Gondwana," said Joel Heath, a palaeontology doctoral student at University College London and the Natural History Museum in London and lead author of the study, published on Thursday in the journal *Current Biology*.

"Our research suggests they likely originated in the low-latitude regions of Gondwana near the equator, an area that today includes northern South America and northern Africa," Heath added.

The earliest-known dinosaur fossils date to roughly 230 million years ago, including Eoraptor and Herrerasaurus

Research suggests dinosaurs likely originated in low-latitude regions of Gondwana near the equator, an area that today includes northern South America and northern Africa

from Argentina, Saturnalia from southern Brazil, and Mbiresaurus from Zimbabwe. While sharing certain traits defining them as dinosaurs, they had sufficient differences that suggest millions of years of dinosaur evolution had already occurred.

"While earlier research has focused on southern South America and southern Africa as the area of origin of the dinosaurs, based on where their fossils first appear, we suggest that significant gaps in the fossil record, particularly in regions that today include the Sahara desert and the Amazon rainforest, may hold the potential to reveal where the earliest dinosaurs were living," Heath said.

The researchers said dinosaurs probably emerged approximately 245-230 million years ago, when these equatorial regions were extremely hot and dry.

"It likely included deserts, savannah-like habitats, and possibly forested areas prone to seasonal wildfires. Previously, it was believed that dinosaurs were absent from these harsh environments," Heath said.

Fossils from this time and region are rare. This might be because the conditions were not ideal for preserving the remains of land animals or because the rocks containing these fossils haven't been discovered yet, Heath said.

The Amazon and the Sahara also are difficult for palaeontologists to explore due to the logistical challenges.

Dinosaurs evolved from more primitive reptiles after the earth's biggest mass-extinction event caused by extreme volcanism at the end of the Permian Period, about 252 million years ago.

Cardiac surgeon who performed India's first coronary bypass surgery passes away

The Hindu Bureau
CHENNAI

India's pre-eminent cardiac surgeon K.M. Cherian, who performed India's first coronary bypass surgery, died in Bengaluru on Saturday. He was 82.

His son, Sanjay Cherian, shared a note that said, "It is with profound grief that I inform you all that my beloved father, Dr. K.M. Cherian, passed away around 11:55 p.m. last night [January 25]. Dad and I had attended a wedding reception in Bengaluru and as we were leaving, he collapsed..." He also said that Dr. Cherian was rushed to Manipal Hospital where he was declared dead. The funeral will be held on January 30.

Only a couple of days ago was his autobiography, *Just an Instrument*, launched at the Kerala Literature Festival.

Born on March 8, 1942, in Kerala, Dr. Cherian worked for over 50 years in the field of cardiology, training under world-renowned leaders in the field. He was also credited with performing the first heart-lung transplant in India, the second cardiac transplant, and strangely, for a profession where people stick to their chosen specialisation, was also a pioneer in paediatric cardiac surgery. He set up Frontier Lifeline Hospital in Chennai and Frontier Mediville, a large medical science park on the outskirts of the city, to help spur research into indigenous cardiac valves and other technologies.

During the book launch in Kerala, Dr. Cherian said each surgeon should consider the patient part of his own family. Some of the experiences he shared on the occasion include how he performed heart surgeries on 20 Iraqi children and how he played the diplomat in the release of four Indian drivers who were imprisoned in Iraq. He went on to explain his association with Mother Teresa, upon whose request he performed a surgery on a poor boy in Kolkata at minimal cost.

After having completed his medical education in Kasturba Medical College, Manipal, he went on to teach in Christian Medical College, Vellore, before heading out to the far shores of Australia and New Zealand to train further in cardiac surgery. He chose to come back to India to serve the people and the country. In the 50-plus years he served in the field, he also had a term as honorary cardiac surgeon to the President and worked extensively with patients who came from foreign nations for treatment, and was awarded the Padma Shri.

DR. K.M. CHERIAN (1942 - 2025)

Prime Minister Narendra Modi, in a post in X, said, "Pained by the passing of Dr. K.M. Cherian, one of the most distinguished doctors of our country. His contribution to cardiology will always be monumental, not only saving many lives but also mentoring doctors of the future. His emphasis on technology and innovation always stood out. My thoughts are with his family and friends in this hour of grief."

Simple childhood

In his autobiography, Dr. Cherian recalled his simple childhood, from walking barefoot to school to playing marbles on the street with friends, and a love to don paint to participate in the tiger dance during Onam. He confessed to getting zero in mathematics in Class 5, but the school managed to give grace marks to all students as the exam was unusually tough.

K.R. Balakrishnan, chairman-cardiac sciences and director of the Institue of Heart and Lung Transplant and Mechanical Circulatory Support in MGM Healthcare, recalled coming to Chennai in November 1984 "fresh from training in Bombay". Dr. Cherian was a mentor, with whom he conducted experiments during his stint at the Railway Hospital. "We did exciting stuff at that time," he said.

"He has travelled all over the world, planning for Madras Medical Mission (MMM). When I was working in Auckland in New Zealand, he stayed with me almost a week, visiting hospitals. I was the first cardiac surgeon to work with him. This is before he became famous. He was instrumental in me getting a fellowship in the United States. He was very generous to young people who worked with him. His contributions to cardiac surgery in India are legendary."

Ajit Mullasari, director of cardiology at the Institute of Cardio-vascular diseases at the MMM, said his association with Dr. Cherian began in 1995 when he joined the hospital.

"The first bypass surgery, coronary artery bypass surgery, the heart transplantation in the private sector, a lot of paediatric surgeries were pioneering efforts in this country. He had a great vision of the future," he said. Dr. Cherian "believed standalone centres will have no dilution of cardiac care. Subsequently a lot of people followed. But he was always one step ahead," Dr. Mullasari said, adding: "He put effort into research, which usually doesn't happen in a private centre. He was pushing you to research, be it stem cell or lab work. He would push us to write and encourage us to present in international congresses."

Sowmya Swaminathan, former chief scientist of World Health Organisation and chairperson of M.S. Swaminathan Research Foundation, in her post on X, said, "Deeply saddened to hear of Dr. KM Cherian's passing. His memoir was just released and we had long conversations recently – about the future of innovation and health technology development in India. Certainly a source of inspiration to many, apart from the countless lives he saved! RIP."

Flute-maker hopes Padma award will open up new avenues

Shubhomoy Sikdar
NARAYANPUR

With weekdays immersed in creating wooden art forms, Sundays for Pandi Ram Mandavi is a time for rest. But this one, which coincides with Republic Day, is different. It has been spent answering a steady stream of congratulatory calls from across the country and beyond, on his humble feature phone.

Mr. Mandavi has been chosen for the Padma Shri, India's fourth-highest civilian award, for his contribution to the field of wood craftsmanship and is particularly known for popularising a specially designed flute. The 68-year-old began his love affair with the art at the tender age of 15.

The artist, whose works have travelled across India and beyond, feels the recognition will inspire others to take up the art. He says it will also create opportunities for existing artists in his village of Gadhbengal in Narayanpur district of Chhattisgarh and the larger Bastar region. "There are various forms of painting and terracotta art also in Gadhbengal and many more across Bastar. But most of us lack marketing skills and still struggle to find markets. I hope the recognition I have achieved helps others too," says Mr. Mandavi, who was born into a Gondi-speaking family from the Muriya tribe and learnt the woodwork from his father.


Pandi Ram Mandavi

From wooden art that ranges from tiny combs to gigantic statues of Muria tribal men and women and even doors and pillars with engravings, it is the flute that earned Mr. Mandavi much recognition. "In the early 1990s, when it was being exhibited in Delhi, it caught the fancy of a group of visiting Japanese schoolchildren, each wanting to buy more than a piece. I realised its potential and over the years, I have lost count of the number of pieces I have sold," he says.

His flute differs from the traditional flute. Sound is produced by holding it in the hand like a wand and spinning it, a process that uses the air entering the long cylinder through a combination of three metallic washers stacked together at one end.

Assam tea workers prone to post-TB fungal disease: study

Chronic pulmonary aspergillosis, or CPA, is a life-threatening infection that strikes individuals with immunodeficiency; an earlier study had flagged prevalence of epidemic dropsy in State's tea belt

Rahul Karmakar
GUWAHATI

Two years after a study flagged the epidemic dropsy threat, a new research paper has identified a life-threatening fungal infection mostly in the damaged lungs of tuberculosis survivors among Assam's tea plantation workers.

TB has been a major public health issue across the tea belts in Assam's Brahmaputra and Barak valleys, afflicting 217 per 1,00,000 population according to the National TB Prevalence Survey of 2019-2021. The risk factors include poverty, poor nutrition, kitchen smoke, close contact with smear-positive patients, and living in congested environments.

A team of researchers from the Assam Medical College and Hospital in Dibrugarh has now put the focus on chronic pulmonary aspergillosis (CPA), an infection caused by *Aspergillus fumigatus*, a fungus that strikes individuals with immunodeficiency. CPA is a chronic lung disease that occurs commonly in pre-existing lung cavities. It mostly occurs in post-TB or active TB patients and shares similar clinical features with tuberculosis.

Persistent problem: TB has been a major public health issue across the tea belts in Assam's Brahmaputra and Barak valleys. ANI

The study, the first of its kind among tea workers, was published in the journal *PLOS Neglected Tropical Diseases*. Its authors are Aishwarya Selvasekhar, Reema Nath, Gourangie Gogoi, and Pronami Borah.

The team examined 128 patients visiting three tea garden hospitals and two referral hospitals in Dibrugarh district, which has 177 of Assam's 803 major tea estates and a high TB burden. These patients – tea workers and their dependents from four tea estates – experienced chronic cough, haemoptysis (coughing blood), weight loss or fatigue, and other respiratory symptoms for three months or more.

Using advanced serological testing and radiological imaging, the researchers recorded a CPA prevalence of 17.18% in the year-long study. CPA seropositivity was 18.5% in active TB patients but spiked to 48.9% in those who had completed treatment, underlining the fungal infection as a post-TB health issue.

Worse than Africa

The mean age of the patients was 41.9 and CPA was found to be more common in middle-age male workers (80 against 48 females).

According to the study, Assam's high CPA prevalence of 60 cases per 1,00,000 people exceeds the global average of 42. The scenario is worse than in African countries such as Nigeria and the Democratic Republic of Congo, where the prevalence ranges from 20 to 50. The researchers suggested testing for Aspergillus antibodies in patients who come with respiratory symptoms after completion of TB treatment to diagnose the cases early and treat them subsequently.

"This will help to decrease the morbidity and mortality due to this neglected and under-diagnosed disease in tea garden hospitals as well as other TB hospitals," they said. The researchers advised campaigns to train healthcare providers to recognise CPA symptoms and educate workers about respiratory health, nutrition, and hygiene.

In the context of nutrition, health experts pointed to a two-year-old study on epidemic dropsy published in the *Cureus Journal of Medical Science*.

Epidemic dropsy is caused by the consumption of edible oils contaminated with the oil from *Argemone mexicana*, a poppy of Mexican origin.

Army's missile firepower thunders down Kartavya Path in show of strike options

The parade features key missile systems, including BrahMos supersonic cruise missiles, upgraded Pinaka Multi-Rocket Launch System, BM-21 Grad MRLS, and the Pralay quasi-ballistic missile system; the new Battlefield Surveillance System, Sanjay, was showcased for the first time

Dinakar Peri
NEW DELHI

The missile systems showcased on Kartavya Path during the Republic Day parade on Sunday capture the evolving long-range tactical strike options for the Indian military, especially the Army, the need for which is one of the key lessons from the war in Ukraine.

BrahMos supersonic cruise missiles, upgraded Pinaka Multi-Rocket Launch System (MRLS) with a range of 75 km, BM-21 Grad, which is a 122 mm MRLS, and Pralay quasi-ballistic missile system were among those showcased.

The Defence Research and Development Organisation (DRDO) showcased a model of the indigenous Advanced Towed Artillery Gun System (ATAGS) on its tableau.

In addition to Pralay, the Army's new Battlefield Surveillance System, Sanjay, was at the parade for the first time. Sanjay has been jointly developed by the Army and Bharat Electronics Ltd. at a cost of ₹2,402 crore, and the systems will be inducted in all operational brigades, divisions and corps of the Army in three phases between March and October.

Upgraded tech: The Pralay quasi-ballistic missile system being displayed during the 76th Republic Day parade on Kartavya Path in New Delhi on Sunday. SHIV KUMAR PUSHPAKAR

As one of the most advanced rocket systems globally, the fully automated 214 mm Pinaka MRLS battery can deliver a salvo of 72 rockets on the target up to 75 km in 44 seconds, the commentary booklet distributed at the parade on Sunday said. The Army has four Pinaka regiments in service and six more are on order.

Twin-launched Pralay

The Pralay with a twin launcher system showcased at the parade is a quasi-ballistic missile and India's first ballistic missile designated for conventional role. Development trials of Pralay are over and the development is now complete, as reported by *The Hindu* earlier. The Defence Acquisition Council has accorded Acceptance of Necessity for a few hundred of the missiles for the Army and the Air Force. "In threat scenario, Pralay is capable of destruction of war waging potential of adversary even before the commencement of contact battle owing to its flexible range and lethality," the booklet stated.

The upgraded Pinaka is going to be the mainstay of the Army's long-range rocket artillery. Last November, the DRDO announced the successful completion of flight tests of guided Pinaka rockets of 75 km range, paving the way for its induction by doubling the original range of 37 km. Work is on to enhance the range to 300 km.

Last September, the Army's Director-General of Artillery, Lt. Gen. Adosh Kumar, said that the Pinaka system was being widely exploited and its ability was second to none. "We are looking at extending the range of the Pinaka rockets and a lot of work is going on. The DRDO is confident of achieving it."

In addition to Pinaka, the Army has five Grad rocket regiments and three Smerch regiments with a range of 90 km. Another missile, Nirbhay sub-sonic cruise missile, the longest range option, is in an advanced stage of development trials and can be expected to be showcased in the next few years.

Specialised ammunition

Another aspect adding to the lethality of Pinaka is specialised ammunition. Trials have been completed using high-explosive pre-fragmented rockets in the Pinaka system, which will increase the range by 15-20%, and an area denial munition (ADM) system, which can be anti-tank and anti-personnel. Contracts for procurement of both are expected to be signed soon, Lt. Gen. Kumar had said.

The Grad proved its worth during the 1999 Kargil War when its ability to deliver a salvo of 40 rockets in just 20 seconds played a key role in neutralising fortified enemy positions on high-altitude ridges. Initially mounted on the Ural-3750 truck platform, the BM-21 underwent a significant upgrade, transitioning to the indigenously developed Ashok Leyland super stallion platform. This upgrade enhanced mobility, increased payload capacity, and streamlined maintenance, the commentary noted.

The BrahMos detachment on Kartavya Path, led by Captain Suraj Singh, was from the 344 Missile Regiment, the youngest unit within the BrahMos fraternity.

Salute to tech: The Army displays robotic mules, or multi-utility legged equipment, during the Republic Day parade in Kolkata. PTI

Sundarbans Bird Festival records over 150 species

Shiv Sahay Singh
KOLKATA

About 154 species of birds were spotted during the third Sundarbans Bird Festival. Aimed at the promotion of avifauna, the estimation exercise was held from January 22 to January 26, during which birders recorded 51 species of migratory birds and 103 species of resident birds.

Forty birders across six teams spotted 31,926 birds during the exercise. About 100 bird species were recorded in the core area of the Sundarban Tiger Reserve, 90 species were spotted in the buffer zone, and 129 species outside the protected area. I

In the Matla forests of the Sundarbans, 108 species of birds were recorded, Kalas recorded 95 species, and Sajnekhali recorded 64 species (the lowest). In the National Park West area, 81 species were recorded, the National Park East area recorded 70 species, and the Basirhat area recorded 73 bird species.

About 12 species of threatened birds were spotted, including the Eurasian Curlew, Brown-winged Kingfisher, and Black-capped Kingfisher.

A.P. to get Central funds of ₹177 cr. for twin tourism projects

The Hindu Bureau
RAJAMAHENDRAVARAM

Andhra Pradesh Tourism Minister Kandula Durgesh on Sunday said the Centre had sanctioned ₹177 crore for developing two key tourism projects, the Akhanda Godavari and the Gandikota circuit, in the State.

Speaking at a press conference here, Mr. Durgesh said tenders would be invited within a week for the two projects to be executed under the public-private-people-partnership (PPPP) mode. "An estimated ₹98 crore will be spent on the Akhanda Godavari project and ₹79 crore has been earmarked for the Gandikota tourism circuit," Mr. Durgesh said.

Akhanda Godavari

"The glass sheet for walking on the Havelock bridge across river Godavari in Rajamahendravaram city, restaurants, tent city and boating covering all the ghats of river Godavari are the prime facilities to be developed," the Minister said.

The Havelock bridge was commissioned in 1897, and was decommissioned after it served the Indian Railways for over a century. "The Akhanda Godavari project will be commissioned before the commencement of the Godavari Pushkarams-2027," he added.

"More hospitality facilities will be provided apart from the beautification of the 12th-century Gandikota Fort and the gorge near it in thee Y.S.R. Kadapa district under the Gandikota tourism circuit," the Minister said.

No additional funds for MGNREGS; wages delayed

Sobhana K. Nair
NEW DELHI

The Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS), the Union government's flagship scheme to provide guaranteed employment of 100 days for rural workers, has not received an additional budgetary allocation in 2024-25 despite a deficit, resulting in delay in disbursal of wages to workers.

Sources said the Rural Development Ministry was short of ₹4,315 crore for the wages for which fund transfer order had been generated. Section 3 (3) of the MGNREG Act says "the disbursement of daily wages shall be made on a weekly basis or in any case not later than a fortnight after the date on which such work was done".

Uncertain times: MGNREGS workers at a reconstruction site on the outskirts of Amritsar. FILE PHOTO

Impacts future projects

The Centre has a liability of ₹5,715 crore against its share for material components.

The Centre bears 60% of the cost of the materials and the remaining 40% is provided by the States.

The delay in the material component has a domino effect which impacts future projects.

When there is a continued delay in material component payout, the local vendors who supply the raw material become reluctant to supply, breaking the work cycle.

In February 2024, in the last Budget of the Narendra Modi government's second term, ₹86,000 crores was allotted for the scheme. Despite the deficit and repeated requests forwarded by the Union Rural Development Ministry to the Finance Ministry, no additional funds were provided.

This is breaking from the past trend of allocating additional funds. To criticism on low allocation for the programme, the government has maintained that it is a demand-driven scheme and additional allocation is made whenever needed. For example, in 2020-21, when the pandemic drove reverse migration to the villages and the demand for work soared, the government revised the original allocation of ₹61,500 crore to ₹1,11,500 crores, one of the highest jumps.

Academics and activists closely monitoring the programme say the low budgetary allocation leads to artificial suppression of demand. This problem was also flagged by the Parliamentary Standing Committee on Rural Development in its report tabled in February 2024.

"The pruning of funds at Budget Estimate (BE) stage itself does have a cascading effect on various important aspects such as timely release of material share etc. which have a telling impact on the progress of the Scheme. ," the panel noted in its report.