

DAILY CURRENT AFFAIRS (25 September 2024)**TOPICS COVERED**

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Zelenskyy meets Modi in U.S., expresses gratitude for efforts towards peace

Sriram Lakshman
NEW YORK

Prime Minister Narendra Modi met with Ukrainian President Volodymyr Zelenskyy on Monday, in the afternoon, before departing New York for New Delhi. Mr. Zelenskyy's team had requested the meeting, according to Foreign Secretary Vikram Misri.

There was no discussion on India's purchase of Russian oil, Mr. Misri said as he briefed journalists on Monday. Referring to India's purchase of oil, Mr. Zelenskyy had told Indian journalists in Kyiv last month, that if Indians "change their attitude" towards Russia, the war would end.

The two leaders last met in Kyiv on August 23 when Mr. Modi made a short visit to Ukraine. During Monday's interaction— their third in three months—they discussed the Russia-Ukraine war and the Ukraine-India bilateral relationship.

Government officials were circumspect on Mr. Modi's afternoon schedule following his address at the UN's Summit of the Future, prior to the announcement that the meeting had taken place.

Mr. Zelenskyy "thanked the Prime Minister for the efforts that he was making for peace and a pathway to finding a way out of this conflict", Mr. Misri said.

"The President thanked India for supporting Ukraine's sovereignty and territorial integrity," the Ukrainian readout of the meeting said.

The Foreign Secretary confirmed that there was a discussion on the specifics of resolving the conflict.

Mr. Misri emphasised that Mr. Modi's conversations with Russian President Vladimir Putin and



Volodymyr Zelenskyy and Narendra Modi during their meeting in New York, on the sidelines of the UN General Assembly. AFP

U.S. President Joe Biden following his (Mr. Modi's) August Kyiv visit, as well as National Security Adviser Ajit Doval's meeting with Mr. Putin on September 12, were all attempts to "try and move towards some specifics".

'Specifics not available'

"I don't say that the specifics are available today, but the attempt is to do precisely that," Mr. Misri said.

Mr. Modi was deeply concerned about the conflict because of the human toll it was taking and the larger toll on the world, especially the Global South, the Foreign Secretary said, adding that the meeting demonstrated the Prime Minister's keenness to contribute to a resolution.

There was not much discussion on a second Peace Summit, Mr. Misri said.

The first Summit on Peace in Ukraine was held in early June in Switzerland and India was represented at the secretary level.

The Ukrainian readout of the meeting specifically

mentioned the conference.

"During the meeting, special attention was paid to strengthening interaction on international platforms, particularly within the UN and G20, as well as implementing the Peace Formula and preparing for the second Peace Summit," it said.

Both the Indian and Ukrainian sides appreciated the progress on bilateral issues, Mr. Misri said, and agreed to keep in touch, including potentially arranging a meeting of the Inter-governmental Commission, which is led by the Foreign Ministers of the two countries.

The Ukrainian readout described some of these issues, such as enhancing trade and economic ties, defence cooperation, India's involvement in post-war reconstruction, and collaboration in education, science, and culture.

INDIA ON UNSC DOCUMENT

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'INFLECTION POINT'

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Zelensky meets Modi in U.S., expresses gratitude for efforts towards peace (25 September)

- Prime Minister Narendra Modi met with Ukrainian President Volodymyr Zelensky on Monday in New York, at Zelensky's request.
- There was no discussion about India's purchase of Russian oil during the meeting, according to Foreign Secretary Vikram Misri.
- Zelensky had previously told Indian journalists that if India changed its stance on Russia, it could help end the war.
- The two leaders discussed the Russia-Ukraine war and the bilateral relationship between Ukraine and India.
- This was their third meeting in three months, with the previous one taking place in Kyiv on August 23 during Modi's visit to Ukraine.
- Zelensky thanked Modi for his efforts towards finding a peaceful resolution to the conflict.
- The Ukrainian statement mentioned gratitude to India for supporting Ukraine's sovereignty and territorial integrity.
- Modi has held discussions with Russian President Vladimir Putin and U.S. President Joe Biden to explore solutions to the conflict.
- While there are no concrete solutions yet, efforts are ongoing to work towards resolving the conflict.
- Modi is concerned about the human impact of the war and its effect on the world, especially on the Global South.
- There was little discussion about a second Peace Summit; the first was held in June, with India represented at a secretary level.
- The Ukrainian side highlighted the importance of cooperation on international platforms like the UN and G20, as well as preparing for the second Peace Summit.
- Both leaders discussed strengthening bilateral ties, including trade, economic cooperation, defense, post-war reconstruction, education, science, and culture.

Kerala smuggler-turned-forest protector bags award

Sandeep
IDUKKI

A smuggler-turned-forest protector in the Periyar Tiger Reserve (PTR) in Thekkady, Kerala, has bagged the prestigious Cricketers for Wildlife Conservation Service Award.

Sabu Varghese, also known as Kunjumon, a member of the Ex-Vayana Bark Collectors Eco Development Committee (EDC) in Thekkady, has received the award in recognition of his inspiring transformation. Mr. Kunjumon, once involved in smuggling Vayana bark (the bark of cinnamon trees), has now dedicated his life to conserving the very forest he once exploited.

Mr. Sabu was part of a group that illegally harvested Vayana bark from the PTR and sold it in Tamil



Sabu Varghese, aka Kunjumon, a member of the Ex-Vayana Bark Collectors Eco Development Committee. SPECIAL ARRANGEMENT

Nadu. "In 1996, Sabu, along with 23 other Vayana collectors, stopped such illegal practices and became associated with forest protection," said a Forest Department official.

Livelihood issues

The smuggling gang used to earn a substantial income by smuggling forest

produce such as sandalwood. Once they renounced the illicit activities, the need to provide them with a sustainable livelihood arose.

This led to the creation of Periyar Tiger Trail, an ecotourism initiative that soon became a national model. The programme provided former smug-

glers with a legitimate income and brought them social acceptance.

Sabu has been instrumental in leading anti-poaching efforts in the Periyar Tiger Reserve. He was a member of the Cheetah Squad, which apprehended sandalwood smugglers from Tamil Nadu.

His efforts also extended to helping smugglers reintegrate into society through the 'Vidiyal' ecotourism programme, providing livelihoods for 17 former smugglers.

Benefits abound

Reflecting on his past, Mr. Sabu said, "Joining the EDC changed everything. We gained social acceptance and it transformed the lives of my children too, who are now receiving a better education and opportunities."

Mr. Sabu was presented the Wildlife Service Award at the M. Chinnaswamy Stadium in Bengaluru on Saturday.

Former Indian cricketer Gundappa Vishwanath presented him with the award, which included a cash prize of ₹1 lakh and a memento.

Cricketers' role

The award, established by the Cricketers for Wildlife Conservation, aims at recognising the unsung heroes of forest conservation.

The initiative was conceptualised by former Indian cricketers Sandeep Patil, Yusuf Pathan, and Harbhajan Singh to motivate the foot soldiers protecting India's forests. M.N. Jayachandran, an environmentalist from Idukki, bagged the award in the Wildlife Crusader category.

Kerala smuggler-turned-forest protector bags award (25 September)

- Sabu Varghese, also known as Kunjumon, a former smuggler turned forest protector, has won the Cricketers for Wildlife Conservation Service Award.
- He is part of the Ex-Vayana Bark Collectors Eco Development Committee (EDC) in the Periyar Tiger Reserve (PTR) in Thekkady, Kerala.
- Sabu used to smuggle Vayana bark (from cinnamon trees) and sell it illegally in Tamil Nadu.
- In 1996, Sabu and 23 other Vayana bark collectors gave up illegal activities and started working to protect the forest.
- To provide these former smugglers with a legal livelihood, the Periyar Tiger Trail ecotourism initiative was created, which became a national model.

- Sabu played a key role in anti-poaching efforts and was part of the Cheetah Squad that caught sandalwood smugglers.
- He also helped reintegrate former smugglers into society through the 'Vidiyal' ecotourism programme, benefiting 17 ex-smugglers.
- Sabu mentioned that joining the EDC transformed his life, providing him and his children with social acceptance and better opportunities.
- He received the Wildlife Service Award at the M. Chinnaswamy Stadium in Bengaluru, presented by former Indian cricketer Gundappa Vishwanath.
- The award included a cash prize of ₹1 lakh and a memento.
- The Cricketers for Wildlife Conservation initiative, created by former cricketers Sandeep Patil, Yusuf Pathan, and Harbhajan Singh, aims to recognize forest conservation heroes.
- Another award, in the Wildlife Crusader category, was given to environmentalist M.N. Jayachandran from Idukki.

Good beginning, says India on UNSC reform document

World leaders recognise the **urgent need of being more 'inclusive'**; UN officials describe the language in 'Pact of the Future' on the long-pending Security Council reforms as 'groundbreaking'

GS Paper II: IR

Press Trust of India
NEW YORK

India said that a UN summit document for the first time containing a **detailed paragraph on Security Council reform** is a "good beginning", and New Delhi looks forward eventually to the beginning of text-based negotiations in a fixed time frame to **reform the 15-nation body**.

World leaders on September 22 adopted by consensus the **"Pact of the Future"**, promising to **"reform the Security Council, recognising the urgent need to make it more representative, inclusive, transparent, efficient, effective, democratic and accountable"**.

UN officials have described the language in the "Pact of the Future" on the long-pending Security Council reforms as "groundbreaking".



Redrawing lines: Foreign Secretary Vikram Misri during a special briefing on Prime Minister Narendra Modi's visit to the U.S. PTI

"I would only point you in the direction of the fact that for the first time, a UN summit document has a detailed paragraph on UN Security Council reform," said Foreign Secretary Vikram Misri in response to a question on how India sees this language on UN Security Council reform in the "Pact of the Future".

"So it may not have every single detail in every

area that we would imagine or we would like there to be, but I think it's a good beginning," Mr. Misri said.

Mr. Misri said that India looks forward "eventually to the beginning of text-based negotiations in a fixed time-frame going forward".

Mr. Misri was briefing reporters here as Prime Minister Narendra Modi wrapped up his three-day

visit to the U.S. during which he attended the Quad Leaders' Summit in Delaware, held bilateral discussions with President Joe Biden, addressed a mega diaspora event in Long Island, spoke in the UN General Assembly at the 'Summit of the Future', and held bilateral discussions with world leaders.

In the "Pact of the Future", world leaders agreed to redress the historical injustice against Africa as a priority and, while treating Africa as a special case, improve the representation of the under-represented and unrepresented regions and groups including Asia-Pacific, Latin America and the Caribbean. They agreed to "enlarge" the Security Council to be more representative of the United Nations membership and reflective of the realities of the contemporary world.

Good beginning, says India on UNSC reform document (25 September)

World leaders recognise the **urgent need of being more 'inclusive'**; UN officials describe the language in 'Pact of the Future' on the long-pending Security Council reforms as 'groundbreaking'

- India views the inclusion of a paragraph on Security Council reform in a UN summit document as a "good beginning."
- On September 22, world leaders adopted the "Pact of the Future" by consensus, which promises to reform the Security Council.

- The reforms aim to make the Security Council more representative, inclusive, transparent, efficient, effective, democratic, and accountable.
- UN officials called the language in the "Pact of the Future" regarding Security Council reform "groundbreaking."
- Foreign Secretary Vikram Misri acknowledged that while the document may not have all the details India desires, it is still a positive start.
- India is looking forward to starting text-based negotiations with a fixed time frame to move ahead with Security Council reforms.
- Prime Minister Narendra Modi concluded his three-day U.S. visit, attending the Quad Leaders' Summit, meeting President Joe Biden, addressing the UN General Assembly, and holding bilateral talks with world leaders.
- The "Pact of the Future" highlights the need to address historical injustices, especially towards Africa, and improve the representation of under-represented regions like Asia-Pacific, Latin America, and the Caribbean.
- The leaders agreed to enlarge the Security Council to better reflect the current global realities and make it more representative of the UN membership.

Father of accused in Badlapur sexual assault case moves HC

The Hindu Bureau

MUMBAI

A day after the accused in the Badlapur sexual assault case, Akshay Shinde, died in police firing, his father on Tuesday moved the Bombay High Court appealing to hear the matter urgently, saying evidence in the case will be destroyed. The matter will be heard by Justice Revati Mohit Dere on Wednesday.

Shinde was accused of sexually assaulting two minor girls at a school in Badlapur town of Thane district.

Advocates Asim Sarode, Shriya Awale and Ajinkya Gaikwad, representing the victims in the case, have also expressed concern about delay in justice.

"I am not at all concerned with the death of the accused, but I am unhappy, disturbed and worried that the death of the accused has actually killed the process of justice. We wanted the accused to be punished, so such heinous crimes can be stopped. We are filing an application in the Bombay High Court seeking probe with respect to the extra judicial killing of the accused Akshay Shinde as it appears to be suspicious and politically motivated," Mr. Sarode said.

The trial through due process against the accused would have "helped society to identify the loopholes" within the educational institutions. Such extra "judicial encounters"

violate the victim's right to seek justice and hence such acts should not be "celebrated or looked upon as a way to deliver justice", he added.

"Further investigation would have led us to trace the role of the other accused who are still absconding, as per the police reports. Their role in the present matter would have been identified. Guidelines would have been framed applicable to all the educational institutions by identifying the loopholes to provide safe and secure environment for all school going girls in Maharashtra thereby deterring others to commit similar incidences. The death of the accused has destroyed the lawful process of justice," he said.

Father of accused in Badlapur sexual assault case moves HC (25 September)

- Akshay Shinde, the accused in a sexual assault case involving two minor girls in Badlapur, died in a police firing.
- His father has moved the Bombay High Court, requesting an urgent hearing, concerned that evidence in the case may be destroyed.
- Justice Revati Mohit Dere will hear the case on Wednesday.
- Advocates representing the victims, Asim Sarode, Shriya Awale, and Ajinkya Gaikwad, expressed concerns about justice being delayed.

- Advocate Sarode said he is not concerned about the death of the accused but is worried that this has disrupted the justice process.
- He emphasized that punishing the accused through the legal system would have helped stop such crimes and identified weaknesses in educational institutions.
- The legal team is filing an application in the Bombay High Court to investigate the suspicious circumstances of Shinde's death, which they believe might be politically motivated.
- Sarode also stated that extra-judicial killings violate the victim's right to seek justice and should not be seen as a method of delivering justice.
- Further investigation could have exposed the role of other accused individuals who are still absconding.
- The death of the accused has ended the opportunity to frame guidelines for educational institutions to prevent similar incidents and provide safety for schoolgirls in Maharashtra.

M.P. Cabinet sets MSP for soya bean purchase at ₹4,892

The Hindu Bureau

BHOPAL

The Madhya Pradesh Cabinet on Tuesday approved online registration for procurement of soya bean at the minimum support price (MSP) of ₹4,892 even as various farmer outfits and the Opposition continue to press for an MSP of ₹6,000. The registration period is from September 25 to October 20, and the procurement will be done from October 25 to December 3.

In a statement, the government said, “13.68 lakh metric tonnes of soya bean will be purchased from farmers at the minimum support price of ₹4,892 [as approved by the Centre] per quintal.” The statement added that the State government will procure more with its funds if the production exceeds the limit approved for procurement by the Centre.

For about a month now, soya bean procurement has been in the political debate in M.P., which leads the country in production. Farmer organisations, including the Samyukta Kisan Morcha (SKM), and the Congress have said that the



For about a month now, soya bean procurement has been in the political debate in M.P.

cost of production is now more than the government's procurement price.

The State government approved the MSP of ₹4,892 for soya bean a couple of weeks ago after its market price fell close to ₹4,000.

On Monday, Bharatiya Kisan Union (BKU) leader Rakesh Tikait visited the State and held a tractor rally in Narmadapuram to press for farmers' demands. Saying that the farmers' agitation in national capital New Delhi had lasted over 13 months, Mr. Tikait told the farmers to not give up and also cautioned them against letting political parties take over their movement.

M.P. Cabinet sets MSP for soya bean purchase at ₹4,892 (25 September)

- The Madhya Pradesh Cabinet approved online registration for purchasing soybeans at a minimum support price (MSP) of ₹4,892.

- Various farmer groups and the Opposition are demanding a higher MSP of ₹6,000.
- The registration period for farmers is from September 25 to October 20, and procurement will happen from October 25 to December 3.
- The government plans to buy 13.68 lakh metric tonnes of soybeans at the MSP of ₹4,892, as approved by the Centre.
- If production exceeds the approved limit, the State government will use its funds to buy more.
- For about a month, soybean procurement has been a political issue, as Madhya Pradesh leads the country in soybean production.
- Farmer organizations like Samyukta Kisan Morcha (SKM) and the Congress claim the cost of production is now higher than the government’s MSP.
- The State government set the ₹4,892 MSP after market prices dropped to around ₹4,000.
- Bharatiya Kisan Union (BKU) leader Rakesh Tikait recently held a tractor rally in Narmadapuram, urging farmers to continue their demands and warning them not to let political parties take over their movement.

Unemployment rate has not fallen: labour survey

Survey report says there is a minor increase in distribution of workers in agriculture; participation of women in the workforce has improved; unemployment rate is 3.2%, similar to that of last year

GS Paper III: Employment & Unemployment

The Hindu Bureau
NEW DELHI

The Periodic Labour Force Survey (PLFS) for the period between July 2023 and June 2024, released by the Labour Bureau on Monday, reported no major change in the unemployment rate (UR). There is a minor increase in the distribution of workers in agriculture, and the manufacturing sector shows no growth in giving jobs compared with the past years.

The participation of women in the workforce has improved. The Centre had faced criticism for the growing unemployment rate and decrease in the number of women in jobs.

A release by the Union Ministry of Statistics and Programme Implementation said that in rural areas, the Labour Force Participation Rate (LFPR) increased from 50.7% in 2017-18 to 63.7% in 2023-24, while for urban areas, it increased from 47.6% to 52%.

“LFPR for males in India increased from 75.8% in 2017-18 to 78.8% in 2023-24 and corresponding in-

Stagnant unemployment rates

The chart shows the unemployment rate of India from 2017 to 2023, which has remained stagnant over the last two years



SOURCE: PERIODIC LABOUR FORCE SURVEY 2023-24

crease in LFPR for females was from 23.3% to 41.7%,” the release said.

The LFPR for Muslim women increased from 15% in 2021-22 to 21.4% in 2023-24. In the case of Hindu women, the participation in workforce increased from 26.1% in 2021-22 to 33.3% in this year. Similarly, among Sikh and Christian women, the LFPR increased from 19.8% to 26.7% and 34.2% to 38.3%, respectively.

In rural areas, the unemployment rate decreased from 5.3% in 2017-18 to 2.5% in 2023-24, while for urban areas, it decreased from 7.7% to 5.1%.



“UR for male in India decreased from 6.1% in 2017-18 to 3.2% in 2023-24 and corresponding decrease for female was from 5.6% to 3.2%,” the Centre said. The overall unemployment rate is 3.2%, similar to last year.

Grim picture

Experts said the annual survey gave a grim picture of the employment scenario.

“Grim situation has become grimmer. The annual report is revealing it,” said labour economist Santosh Mehrotra. “There is no improvement in the unemployment scenario, neither

in youth unemployment nor in overall unemployment,” he said.

He said the Centre continued to claim that the LFPR and Worker Population Ratio were increasing. “It is because of the increase in workers in agriculture. This also means that unpaid family labour has also increased and the PLFS counts this unpaid family labour as employment. The participation of workers in agriculture share has gone up for the fourth year in a row. This is shocking,” he said.

Professor Mehrotra said the increase in workforce in agriculture meant that the process of people looking for non-farm jobs reversed and it had not stopped.

As the workers’ participation in manufacturing is still 11.4%, he said, the share of manufacturing in providing employment is not increasing.

“In 2012, it was 12.8%, and it ever recovered in the last 10 years. The contribution of construction work has gone back to 12%. The sector, which revived, is not showing any buoyancy,” he said.

September)

Survey report says there is a minor increase in distribution of workers in agriculture; participation of women in the workforce has improved; unemployment rate is 3.2%, similar to that of last year

- The Periodic Labour Force Survey (PLFS) for July 2023 to June 2024 shows no major change in the unemployment rate.
- There is a slight increase in workers employed in agriculture, but no growth in manufacturing jobs compared to previous years.
- Women's participation in the workforce has improved, which is notable since the government had faced criticism for rising unemployment and fewer women in jobs.
- In rural areas, the Labour Force Participation Rate (LFPR) increased from 50.7% in 2017-18 to 63.7% in 2023-24, while in urban areas, it rose from 47.6% to 52%.
- The LFPR for men increased from 75.8% in 2017-18 to 78.8% in 2023-24, and for women, it increased from 23.3% to 41.7%.
- Muslim women's LFPR increased from 15% in 2021-22 to 21.4% in 2023-24, while Hindu women's participation rose from 26.1% to 33.3%.
- For Sikh and Christian women, LFPR increased from 19.8% to 26.7% and 34.2% to 38.3%, respectively.
- The unemployment rate in rural areas decreased from 5.3% in 2017-18 to 2.5% in 2023-24, while in urban areas, it fell from 7.7% to 5.1%.
- The unemployment rate for men decreased from 6.1% in 2017-18 to 3.2% in 2023-24, and for women, it also dropped from 5.6% to 3.2%.
- The overall unemployment rate remains 3.2%, similar to last year.
- Experts describe the employment situation as worsening, with no improvement in unemployment, especially among youth.
- The Labour Force Participation Rate and Worker Population Ratio are rising, but largely due to more workers in agriculture, including unpaid family labor.
- The share of workers in agriculture has increased for the fourth year in a row, indicating a reversal of people seeking non-farm jobs.
- The manufacturing sector's share of employment remains stagnant at 11.4%, and construction work is not showing significant growth either.

Israel seeks 10,000 more skilled construction workers from India

The Hindu Bureau
NEW DELHI

Israel is seeking up to 10,000 skilled Indian workers in its latest eight-day recruitment drive being held in the Industrial Training Institute at Aundh in Pune till Wednesday.

Officials in the Skill Development and Entrepreneurship Ministry said the current phase of recruitment followed the initial drive conducted this year in Haryana, Uttar Pradesh and Telangana.

“To date, approximately 4,800 Indian workers have been deployed to Israel, earning salaries of around ₹1.32 lakh a month and a monthly bonus of ₹16,000,” officials said.

An additional 1,500 workers from the first cohort began their journey to Israel on September 18, bringing the total number of skilled Indian profes-



Skills at play: As many as 5,000 Indian skilled workers have been employed in Israel so far. REUTERS

sionals in Israel to over 5,000.

Officials further said Israeli employers had expanded their recruitment targets, seeking an additional 10,000 candidates in this round.

“The focus remains on four critical areas of expertise – framework, iron

bending, plastering, and ceramic tiling,” they said. A delegation of 12 Israeli officials arrived in India on September 16 to oversee the recruitment effort.

The recruitment is aimed at fulfilling Israel’s growing demand for skilled construction workers while offering Indian

workers international career opportunities, officials said.

This recruitment drive is a result of a government-to-government (G2G) agreement signed between India and Israel in November 2023. The Maharashtra government has provided infrastructure and logistical support at the ITI, Aundh, where Deputy Director and Joint Director in-charge Ramakant Bhavsar, along with his team, are aiding the recruitment efforts at the institute.

The National Skill Development Corporation (NSDC) is responsible for preparing candidates for the technical and professional challenges they will face in Israel.

This recruitment drive is being perceived as one which positions India as a global supplier of skilled human resources in international markets.

Israel seeks 10,000 more skilled construction workers from India (25 September)

- Israel is looking to recruit up to 10,000 skilled Indian workers in an eight-day recruitment drive at the Industrial Training Institute (ITI) in Aundh, Pune.
- This is the second phase of recruitment, following earlier drives in Haryana, Uttar Pradesh, and Telangana.
- So far, around 4,800 Indian workers have been sent to Israel, where they earn approximately ₹1.32 lakh per month, along with a bonus of ₹16,000.
- An additional 1,500 workers from the first batch left for Israel on September 18, bringing the total number of skilled Indian workers in Israel to over 5,000.
- Israeli employers have expanded their recruitment target, now aiming to hire 10,000 more workers in this round.
- The recruitment is focused on four key skills: framework, iron bending, plastering, and ceramic tiling.
- A delegation of 12 Israeli officials arrived in India on September 16 to oversee the recruitment process.
- This drive addresses Israel's need for skilled construction workers and offers Indian workers international career opportunities.
- The recruitment is based on a government-to-government (G2G) agreement signed between India and Israel in November 2023.
- The Maharashtra government is providing infrastructure and support at the ITI in Aundh, with Ramakant Bhavsar and his team assisting the recruitment efforts.
- The National Skill Development Corporation (NSDC) is preparing candidates for the technical and professional challenges they will face in Israel.
- This initiative positions India as a global supplier of skilled human resources in international markets.

Indian Railways to overhaul ageing signalling systems for better safety

GS Paper III:
Railway Safety

Worried over many signalling systems remaining functional beyond their recommended lifespan, the Indian Railways has decided to replace signal assets that have outlived their codal life.

In a directive to the General Managers of all Zonal Railways, the Railway Ministry emphasised the urgent need to prioritise the replacement of signal assets nearing or surpassing their codal life. To avoid delays, this critical work would be carried out independently, without impacting the ongoing infrastructure projects, including track doubling and the construction of third or fourth lines.

By rolling out a "Plan for Reliability Improvement and Maintenance Effectiveness (PRIME)", the Rail-



Safe journey: The Railways aims at improving the reliability and maintainability of the signalling systems. V. GANESAN

ways aims at improving the reliability and maintainability of the signalling systems, which were vital for safe train operations. The plan underscores the need for regular staff training and counselling on safety and maintenance protocols to ensure high standards of work quality.

A key issue highlighted by the Ministry is the frequent occurrence of cable

cuts along railway tracks, which had led to multiple signalling failures.

These disruptions not only hampered train operations but posed serious safety risks, potentially resulting in catastrophic accidents.

Recent train collisions

According to senior Railway officials, the renewed focus on safety came in the

wake of several major train accidents over the past two years, including the tragic triple train collision in Odisha's Balasore district on June 2, 2023, which claimed 291 lives and left over 900 injured. Faulty signals were suspected to have led to the devastating accident.

Also, in the two major rear-end collisions, one in the Waltair Division of East Coast Railway and the other in the Katihar Division of Northeast Frontier Railway, in the past one year, lapses in managing train operations in automatic signalling territory were cited as reasons for the accidents.

To address these issues, the Railways instructed training centres to provide special focus on acquainting and training of staff of all departments concerned on new systems that are coming up.

Indian Railways to overhaul ageing signalling systems for better safety (25 September)

- Indian Railways is concerned about signalling systems that have been in use beyond their recommended lifespan.
- The Railways has decided to replace these outdated signal assets.
- The Railway Ministry directed all Zonal Railways to urgently prioritize replacing signal assets that are old or nearing the end of their life.
- This replacement work will be done separately from ongoing infrastructure projects like track doubling and construction of extra lines.
- The Railways introduced a "Plan for Reliability Improvement and Maintenance Effectiveness (PRIME)" to enhance the reliability and maintenance of signalling systems, essential for safe train operations.
- The plan includes regular staff training and counselling on safety and maintenance protocols to ensure high work standards.
- The Ministry highlighted frequent cable cuts along railway tracks, which have caused many signalling failures, leading to train disruptions and safety risks.
- This safety focus follows recent major train accidents, including the triple train collision in Odisha's Balasore district on June 2, 2023, where 291 people died, and faulty signals were suspected as the cause.
- Other train collisions in the past year in Waltair Division (East Coast Railway) and Katihar Division (Northeast Frontier Railway) were linked to signalling and operational lapses.
- Training centres have been instructed to focus on familiarizing staff with new systems to improve safety and operations.

The freezing upper deck

GS Paper I: Geography



Q: Why is it colder at higher altitudes?--

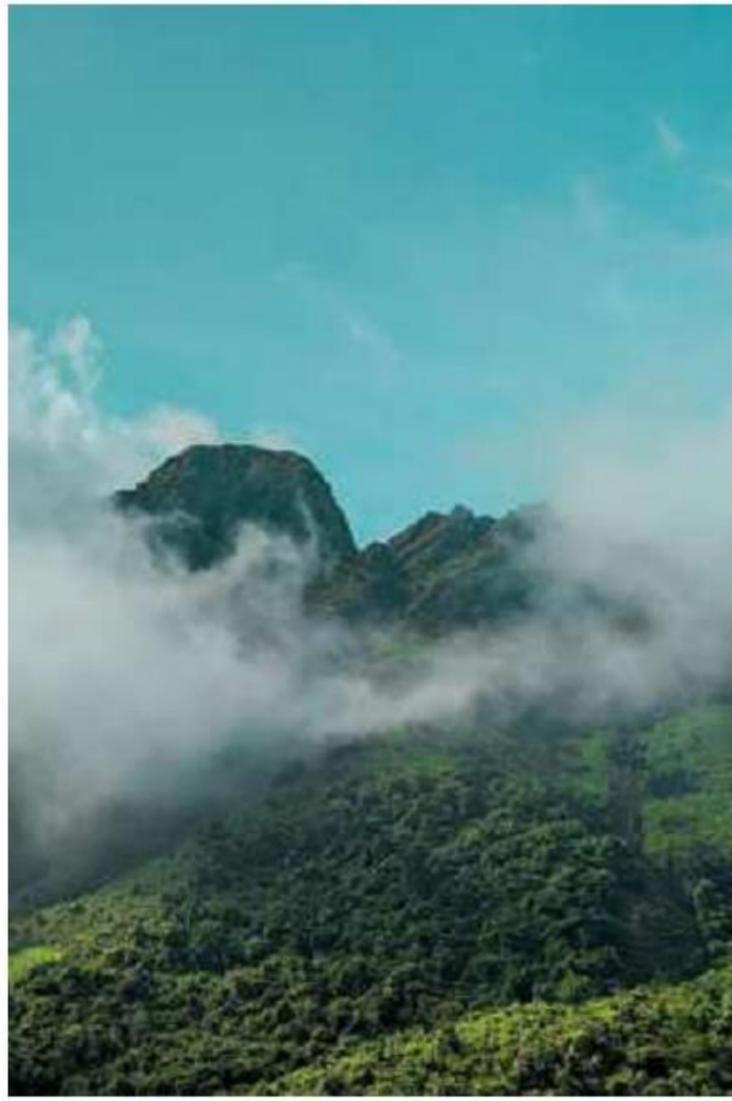
Lakshminarayanan S.

A: Measurements reveal that, as we go up into the

atmosphere, the air temperature decreases with height from the ground up to about 15-20 km in the troposphere. Beyond this, it increases in the stratosphere up to a height of 50 km. Again, it decreases in the mesosphere up to 80 km and finally increases in the ionosphere.

Solar radiation heats the earth's surface far more than the air through which it travels. The heat at the surface is transported by convective expansion into the atmosphere. An atmosphere conditioned by convective expansion will have relatively cooler temperatures at higher levels. This holds good in a hydrostatically stable atmosphere, under adiabatic conditions (i.e., when entropy is constant), which is true of planetary or stellar atmospheres.

But the real atmosphere is not static. It is dynamic with constant motion. The thermodynamic processes are not adiabatic as radiation from outside the atmosphere enters, and the atmosphere also radiates away the heat into outer space. Still, the departures from



A view of clouds rolling over a mountain peak in Deomali, Odisha. MOHAN VAMSI SOMIREDDI

hydrostatic and adiabatic conditions are small, and the temperature decreases with height.



For feedback and suggestions

for 'Science', please write to science@thehindu.co.in with the subject 'Daily page'

The freezing upper deck (25 September)

- As we go higher into the atmosphere, the air temperature decreases up to about 15-20 km in the troposphere.
- In the stratosphere, from 20 km to 50 km, the temperature increases.
- After that, it decreases again in the mesosphere (up to 80 km) and then increases in the ionosphere.
- Solar radiation heats the Earth's surface more than the air it passes through.
- Heat from the Earth's surface moves upward into the atmosphere through convection, which leads to cooler temperatures at higher altitudes.
- This cooling happens in a stable atmosphere under certain conditions, like when there is no heat loss or gain (adiabatic conditions).
- Although the atmosphere is not static and constantly in motion, the overall temperature still decreases with height, but with small variations.



GS Paper II: PM Modi US Visit

Visit wrap-up

The Modi U.S. visit announcements will see New Delhi being put to the test

Prime Minister Narendra Modi's three-day visit to the U.S was marked by high-level meetings that had a three-part focus. He spent one day at the Quad and in bilateral meetings with U.S. President Joseph Biden, a day in New York with business leaders and the diaspora, and another day at the UN and in bilateral meetings. The Quad Summit, delayed due to political cycles in the four member countries, was more substantive than expected for a farewell meeting (Mr. Biden and Japan's Fumio Kishida will soon demit office). The joint statement was noted for its sharp language on Chinese aggression in the South China Sea, as well as on Russia's invasion of Ukraine, where the leaders upheld the UN charter on sovereignty and territorial integrity. The announcement of initiatives aimed at countering Chinese actions will no doubt raise Beijing's ire: a "Quad-at-Sea Ship Observer Mission" for 2025, a Maritime Initiative for Training in the Indo-Pacific (MAITRI) and a "maritime legal dialogue" to support the "rules-based order". However, India's hesitation in joining other Quad militaries in contested waters in the Pacific Ocean remains, and India's presidency of the Quad next year will show whether those are overcome. Quad countries also committed to a "Cancer Moonshot" to fight cancer, an initiative that can draw lessons from the troubled Quad vaccine initiative. India and the U.S. were able to announce progress on many strategic fronts including a military partnership for semiconductor fabrication and India acquiring predator drones. However, the ties faced unspoken tensions over the lingering effect of the Pannun case, including summons issued for NSA Ajit Doval in a civil suit and a White House meeting with Sikh activists who have campaigned against India – all before Mr. Modi's arrival. The message from Washington appears to be that the Pannun case cannot be overlooked.

Mr. Modi's message at the UN as well as in bilateral meetings with leaders including Ukrainian President Volodymyr Zelenskyy was watched closely given recent moves hinting at India's involvement in a peace process. While Mr. Modi gave no further indication of such a plan, his discussions with Mr. Zelenskyy centred around a possible second peace summit. At a diaspora event, Mr. Modi said that India is now a "strong voice" of the Global South, and was taking up the concerns of the developing world on the conflict with the global leadership. At the UN "Summit of the Future", he added that the success of humanity would depend on its "collective strength, not in the battlefield". The next few months will see New Delhi tested not only on those lofty ideals and ambition for peace but also on actualising the many announcements made during the visit.

Visit wrap-up (25 September)

The Modi U.S. visit announcements will see New Delhi being put to the test

- Prime Minister Narendra Modi visited the U.S. for three days, focusing on high-level meetings.
- His visit included one day at the Quad Summit and bilateral meetings with U.S. President Joe Biden.
- Another day was spent in New York with business leaders and the Indian diaspora.
- The final day included participation at the UN and additional bilateral meetings.
- The Quad Summit addressed Chinese aggression in the South China Sea and Russia's invasion of Ukraine, emphasizing sovereignty and territorial integrity.
- New initiatives were announced, including a “Quad-at-Sea Ship Observer Mission” for 2025 and a Maritime Initiative for Training in the Indo-Pacific.
- India's participation in military activities in contested Pacific waters remains uncertain.
- Quad countries also committed to a “Cancer Moonshot” initiative to fight cancer.
- India and the U.S. reported progress on military partnerships, including semiconductor fabrication and acquiring predator drones.
- Tensions existed due to the Pannun case, which affected U.S.-India relations before Modi's arrival.
- Modi's message at the UN emphasized India's role as a strong voice for the Global South and highlighted the need for collective strength for peace.
- Discussions with Ukrainian President Volodymyr Zelenskyy focused on a possible second peace summit, but no concrete plans were revealed.
- The coming months will test India's commitment to its announced ideals and ambitions for peace.

Navigating cross-border insolvency

GS Paper III: External Sector

The adoption of cross-border insolvency laws is vital to international trade.

Integration of cross-border regimes into a nation's legal ecosystem is considered the hallmark of sound insolvency laws. Besides providing legal certainty, they also improve the health of trading entities with cross-border operations, thereby benefiting investments and international trade.

Implementing the Model Law

The debate on implementing harmonised laws to deal with cross-border insolvency has, therefore, been active. Since the late 1990s, the UN Commission on International Trade Law (UNCITRAL) has endeavoured to implement its Model Law developed on four pillars (access, recognition, cooperation, and coordination) across nations. Its potential benefits have been recognised in several countries, including India, by the Bankruptcy Law Reform Committee while drafting the Insolvency and Bankruptcy Code (IBC), 2016, as well as the Indian government (Economic Survey, 2022).

However, progress on the adoption of the Model Law has been slow. As per UNCITRAL, only 60 countries have adopted it. Further, there have been variations in its implementation (given its non-binding nature), with nations tailoring the same to their requirements by including reciprocity/public policy exceptions clauses.

India is also yet to adopt the Model Law despite several committee recommendations on the subject. As per reports, a decision on the same has been likely deferred again. The Union Budget, while in support of improving the IBC's efficiency through technology platforms/augmenting judicial infrastructure, was also silent on this issue. At present, India relies on limited provisions, which allow bilateral agreements on a case-by-case basis for cross-border



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There is a need to integrate perspectives on the importance of insolvency laws with global trade in multilateral or bilateral routes

insolvencies. These have been seen as ad hoc and inadequate.

In parallel, in the last few years, India has been executing Free Trade Agreements (FTAs), Comprehensive Economic Corporation Agreements (CECAs), Comprehensive Economic Partnership Agreements (CEPAs) and their equivalents. As per the Commerce Ministry, India has signed such agreements with more than 54 countries. The Ministry describes FTAs as arrangements between countries to reduce or eliminate tariff /non-tariff barriers on substantial trade with the scope of covering areas such as intellectual property rights (IPRs) and investments. Similarly, CECAs/CEPAs are described as more integrated agreements on goods, services, and investments while including broader areas such as trade facilitation and cooperation. Therefore, examining how these agreements capture insolvency is relevant.

Insolvency provisions

However, despite growing FTAs/CEPAs and their importance to trade, they lack detailed cross-border insolvency provisions. While FTAs are relatively limited in scope, CEPAs /CECAs are said to be "more ambitious and look at deeper regulatory aspects of trade" (Commerce Ministry). However, in their present form, most contain only general disputes or trade remedy clauses. It can be argued that FTAs facilitate trade, which leads to calls for cross-border insolvency laws. However, such laws are a vital ingredient of international trade, and relevant clauses need integration in agreements, pending the adoption of any harmonised law.

As regards the Model Law, while well recognised, the ground-level verdict is not out on whether it is the optimum solution, easily implementable in countries with diverse economic/legal regimes. There have been alternate perspectives from some scholars, noting that international treaties, frameworks,

and protocols can be tailor-made to address individual cases. These may be effective while complementing the existing system.

After signing four new FTAs (2021-2024), India is working on similar agreements with several nations (Economic Survey, 2024). Hence, pending adoption of Model Law, there is little reason why such FTAs cannot cover insolvency. There can be complementary integration of cross-border provisions in FTAs /equivalents. In their present form, these agreements capture disputes, IPRs, and even sustainability, but mostly ignore insolvency. If CECAs/CEPAs are conceptualised to capture deeper regulatory aspects, why can they not cover insolvency dimensions?

Interestingly, the vacuum is not found only in bilateral/regional agreements but even in some important World Trade Organization reports, which omit an explicit discussion of cross-border insolvency while discussing factors influencing the future of trade. Thus, there is a need to integrate perspectives on the importance of insolvency laws with global trade in multilateral or bilateral routes. Specifically, FTAs are incomplete without cross-border dimensions.

Therefore, there needs to be a more ingrained appreciation of the importance of sound insolvency laws for international trade. FTAs (and their equivalents) need to factor in appropriate mechanisms to weather the consequences of insolvency of trading entities. This would only strengthen the edifice of FTAs being signed by India. This may also form part of the government's agenda of framing SOPs for FTAs. While the practical feasibility of interlinking insolvency with FTAs is best assessed by the Commerce Ministry, the Insolvency and Bankruptcy Board, and legal experts, considering the reality of insolvency with cross-border ramifications, the sooner these issues are addressed, the greater the benefits to India's trade.

Navigating cross-border insolvency (25 September)

- Cross-border insolvency laws are essential for international trade and provide legal certainty.
- Integrating these laws into a country's legal system is crucial for effective insolvency laws.
- The UN Commission on International Trade Law (UNCITRAL) has worked since the late 1990s to implement a Model Law based on four pillars: access, recognition, cooperation, and coordination.
- Several countries, including India, recognize the benefits of this Model Law in their insolvency frameworks, particularly in the Insolvency and Bankruptcy Code (IBC), 2016.
- However, adoption of the Model Law has been slow, with only 60 countries implementing it.
- Implementation varies because the Model Law is non-binding, and countries can modify it to fit their needs.
- India has not yet adopted the Model Law despite recommendations from various committees, and decisions on it have been postponed.

- The Union Budget supported improving IBC efficiency but did not address the Model Law issue.
- Currently, India relies on limited provisions that allow for bilateral agreements on cross-border insolvencies, which are considered inadequate.
- India has signed Free Trade Agreements (FTAs), Comprehensive Economic Cooperation Agreements (CECs), and Comprehensive Economic Partnership Agreements (CEPs) with over 54 countries.
- FTAs aim to reduce or eliminate trade barriers and may cover intellectual property rights and investments.
- CECs and CEPs are more integrated agreements that include broader areas like trade facilitation and cooperation.
- It is important to analyze how these agreements address insolvency issues.

Insolvency provisions

- Despite the increase in Free Trade Agreements (FTAs) and Comprehensive Economic Partnership Agreements (CEPAs), they often lack detailed cross-border insolvency provisions.
- FTAs are limited in scope, while CEPAs/CECs are more ambitious, focusing on deeper regulatory trade aspects, but most still only include general dispute resolution clauses.
- FTAs help facilitate trade, which highlights the need for cross-border insolvency laws as essential for international trade.
- Relevant insolvency clauses should be integrated into trade agreements until a harmonized law is adopted.
- The Model Law for cross-border insolvency is recognized but may not be the best or easiest solution for countries with diverse legal and economic systems.
- Some scholars suggest that tailored international treaties and frameworks could effectively address individual cases of insolvency.
- India has signed four new FTAs between 2021 and 2024 and is negotiating more with other countries.
- There is no reason why FTAs cannot include provisions for insolvency in their current agreements.
- FTAs currently cover disputes, intellectual property rights (IPRs), and sustainability, but often overlook insolvency issues.
- If CEPAs/CECs aim to address deeper regulatory aspects, they should also consider insolvency.
- The lack of explicit discussion on cross-border insolvency is not only in regional agreements but also in key World Trade Organization reports.
- There is a need to highlight the importance of insolvency laws in relation to global trade in both multilateral and bilateral contexts.
- FTAs are incomplete without addressing cross-border insolvency issues.
- There should be a greater appreciation of how sound insolvency laws are crucial for international trade.
- FTAs need mechanisms to manage the consequences of insolvency for trading entities to strengthen India's trade agreements.
- The integration of insolvency issues in FTAs should be part of the government's agenda for developing standard operating procedures (SOPs).
- The practicality of linking insolvency with FTAs should be assessed by the Commerce Ministry, the Insolvency and Bankruptcy Board, and legal experts.
- Addressing these issues sooner will lead to greater benefits for India's trade.

Why the 'fact-checking' unit was invalidate

Why did the Bombay High Court strike down as "unconstitutional" the amended Information Technology (IT) Rules, 2021? What did the amended rules ask of social media intermediaries? How did the Supreme Court intervene in the matter?

GS Paper II:
Fundamental
Right A19(2)

Aaratrika Bhaumik

The story so far:

In September 20, the **Bombay High Court** struck down as "unconstitutional" and "vague" the amended **Information Technology (IT) Rules, 2021**, which empowered the Centre to establish a "Fact Check Unit" (FCU) to identify "fake or false or misleading" online content about the government and its establishments. Justice Atul Sharachchandra Chandurkar delivered the verdict as the "tie-breaker" judge after a division Bench comprising Justices G.S. Patel and Neela Gokhale pronounced a split verdict in January, 2024.

What was the law under challenge?

The **Ministry of Electronics and IT (MeiTY)** introduced the **Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Amendment Rules, 2023 (2023 Rules)**, amending the 2021 IT Rules.

This amendment vested the Union government with the authority to establish a fact-checking body empowered to classify any information "pertaining to the business of the Central government" as "fake, false, or misleading".

The amended Rule 3(1)(b)(v) specifically required social media intermediaries to make "reasonable efforts" to prevent users from uploading or transmitting any content flagged by the Centre's FCU as misinformation. Such flagged content would have to be taken down within 36 hours if the intermediaries wanted to retain their "safe harbour" protection – a form of legal immunity against any third-party content hosted by them. Within a week of their notification, the constitutional validity of the 2023 Rules was challenged before the High Court by Kunal Kamra, a political satirist and standup artist, the



GETTY IMAGES

Editors Guild of India, and the Association of Indian Magazines.

What did the split verdict stipulate?

Justice Patel opined that the amended rules promoted censorship and did not fall within the ambit of reasonable restrictions permitted under Article 19(2) of the Constitution. He underscored that the absence of procedural safeguards or guidelines effectively made the Union government a "judge in its own cause". In contrast, Justice Gokhale reasoned that the government is best positioned to provide accurate information about itself and that the rules were intended solely to combat misinformation, without restricting legitimate criticism or political satire. She also dismissed allegations of bias by asserting that the mere fact that the FCU members were appointed by the

government did not undermine their independence.

Did the Supreme Court intervene?

Following the split verdict, the Chief Justice of the High Court appointed Justice Chandurkar to hear the matter afresh and deliver a tie-breaking ruling, in accordance with the High Court rules. Subsequently, the petitioners filed applications seeking an interim stay on the notification of the FCU until the matter was finally adjudicated. However, Justice Chandurkar dismissed these applications on the ground that no *prima facie* case was made out to stall the establishment of the body.

On March 20, 2024, the Centre notified the FCU under the Press Information Bureau (PIB). However, the very next day, the Supreme Court stayed the operation

of the notification until Justice Chandurkar took a final call on the validity of the amended rules. It reasoned that the challenge raised "serious constitutional questions" relating to the fundamental right to freedom of speech and expression.

What did Justice Chandurkar rule?

Endorsing Justice Patel's view, Justice Chandurkar observed that the amended rules suffer from manifest arbitrariness and sought to impose restrictions on freedom of speech and expression beyond those defined under Article 19(2) of the Constitution. He noted that the expressions "fake, false or misleading" within the rules are "vague and overbroad", leaving ample room for potential misuse.

Highlighting that there was no clarity on how the FCU would identify any information to be patently false or misleading, the judge asserted that the "exercise would result in an unilateral determination by the executive itself". He also refused to accept the Centre's claim that the Rules would exclude political comments and satire by reasoning that "any assurance from one Government even if carried out faithfully would not bind a succeeding Government."

Notably, Justice Chandurkar observed that the mere ability of an aggrieved person to challenge FCU decisions in a constitutional court could not be regarded as an adequate safeguard. He accordingly concluded that the amended rules were liable to be struck down, as they created a "chilling effect" on intermediaries by jeopardising their safe harbour protection.

What happens next?

The Union government is likely to appeal the decision before the Supreme Court especially since the 2021 IT Rules are currently under challenge before the Delhi High Court and the Madras High Court. The ruling will also impact the legitimacy of similar fact-checking units established in Tamil Nadu and Karnataka.

THE GIST

The amended Rule 3(1)(b)(v) specifically required social media intermediaries to make "reasonable efforts" to prevent users from uploading or transmitting any content flagged by the Centre's FCU as misinformation.

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The Union government is likely to appeal the decision before the Supreme Court.

Why the 'fact-checking' unit was invalidated (25 September)

Why did the Bombay High Court strike down as "unconstitutional" the amended Information Technology (IT) Rules, 2021? What did the amended rules ask of social media intermediaries? How did the Supreme Court intervene in the matter?

- On September 20, the Bombay High Court declared the amended Information Technology (IT) Rules, 2021, unconstitutional and vague.
- The amendment allowed the Indian government to create a "Fact Check Unit" (FCU) to label online content about the government as "fake," "false," or "misleading."
- Justice Atul Sharachchandra Chandurkar issued the verdict as the deciding judge after a split verdict from a previous division bench.
- The Ministry of Electronics and IT (MeiTY) introduced the amended rules (2023 Rules) to modify the original IT Rules from 2021.
- The 2023 Rules gave the government the power to establish a body that could determine if any information related to the Central government was misleading.
- Under amended Rule 3(1)(b)(v), social media platforms had to make "reasonable efforts" to block users from sharing content flagged as misinformation by the FCU.
- If social media intermediaries did not take down flagged content within 36 hours, they would lose their "safe harbour" protection, which protects them from liability for third-party content.
- Kunal Kamra, a political satirist, along with the Editors Guild of India and the Association of Indian Magazines, challenged the constitutional validity of the 2023 Rules shortly after they were announced.

What did the split verdict stipulate?

- Justice Patel criticized the amended rules for promoting censorship and violating Article 19(2) of the Constitution, stating that they lacked procedural safeguards.
- He argued that the rules allowed the government to act as "judge in its own cause."
- In contrast, Justice Gokhale believed the government is best suited to provide accurate information and that the rules aimed only to combat misinformation without hindering legitimate criticism or political satire.
- She dismissed claims of bias, arguing that the government's appointment of FCU members did not compromise their independence.

- After the split verdict, the Chief Justice of the High Court appointed Justice Chandurkar to reassess the case and make a tie-breaking decision.
- Petitioners requested an interim stay on the FCU notification, but Justice Chandurkar denied this, stating no strong case was made to halt its establishment.
- On March 20, 2024, the Centre announced the FCU, but the Supreme Court quickly stayed its operation the next day until Justice Chandurkar ruled on the amended rules' validity.
- The Supreme Court highlighted that the challenge raised significant constitutional questions about freedom of speech.
- Justice Chandurkar agreed with Justice Patel, stating that the amended rules imposed arbitrary restrictions on free speech beyond those allowed under Article 19(2).
- He criticized the terms “fake, false, or misleading” as vague and broad, risking misuse.
- The judge pointed out the lack of clarity on how the FCU would identify misleading information, warning it would lead to unilateral decisions by the government.
- He rejected the Centre's argument that the rules would not affect political commentary, stating that future governments could ignore such assurances.
- Justice Chandurkar deemed the ability to challenge FCU decisions in court as insufficient protection.
- He concluded that the amended rules created a "chilling effect" on intermediaries, risking their safe harbour protection, and ruled them unconstitutional.
- The Union government is expected to appeal the decision in the Supreme Court, especially as the 2021 IT Rules are also being challenged in other High Courts.
- This ruling may also impact the legitimacy of similar fact-checking units in Tamil Nadu and Karnataka.

What are retractions and why do they matter?

What is a retraction index? Why do researchers use potentially duplicated or manipulated work?

GS Paper III: S&T: Intellectual Property Rights

The story so far:

According to the ‘Retraction Watch’ database, an Indian scientist at an institute in Lucknow has racked up 45 retractions. It also states that another researcher at a university in Kolkata published 300 scientific papers in a year, which is nearly a paper a day and impossible. This individual had six papers retracted, which cover an array of disciplines including chemistry and virology. Paper retractions are becoming more common worldwide even as the research misconduct problem is worsening in India.

What are retractions?

A retraction is a mechanism that kicks in when a scientific paper published in an academic journal is found to be so flawed as to merit being removed from scientific literature. The academic community is often understanding when a paper is

retracted for an honest error but much less forgiving when a paper is pulled because it contains deliberately manipulated material. For example, the case of John Darsee, a young Harvard University cardiology researcher, stunned the academic community in the 1980s. He had over 80 papers retracted for spreading “inaccuracies and falsehoods”.

Scientific fraud is surprisingly endemic: the list with Darsee includes Jan Hendrik Schön, Brian Wansink, Hwang Woo-suk, and of recent Ranga Dias as well, among others. Even Nobel laureates are not spared. Gregg Semenza, a professor at Johns Hopkins University and winner of the 2019 medicine Nobel Prize, has had 12 papers retracted over potentially duplicated or manipulated images.

How often are papers retracted?

Between 2020 and 2022, 2.5 times more papers were retracted than they were between 2017 and 2019. The reasons for retraction include plagiarism, editorial conflicts, image manipulation, and the

use of paper mills. During the COVID-19 pandemic, many publishers had fast-tracked the peer-review process for papers they received from scientists. As a result, some 10,000 papers had to be retracted in 2023 because of quality and/or data issues. The number was only around 1,600 in 2013. In 2023, a German neuropsychologist named Bernhard Sabel published the results of using a fake-paper detector he had built: he found that a third of 5,000 neuroscience papers published in 2020 likely had plagiarised and/or falsified content.

What is the retraction index?

A journal's retraction index is the the number of retractions in a given time period multiplied by 1,000 and divided by the total number of published articles, according to a definition provided by scientists Ferric Fang and Arturo Casadevall in a September 2011 paper. They also showed that there's a greater chance of a paper being retracted from a high-impact journal than from a

What are retractions and why do they matter? (25 September)

What is a retraction index? Why do researchers use potentially duplicated or manipulated work?

- An Indian scientist in Lucknow has 45 retractions of published papers, while a researcher in Kolkata published nearly 300 papers in one year, which is considered impossible.
- The Kolkata researcher has had six papers retracted across various fields, including chemistry and virology.
- Retractions are becoming more common globally, and research misconduct is increasing in India.
- A retraction occurs when a flawed scientific paper is removed from academic literature due to significant errors.
- The academic community is more lenient with honest mistakes but less forgiving of deliberate manipulations.

- The case of John Darsee, a cardiology researcher at Harvard, involved over 80 retractions due to inaccuracies and falsehoods.
- Scientific fraud is prevalent, affecting many researchers, including Nobel laureates like Gregg Semenza, who has had 12 papers retracted for potential image manipulation.
- From 2020 to 2022, the rate of paper retractions increased significantly compared to the previous years, with various reasons for retractions including plagiarism and image manipulation.
- During the COVID-19 pandemic, fast-tracked peer reviews led to around 10,000 papers being retracted in 2023 due to quality and data issues, a substantial rise from about 1,600 in 2013.
- Bernhard Sabel, a German neuropsychologist, found that a third of 5,000 neuroscience papers published in 2020 likely contained plagiarized or falsified content.

What is the retraction index?

- A journal's retraction index is calculated by multiplying the number of retractions in a specific time period by 1,000 and dividing by the total number of published articles.
- Researchers Ferric Fang and Arturo Casadevall defined this index in a September 2011 paper.
- High-impact journals, which have a higher average citation rate, are more likely to have papers retracted compared to low-impact journals.
- Scientists may falsify papers due to the existence of paper mills, which produce fake or low-quality papers for sale.
- These paper mills are linked to countries like Russia, Iran, and China.
- The rise of paper mills is partly driven by research institutions wanting to improve their university rankings based on research output.
- In academia, the number of published papers can significantly impact promotions, grants, and awards.
- PhD students may be required to publish papers to graduate, contributing to a "publish or perish" mentality that fuels the demand for paper mills.
- Scientific misconduct undermines trust among researchers and in scientific literature.
- Retractions serve as a mechanism to correct errors in scientific research.
- Addressing the issue of misconduct in research is a challenge for policymakers, raising questions about the use of AI for detecting poor-quality papers and how to assess research quality versus quantity.

PULSE-CHECK

How BMI is becoming an inadequate measure for health

BMI does not help a doctor understand the composition of the weight – how much of it is fat, and where the fat is distributed. Studies are now showing that BRI may be better at predicting health risks than BMI

GS Paper III: Basic Science

Practically everyone who has gone to a doctor for a check-up has had their BMI or Body Mass Index measured. BMI calculators abound online and it has become a modern go-to quick check for one's health – financial services company Zerodha even announced, in 2022, an extra bonus for employees with a BMI of less than 25.

But how accurate is BMI in deciding how healthy you are now, or how healthy you will remain in the future? Increasingly, experts have arrived at the realisation that it is an imperfect calculation that has several limitations.

Therefore, the new buzz word is BRI or the Body Roundness Index. Devised by U.S. mathematician Diana Thomas, and first published in a 2013 paper, this index measures how round you are. "BMI is grounded by the assumption that bodies are like cylinders. But when I looked at myself in the mirror, I thought – 'I'm more of an egg than a cylinder.' And this is what led to devising the BRI" she says.

The mathematical formula for BRI is associated with body fat levels, and takes into account height and waist circumference. The scores usually range from 1 to 15, with those having very high scores or very low scores (of over 6.9 or under 3.4) considered at the most risk for illnesses.

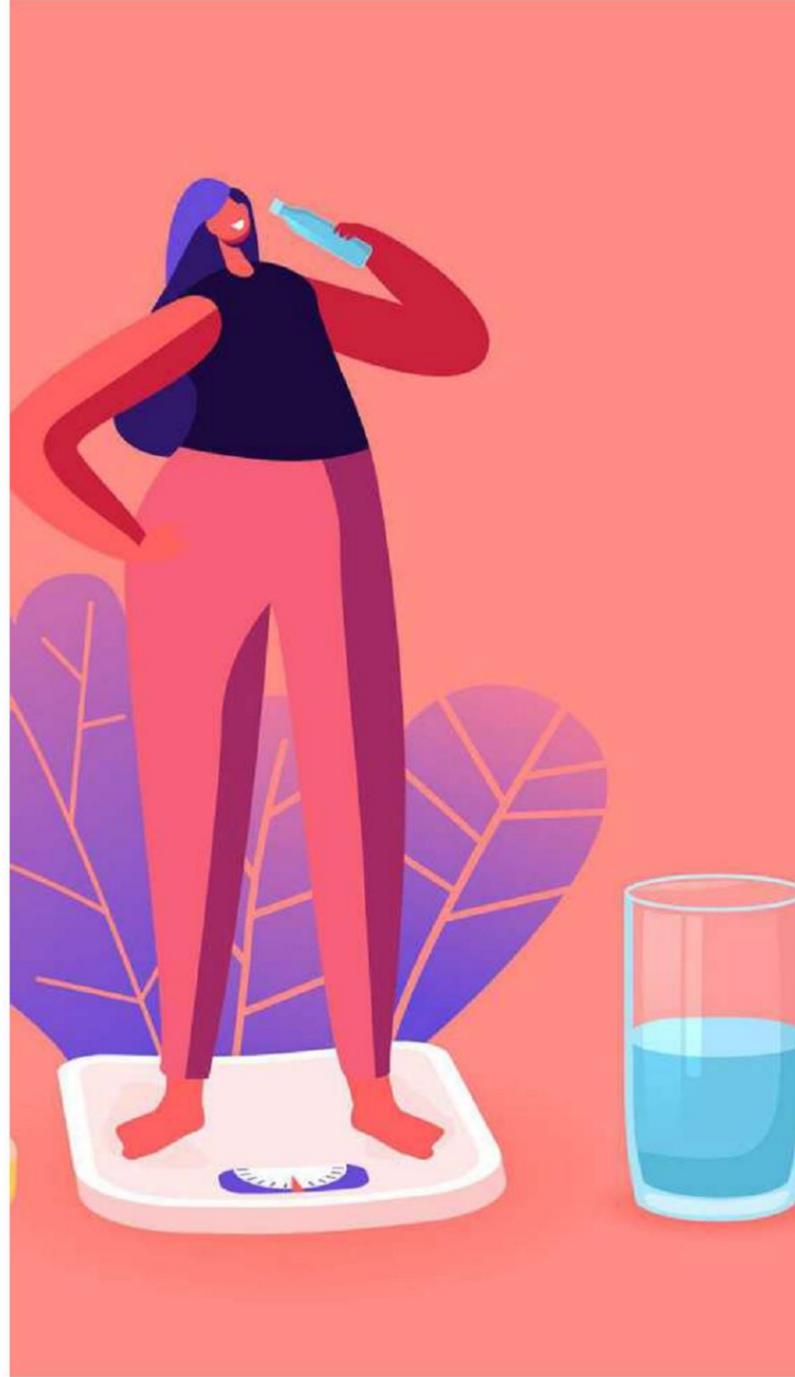
How is BRI different from BMI?

BMI is your weight in kilograms divided by your height in metres squared. A BMI of 18 to 24.9 is considered normal; 25 to 29.9 is termed overweight and 30 and above is classified as obese.

The problem, says Jaichitra Suresh, chief medical officer, SIMS Hospital, Chennai, is that BMI does not help a doctor understand the composition of the weight: how much of it is fat, muscles or water for instance, and where the fat is distributed in the body. "Athletic people and those who do weight training may have high BMIs, as muscles are denser than fat, but will still be healthy. It cannot be assumed that a high BMI always means high fat," she points out.

BMI also has limitations with different ethnic groups – it was created using data from 19th century Europeans. For instance, Dr. Jaichitra says, an Indian and a Caucasian may have the exact same BMI, but in an Indian the fat percentage may be higher than that of the Caucasian.

How is BRI different? The BRI score takes the waist circumference into account, and calculates percent body fat: the calculator shows you an egg-like outline, with a green region, which is considered healthy. Scores outside this region are considered to be at risk. "The more round you are, the higher percent body fat you have, the higher your visceral adipose and therefore your risk of diabetes, cardiovascular problems etc. Metabolic illnesses can manifest without the body looking like it is obese. But even at the lower end, having a small body size for height, weight and gender, is a risk. The green zone shows you the sweet spot," says Dr. Thomas, who is a full professor in the Department of Mathematical Sciences at the United States Military Academy, West Point.



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Where does the fat lie?

When BMI was first proposed to be used as an indicator for mortality risk, experts pointed out that its scores may not be applicable for the Asian population – and at this stage, in 2002, it was suggested that 23 be considered an action point for Asian populations, and not 25.

"But this," says Anura Kurpad, professor of physiology at St. John's Medical College who was part of the WHO expert consultation on BMI in Asian populations, which met in Singapore in 2002, "did not address the problem. It is not the amount of fat that is the issue but where the fat is – as fat in the abdomen, particularly when it accumulates around the internal organs, is what leads to metabolic syndrome and a host of medical issues. BMI can be misleading. You could be skinny but with a paunch and this would put you at risk of non-communicable diseases," he says.

High levels of visceral fat (belly fat stored deep within the abdomen, around the internal organs) can contribute to developing type 2 diabetes, hypertension, cardiac diseases and other health conditions. Indians are genetically predisposed to putting on weight around the abdomen making them more susceptible to insulin resistance, and therefore, diabetes. The guidelines released this year by the National Institute of Nutrition reflect this: they state that BMIs ranging from 23 to 27.5 are to be considered overweight for Asians, since they tend to have a higher percentage of body fat compared to some other populations.

Alternatives were proposed then, says Dr. Kurpad, who is also senior advisor, Tata Trusts, including waist-height ratios. This is a simple index: if your waist circumference is less than half of your height, you are in good shape, but if it is

more, then that indicates you are beginning to get spherical.

The problem of obesity is rising in India: according to the National Family Health Survey-5 (NFHS-5), the number of overweight/obese Indian men is now 22.9%, while the figure for women is 24%.

But Dr. Kurpad points to another issue as well: "BMI gives the impression that it is only physically overweight or obese people who are at risk of chronic diseases. But this is not true – thin people are also at risk, as are children. In fact a national nutrition survey in children aged 5 to 19 found that one in two children studied had higher than normal blood glucose levels, high BP and higher than normal cholesterol," he says.

Even if adults or children are of normal weight, explains A.J. Hemamalini, professor and head of the department of clinical nutrition at the Sri Ramachandra Faculty of Allied Health Sciences, Chennai, often, their fat mass is high and their muscle mass is low, and this is why BMI is not always an accurate indicator. "We look at different components including biochemical profile, waist circumference, waist to height ratio and correlate this with dietary intake and physical activity, to arrive at an idea of their nutritional status," she says.

More reliable alternative

Many studies have now shown that BRI may be better at predicting health risks than BMI.

In a paper published in *Diabetology International* in July 2021, researchers from JIPMER Puducherry noted that BMI's clinical utility is challenged by its "inability to discriminate between fat and lean mass and failure to report the fat distribution." The paper, 'Cut-off values and clinical efficacy of body roundness index and other novel anthropometric indices in identifying metabolic syndrome and its components among Southern-Indian adults,' by Chiranjeevi Kumar Endukuru et al, which studied 202 individuals, found that BRI, among other novel measures, had a "significantly higher predictive capacity to identify MetS (metabolic syndrome). Among traditional and novel anthropometric indices, the paper said, BMI and ABSI (a-body shape index) "exhibited the weakest predictive power to identify MetS in both genders."

A recent cohort study of over 32,000 U.S. adults, 'Body Roundness Index and All-Cause Mortality Among US Adults' published in *JAMA Network Open*, found that the "association between BRI and all-cause mortality followed a U-shape, with both lowest and highest BRI groups experiencing significantly increased risk of all-cause mortality," indicating that "BRI may be promising as a newer anthropometric measure associated with all-cause mortality."

But how reliable is BRI? It may be subject to human error. Writing for *The Conversation* last year, Alice Bullas, Senior Research Fellow, Sports Engineering Research Group, Sheffield Hallam University, said one study had found that eight out of 10 trained health professionals demonstrated such high levels of human error when manually measuring the abdomen that they failed to notice an increase of 3 cm the second time they took the measurement. "This margin of error will probably be even higher in people taking their own measurements at home," she wrote, adding that as a new metric, BRI also does not yet have the kind of extensive data backing up its use that exists for BMI.

While BMI, BRI and other indices to measure health risks may continue to be debated for some time to come, it's a good idea, says Dr Kurpad, for everybody to use the simple waist to height calculation to keep track of their health.

How BMI is becoming an inadequate measure for health (25 September)

BMI does not help a doctor understand the composition of the weight — how much of it is fat, and where the fat is distributed. Studies are now showing that BRI may be better at predicting health risks than BMI

- BMI (Body Mass Index) is commonly measured during doctor check-ups and is used as a quick health indicator.
- Zerodha offered bonuses to employees with a BMI under 25 in 2022.
- Experts recognize that BMI is an imperfect measure of health with several limitations.
- A new metric called BRI (Body Roundness Index) has been introduced, created by mathematician Diana Thomas in 2013.
- BRI measures body roundness rather than just weight and height, considering waist circumference as well.
- The BRI score ranges from 1 to 15, with scores above 6.9 or below 3.41 indicating higher health risks.
- BMI is calculated as weight in kilograms divided by height in meters squared.
- BMI categories: 18 to 24.9 is normal, 25 to 29.9 is overweight, and 30 or above is classified as obese.
- A limitation of BMI is that it doesn't differentiate between fat, muscle, or water weight, nor does it indicate fat distribution in the body.
- Athletes may have high BMIs due to muscle density, even though they are healthy.
- BMI was developed using data from 19th century Europeans, making it less accurate for different ethnic groups.
- For example, an Indian and a Caucasian might have the same BMI, but the Indian may have a higher body fat percentage.
- BRI considers waist circumference and calculates body fat percentage, providing a more comprehensive health assessment.
- BRI visually represents body shape, indicating healthy (green) and at-risk areas.
- A rounder body shape indicates higher body fat and a greater risk of metabolic illnesses, even in individuals who may not appear obese.

Where does the fat lie?

- In 2002, experts suggested that a BMI of 23 should be a key indicator for mortality risk in Asian populations, instead of the general 25.
- Anura Kurpad, a professor at St. John's Medical College, emphasized that the location of fat is more critical than the amount; abdominal fat, especially around internal organs, poses significant health risks.
- High levels of visceral fat can lead to conditions like type 2 diabetes, hypertension, and heart diseases.
- Indians are genetically more likely to gain weight around the abdomen, increasing their risk of insulin resistance and diabetes.
- The National Institute of Nutrition updated guidelines to state that BMIs of 23 to 27.5 are considered overweight for Asians due to their higher body fat percentage.
- Alternatives like the waist-height ratio have been proposed; if your waist circumference is less than half your height, you're considered in good shape.
- Obesity is a growing issue in India, with 22.9% of men and 24% of women classified as overweight or obese according to the National Family Health Survey-5 (NFHS-5).
- BMI can mislead by suggesting only overweight or obese individuals are at risk for chronic diseases; thin people and children can also be at risk.
- A national nutrition survey found that many children aged 5 to 19 had higher than normal blood glucose, blood pressure, and cholesterol levels.
- Even individuals with a normal BMI may have a high fat mass and low muscle mass, making BMI an inaccurate health indicator.
- Experts suggest considering factors like biochemical profiles, waist circumference, waist-to-height ratio, dietary intake, and physical activity to assess nutritional status.

More reliable alternative

- Studies suggest that the Body Roundness Index (BRI) may be better at predicting health risks than the Body Mass Index (BMI).
- A paper from JIPMER Puducherry in July 2021 highlighted BMI's limitations, stating it cannot distinguish between fat and lean mass or indicate fat distribution.
- The study involved 202 individuals and found that BRI had a significantly higher ability to identify metabolic syndrome (MetS) compared to BMI and the A-body shape index (ABSI), which had the weakest predictive power for both genders.
- A cohort study of over 32,000 U.S. adults published in JAMA Network Open showed a U-shaped relationship between BRI and all-cause mortality, indicating that both very low and very high BRI scores are associated with increased mortality risk.
- However, BRI may be prone to human error; a study found that 80% of trained health professionals made significant errors when measuring waist circumference, potentially missing a 3 cm increase.
- The margin of error is likely greater for individuals measuring their own waist at home.

- BRI lacks the extensive data and validation that BMI has accumulated over the years.
- Despite ongoing debates about BMI, BRI, and other health indices, Dr. Kurpad recommends using the simple waist-to-height ratio to monitor health effectively.