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***Daily News Feed***

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# Sindhu, Lakshya end title drought; Treesa-Gayatri duo creates history

## BADMINTON

**Uthra Ganesan**  
LUCKNOW

The title drought for Indian shuttlers this year finally ended with the home favourites winning three of the five on offer on the final day of the Syed Modi India International Super 300 tournament here on Sunday.

While P.V. Sindhu beat China's Luo Yu Wu 21-14, 21-16 to join compatriot Saina Nehwal as a three-time winner at the Babu Banarasi Das Academy courts, Lakshya Sen won his maiden title in the event with a facile 21-6, 21-07 win against Singapore's Jia Heng Jason Teh.

But the stars of the day were undoubtedly Treesa Jolly and Gayatri Gopichand, becoming the first ever Indian women's pair to win the title here since its inception in 2009, defeating Li Jing Bao and Li Qian 21-18, 21-11.

It's been a disappointing year for Indian badminton with Chirag Shetty/Satwiksairaj Rankireddy being the only ones to win anything in 2024 before this. Sunday, therefore, was perhaps the best thing to happen to the sport ahead of 2025. But when the first two events on Sunday – the mixed and men's doubles – went against the Indian pairs in hour-long matches, it looked ominous.

That was before Treesa-



**Glittering show:** Sindhu and Lakshya eased past their opponents for the singles crowns. SANDEEP SAXENA

Gayatri came on. A tense first game saw the pairs exchanging lead every few points and it could have gone either way before the Indians kept their nerve to pull off a 21-18 win.

It was very different in Game 2 as they capitalised on the opponents' errors, displayed excellent attacking and defensive skills and kept widening the lead to wrap up in quick time. Up next for the two 21-year olds will be the World Finals, the only Indians at the year-end competition.

Sindhu, having improved with every outing here, was clearly the more confident one on court. And it showed in the final analysis. The first game was easy with the former World Champion always ahead. Wu tried to fight back but Sindhu, with her drops and reach, barely gave her space.

The second game was more of the same and, with Wu visibly getting tired with all the running around, there was little she

could do to counter Sindhu's smashes and stay in the long rallies. She did edge ahead at 11-10 but was unable to sustain in the face of intense pressure.

Lakshya, meanwhile, continued the way he has been all through the week, running through opponents in a hurry.

The first game against Teh was over in just 12 minutes, even before the crowd could settle. It took 19 minutes for the second as Lakshya, without breaking a sweat, made Teh a helpless spectator.

### **The results (finals): Women:**

P.V. Sindhu bt Luo Yu Wu (Chn) 21-14, 21-16.

**Doubles:** Treesa Jolly / Gayatri Gopichand bt Li Jing Bao / Li Qian (Chn) 21-18, 21-11.

**Men:** Lakshya Sen bt Jia Heng Jason Teh (Sin) 21-6, 21-7.

**Doubles:** Di Huang / Yang Liu (Chn) bt Pruthvi Krishnamurthy Roy / K. Sai Pratheek 21-14, 19-21, 21-17.

**Mixed doubles:** Dechapol Puavaranukroh / Supissara Paewsampran (Tha) 18-21, 21-14, 21-8.

# On the freedom of religion in Bangladesh

The preamble of the Bangladesh constitution mentions rationalism, democracy, socialism and secularism as its fundamental principles. Article 41 guarantees freedom of religion. It says that every citizen subject to public order and morality has the right to profess, practise or propagate any religion.

## LETTERS & SPIRIT

Khan Akbarul

**T**he destruction of Hindu temples in Bangladesh and the arrest of Hindu monk Chittanyo Krishna Das on sedition charges is not only a violation of Bangladesh's constitutional provisions but also a violation of international human rights law. Human rights are not the internal matters of any country and thus, India is fully justified in expressing its concern about the violation of minority rights in Bangladesh. However, the Bangladesh Foreign Ministry's reply has been disappointing. Indicative of how a country which claims minority rights usually responds.

Some 20 million Hindus, Christians, Buddhists and Ahmadiyyas who constitute the minorities in Bangladesh cannot be left at the mercy of the interim government that has not shown any sign of taking concrete steps against the Hindu majoritarian mob except a visit to Dakhshineswar temple by Muhammad Yunus who heads the current political dispensation. The kind of religious freedom the Bangladesh constitution guarantees to its religious minorities must be revisited by the interim government.

### Four fundamental principles

Pakistan was created through the division and erasure of a nation theory of Sir Jinnah and Muhammad Jinnah. No nation is to be created in the name of religion. Paving the theory wrong within 25 years, Pakistan itself got partitioned with the creation of a new country – Bangladesh. This new country was created not in the name of religion but on the basis of the secular and liberal thought nationalism. The constitution was adopted by the Constituent Assembly on November 4, 1972. The constitution also mentioned that this date corresponds to the 16th day of Kartick, 1379 B.S.

The preamble of the Bangladesh constitution mentions rationalism, democracy, socialism and secularism as its fundamental principles. In the India, the constitution or socialism has been explicitly mentioned and the preamble says that the fundamental aim of the state is to make through democratic process a socialist society free from exploitation – a society in which rule of law, fundamental human rights and freedoms, and equality and justice will be provided to all citizens.

### Islam as state religion

Though the origin of Bangladesh constitution was secular, the military dictator Ziaur Rahman in 1977 removed 'secularism' from it, and in 1988, General Ershad got Article 24 inserted in the constitution which had down Islam as the state religion. This new Article says that the state religion of the Republic is Islam and other religions may be practiced in peace and harmony. This kind of provision is there both in Sri Lanka as well as Britain. But the High Court and the Supreme Court struck down the amendment in 2005 and 2008 respectively. The court said that even though Islam is the state religion, the constitution remains secular. In a 100-page judgement, the court observed that the "irrevocable and relevant provision of the constitution in respect of secularism, rationalism and socialism as defined on August 06, 1975 (Mujaibur Rahman was assassinated on this day) will survive." It observed that "writing secularism, one of the state policy from the constitution, destroyed one of the



Rights of the four Bangladesh minorities demand that the government withdraw all cases against the leaders in Dhaka, Bangladesh, on November 4, 2011.

basis of our struggle for freedom and also changed the basic character of the Republic as enshrined in the preamble as well as Article 24 of the constitution."

On June 10, 2011, the constitution was again amended through the 18th amendment and the term 'secular' was removed. The amendment removed the expression 'shall also forth and forth to Islam' from the preamble, but retained the phrase 'freedom of religion'. In the name of Allah, the bestower, the merciful that was added in 1987, to accommodate other religions, it also mentions in the name of Creator, the merciful. This Allah was changed to Creator. The year also included the 8th amendment that permitted political parties based on religion.

### Rejection of religious discrimination

Article 24 stated that the religion of the Republic would be Islam but that the state shall ensure equal status and equal rights to Hindus, Buddhists, Christians and other religions. How these terms in a constitution – Islam as the state religion yet other religions have not been given equal status and equal rights. In the classical secular formulation, this is not right. However, it seems that this declaration of Islam as state religion in Bangladesh was similar to the state of the King in the United Kingdom as the Defender of Faith and Supreme Governor of the Church of England. King Charles on May 6, 1921 took the oath to uphold the laws of God and the true profession of the Gospel, maintain the Protestant reformed religion established by law and receive the sacrament of the Church of England.

Article 80 of the Bangladesh constitution mentions secularism along with rationalism, democracy and socialism as the fundamental principles of state policy. Article 12 was revised by the 15th amendment and it explains what will

be the essential ingredients of socialism in Bangladesh and how secularism will be achieved. It says that the principles of socialism shall be realized by the elimination of communalism in all forms, where the state shall not grant political status in favour of any religion, where abuse of religion for political purposes and any discrimination against or persecution of persons practicing a particular religion is prohibited. With such a clear and progressive provision, what are happening today is contrary to the constitutional mandate and Bangladeshis should immediately intervene for this in 2009 and 2010.

Article 38 that deals with the fundamental right to form associations prohibits the formation of unions or associations for the purpose of destroying the religious, social and communal harmony among the citizens or if such associations are formed for the purpose of creating discrimination among the citizens on the grounds of religion, race, caste, place of birth or language etc. or if observed of such associations are contrary to constitution.

Additionally, Article 215 imposes a duty on the state to protect and develop the unique local culture and tradition of the tribes, minor races, ethnic sects and communities of Bangladesh. Unlike Pakistan's constitution, there is no Muslim appointed to the office of President or other constitutional offices.

### Absolute freedom of religion

Bangladesh's constitution in an independent article (Article 29) guarantees freedom of thought and conscience. India does not have freedom of thought as a fundamental right but freedom of conscience has been included as part of the freedom of religion in Article 18. Article 41 of Bangladesh's constitution guarantees freedom of religion. It says that every citizen subject

to public order and morality has the right to profess, practice or propagate any religion. Like our Article 26, Article 400 gives the right to every religious community or denomination to establish, maintain and manage its religious institutions. Similarly just like our Article 28, Article 410 of Bangladesh's constitution lays down that no person attending any educational institution shall be required to receive religious instruction or take part in or attend any religious ceremony or worship, if that instruction, ceremony or worship relates to a religion other than his own. The difference between the two provisions is while we do not permit any religious instruction in any institution that is maintained out of state funds or is occupied by the government, Bangladesh permits religious instruction but only of one's own religion.

Article 200 is a replica of our Article 15 and prohibits the state from discriminating against any citizen on grounds of religion, race, caste, sex or place of birth. It also states that no citizen shall on grounds of religion, race, caste, sex or place of birth be subjected to any disability, liability, restriction or condition with regard to access to any place of public entertainment or resort or admission to any educational institution. Our Article 15 does not mention educational institutions and gives the right to access only to places maintained wholly or partly out of state funds or dedicated to the use of the general public. Thus, Bangladesh's constitution completely prohibits any discrimination on the grounds of religion.

The interim Bangladesh government is thus duty bound to honour these sacred constitutional promises to retain people trust in it.

Firooz Shauq is a constitutional law expert and Vice-Chancellor of Chittagong National Law University, Bangladesh.

## THE GIST

Though the original Bangladesh constitution was secular, the military dictator Ziaur Rahman in 1977 removed 'secularism' from it, and in 1988, General Ershad got Article 24 inserted in the constitution which had down Islam as the state religion.

On June 10, 2011, the constitution was again amended through the 18th amendment and the term 'secular' was removed. The amendment removed the expression 'shall also forth and forth to Islam' from the preamble, but retained the phrase 'freedom of religion'. In the name of Allah, the bestower, the merciful that was added in 1987,

The new Article 80, Article 124 gives the right to every religious community or denomination to establish, maintain and manage its religious institutions.

# What India's AI Safety Institute could do

In October, the Ministry of Electronics and Information Technology (MeitY) convened meetings with industry and experts to discuss setting up an AI Safety Institute under the IndiaAI Mission. Curiously, this came on the heels of Prime Minister Narendra Modi's visit to the U.S., the Quad Leaders' Summit, and the United Nations Summit of the Future. AI appeared high on the agenda in the run up to the Summit of the Future, with a high-level UN advisory panel producing a report on Governing AI for Humanity.

Policymakers should build on India's recent leadership at the G20 and the GPAI, and position it as a unifying voice for the global majority in AI governance. The design of the Safety Institute should prioritise raising domestic capacity, capitalising on India's comparative advantages, and plugging into international initiatives.

Notably, the Summit of the Future yielded the Global Digital Compact that identifies multi-stakeholder collaboration, human-centric oversight, and inclusive participation of developing countries as essential pillars of AI governance and safety. As a follow up, the UN will now commence a Global Dialogue on AI. It would be timely for India to establish an AI Safety Institute which engages with the Bletchley Process on AI Safety. If executed correctly, India can deepen the global dialogue on AI safety and bring global majority perspectives on human centric safety to the forefront of discussions.

## Institutional reform

In designing the institute, India should learn from concerns stemming from MeitY's AI Advisory in March 2024, which proposed that there be government approvals before the public roll-out of experimental AI systems. Some asked what kind of institutional capability the Indian government had to suitably determine the safety of novel AI



**Sidharth Deb**

Manager, Public Policy at The Quantum Hub, a public policy firm based in Delhi

India's AI Safety Institute should tap into parallel international initiatives

deployments. Other provisions on bias, discrimination, and the one-size-fits-all treatment of all AI deployments indicated that the advisory was not based on technical evidence.

Similarly, India should be cautious and avoid prescriptive regulatory controls which have been proposed in the European Union (EU) and China. The threat of regulatory sanction in a rapidly evolving technological ecosystem quells proactive information sharing between businesses, governments, and the wider ecosystem. It nudges labs to only undertake the minimum steps towards compliance. Yet each jurisdiction demonstrates a recurring recognition of establishing specialised agencies – for example, China's Algorithm Registry and the EU's AI Office. However, to maximise the promise of institutional reform, India should decouple institution building from regulation making.

The Bletchley process is underscored by the U.K. Safety Summit in November 2023 and the South Korea Safety Summit in May 2024. The next summit is set for France and this process is yielding an international network of AI Safety Institutes.

The U.S. and the U.K. were the first two to set up these institutes and have already signed an MoU to exchange knowledge, resources, and expertise. Both institutions are also signing MoUs with AI labs and receiving early access to large foundation models. They have installed mechanisms to share technical inputs with the AI labs before their public roll outs. These Safety Institutes facilitate proactive information sharing without being regulators. They are positioned as technical government institutions that leverage multi-stakeholder consortiums and partnerships to assess the risk of frontier AI models to public safety. However, they largely consider AI safety through the lens of cybersecurity, infrastructure security, safety of the biosphere, and other national

security threats.

These safety institutes aim to improve government capacity and mainstream the idea of external third-party testing and risk mitigations and assessments. Government-led AI safety institutes aim to deliver insights which can transform AI governance into an evidence-based discipline. The Bletchley process presents India with an opportunity to collaborate with governments and stakeholders from across the world. Shared expertise will be essential to keep up with AI's rapid innovation trajectories.

## Charting India's approach

India should establish an AI Safety Institute which integrates into the Bletchley network of safety institutes. For now, it should be independent from rulemaking and enforcement authorities and, instead, operate exclusively as a technical research, testing, and standardisation agency. It would allow India's domestic institutions to tap into the expertise of other governments, local multi-stakeholder communities, and international businesses. While upscaling its AI oversight capabilities, India can also use the Bletchley network to advance the global majority's concerns with AI's individual centric risks.

The institute could champion perspectives on risks relating to bias, discrimination, social exclusion, gendered risks, labour markets, data collection and individual privacy. Consequently, it could deepen the global dialogue around harm identification, big picture AI risks, mitigations, red-teaming, and standardisation. If done right, India may become a global steward for forward-thinking AI governance which embraces many stakeholders and government collaboration. The AI Safety Institute can demonstrate India's scientific temper and willingness to implement globally compatible, evidence-based and proportionate policy solutions.

# India's cities, their non-communicable disease burden

**T**he recent case where a Bengaluru Metropolitan Transport Corporation (BMTCL) bus driver passed away after cardiac arrest while on duty, has set off discussions on rising poor health outcomes in our cities.

Our cities are spread over pockets and layers. These pockets house the most marginalised and vulnerable urban citizens such as informal workers and migrant workers. Our cities run, literally and figuratively, because of bike-borne gig workers, cab and auto drivers, bus drivers and conductors. Our cities shine and are clean because of sanitation workers who are awake before the city does to clean the roads, clear the garbage bins and transport the garbage to sorting stations, waste lands, or landfills, all while staying deprived of hygiene and nutrition while at work. Most of them are not on contract and without health insurance.

## Poor implementation of policies

As we discuss this, India has a national non-communicable diseases (NCD) surveillance policy, with screening for NCD risks at the community level, aimed at preventive and promotive pathways for NCD care and treatment pathways. Though these policies are often subscribed from global bodies, they are poorly implemented. Health systems in urban areas are overburdened, fragmented and broken, which is a function of poor urban design and rapid urbanisation.

With over half of the world's population living in urban areas, this figure is projected to reach 70% by 2050. India's workforce is characterised by significant inter-State migration, with approximately 41 million people moving between States (Census 2011). This dynamic process, constituting nearly 29% of the total migration rate (Periodic Labour Force Survey 2020-21), highlights the fluidity of labour markets. Notably, a substantial portion of the urban population,



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There is a need to create healthy cities, marginalised communities and urban neighbourhoods must have access to primary health care

estimated at 49% (UN-Habitat/World Bank, 2022), lives in slums, further underscoring the complex socio-economic landscape of India's cities.

## The health burden in urban India

Poor urban communities face a triple health burden: hazardous work environments, limited health-care access, and financial vulnerability during health crises, that are exacerbated by social and economic marginalisation. As for national data on health indicators, NFHS data showed a decline in tobacco and alcohol consumption from 2005-06 to 2019-21 (NFHS 3 and 5), which is alarmingly juxtaposed with a rise in hypertension, diabetes, and obesity rates (NFHS 4 and 5).

Symptomatically, NCDs are silent, necessitating regular screening which needs to sit within a robust health promotion and referral system. The lack of understanding of the need for screening, early detection and preventive pathways for NCDs create catastrophic out-of-pocket (OOP) expenditure, in turn jeopardising financial stability and impacting the overall livelihood and life trajectory of the entire family.

This writer's experience of working with marginalised communities aligns with the fundamentals of social determinants of health (SDOH) which tie workplace, work, housing, community, family connections to health outcomes. Health in marginalised communities stems from social identities, work and employment, language, migration status, and accessing primary health systems.

In a country whose foundation of health systems sits on strong primary health care, it is problematic that the availability and access to publicly run primary health care are abysmally poor among urban marginals. Public health systems are, by design, supposed to cater to all, and, most specifically, to the lowest 40% of the population. The idea of universal health coverage fails. Preventing OOP expenditure fails. And our

urban marginals are laden with poor health outcomes, which, for many, runs across generations. This necessitates having an active dialogue between employers, municipalities, traffic systems, schools, as well as health systems. As interconnected systems, there is a need to co-create solutions with the community, and for the community.

## Tapping technology

In this age of digital technology and ease of tech-based monitoring, we could bring real-time monitoring of parameters on the lines of 'health in our hands' for those who have hypertension and diabetes. Screening, as a methodology, has a two-fold advantage. It gives us evidence from the population level which could be used for epidemiological modelling and public health planning.

On the other hand, this creates awareness at the individual and community level for health risks. It makes room for the implementation of community based, co-created health promotion, and health education activities which are sustainable and in turn un-burden health systems. This also creates an awareness for pathways for health care, referral and knowledge on social protection schemes to limit OOP expenditure.

This is the time for State-level action plans for NCD health care, which lay an emphasis on access to primary health care for marginalised communities and poor urban neighbourhoods—migrants, informal workforce, people living in informal settlements. We need to join hands with urban local bodies, the city administration, health departments and community-based organisations, experts and think tanks and discuss ideas to create healthy cities for all. This should also lead to a scaling up of ideas for community-led, community-based NCD surveillance systems for marginalised urban settlements.



## BIG SHOT



▲ The Mid-Infrared Instrument (MIRI) of the James Webb Space Telescope captured this brilliant new view of the famous Sombrero Galaxy (officially M104). The core of the galaxy is dim in this view, revealing a smooth inner disk as well as details of how the clumpy gas in the outer ring is distributed. Its name comes from an image by the Hubble telescope, where, together with its prominent core, it appeared like the broad-brimmed hat. NASA



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## WHAT IS IT?

# Shock diamonds: supersonic heat nuggets

Sometimes when a rocket or a jet takes off, its exhaust has an alternating pattern of light and dark patches (see image). The bright patches in this formation are called shock diamonds, a.k.a. Mach diamonds. Shock diamonds are formed when an engine releases its exhaust into the atmosphere at a supersonic speed.

Just as it leaves the engine, the exhaust can be at a lower pressure than atmospheric pressure at the same altitude. As the exhaust flows out, the atmosphere compresses it until the two pressures are equal. It's also possible that the exhaust becomes over-compressed, at which point it will expand outward again to drop its pressure. This seesawing process may repeat itself multiple times until the exhaust pressure is close to the atmospheric pressure. This entire process generates waves in the exhaust plume, leading to the formation of shock diamonds.

When the atmospheric pressure bears down on the plume, it causes exhaust that's diverging outward to bend inward instead, before its pressure causes the exhaust to bend outward



An SR-71 Blackbird takes off from the Dryden Flight Research Centre, California, on March 9, 1993. Shock diamonds are visible in its exhaust. NASA.

again and so on. When it flows inward, the pressure in that portion increases, hiking the temperature there and causing any fuel passing through that area to burn. The combustion creates a bright spot at that location, i.e., a shock diamond. The bending of the exhaust outward and inward produces shock waves that flow through the plume, creating the shock diamond pattern throughout.

- Vasudevan Mukunth



### For feedback and suggestions

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# In our fight against climate change, could the seas turn the tide?

The open seas offer an immense opportunity to slow climate change if we invest now and do it right. The ocean has absorbed 25% of anthropogenic carbon dioxide emissions and more than 90% of the excess heat generated by greenhouse gases. Investing in sequestration within the wide-open expanse of the ocean is logical and inevitable

Praveen Lal

**T**he ocean, the earth's vast blue lung, has long played a critical but underappreciated role in moderating the planet's climate. It has absorbed 25% of anthropogenic carbon dioxide emissions and more than 90% of the excess heat generated by greenhouse gases, buying humanity precious time against the worsening effects of climate change. However, this seemingly boundless capacity comes at a cost: ocean acidification, disrupted biogeochemical cycles, pollution, and prolonged harm to marine ecosystems. Acidification, for instance, threatens calcifying organisms like coral and shellfish, while warming alters ocean circulation and disrupts vital marine habitats. These disruptions cascade through ecosystems, undermining the services they provide – from fisheries to carbon sequestration. The ocean's natural carbon and heat absorption processes, though crucial, are slow and carry ecological consequences.

**A different suite of options**  
As we grapple with the dual imperatives of decarbonisation and climate resilience, attention is increasingly turning to marine carbon dioxide removal (mCDR) to complement emissions reductions and address lingering carbon dioxide burdens. The ocean's immense surface area and unique chemistry make it a tempting venue for natural and carefully engineered solutions. So far, all our efforts to fight climate change have been land-biased. We have invested heavily on land but ignored oceans, seas, lakes, and rivers. Several studies tell us that the land is saturated because soils and rocks are so severely damaged that they no longer support efficient carbon capture.  
Oceans, seas, rivers, and even lakes offer a different suite of options. Deep-water bodies retain the ability to remove excess carbon rapidly from the atmosphere. They also transport the carbon into depths where it mixes and binds with minerals. As on land, marine carbon capture strategies fall into two categories: (i) Biotic approaches take advantage of living systems like mangroves and macroalgae or our rivers to carefully carbonate biomass burial at sea. (ii) Abiotic approaches manipulate physical or chemical properties, such as through ocean alkalinity enhancement (OAE), and are more complicated but are also becoming unworkable. Both these methods promise to capture and store carbon for the long term and potentially stand out as 'net-zero' contributions to climate goals.  
(Biotic, or nature-based, solutions rely

## The global carbon cycle



Schematic representation of the overall perturbation of the global carbon cycle caused by anthropogenic activities, averaged globally for the decade 2012-2021. The uncertainty in the atmospheric CO2 growth rate is very small (0.02 billion tonnes per year) and is neglected for the figure. Source: IPCC AR6 WG1

on the inherent potential of ecosystems to sequester carbon while supporting biodiversity conservation and coastal protection. They are also relatively well-established, with some already integrated into national climate plans. However, their carbon sequestration potential is modest – typically capped at less than one billion tonnes of carbon dioxide every year – and storage durations are limited to hundreds or at best thousands of years.  
Abiotic techniques, by contrast, offer greater scalability and permanence. For example, biomass burial at sea, if done right, can sequester seven to 22 billion tonnes of carbon dioxide per year. Reducing the acidic nature of the seas through OAE is another option. Here, alkaline materials are added to sea water to neutralise its carbon dioxide content, locking the carbon away for tens of thousands of years in the form of dissolved inorganic molecules. This method could potentially sequester one to 15 billion tonnes of carbon dioxide per year, an order of magnitude higher than biotic methods.  
To put this in perspective, if we wish to keep global warming below 1.5°C, all our efforts must collectively cap emissions at 570 billion tonnes of carbon dioxide and reach net zero by 2050. But at today's

relentless pace, this carbon budget will vanish by 2030. Yet abiotic approaches face hurdles, including public scepticism, regulatory challenges, and the need for extensive energy inputs – particularly in cases involving mineral mining or electrochemical processes.  
**Promise for deep carbon burial**  
Despite its promise, mCDR is fraught with uncertainties and potential side effects as well. Techniques like ocean iron fertilisation, which claims to stimulate phytoplankton blooms to capture carbon dioxide, can disrupt other ecosystems and lower the oxygen content of deeper waters. Microalgae cultivation, another proposed solution, carries similar risks when decaying biomass alters the local chemistry. Even OAE, which experts have touted for its feasibility, raises concern about its consequences for marine biodiversity and the energy-intensive processes it may require.

Public perception further complicates deployment. Measuring how much carbon is captured and stays buried also remains a challenge since the seas are expensive to monitor. Many people view abiotic techniques as unnatural or harmful and favour biotic approaches instead, like direct air capture. Overcoming this scepticism will require communication, rigorous assessments, and stakeholder engagement. Critically, mCDR is not a substitute for reducing emissions. It cannot offset the current scale of fossil fuel combustion. However, as the world transitions toward net-zero emissions, leveraging the oceans and the seas becomes indispensable.  
The careful study of geological and ecological methods offers a chance to harness their power and vastness of oceans. Success hinges on rigorous science, robust governance, and societal trust. The Indian Ocean, with its vast area holds untrapped promise for deep carbon burial, potentially capturing 25-40% of the marine carbon dioxide. Harnessing these natural systems could provide a critical edge, turning the tide on runaway warming.  
Praveen Lal is a fisheries, a natural history writer, and the co-founder of the climate group Deep Carbon. praveenlal@gmail.com

## THE GIST

- ▼ The capacity of oceans to absorb carbon comes at a cost: acidification, pollution, and harm to marine ecosystems. It causes disruptions that cascade through ecosystems.
- ▼ The ocean's immense surface area makes it a tempting venue for carefully engineered solutions. So far, efforts to fight climate change have been land-biased, but studies tell us that the land is saturated and can no longer support carbon capture.
- ▼ Marine carbon sequestration is not a substitute for reducing emissions. It cannot offset fossil fuel combustion. However, as the world transitions toward net zero, leveraging the oceans becomes indispensable.



# New HIV infections declined 44% in 2023, AIDS-related deaths down 79%, says Nadda

## **The Hindu Bureau**

NEW DELHI

India's sustained efforts have ensured that the prevalence of HIV epidemic in the country remained in low levels over the years, with new infections in 2023 almost 44% lower than in 2010, while AIDS-related deaths declined by 79%, Union Health Minister J.P. Nadda said at an event held on Sunday to mark World AIDS Day.

Data released by the Ministry showed that HIV prevalence in adults continued to be high in Mizoram and Nagaland, closely followed by Manipur. Further, its rising trend in Punjab is a cause for concern.

It continues to be high among high-risk groups such as women sex workers, transgender people, truckers, and migrants.

## **The rising trend of prevalence in Punjab is a cause for concern, show data**

According to the HIV burden estimation report, which provides updated evidence of the prevalence level and trend of the HIV epidemic, Andhra Pradesh, Karnataka, and Telangana had an estimated adult prevalence higher than 0.4% (the national prevalence stands at 0.20%).

### **25.44 lakh people**

The report said that even with the low prevalence, India still had an estimated 25.44 lakh people living with HIV in 2023. Women aged 15-plus accounted for 44% of it, while nearly 3% of the cases were among children.

Speaking at a function held in Madhya Pradesh on Sunday, the Minister noted that India in the past adopted a 90-90-90 target for combating AIDS, referring to the targets of detecting 90% cases of AIDS in the country, treating 90% of identified people with antiretroviral therapy (ART), and having the viral load suppressed in 90% of them. He said the targets were later increased to 95-95-95, of which now 81% people with AIDS had been identified, 88% were being given ART, and the viral load in 97% had been suppressed.

Mr. Nadda emphasised the importance of caution to prevent HIV infection, the need to adopt a healthy lifestyle, and the significance of raising awareness while combating stereotypes through various initiatives.

# Centre working on national policy document on female labour force participation

**Sreeparna Chakrabarty**

NEW DELHI

The Centre will soon bring out a national policy document on female labour force participation with a focus on providing an enabling atmosphere like a viable care economy structure.

An inter-ministerial team from the Ministries of Skill Development, Labour, Rural Development, and Women and Child Development is working on it, informed sources told *The Hindu*.

Care economy is the sector of economic activities related to the provision of care, both paid and unpaid, for the present and future populations. It includes direct care, such as feeding a baby, as well as indirect care, such as cooking and cleaning, health care, education, and other



The move comes amid a report which said women faced a sharp drop in their labour force participation after marriage.

personal and domestic services.

The move comes amid a recent World Bank report which said women faced a sharp drop in their labour force participation post-marriage in India. According to the report, it is estimated that in India post-marriage, female employment rates drop by 12 percentage points, about

one-third of the female pre-marital employment rate, even in the absence of children.

## **Core skilling package**

One of the initiatives being explored is a core skilling package for caregivers for children, the sources said. The policy paper will also look at providing child care facilities for women in the informal sector such as for workers under the National Rural Employment Guarantee Scheme.

The Ministry of Women and Child Development already runs the 'Palna' scheme, or the National Programme on Anganwadi-cum-Crèche, which provides day-care facilities for children of working parents. A total of 1,000 Anganwadi creches have been made operational till now as part of this scheme, the sources said.

# PM flags cyberfrauds, port security at annual police meet

**The Hindu Bureau**  
NEW DELHI

Prime Minister Narendra Modi has expressed concern over the potential threats generated on account of digital frauds, cybercrimes, and AI technology at a conference of top police officers in the country.

Mr. Modi, along with Home Minister Amit Shah, attended the 59th All India Conference of Directors-General of Police and Inspectors-General of Police at Bhubaneswar on Saturday and Sunday.

The Prime Minister flagged the issues, particularly the potential of deep-fakes to disrupt social and familial relations.

He also highlighted the need to expand the focus on port security, and preparing a plan of action for it.

Appreciating the initiatives taken in urban policing, he suggested that each of the initiatives be collated and implemented entirely in 100 cities of the country, a government statement said.

Mr. Modi called for the use of technology to reduce the workload of the constabulary, and suggested that the police station be made the focal point for resource allocation.

Recalling the unparal-



Narendra Modi

leled contribution of Sardar Vallabhbhai Patel to the Ministry of Home Affairs (MHA), the Prime Minister exhorted the entire security establishment – from the level of the MHA to the level of the police station – to pay homage on Patel's 150th birth anniversary next year, by resolving to set and achieve a goal on any aspect that would improve the police's image, professionalism, and capabilities.

During the conference, in-depth discussions were held on existing and emerging challenges, including counter-terrorism, left-wing extremism, cybercrime, economic security, coastal security, and narco-trafficking. Deliberations were also held on emerging security concerns along the border with Bangladesh and Myanmar, trends in urban policing, and strategies for countering malicious narratives.



# Festival rush missing, yet net GST revenues up 11.1%

Net revenues, after factoring in refunds, hit ₹1.63,010 cr. in November, with domestic transactions yielding 12.5% higher taxes than a year ago, while revenues from imports were up by 5.6%

**Vikas Dhoot**  
NEW DELHI

**G**rowth in gross Goods and Services Tax (GST) revenues slowed to 8.5% in November from 8.9% in October, with the indirect tax receipts easing to a little over ₹1.82 lakh crore from ₹1.87 lakh crore in the previous month.

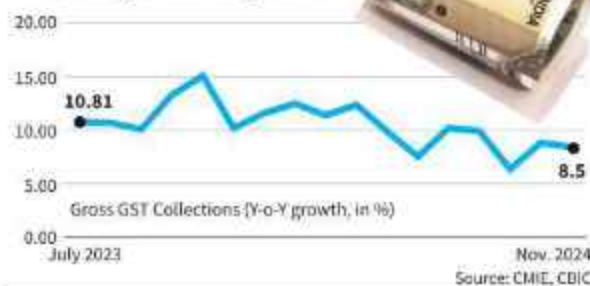
Prior to refunds, collections from domestic transactions were 9.4% higher and those from imports were up 5.9%. It must be noted that November's tax receipts typically pertain to transactions undertaken in October when the festivals of Deepavali and Dasara were celebrated.

Pointing to the month-on-month decline in GST collections, despite the festive season boost, EY India tax partner Saurabh Agarwal said he expects tax receipts to slow down in the next four months of the financial year. "The global geopolitical scenario and potential consumer spending cuts could further exacerbate short-term economic growth," he said.

Net GST revenues, after factoring in refunds to taxpayers, increased at a faster pace of 11.1% to hit

## No festive spurt

At ₹1,82,269 crore, Gross GST revenues in November — based on transactions in October — dipped from the previous month, with growth slowing to 8.5%



₹1,63,010 crore, with domestic transactions yielding 12.5% higher taxes than a year ago, while revenues from imports were up 5.6%. Net revenues had risen 7.9% in October to a tad above ₹1.68 lakh crore.

### Marginal improvement

Much of the gap between the slower growth in gross receipts and the higher uptick in net revenues can be attributed to a sharp 19.6% fall in refunds for domestic transactions which stood at just ₹10,111 crore in November. Refunds related to exports grew 6.8%.

In October, refunds to domestic taxpayers had risen 42.8%, while export-related refunds had contract-

ed 2%. In July this year, GST refunds had also contracted by over 19%.

Overall, the first eight months of the financial year have now recorded a 9.2% growth in net GST revenues that stand at almost ₹12.91 lakh crore. While this marks a marginal improvement over the cumulative pace of 9% till October, it is still markedly slower than the growth of about 11% penned in to the Centre's Budget 2024-25 arithmetic.

While gross domestic revenues were up 9.4%, as many as 15 major States recorded slower growth, with seven of them reporting a contraction in tax collections over last Novem-

ber. Just like in October, Arunachal Pradesh recorded the sharpest contraction of 23% last month. Nagaland and strife-ridden Manipur also saw a revenue shrinkage again, with receipts dipping 22% and 4%, respectively.

Andhra Pradesh recorded a 10% decline in revenues, while Chhattisgarh's revenues contracted 1% for the second straight month. Revenues also dipped 1% in Rajasthan. For eight major States, the growth was tepid despite the festive season - including Haryana (2%), Telangana and Punjab (3% each), Madhya Pradesh and Uttar Pradesh (5% each), West Bengal (6%), and Tamil Nadu (8%).

Sikkim led the pack of high growth States with a 52% surge in revenues, followed by the Union Territory of J&K (25%), Delhi and Tripura (up 18% each), and Maharashtra (17%).

M.S. Mani, partner at Deloitte India, termed the slower growth in some large States and the contractions in States like Rajasthan, Andhra Pradesh and Chhattisgarh "an area of concern" as they have a significant manufacturing presence and considerable economic impact.

# CAQM yet to submit data on increase in stubble 'burnt area' to top court

**Nikhil M. Babu**  
NEW DELHI

Despite a Supreme Court directive, the Commission for Air Quality Management in NCR and Adjoining Areas (CAQM) is yet to submit data to the top court on the increase in paddy stubble 'burnt area' in Punjab and Haryana in 2023, according to sources and the CAQM's recent affidavit.

The CAQM has also failed to provide the 'Minutes of the Meeting (MoM)' of a committee formed by it, which showed that the commission had information about the increase in 'burnt area' and that several farmers were burning stubble after satellites passed over the area to avoid detection.

The data is critical in understanding the extent of stubble burning as the number of incidents has dipped significantly in both States this year, according to data by the Indian Agricultural Research Institute (IARI) on Saturday at the end of this year's paddy harvest season. The CAQM also uses IARI data.

Experts emphasise that considering both stubble burning incidents and stubble 'burnt area' is es-



**Burning issue:** According to data from the Punjab government and the Centre, the 'burnt area' of paddy fields in Punjab and Haryana increased in 2023 compared with previous years. REUTERS

sential to grasp the actual magnitude of the problem.

On November 22, a Bench of Justices A.S. Oka and Augustine George Masih of the Supreme Court took note of a report in *The Hindu* that stated that the CAQM had information that the 'burnt area' of paddy fields in Punjab and Haryana increased, but the commission did not inform this to the apex court.

The Bench then directed the CAQM to submit the data on increase in 'burnt area' and the MoM cited in the article to the court by November 25 and also give clarifications.

## **'Important concept'**

Justice Oka said other than number of fires, total burnt area is a "very important"

concept. He stressed the need to create a mechanism to provide accurate data on farm fires and not to wait till October next year.

However, the CAQM did not submit the data and the MoM in the affidavit that it filed later.

The CAQM did not officially respond to queries, but a CAQM source said the court asking to submit the data and MoM was an oral observation of the court and not part of the order.

"The committee formed by the CAQM, which is headed by ISRO, is developing a protocol for paddy burnt area as there is no standard protocol now and different governments and agencies are using different protocols," the source said.

"Burnt area by itself will not be an accurate representation as many farmers now do partial burning of the stubble, but it will still be recorded as a completely burnt area in satellite measurements," the source added.

Anumita Roychowdhury, executive director, Centre for Science and Environment, stressed the importance of considering both burnt area and number of farm fires. "If we are considering only the number of stubble burning incidents, then big and small fires will be shown as the same. But the impact and emissions from a big fire will be more. So, we have to consider both to understand the magnitude of the problem," she said.

# Bangladesh upheaval has not led to a spike in border interceptions: data

**Vijaita Singh**  
NEW DELHI

The recent major political changes in Bangladesh have not led to a significant increase in the number of undocumented people intercepted on the border while entering or leaving India, Union government data show.

Between August 5, when then Bangladesh Prime Minister Sheikh Hasina fled to India, and November 27, 1,393 people from Bangladesh were apprehended along the International Border. From January 1 to August 4, the number was 1,144, the data accessed by *The Hindu* show. In all, 3,907 undocumented people have been intercepted so far this year, which includes Indians and people of other nationalities. In 2023, 5,095 were intercepted, including 3,137 Bangladeshis.

## Border transit

No major rise in number of undocumented people due to the political changes in Bangladesh

### Status Quo

Year	Undocumented Bangladeshis
2018	2,995
2019	2,480
2020	3,295
2021	2,451
2022	3,074

Despite the political turmoil in Bangladesh, between August 5 and November 27, only 1,393 persons were apprehended

In 2024 so far, the number of undocumented people intercepted was 3,907



Other than undocumented Bangladeshis, the Border Security Force intercepted 873 Indians entering Bangladesh without documents from January 1 to August 4.

The number of Indians who wanted to cross to Bangladesh from August 5 to November 27 stood at 388. This year, 109 people from other nationalities,

including of Myanmar, were stopped at the border. In 2018, 2019, 2020, 2021, and 2022, the number of Bangladeshis intercepted was 2,995, 2,480, 3,295, 2,451, and 3,074, respectively.

The BSF, deployed along the 4,096-km border with Bangladesh, has been on a heightened vigilance since August, with instruc-

tions from the Union Home Ministry "to not allow anyone into the country without valid documents".

### On alert

After the recent arrest in Dhaka of Chinmoy Krishna Das, spokesperson of the Bangladesh Sammilito Sanatani Jagaran Jote, an umbrella group of minority religious communities, in an alleged case of sedition, the BSF has tightened its vigil along the border.

"There could be instances when members of the minority community may want to enter India fearing for their safety, but till now, no such scenario has emerged. There were a few reports from Dinajpur in north Bengal but no mass movement of people is noticed so far. We stop unauthorised entry of all people," a senior BSF official said.



# Plastic treaty negotiations fail with countries split over production cuts

**Jacob Koshy**  
NEW DELHI

Delegates from nearly 170 countries who gathered in Busan, South Korea, failed to agree on a framework agreement to eliminate plastic pollution, despite a week of negotiations.

While this was the fifth and officially final round of talks of the Intergovernmental Negotiations Committee that began in 2022, ultimately the chasm between the blocs of countries – those that saw cutting plastic production as necessary to eliminate plastic waste and those that didn't – proved too wide to overcome. Countries, however, have decided to resume negotiations, likely sometime next year, under the tentative banner of INC-5.2.

As of Sunday evening, the assembly of countries in the final plenary ex-



Delegates pose for a group photo at the end of a member state press briefing during the fifth meeting of the INC in Busan. AFP

pressed disappointment as well their reservations on several paragraphs in a text, which was synthesised by the Chair of the proceedings, Luis Vayas Valdivieso, following negotiations by countries in an attempt to cobble an agreement.

"We share the unhappiness we feel in this room with the limited amount of

progress that we were able to make," said Hugo Schally, who spoke on behalf of the European Union at the closing plenary.

At the other end, other delegates saw proceedings as trying to reach "beyond" addressing plastic pollution. "Everyone is bringing their own lenses and turning it into a pretext for trade restrictions,

economic agendas, and commercial competition disguised as environmental action," said Salman Al-Ajmi who spoke for Kuwait.

A long-standing sticking point, and vehemently opposed by countries such as Saudi Arabia whose economies are centred on petrochemicals and the production of plastic polymers, was the push to have countries set targets to cut virgin plastic polymer production. This position was also unacceptable to India.

"India would like to state its inability to support any measures to regulate the production of primary plastic polymers as it has larger implications in respect of the right to development of Member States," said Indian delegation leader Naresh Pal Gangwar of the Environment Ministry, at the plenary

