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# India's goods trade deficit at 42-month low following dip in gold, crude imports

**Ashokamithran T.**

MUMBAI

India's goods trade deficit was down to a 42-month low of \$14.05 billion as imports of gold, silver and crude dipped in February, show data from the Commerce and Industries Ministry. The difference between import and export of goods was \$22.9 billion in January. In February 2024, the merchandise trade deficit stood at \$19.5 billion.

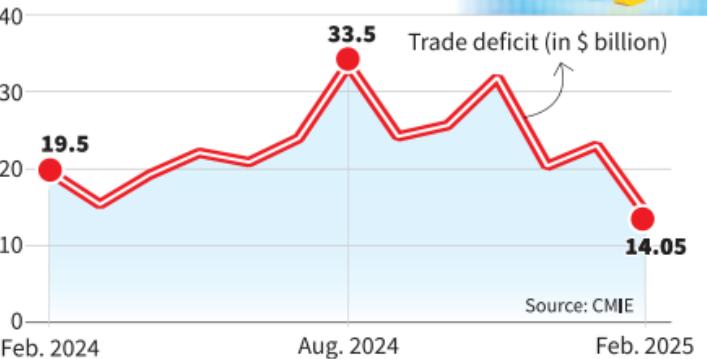
India's gold and silver imports were at \$2.7 billion, which was the lowest since June 2024, when the value was \$2.5 billion.

As for crude and petroleum, imports were at \$11.89 billion, which was the lowest since July 2023, when the value was at \$11.81 billion.

India exported goods worth \$36.9 billion in February 2025. Imports, ho-

## Lowering trade deficit

Feb. imports were the lowest since April 2023 and the trade deficit was lower than figures in Aug. 2021



wever, slipped to a 22-month low of \$50.9 billion.

On a year-on-year basis, exports dipped 10.84% in February 2025.

"A portion of the YoY decline in merchandise exports can be attributed to the base year effect related to the leap month," Aditi Nayar, chief economist at the credit rating agency ICRA, wrote in a state-

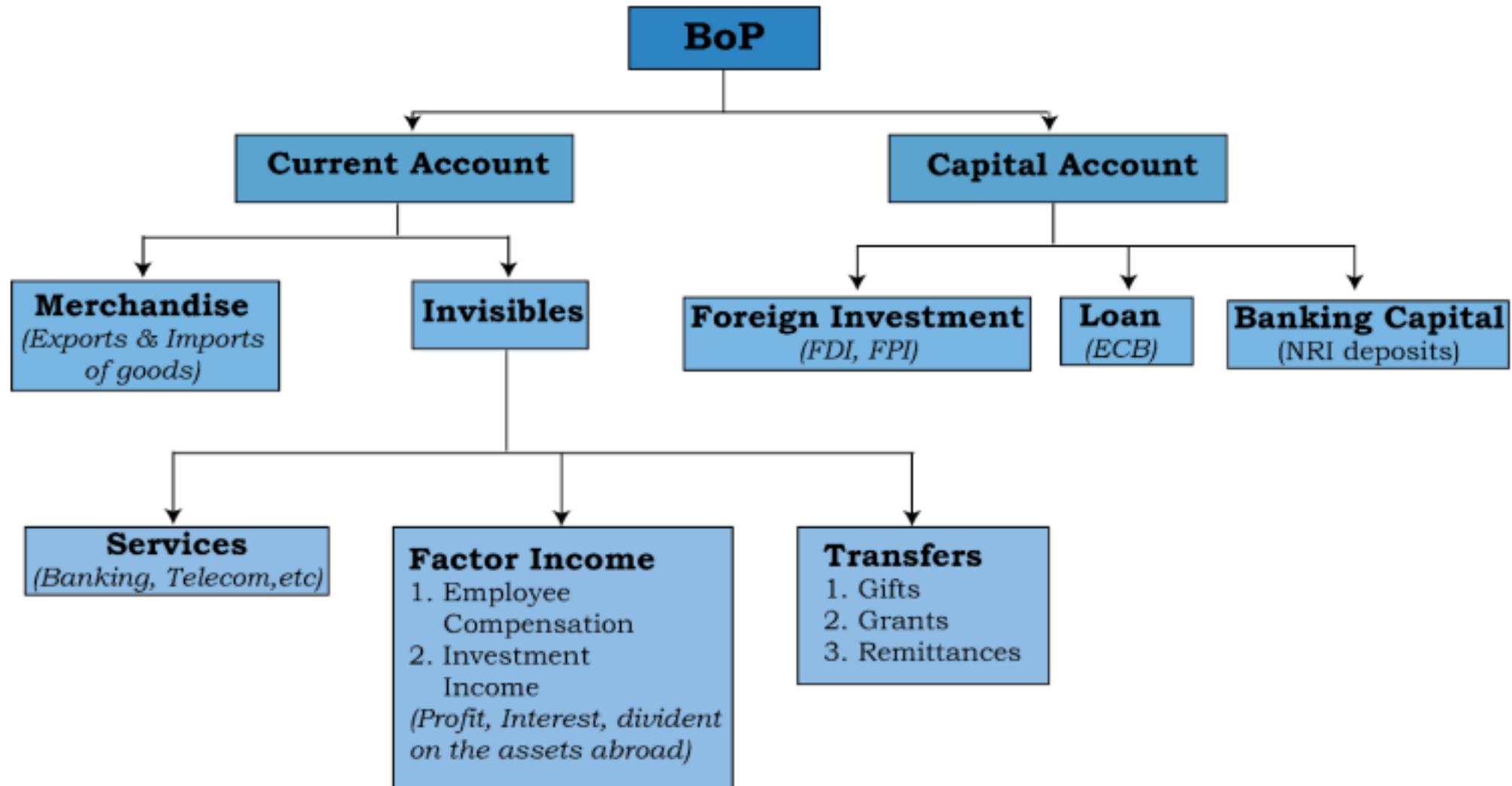
ment. Imports however shrunk 16.3% in the reporting month as against the corresponding period last year.

"The trade deficit was significantly lower than the average of over \$23 billion during the first 10 months of FY2025," Ms. Nayar said.

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# H-1B workers with master's degree doubled in 2020s from 2000s

Key facts about the H-1B program and its workers, as bipartisan calls for reform gain momentum in the U.S.

## DATA POINT

### The Hindu Data Team

The landscape of H-1B visa approvals has undergone a dramatic transformation over the past two decades, according to data collated by the Pew Research Survey.

At the start of the millennium, 57% of approved H-1B workers had a bachelor's degree, while only 31% had a master's degree. By 2021, these numbers had flipped – only 34% held a bachelor's degree and 57% had a master's degree (Chart 1). This means that a four-year degree has become less sufficient for securing a visa.

In the 2000s, about 10% of approved H-1B applications were renewals, while most were new. By the 2020s, renewals had grown to one-third of all approvals (Chart 2). So, it has become increasingly tough for new applicants to secure a H-1B visa.

The denial rate for H-1B applications dropped to a record low of around 2% under former President Joe Biden, down from a peak of 15% during Donald Trump's first term. Under Barack Obama, it had fluctuated between 5% and 10% (Chart 3). This data gains prominence with Mr. Trump serving a second term as President, though Republicans are divided over the skilled immigration issue.

In the 2000s, Indians had accounted for 40-50% of approvals. This rose to over 70% from the mid-2010s (Chart 4).

In 2023, 65% of approved H-1B workers were hired for computer-related jobs. They also received a higher median annual salary than other job types, though managers had a significantly higher average salary (Chart 5).

In 2023, Amazon sponsored the highest number of H-1B visas (2.9% of total approvals), followed by Cognizant Technology Solutions, Infosys, Tata Consultancy, and Google (Table 6).

## A profile of H-1B workers

The charts are sourced from Pew Research Centre's "What we know about the U.S. H-1B visa program"

Chart 1: The % share of H-1B workers approved each fiscal year whose highest level of education is a \_\_\_\_\_ degree

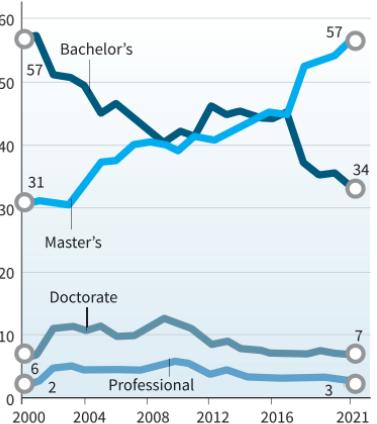


Chart 2: The number of H-1B applications approved each fiscal year. K=1,000

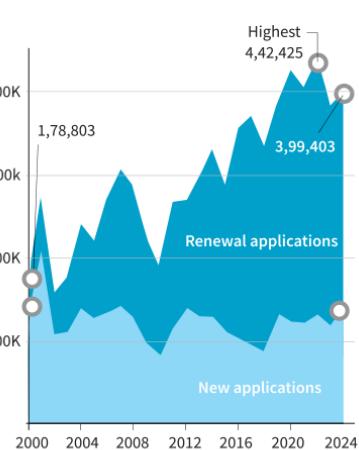


Chart 3: The % share of H-1B applications denied each fiscal year

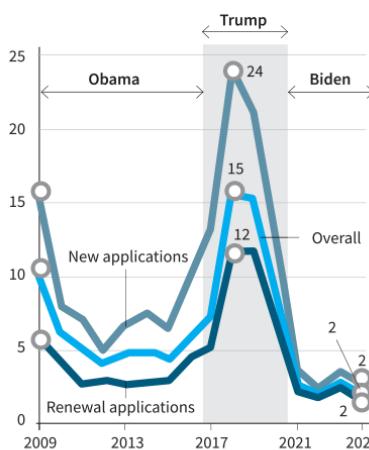


Chart 4: The % share of H-1B workers approved each fiscal year were born in \_\_\_\_\_

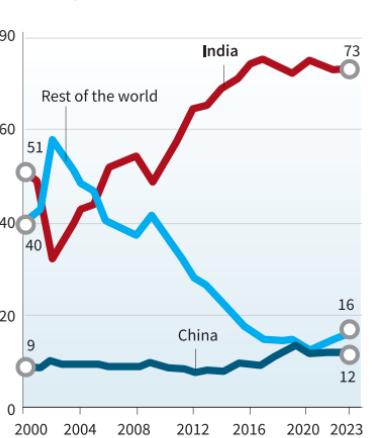


Chart 5: The % and median annual salary of H-1B workers approved in fiscal year 2023, by occupation

	% of H-1B workers	Median annual salary (\$)
Computer-related	64.9%	\$1,23,600
Architecture engineering and surveying	9.4	1,15,000
Education	6.2	69,700
Administrative specialisations	5	1,20,000
Medicine and health	4.4	1,04,900
Mathematics and physical sciences	2.7	1,22,600
Life sciences	1.9	81,500
Managers and officials	1.4	1,40,000
Miscellaneous professional technical and managerial	1.2	1,45,000
Social sciences	0.8	1,10,000

Table 6: Employers with the highest number of H-1B applications approved in fiscal year 2023

Rank	Employer name	Number of approvals	% of total Approvals
1	Amazon.com Services LLC	11,299	2.9%
2	Cognizant Technology Solutions	7,654	2%
3	Infosys Limited	7,349	1.9%
4	Tata Consultancy Services Ltd.	6,914	1.8%
5	Google LLC	5,465	1.4%
6	Microsoft Corp.	4,793	1.2%
7	Apple Inc.	3,821	1%
8	Meta Platforms Inc.	3,371	0.9%
9	JPMorgan Chase Co.	3,066	0.8%
10	Capgemini America Inc.	2,831	0.7%

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## **Content.**

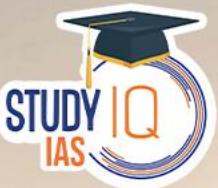
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- By 2021, these numbers had flipped — only 34% held a bachelor's degree and 57% had a master's degree
- This means that a four-year degree has become less sufficient for securing a visa.
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- The H-1B is a non-immigrant visa which allows US-based companies to hire and employ foreign workers for specialty jobs like science, technology, engineering, mathematics (STEM), and IT (High skills and at least a bachelor's degree)
- It was introduced in 1990 to help US employers address skill shortages when qualified US workers are unavailable.
- A nonimmigrant visa allows temporary entry to the US for purposes like tourism, business, work, study, or medical treatment.
- Visa Duration: An H-1B visa can be issued for a maximum of six years. After this period, the visa holder must either leave the US for at least 12 months before reapplying for another H-1B visa or apply for permanent residence (a Green Card).

## **Content.**

- **Annual Cap and Exemptions:** Currently, there is a regular annual cap of 65,000 new H-1B visas each fiscal year.
- An additional 20,000 visas are available for applicants who hold a master's degree or higher from a US university.
- Petitions for H-1B visa holders seeking continued employment and those seeking employment at higher education institutions, affiliated nonprofits, or government research organizations are eligible for cap exemption.
- **Dominance of Indians:** People born in India are the largest beneficiaries accounting for more than 70% of all approved H-1B petitions annually since 2015.
- People born in China rank second, consistently making up 12-13% of petitions since 2018.



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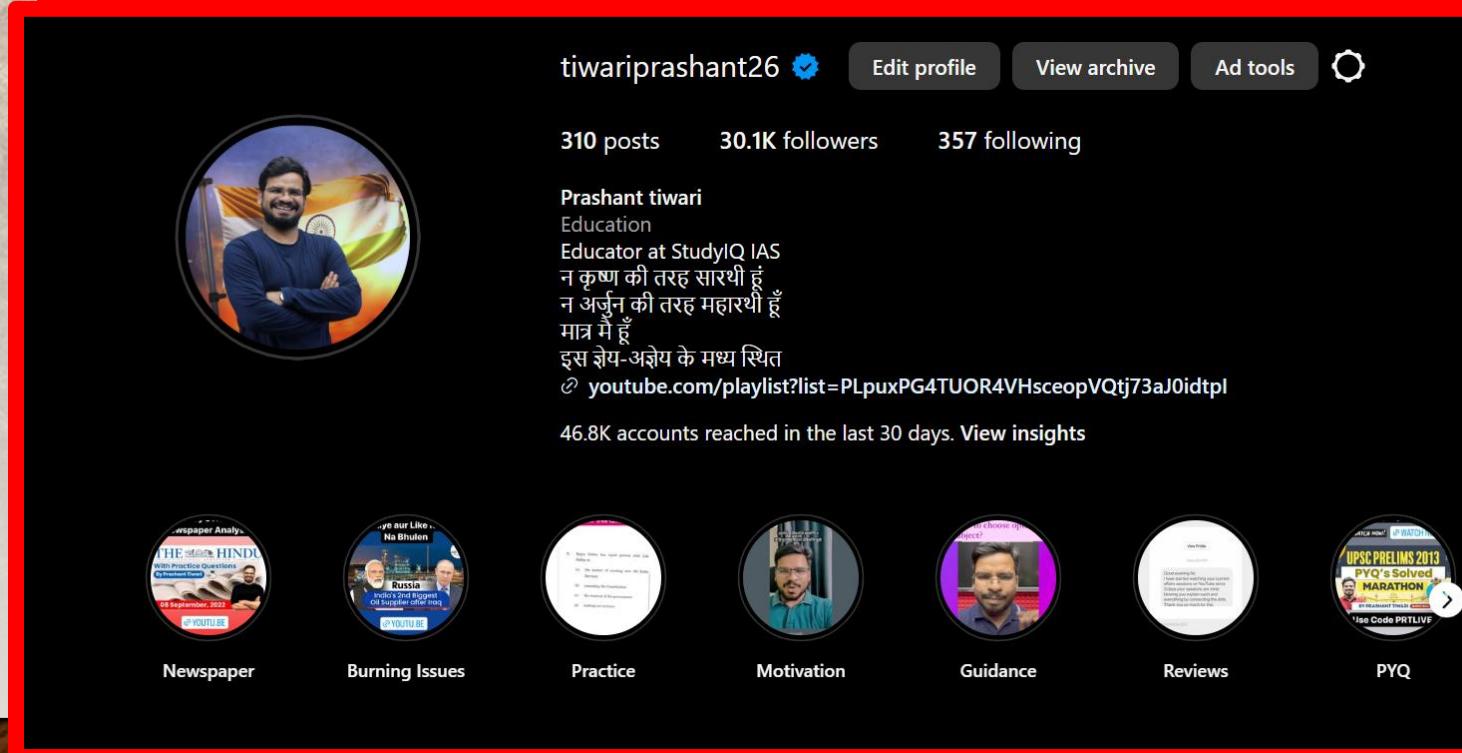
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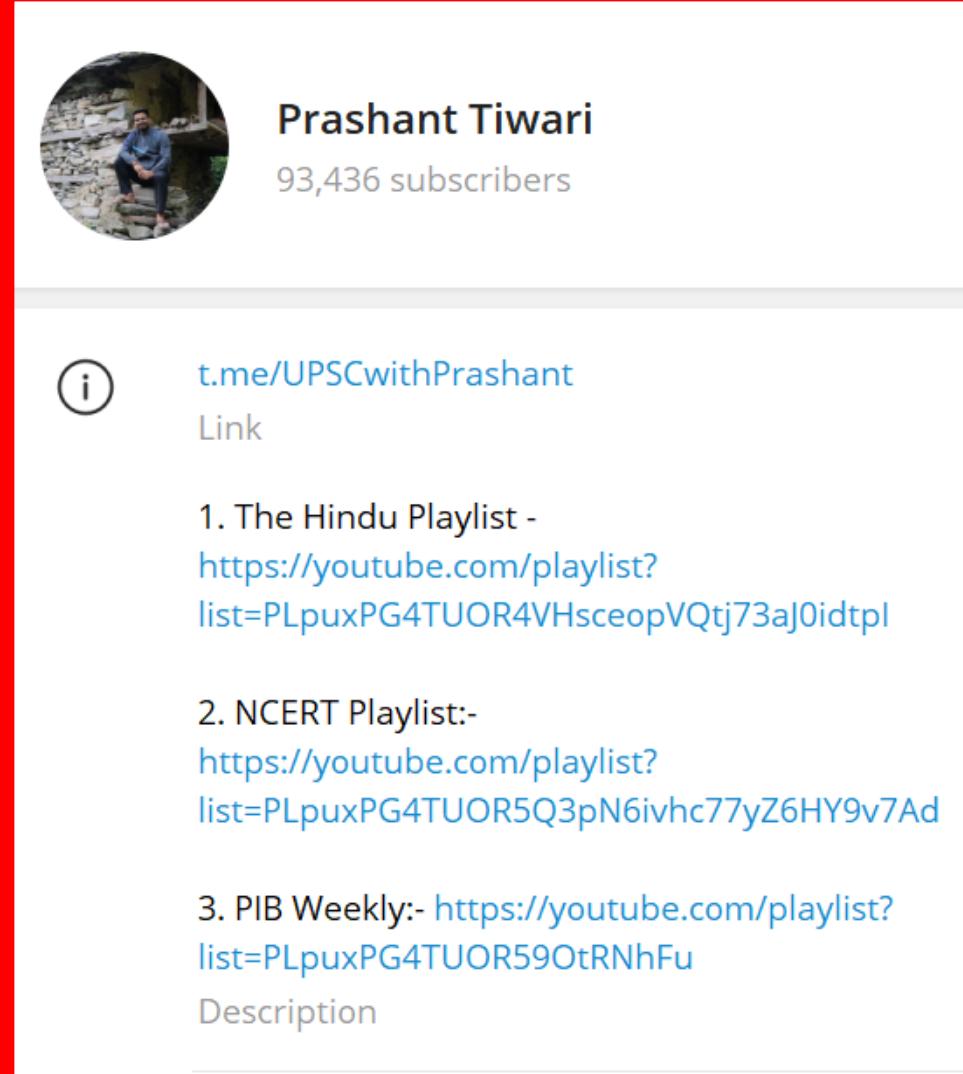
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Description

# The barriers faced by construction workers

**C**onstruction is the fastest-growing sector, contributing about 9% to the national GDP and projected to reach \$1.4 trillion by 2025. Around 3 crore workers are estimated to be working in this sector in India by 2030. However, last month, Larsen and Toubro Chairman and Managing Director, N. Subrahmanyam, voiced growing concerns over labour shortages in the sector. He said that some workers are reluctant to relocate for work due to the availability of welfare schemes, which offer them financial security. This narrative oversimplifies the structural issues that construction labourers face.

**A fragmented journey**  
Construction workers, especially migrant labourers, endure a fragmented employment landscape characterised by frequent relocations, high job insecurity, inconsistent access to welfare benefits, and precarious working conditions. Despite legal frameworks such as the Building and Other Construction Workers (Regulation of Employment and Conditions of Service) (BOCW) Act, 1996, accessing welfare entitlements remains a significant challenge. Around 5.65 crore construction workers are registered with State construction boards. These have collected around ₹70,000 crore cesses, which are to be used for the welfare of construction workers. But this amount largely remains unutilised due to a series of issues.

A primary barrier for construction workers is obtaining and maintaining the documentation required for welfare registration. Proofs of identity, date of birth, and residence are essential documents for accessing benefits. However, due to the transient nature of their work, many labourers lack permanent addresses, making it difficult for them to secure documents such as birth certificates, residence proofs, and rental agreements.



**Tarun Cherukuri**  
**Founder and CEO,**  
**Indus Action**



**Harshil Sharma**  
**Director**  
**Government**  
**Relations, Indus**  
**Action**

The requirement for an ‘employment certificate’ validating 90 days of work in a year further complicates the process. This document is typically issued by employers, but in the case of a few States, it is substituted by self-certification or a trade union certificate. Still, employers are majorly called or visited for verification. Contractors are unwilling or unable to provide certificates or requisite information to the State, leaving workers unable to prove their eligibility. Additionally, verification protocols vary across States.

While State governments collect a 1.2% construction cess under the BOCW Act to fund worker welfare, approximately 75% of it remains unutilised, according to a 2023 Parliamentary Standing Committee report. This discrepancy is largely due to the fragmented nature of worker databases, inconsistent verification protocols, and cumbersome registration processes. For example, construction workers affected by seasonal employment disruptions, such as heat waves, struggle to access direct benefit transfers despite legal provisions. During the ban on construction due to air pollution in north India, lakhs of workers lost their livelihoods but faced delays and administrative challenges in securing financial relief. The lack of digital public infrastructure to facilitate rapid disbursement exacerbates their vulnerability.

Migrant workers often move across multiple States searching for employment, but the absence of interoperable systems means that benefits registered in one State cannot be accessed in another. For instance, a worker registered under the Haryana BOCW Board loses access to welfare if he relocates to Delhi. This disrupts continuity in welfare delivery and discourages workers from registering altogether.

## Proposed solutions

To address labour shortages in the

construction industry, we propose the following actionable reforms. First, a unified national labour identification system, akin to the One Nation One Ration Card scheme, would facilitate inter-State portability of welfare benefits. If BOCW registrations are linked to UAN on e-Shram and worker data across States is integrated, construction labourers could access their entitlements regardless of their location.

Second, State governments should adopt open-source digital platforms to improve the accessibility and efficiency of welfare schemes. Implementing a centralised portal with standardised workflows would reduce administrative delays and enhance transparency. Such platforms can also support automated verification through Aadhaar seeding and real-time tracking of welfare disbursement.

Simplifying documentation protocols by accepting alternative proofs, and relaxing the verification protocols, can ease the process. State governments can facilitate bulk registration through on-site camps, ensuring that large construction projects maintain accurate worker records. This would reduce dependency on employer-issued certificates.

Investing in skill development programmes for construction is essential for addressing long-term labour shortages. A robust skilling ecosystem tailored to meet the evolving demands of the industry can enhance worker productivity and retention. But skilling alone is not enough – ensuring safe and dignified work environments is equally critical for maintaining workers’ health and efficiency. Construction firms can play a key role in this by committing to both medium-term skilling initiatives and improved workplace standards, creating a more stable, skilled, and resilient workforce.

In conclusion, labour shortages cannot be addressed without acknowledging and resolving the systemic barriers to welfare access and employment continuity.

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- **Construction is the fastest-growing sector, contributing about 9% to the national GDP and projected to reach \$1.4 trillion by 2025.**
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- **But skilling alone is not enough — ensuring safe and dignified work environments is equally critical for maintaining workers' health and efficiency.**

# *A land where ambition grows minus an outbound ticket*

The recent drama over the unceremonious repatriation of Indians who attempted illegally to enter the United States of America, and who ended up handcuffed and manacled in an American military aircraft that dumped them on the tarmac in Amritsar, raises a whole series of issues. Migration, after all, is not merely a policy issue. It is a human story, woven into our collective memories and dreams.

Immigration has long been an integral part of human history, shaping civilisations, economies, and societies across the globe. India, with its rich tradition of global engagement, has long seen its people traverse continents in pursuit of opportunity, new lives, better futures. Every year, millions of Indians embark on this journey, making India the country with the highest number of emigrants in the world. Today, Indians are no longer just workers abroad; they are leaders, shaping global industries. With Sundar Pichai at Google, Satya Nadella at Microsoft, and a host of others born and raised in India heading Fortune500 companies, Indian migrants drive innovation and economic power in the West. History proves that migration has always been a force multiplier, enriching both migrants and host nations. Yet, in an era of rising walls, both physical and political, migration faces unprecedented scrutiny.

#### **A paradox that is painful**

For decades, the lure of the American Dream has beckoned young Indians with the promise of economic opportunity, social mobility, and the prospect of a better future. While the IT engineers in Silicon Valley went on scholarships or work visas and stayed on, the Sikh cab drivers navigating the streets of New York may have found less conventional means of entry. But these illegal migrants are not fugitives but opportunity-seekers wanting a fair shot at prosperity. With remittances to India crossing \$120 billion in 2023, migration fuels a cycle where families seek to replicate the success of relatives abroad. It is the vast expanse of opportunity in major U.S. cities, the promise of work under the radar, and the prospect of eventual amnesty (like so many before them) that draws them in. An estimated 7,25,000 undocumented Indian migrants – nearly one in four of all Indians in the U.S. – live and work clandestinely in the U.S.

There is a painful paradox at the heart of India's illegal migration story. We celebrate tech billionaires while youth unemployment soars, showcase gleaming infrastructure while millions struggle for dignified work. India's growth story features booming statistics, shrinking opportunities, and a rising economy still unable to assure its own people that their future lies at home.

The lure of foreign shores is sometimes about



**Shashi Tharoor**

is a fourth-term Member of Parliament (Congress), Lok Sabha, for Thiruvananthapuram, Chairman of the Parliamentary Standing Committee on External Affairs, and the Sahitya Akademi Award-winning author of 26 books, including 'Pax Indica: India and the World of the 21st Century' (2012)

ambition, sometimes about survival. This has birthed a thriving network of unscrupulous agents weaving fantasies of western riches, convincing even people from India's most prosperous States to leave. Gujarat – a State championed as an economic success story, the launch-pad of the Prime Minister's rise – sees thousands risking everything to migrate. Punjab, too, is revered as India's breadbasket; it feeds the nation, yet its youth are leaving in droves. Rising unemployment, dwindling agricultural returns, and an insidious drug crisis have eroded hope, leaving many with little choice but to seek their fortunes abroad, legally or otherwise.

In their desperation, many Indians turn to shadowy networks, paying staggering sums to be smuggled across borders. What was once the path of young, single men now sees entire middle-class families – the bedrock of India's ambitions – risking everything for a fresh start abroad. The Gujarati family that froze to death trapped in a snowdrift on the Canadian-U.S. border in January 2022 was upper middle-class at home. Some of those who were sent back by the U.S. had paid a crore of rupees to get there. Who would have imagined that people with a crore of rupees would not thrive in India? Why is India, one of the world's fastest-growing economies, a rising geopolitical force, and a nation with unparalleled human capital, still unable to provide enough opportunities for its own people? Why has the pursuit of dignity, stability, and economic security led millions of Indians to distant shores, even where they are not welcome? These are uncomfortable questions – ones we can no longer ignore.

#### **More mirage than dream**

There is also the question of what they find when they get there. The American Dream, once seen as a golden ticket, is increasingly a mirage. Many find themselves trapped in an endless cycle of uncertainty – living in fear of deportation, working in jobs that barely sustain them, struggling to integrate into societies that, at times, view them with racist suspicion. And for many who leave, the struggle does not end when they cross the border – it follows them, sometimes in the most tragic ways. We hear of migrants working endless hours in exploitative conditions, of families back home waiting for news that never comes. And now, for many, the journey merely ends in humiliating deportation.

The United States is well within its legal authority to return those who have entered its territory unlawfully. They have been doing so: the Biden administration deported 1,100 Indians in the last fiscal year. Since October 2020, nearly 1,70,000 Indian migrants have been detained by U.S. Customs and Border Protection while attempting to cross the border illegally, largely from Canada or Mexico; they are all subject to

deportation. However, the manner in which this process is conducted has been dismaying. Deportation must be carried out with dignity and a respect for human rights. The recent images of shackled and handcuffed migrants being loaded onto military aircraft, suggesting more a criminal extradition of felons than an immigration enforcement measure, have understandably agitated Indians. Colombia and Mexico have rejected such treatment of their citizens, rightly arguing that deportation is an administrative process, not a punitive spectacle. Humiliating individuals to deter others serves no just purpose – it merely erodes dignity and distorts perceptions.

#### **Issues to ponder over**

We must ask: should a democracy treat another's citizens this way? Does border enforcement justify undermining the very values the deporting nation upholds? Diplomacy is not just policy but also a reflection of national character. While India does not, and should not, endorse illegal immigration, we cannot be silent spectators to the mistreatment of our citizens. A nation's stature is not just economic clout or international reach but the respect its passport commands. True global engagement is not just about alliances and trade deals; it is about setting an unwavering standard – wherever an Indian stands, their nation stands with them.

Another paradox: We hail the aspirational young Indian, but he prefers to fulfil his aspirations abroad. India must not be a place migrants are forced to return to, but one they want to return to. Those coming back are not just deportees but skilled, ambitious individuals whose aspirations can drive India's growth. We must make opportunities accessible to all, not concentrated among the privileged. Inclusive growth, innovation, and investments in infrastructure, education, and entrepreneurship must be national imperatives. More than just jobs, India must offer careers that inspire people to stay, build, and invest in their future here.

As the world builds walls, India must build bridges – to opportunity, prosperity, and a future where migration is an option, not a necessity. If India is to truly rise, it must become a nation where people do not feel compelled to leave, but empowered to stay. India must not just be the world's largest exporter of talent but a magnet for it – a place where ambition flourishes without an outbound ticket, where success is celebrated at home, and where prosperity is not a foreign fantasy but a reality shaped on our own soil.

Let us make India, once again, a land of hope. Not because the world is rejecting our people, but because, if we do the right things, they will have no need to look elsewhere.

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- **Migration, after all, is not merely a policy issue. It is a human story, woven into our collective memories and dreams.**
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- **India, with its rich tradition of global engagement, has long seen its people traverse continents in pursuit of opportunity, new lives, better futures.**
- **Every year, millions of Indians embark on this journey, making India the country with the highest number of emigrants in the world.**
- **Today, Indians are no longer just workers abroad; they are leaders, shaping global industries.**

- For decades, the lure of the American Dream has beckoned young Indians with the promise of economic opportunity, social mobility, and the prospect of a better future.
- An estimated 7,25,000 undocumented Indian migrants — nearly one in four of all Indians in the U.S. — live and work clandestinely in the U.S.
- The United States is well within its legal authority to return those who have entered its territory unlawfully.
- However, the manner in which this process is conducted has been dismaying. Deportation must be carried out with dignity and a respect for human rights.
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# New Delhi's perilous recalibration with the Taliban

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**I**ndia continues to get closer to the Taliban, with reports that Prime Minister Narendra Modi will allow the regime in Afghanistan to appoint a new envoy for its embassy in New Delhi.

This comes on the heels of the first high-level meeting between India and the Taliban in January, with India's Foreign Secretary Vikram Misri and acting Taliban 'Foreign Minister' Amir Khan Muttaqi meeting in Dubai to discuss strengthening political and economic ties, and providing humanitarian aid.

India's relationship with the Taliban has been trending this way for some time, beginning when New Delhi reopened its embassy in Kabul in June 2022, almost a year after the Taliban retook power in Afghanistan.

But accepting a Taliban diplomat in India would be a significant shift, all but recognising the regime as the legitimate rulers of Afghanistan.

This is something most countries have refused to do because of the Taliban's abysmal treatment of women, with 1.4 million school-age girls deliberately denied their right to education and women forbidden from most jobs. More recently, women have also been banned from beauty parlours and national parks, cruel steps to remove them from the public eye. The situation is so bad it has been called "gender apartheid" by United Nations experts. New Delhi believes that this is the time to back the Taliban, seeing a chance to gain influence in a country seen as strategically important for India's interests.

## China's quick moves

China has already beaten India to Kabul, becoming the first country to accept the credentials of a Taliban envoy last year and funding several infrastructure projects in Afghanistan. Beijing is also considering letting the Taliban join its lucrative Belt and Road Initiative,



**Chris Fitzgerald**

is a freelance journalist covering Afghanistan and director of the Platform for Peace and Humanity's Indo-Pacific program

which would bring the regime firmly into its sphere of influence.

India can also get a jump on rival Pakistan, with its formerly warm relationship with the Taliban now ice-cold. Once seen as natural allies, the Taliban has sought independence from Islamabad and has forged relationships with the wider region, including China, Russia and its Central Asian neighbours. A former patron of the Taliban, Pakistan now finds itself lacking influence in Kabul.

## A wave of terror

But engaging with the Taliban comes with significant risks, something India will need to consider before it gets involved in Afghanistan.

The country has become a hotbed for terrorism under the Taliban. The Islamic State (IS) is running rampant, conducting deadly terror attacks across Afghanistan that target the regime and the interests of its allies.

This includes the assassination of Taliban 'Minister' and powerbroker Khalil Ur-Rahman Haqqani in December and threatening to bomb the Chinese embassy in Kabul in 2023. This came after an IS attack on a Kabul hotel popular with Chinese nationals in 2022 that left three dead and injured 18 people.

Russia has also been targeted, witnessed by the IS attack on Moscow's Crocus City Hall in March 2024 that killed at least 140 people and injured more than 500. In early March this year, Russia's security agencies killed a man in a shootout in a Moscow subway who was suspected of being affiliated with the IS.

The Taliban has also been accused of supporting its affiliate, the Tehrik-e Taliban, to carry out attacks in Pakistan. A spate of attacks late last year led to Pakistan conducting airstrikes on terror camps in Afghanistan and subsequent clashes at border crossings between the Taliban

and Pakistan's armed forces.

The relationship between the Taliban and Islamabad has completely broken down over the Taliban's inability to reign in terror groups operating within Afghanistan. The problem is getting worse, not better, with the Tehrik-e Taliban claiming to have carried out 147 attacks on Pakistani soil in February alone, killing 180 soldiers. Recently, the group's affiliate, the Jaish Al-Fursan, claimed responsibility for a suicide bombing at an army compound in northwest Pakistan that killed nine and injured 25.

It is a matter of concern that India has already caught the ire of the IS. In December, the group claimed responsibility for an attack on the Indian consulate in Jalalabad that killed one person and injured two others. This came after a United Nations report last year said that the IS has sought to recruit 'lone actors' to carry out large-scale attacks in India. India is now clearly in the firing line.

## Need for caution

New Delhi has long called for Afghanistan to be free of terrorism, and this should be a key demand before any further engagement with the Taliban takes place. This includes the Taliban collaborating with regional partners to defeat the IS and forcing the group to renounce the support of the Tehrik-e Taliban.

Afghanistan has always been a dangerous place to be invested in, having suffered from political instability and terrorism for decades. The Taliban's inability or unwillingness to solve these problems makes it just as risky a prospect today.

India should heed the lessons of rivals China and Pakistan, who have had their fingers burnt after engaging with the Taliban and investing in Afghanistan. With India's tragic history of terrorism at home, New Delhi might decide this is a risk just not worth taking.

India risks getting its fingers burnt by engaging with the Taliban

## **Content.**

- India continues to get closer to the Taliban, with reports that Prime Minister Narendra Modi will allow the regime in Afghanistan to appoint a new envoy for its embassy in New Delhi.
- This comes on the heels of the first high-level meeting between India and the Taliban in January, with India's Foreign Secretary Vikram Misri and acting Taliban 'Foreign Minister' Amir Khan Muttaqi meeting in Dubai to discuss strengthening political and economic ties, and providing humanitarian aid.
- India's relationship with the Taliban has been trending this way for some time, beginning when New Delhi reopened its embassy in Kabul in June 2022, almost a year after the Taliban retook power in Afghanistan.
- But accepting a Taliban diplomat in India would be a significant shift, all but recognising the regime as the legitimate rulers of Afghanistan.

## **Content.**

- This is something most countries have refused to do because of the Taliban's abysmal treatment of women, with 1.4 million school-age girls deliberately denied their right to education and women forbidden from most jobs.
- More recently, women have also been banned from beauty parlours and national parks, cruel steps to remove them from the public eye.
- The situation is so bad it has been called “gender apartheid” by United Nations experts.
- New Delhi believes that this is the time to back the Taliban, seeing a chance to gain influence in a country seen as strategically important for India’s interests.
- China has already beaten India to Kabul, becoming the first country to accept the credentials of a Taliban envoy last year and funding several infrastructure projects in Afghanistan.

## **Content.**

- **Beijing is also considering letting the Taliban join its lucrative Belt and Road Initiative, which would bring the regime firmly into its sphere of influence.**
- **India can also get a jump on rival Pakistan, with its formerly warm relationship with the Taliban now ice-cold.**
- **Once seen as natural allies, the Taliban has sought independence from Islamabad and has forged relationships with the wider region, including China, Russia and its Central Asian neighbours.**
- **A former patron of the Taliban, Pakistan now finds itself lacking influence in Kabul.**
- **India should heed the lessons of rivals China and Pakistan, who have had their fingers burnt after engaging with the Taliban and investing in Afghanistan.**

## Ajab in time

India must push for vaccination against the flu for the elderly

With recent reports indicating a rise in the seasonal influenza cases in the Delhi-NCR area, it is once again time to issue a cautionary note and make a renewed effort to push adult vaccination in the country. The predominant strains involved this season are Influenza A and Influenza B, many treating physicians and pulmonologists have reported. Influenza, with the moniker flu, is a contagious respiratory illness caused by viruses. While it is routinely conflated with the common cold, since the symptoms present similarly – sudden cough and sore throat, with high fever, accompanied by muscle pain, body aches, headaches, fatigue and stuffy nose – it is not quite the same. Both are caused by different viruses and can have varying symptoms and severity. The flu causes mild to serious illness, requiring hospitalisation sometimes, and in a few cases, mostly coinciding with a delay in hospitalisation, can even lead to death. In India, there are two peaks of seasonal influenza, one from January to March and the other in the latter part of the southwest monsoon, in August-October. India has developed a near real time surveillance of cases of Influenza like Illness (ILI) and Severe Acute Respiratory Infections (SARI) presenting themselves in health facilities. This programme was further strengthened and made more robust during and after the COVID-19 pandemic. There is also real time surveillance through the country-wide network of diagnostic laboratories. Epidemiologists say influenza surveillance is a key tool to keep tabs on circulating strains, and define seasonality, besides, playing an important role in syncing vaccination with relevant circulating strains. With all this information in place, it is highly unlikely that health managers will miss any seasonal uptick of cases.

However, the task at hand for governments is a little more complex – it is about being prepared to handle the outbreak by anticipating it and inculcating a sense of preservation, particularly among the high-risk groups ranging on the extremes of the age spectrum. Attention should be paid to children, senior citizens and people with chronic respiratory conditions. Key among the interventions recommended is increasing awareness on vaccination for influenza; in fact, people of all ages will benefit from a periodic shot of the updated flu vaccine. While vaccination for children is, by and large, acceptable, and an area of focus for all health managers, adult immunisation gets the short shrift. At the moment, it is left to the whims and resources of State governments to offer adult vaccinations. Targeted awareness campaigns must be clear, urgent in tone, and make an impact on the high-risk groups particularly, because, very simply, vaccines save lives.

**Page No. 6, GS 2**

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## **Content.**

- **Avian influenza, often referred to as bird flu, is a highly contagious viral infection that primarily affects birds, particularly wild birds and domestic poultry.**
- **In 1996, highly pathogenic avian influenza H5N1 virus was first identified in domestic waterfowl in Southern China. The virus is named A/goose/Guangdong/1/1996.**

### **Transmission to Humans and Related Symptoms:**

- **Human cases of H5N1 avian influenza occur occasionally, but it is difficult to transmit the infection from person to person. As per World Health Organisation(WHO), when people do become infected, the mortality rate is about 60%.**
- **It can range from mild flu-like symptoms, including fever, cough, and muscle aches, to severe respiratory issues like pneumonia, difficulty breathing, and even cognitive problems such as altered mental status and seizures.**

# Types

## Influenza A

(Infects a wide range of animals including birds)

## Influenza B

(Mainly infects humans)

## Influenza C

(Infects humans and pigs but more rare than types A and B)

## Influenza D

(Infects cattle)

# A Subtypes

## Avian

(Can infect humans)

H5N1

H7N3

H7N7

H7N9

H9N2

H10N8

## Swine

(Can infect humans)

H1N1

H1N2

H3N2

Most common human

H1N1

H3N2

### **Initial Outbreak:**

- The initial outbreak of Highly Pathogenic Avian Influenza (HPAI) H5N1 in India occurred in 2006 in Navapur, Maharashtra, and was followed by annual outbreaks.
- H5N8 was first observed in India in November 2016, mainly affecting wild birds across five states, with Kerala reporting the most cases.
- The disease has been reported in 24 states and union territories, resulting in the culling of over 9 million birds to control its spread.

### **Related Initiative:**

- India's approach to controlling Highly Pathogenic Avian Influenza (HPAI) follows a "detect and cull" policy as outlined in the National Action Plan for Prevention, Control, and Containment of Avian Influenza (revised - 2021)

### **Treatment:**

- Antivirals have demonstrated effectiveness in the treatment of avian influenza virus infections in humans, lowering severity and the risk of death.

# Why are electoral reforms necessary?

Since when have votes been registered solely through Electronic Voting Machines? Why have certain Opposition parties accused the EC of electoral roll manipulation? Should criminal cases of politicians standing for elections be given wide publicity?

## EXPLAINER

Rangarajan R.

### The story so far:

The Election Commission (EC) has invited political parties to discuss strengthening the election process. This is in wake of the allegations of manipulation of electoral rolls during the recently concluded assembly elections and issues raised with respect to duplicate Electoral Photo Identity Card (EPIC) numbers in different States.

### What are the legal provisions?

Article 324 of the Constitution provides that the superintendence, direction and control of the preparation of electoral rolls for, and the conduct of, all elections to the Parliament and State legislature shall be vested in the EC. The preparation of electoral rolls is governed by the provisions of the Representation of the People Act, 1950 and related rules, including Registration of Electors Rules, 1960.

The voting process has undergone tectonic changes since the first general election in 1952. In the first two general elections of 1952 and 1957, a separate box was placed for each candidate with their election symbol. Voters had to drop a blank ballot paper into the box of the candidate whom they wanted to vote for. It is only from the third general election in 1962 that ballot papers with names and symbols of candidates was introduced. Subsequently, since the 2004 general elections to the Lok Sabha, Electronic Voting Machines (EVM) have been used in all constituencies. Since 2019, EVMs have been backed by 100% Voter Verifiable Paper Audit Trail (VVPAT) slips in all constituencies.

### What are the issues?

There have been a series of issues raised in the past with respect to the voting and counting process. First, there were demands through a Public Interest Litigation (PIL) for reverting to paper ballot papers which was dismissed by the Supreme Court in April 2024. Second, the same PIL demanded 100% matching of VVPAT with EVM count, which at present is carried out for five machines per assembly constituency/segment. The Supreme court, while dismissing this demand as well, had directed that the burnt memory of microcontrollers of 5% of EVMs, which includes that of control units, ballot units, VVPATs, in every assembly segment can be checked and verified by a team of engineers of the EVM manufacturers in case of any suspicion of tampering. The exercise needs to be initiated via a written request from candidates who are placed second or third in a constituency, within seven days of the declaration of election results.

Third, there were allegations of manipulation of electoral rolls in the run up to the Maharashtra and Delhi Assembly elections. The Opposition parties alleged that large number of bogus/fake voters were added to the electoral roll to benefit the ruling party at the Centre. The fourth and current issue relates to identical EPIC numbers for voters belonging to different States like West Bengal, Gujarat, Haryana and Punjab. Opposition parties such as the Trinamool Congress allege that it vindicates their claim of bogus voters being included in the voters' list. The EC has explained that duplication may have arisen because of the earlier decentralised system for allotting EPIC



Need for a revamp: Poll officials carrying EVMs enter the Patparganj counting centre for the Delhi Assembly polls, in New Delhi, on February 8. PTI

numbers before shifting to the centralised database on the ERONET platform. It clarified that irrespective of the EPIC number, an elector can cast his/her vote only in their designated polling station in their State or Union Territory.

Apart from the above issues in the election process, there are significant issues related to the campaign process that have to be addressed. First, 'Star Campaigners' of most parties have been guilty of using inappropriate and abusive words against leaders of other political parties, appealing to caste/communal feelings of electors, and making unsubstantiated allegations. Second, candidates of all major political parties breach the election expenditure limit by a wide margin. Further, there are no limits on political party spending during elections. The Centre for Media Studies has estimated that the expenditure during the 2024 Lok Sabha elections was close to ₹1,00,000 crore by various political parties. Such inflated election expenditure fuels corruption resulting in a vicious cycle. Third, as per the report of the Association of Democratic Reforms, the issue of criminalisation of EVMs has almost reached its nadir with 251 (46%) of the 543 elected MPs in 2024, having 170 (31%) face serious criminal charges including rape, murder, attempt to murder and kidnapping.

### What are the required reforms?

Free and fair elections is part of the basic structure of our Constitution as declared by the Supreme Court in various cases.

With respect to the electoral process of voting and counting, the following reforms need to be considered and implemented. First, as regards the EVM and VVPAT related aspects, the sample size for the matching of EVM count and VVPAT slips should be decided in a scientific manner by dividing each State into large regions. In case of even a single error, VVPAT slips should be counted fully for the concerned region. This would instil statistically significant confidence in the counting process. Further, as recommended by the EC in 2016, in order to provide a degree of cover for voters at the booth level, 'totaliser' machines can be introduced that would aggregate votes in 14 EVMs before revealing the candidate-wise count. The candidates placed second or third should also utilise the direction of the Supreme Court to demand the verification of 5% of EVMs in each assembly segment in case of any suspected tampering. If any issue is identified, it should be suitably addressed and if there are none, it would put to rest the political speculation.

Second, to address the apprehension of inclusion of fake voters and duplicate EPIC cards, the process of linking citizens' Aadhaar number with EPIC cards may be considered after detailed discussions with all stakeholders and dispelling concerns around right to privacy. Meanwhile, the EC should remove any duplicate voter ID numbers in the electoral roll across States and ensure unique EPIC numbers.

Equally important, if not more, are the reforms needed in the campaign process. First, the EC should be able to consider

the 'Star Campaigner' status of a leader, in case of any serious violation of the Model Code of Conduct (MCC), thereby depriving the party candidates of expenditure relief for their campaigns. Under Paragraph 16A of the Symbols order, the EC has the power to suspend or withdraw the recognition of a recognised political party for its failure to observe MCC or follow lawful directions of the Commission. Strict action under this provision against bigger parties would have a salutary effect in ensuring adherence to the MCC. Second, with respect to election expenditure, the law must be amended to explicitly provide that 'financial assistance' by a political party to its candidate should also be within the limits of election expenditure prescribed for a candidate. There should also be a ceiling on expenditure by political parties. Third, the Supreme Court direction to candidates as well as political parties to issue declarations about criminal antecedents, at least three times before election, in a widely circulated newspaper in the locality and in electronic media, should be strictly enforced. This would enable a discerning voter in exercising a well-informed choice.

The EC and various political parties should engage in a meaningful discussion on all these aspects so that the campaign and electoral processes instil confidence in voters at large.

Rangarajan R is a former IAS officer and author of 'Polity Simplified'. He currently trains civil service aspirants at Officers IAS Academy. Views expressed are personal.

## THE GIST

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- The voting process has undergone tectonic changes since the first general election in 1952. In the first two general elections of 1952 and 1957, a separate box was placed for each candidate with their election symbol. Voters had to drop a blank ballot paper into the box of the candidate whom they wanted to vote for.
- It is only from the third general election in 1962 that ballot papers with names and symbols of candidates was introduced.

## Fact

- Subsequently, since the 2004 general elections to the Lok Sabha, Electronic Voting Machines (EVM) have been used in all constituencies.
- Since 2019, EVMs have been backed by 100% Voter Verifiable Paper Audit Trail (VVPAT) slips in all constituencies.
- Public Interest Litigation (PIL) for reverting to paper ballot papers.
- PIL demanded 100% matching of VVPAT with EVM count
- five machines per assembly constituency/segment
- Free and fair elections is part of the basic structure of our Constitution as declared by the Supreme Court in various cases.

# How climate change is affecting India's wheat production cycle

The Indian Ocean is warming at an accelerated rate, which in turn is affecting India's monsoon, on which most of the country's agriculture depends. The kharif or summer crop season is starting and ending late, which delays the beginning of the rabi season. And wheat is a rabi crop

Priyali Prakash

**I**ndia recorded its warmest February in 124 years this year. The India Meteorological Department has already raised an alarm for March, saying that the month will experience above normal temperatures and more than the usual number of days with heat waves. The period coincides with the beginning of India's wheat harvest season, and extreme heat poses a grave threat for the country's second-most consumed crop, after rice.

## Wheat in India

In India, wheat is primarily grown in the northwestern parts of the Indo-Gangetic plains. Primary producers include the states of Uttar Pradesh, Punjab, Haryana, and Madhya Pradesh. Wheat needs a cooler season to grow, and the crop is usually sown between October and December. It is harvested between February and April in the rabi crop season.

The Indian government set a wheat procurement target of 30 million tonnes for the 2025-2026 rabi marketing season, news agency PTI reported in January. The lower procurement target comes despite the agriculture ministry aiming for a record wheat production of 115 million tonnes in the 2024-2025 crop year (July-June), the report added.

In 2024-2025, government wheat procurement was recorded at 26.6 million tonnes. While this exceeded the 26.2 million tonnes procured in 2023-2024, it fell short of the 34.15 million tonnes target for the year.

In May 2022, India had prohibited wheat exports. This was shortly after Russia invaded Ukraine, a major wheat-producing country, which disrupted international availability of the food grain and triggered a global price hike.

## Heat and wheat

Climate variability itself is not a new phenomenon, but it catches our attention when the crop growth season overlaps with heat wave conditions, Sandeep Mahato of the M.S. Swaminathan Research Foundation (MSSRF), Chennai, told *The Hindu*.

A 2022 study in the *International Journal of Molecular Sciences* noted that increasing global warming is causing heat stress that "triggers significant changes in the biological and developmental process of wheat, leading to a reduction in grain production and grain quality."

According to the paper's authors, heat stress is known to affect the growth and development of wheat by altering "physio-bio-chemical processes such as photosynthesis, respiration, oxidative damage, activity of stress-induced hormones, proteins and anti-oxidative enzymes, water and nutrient relations, and yield-forming attributes (biomass, tiller count, grain number, and size) upon exposure to temperatures above the optimum range."

## Stages of wheat growth

According to the UN Food and Agriculture Organisation, stages of wheat growth are defined based on how different organs of the plant develop. This can be broadly grouped into four stages:



In India, wheat is primarily grown in the Indo-Gangetic plains. Producer states include Uttar Pradesh, Punjab, Haryana, and Madhya Pradesh. ANI

Optimal temperature required for growing wheat	Stages	Optimum temperature	Minimum temperature	Maximum temperature
	Seed germination	20.25 ± 1.2	3.5 - 5.5 ± 0.44	35 ± 1.02
	Root growth	17.2 ± 1.87	3.5 ± 0.73	24.0 ± 1.21
	Shoot growth	18.5 ± 1.90	4.5 ± 0.76	20.1 ± 0.64
	Leaf initiation	20.5 ± 1.25	1.5 ± 0.52	23.5 ± 0.95
	Terminal spikelet	16.0 ± 2.30	2.5 ± 0.49	20.0 ± 1.60
	Anthesis	23.0 ± 1.75	10.0 ± 1.12	26.0 ± 1.01
	Grain filling duration	26.0 ± 1.53	13.0 ± 1.45	30.0 ± 2.13

(i) Germination to emergence: This includes the growth of the seed until the seedling breaks through the soil surface and the first leaf emerges.

(ii) Growth stage I: Steps from emergence to double ridge. Shoots appear, and the plant growth shifts focus from producing primordial leaves to flowering structures called spikelets.

(iii) Growth stage 2: This stage lasts from double ridge to anthesis. This is where the focus of the plant shifts from the vegetative to the reproductive stage. This is also one of the stages where the plant is comparatively more susceptible to heat stress.

(iv) Growth stage 3: This stage includes the grain-filling period, from anthesis to maturity.

According to experts, the real problem starts with the oceans. The Indian Ocean is warming at an accelerated rate. A 2024 study conducted by scientists at the Indian Institute of Tropical Meteorology, Pune, noted that the water body will likely be in a "near-permanent heat wave state" mainly as a result of global warming by the end of the century.

The frequency of marine heat waves is expected to increase tenfold, from the current average of 20 days per year to 220-250 days per year, the study added.

A warming Indian Ocean will in turn alter India's monsoon, on which most of the country's agriculture depends. For example, the kharif or summer crop season is starting and ending late, which inevitably delays the beginning of the rabi season.

Wheat is a rabi crop. If its sowing date is late, the later stages of plant growth will coincide with early heat waves in India. February 2025 was warmer than usual, Goveas added. "The problem is a deeper



Changes in strategies to support early sowing of crops in areas that are likely to see early heat waves, or introducing improved yield varieties with shorter growth duration, are some policy changes that can alleviate heat stress on wheat

challenge of the climate crisis on our food systems. The earth is getting warmer. We need to think about not just one crop but all crops: get timings right, have our information and weather systems updated with the knowledge of what to expect, and undertake mitigation efforts against the challenges."

"The larger question here is to be able to guarantee food security," Mahato of MSSRF Chennai said. "We have to focus on addressing yield gaps. This ties into the issue of management of resources like fertilizers, pest control, etc."

According to Mahato, immediate policy support to farmers to deal with heat stress effects on wheat can be in the form of compensation, but there are more long term solutions that need to be incorporated into our agricultural practices.

"Changes in agricultural management strategies to support early sowing of crops in areas that are likely to see early heat waves, or introducing improved yield varieties with shorter growth duration, are some policy changes that can alleviate heat stress on wheat," he added. "There is no compromise that can be done on improving production, and that should be the central goal to the adaptation question."

"Policymakers must take a multi-pronged approach, combining scientific research, financial support, technological solutions, and farmer education to protect wheat crops from rising heat stress," according to Jha. "This includes promoting heat-resistant wheat varieties, adjusting sowing dates, financial support and crop insurance, and weather monitoring and advisories."

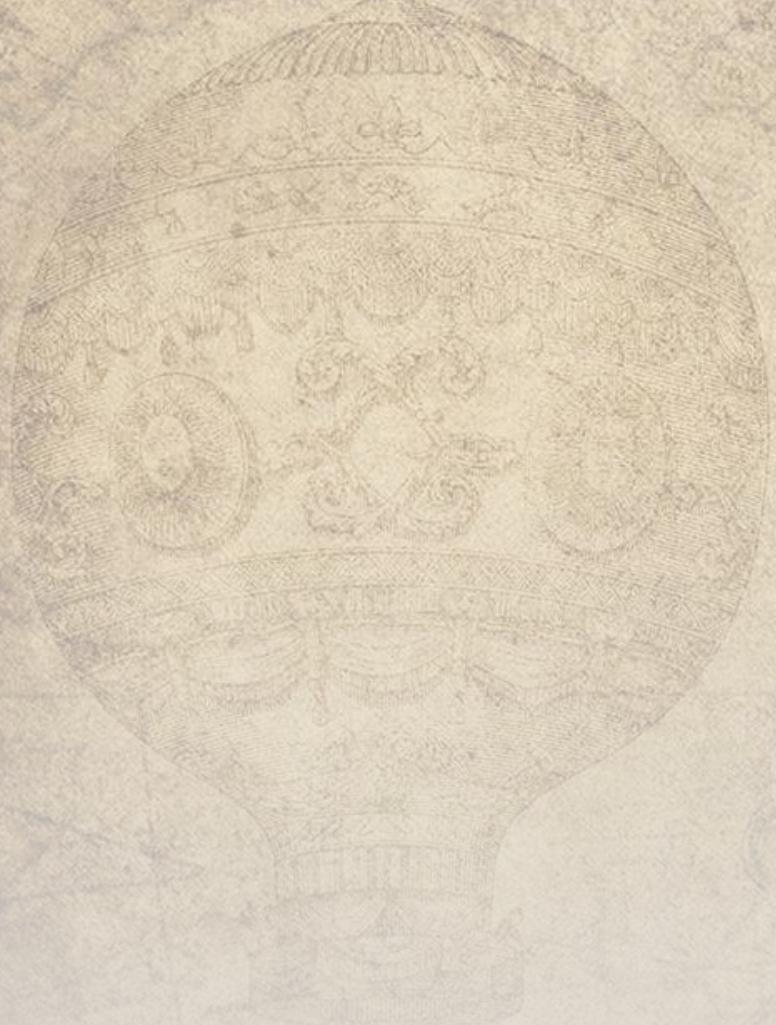
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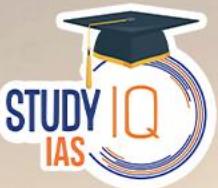
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## Fact

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- A warming Indian Ocean will in turn alter India’s monsoon, on which most of the country’s agriculture depends. For example, the kharif or summer crop season is starting and ending late, which inevitably delays the beginning of the rabi season.
- Wheat is a rabi crop. If its sowing starts late, the later stages of plant growth will coincide with early heat waves in India.
- February 2025 was warmer than usual, and similar trends have been predicted for March. This is also the peak season for wheat harvest, and the ideal temperature in the later stages of the plant’s growth should not cross 30° C.





# UPSC IAS

## PRELIMS TO INTERVIEW (P2I)

# SAMPOORNA

### MARCH MORNING BATCH



Prelims and  
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Program



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performer



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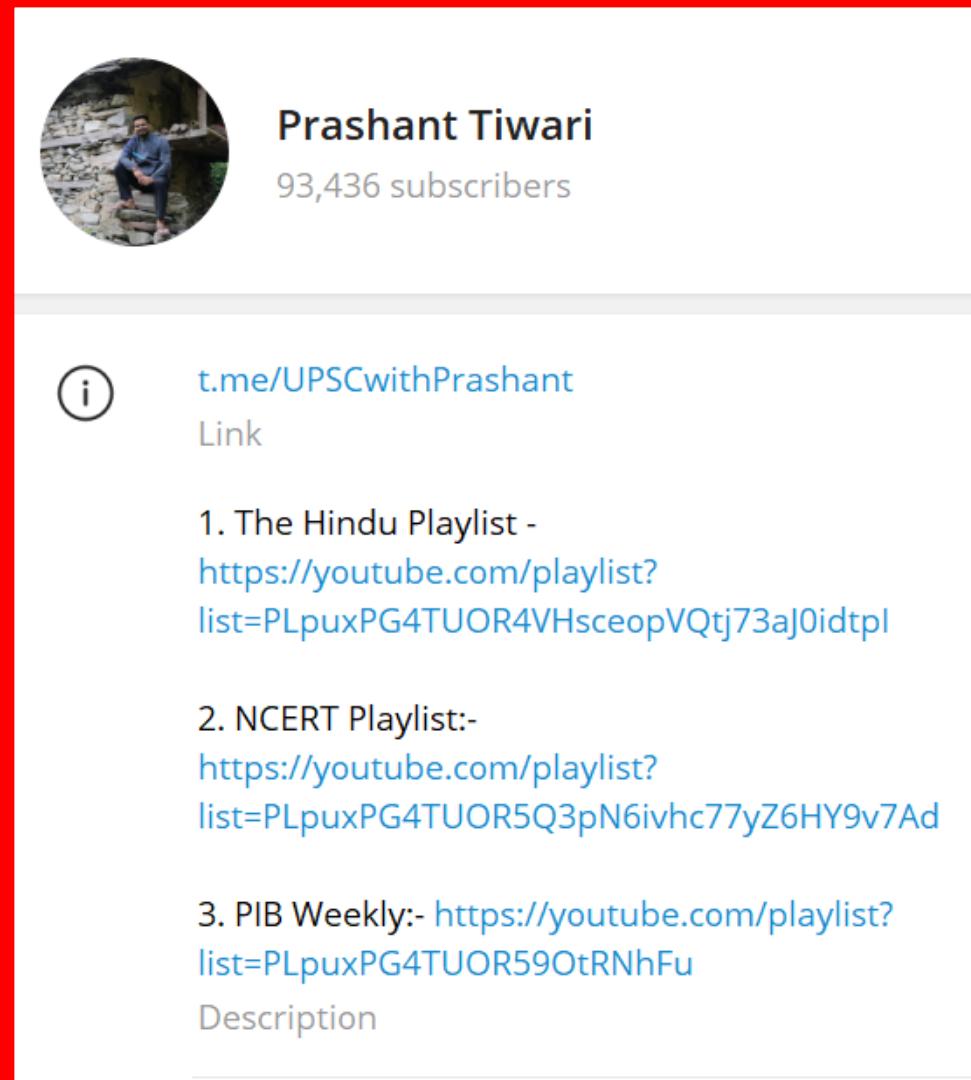
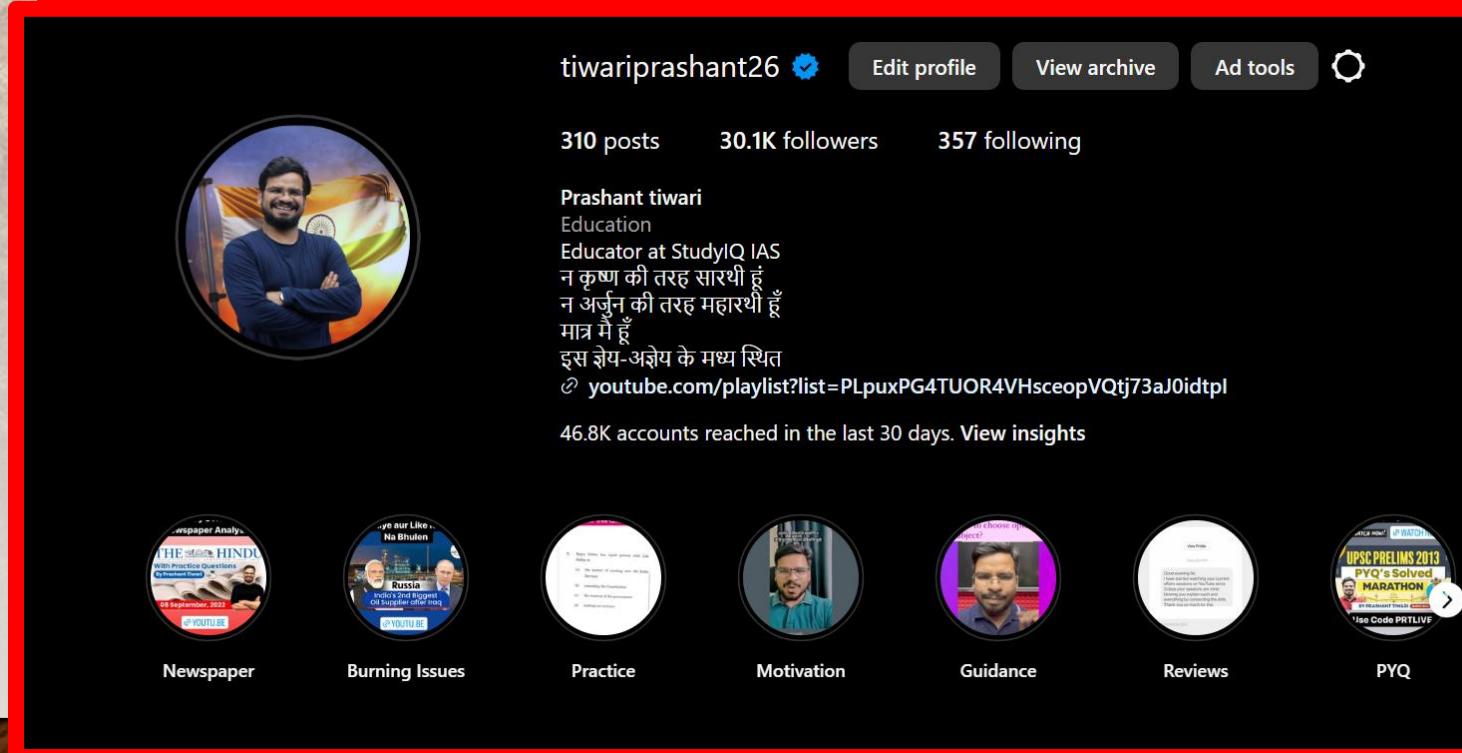
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