

**THE HINDU UPSC IAS EDITION HD 13~11~2025
-:FOR UPSC IAS ASPIRANTS:-
"AVOID POLITICAL & IRRELEVANT ARTICLES"
Please Try To Read This Completely in 45 Minutes If You
Can't So Then You Have To Increase Your Efforts
All the topics of this UPSC IAS Edition are directly or
indirectly important for the prelims & main examination.
There are some topics which can be coded in answer writing of
other topics in the main exam.**

Record low

The chart shows retail price inflation (in %), measured by the Consumer Price Index, from January 2012 to October 2025



Retail inflation hits record low of 0.25%

T.C.A. Sharad Raghavan
NEW DELHI

Retail inflation fell to a historic low of 0.25% in October, with the government attributing this fall to the first full month's impact of GST rate cuts, a favourable base effect, and drop in inflation of several food items such as vegetables and fruits.

According to the govern-

ment, this is the lowest rate of inflation measured in the current series of the Consumer Price Index. That is, it is the lowest rate of inflation since January 2012. The data reveal that the fall in overall inflation is largely due to the statistical impact of the base effect on food inflation.

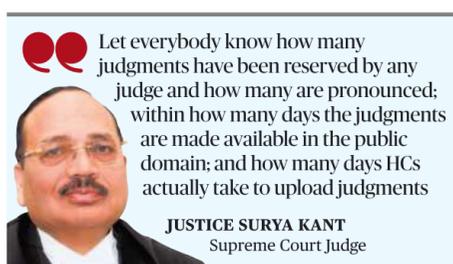
CONTINUED ON
» PAGE 12

All HCs should upload details of time taken by judges to deliver verdicts: SC

Krishnadas Rajagopal
NEW DELHI

The Supreme Court on Wednesday said all High Courts should put out in the public domain the time taken by their judges to pronounce verdicts in pending cases.

A Bench of Justices Surya Kant and Joymalya Bagchi was hearing a plea by four life convicts from the Scheduled Tribes and Other Backward Classes. They had complained that the Jharkhand High Court had not pronounced its verdicts on their criminal appeals even after reserving the cases for judgment two to three years ago.



There are no specific timelines within which judges have to deliver verdicts. The convention is that they ought to pronounce judgments within a reasonable time, from two to six months, of reserving cases. However, judges, including

in the Supreme Court and the High Courts, have in practice reserved judgments for well over a year before delivering them. This may be due to the complexity of the question of law involved or the burden of work.

Justice Kant, who is Chief Justice of India-designate, indicated that reforms and transparency in judicial functioning must not be limited to litigants alone, it should also meet the legitimate expectations of the public at large.

"Let everybody know how many judgments have been reserved by any judge and how many are pronounced; within how many days the judgments are made available in the public domain; and how many days High Courts take to upload judgments," he observed.

CONTINUED ON
» PAGE 12

Waqf Board, *mutawallis* race against time to comply with UMEED portal

The Hindu Bureau
HYDERABAD

With the December 6 deadline for the UMEED portal drawing near, the Telangana State Waqf Board (TGSWB) and the *mutawalli* (waqf manager) community find themselves racing against time to complete the tedious process of uploading records of waqf properties.

Senior TGSWB officials said training programmes, including

live demonstrations to explain the document uploading process, are being conducted. As a part of the process the TGSWB has been registering individuals as “makers”, tasked with entering property details and uploading the requisite documents on the portal. Officials said the number of registered makers has been steadily rising, which is expected to hasten the process.

The UMEED portal is a cen-

tralised platform launched by the Ministry of Minority Affairs for the “digitisation, management, and monitoring” of all waqf properties.

“Till Monday we had registered 7,800 makers. We are at the third position in the country as far as this exercise is concerned. Each maker is assigned to upload documents connected to a waqf institution. The registration of *mutawallis* as makers is an ongoing process,” said

TGSWB chief executive officer Mohammed Asadullah.

Officials said the TGSWB, individually and in collaboration with socio-religious outfits, has been conducting awareness drives. But several challenges persist. These include limited access to the portal for many on account of non-familiarity with the technology and recurring technical issues.

“We are giving participants live demonstrations on how to

use the portal. While uploading documents is time-consuming, there is no alternative,” an official said, adding that Chief Minister A. Revanth Reddy had written to Prime Minister Narendra Modi seeking an extension of the deadline.

Meanwhile, All India Majlis-e-Ittehadul Muslimeen chief and Hyderabad MP Asaduddin Owaisi said he had filed a plea before the Supreme Court seeking an extension of the deadline.

IN BRIEF**SC reserves verdict on uniform definition of Aravali Hills**

The Supreme Court on Wednesday reserved its verdict on the crucial issue of defining the Aravali Hills and range for ensuring environmental conservation, land use regulation, and mining activities in Delhi, Haryana, Rajasthan, and Gujarat. A Bench comprising Chief Justice B.R. Gavai and Justices K. Vinod Chandran and N.V. Anjaria reserved the verdict after hearing several lawyers including Additional Solicitor General Aishwarya Bhati and amicus curiae K. Parmeswar. Over the years the range has faced extensive degradation due to illegal mining, urban encroachment and deforestation. PTI

Inter-State rivalry that is fuelling India's growth

Last month, when Google unveiled its plans for its largest Artificial Intelligence (AI) data centre outside of California, U.S., in Andhra Pradesh, Chief Minister N. Chandrababu Naidu gleefully claimed bragging rights – a global tech titan choosing his State for a marquee investment over regional rivals such as Tamil Nadu and Karnataka. The jubilation in Visakhapatnam, Andhra Pradesh, could be heard across State borders. In Tamil Nadu, a former All India Anna Dravida Munnetra Kazhagam Minister chided the Dravida Munnetra Kazhagam-led Stalin government for failing to woo Google, although it is headed by a true-blue Tamil. Across another border, a Karnataka Minister suggested, with barely concealed envy, that Andhra Pradesh had lured Google with “extravagant subsidies”.

Strip away the politics, though, and what you see is something profoundly healthy – competition among States for investment – a potentially powerful engine for growth. For the first time in decades, Chief Ministers are not queuing in Delhi's corridors of power, but are in boardrooms of multinationals and corporate conclaves, persuading investors that India's best destination is their State.

Central patronage to competitive federalism

To appreciate this shift, cast your mind back to pre-1991 India. For four decades after Independence, capital investment was largely a political decision made in New Delhi. The “commanding heights” of the economy were occupied by bureaucrats who dispensed patronage through licences, permits and quotas. The country's industrial geography was determined by political calculation rather than market forces. The Centre decided what should be produced, how much should be produced, and, crucially, where it should be produced.

States, on their part, vied for investment not by wooing potential investors but by wooing politicians in Delhi.

The reforms in 1991 changed that. By dismantling industrial licensing and opening India to trade and investment, liberalisation shifted power – at least partly – from the Centre to the States. One of the unstated hopes then was that economic freedom would unleash competition among States to attract investors through better infrastructure, governance and policy stability.

That transformation took time. For much of the next two decades, investment decisions remained Delhi-centric. Public enterprises continued to dominate and State bureaucracies were slow to adapt to a more entrepreneurial era.

The promise of reforms is now being realised.



Duvvuri Subbarao

is a former Governor, Reserve Bank of India (2008-2013)

The rise of competitive federalism has been one of the quiet revolutions of the past decade. States today compete not just with land, concessional utilities and tax breaks, but with reliability – predictable policy, faster clearances, skilled labour and good governance.

Andhra Pradesh, Tamil Nadu and Karnataka vying for global tech mandates – from Google to Micron – is evidence of a maturing federal economy. When Foxconn debated where to locate its electronics facilities, States from Maharashtra to Tamil Nadu made pitches at the highest level. When Vedanta and Foxconn announced their semiconductor joint venture, both Maharashtra and Gujarat lobbied intensely, with Gujarat eventually breasting the tape. The tussle between Tamil Nadu and Telangana over electric vehicle (EV) manufacturing hubs underscored how investment courting has become a professional, high-stakes exercise.

Experience in other federations

India is not unique in this. Healthy subnational competition is a defining feature of all successful federations.

In the United States, when Amazon announced plans for a second headquarters, over 200 cities submitted proposals offering tax breaks, infrastructure support and workforce commitments. Although critics called it a subsidy race, it forced cities to improve governance and transparency. Many of the proposals later formed blueprints for urban renewal projects even where Amazon did not invest.

In Germany, the federal Länder (States) compete to attract high-tech industries. Bavaria's transformation into an innovation hub – home to BMW, Siemens and a cluster of “Mittelstand” firms – owes much to policy agility that other German States have since emulated.

Australia and Canada show similar patterns. Australian States compete to attract mining, clean energy and education investments, while Canadian provinces such as Ontario and British Columbia vie for technology and film production hubs. The result in all these cases is a virtuous cycle: competition that spurs innovation, efficiency and reform.

India's own States are now entering that league. The best-performing ones are magnets for both capital and ideas, setting governance benchmarks that others must meet or exceed.

The Centre, to its credit, has encouraged this shift. Rankings on ease of doing business, startup promotion and export readiness have intensified competition in constructive ways. Investors, once daunted by India's bureaucracy, now see its regional diversity as a positive – multiple entry

points, each with distinct strengths. Andhra Pradesh's ease of doing business, Punjab's entrepreneurial verve, Tamil Nadu's skilled workforce, Gujarat's infrastructure, Jharkhand's mineral base and Uttar Pradesh's vast untapped potential – each is part of a mosaic that together makes India a federation of opportunity.

Competition, of course, carries risks. It should not degenerate into a race to the bottom. States must guard against reckless subsidies or indiscriminate land giveaways that undermine fiscal stability. The smarter path lies in competing through competence and credibility, not concessions.

Healthy rivalry also fosters imitation of best practices. When one State reforms single-window clearances, others follow. When one launches an EV policy, others sharpen theirs. A Haryana success provokes a Himachal response; a Madhya Pradesh reform triggers a Chhattisgarh recalibration; an Odisha initiative spurs West Bengal to better it. This dynamic, cross-State learning is driving policy diffusion across India – a hallmark of vibrant federalism. The global manufacturing and services landscape is now in churn. As multinationals diversify away from China, they seek scale, predictability and credible governance. The “+1” in the China+1 formula must be earned – State by State. No investor lands in “India” in the abstract; they land in Bengaluru, Bhopal or Bhubaneswar. In that sense, India competes globally through its States.

The new federal compact

In just three decades, India has moved from a permission-based economy to a persuasion-based one. States no longer queue for Delhi's patronage; they campaign with CEOs and investors, pitching their case with confidence and data.

This is a transformation of mindset as much as of policy. The Andhra Pradesh-Tamil Nadu-Karnataka exchanges over Google's data centre may sound like parochial bickering, but they actually signify a maturing federal compact. States now view every investment not as central patronage but as a conquest earned through effort.

Every time Andhra Pradesh secures a tech data centre, or Gujarat wins a semiconductor plant, or Uttar Pradesh's electronics parks around Noida light up with new investment, or West Bengal breathes life into its ports and power grids to attract industry, the benefits ripple far beyond State borders. Each success strengthens supply chains, builds skills, and deepens India's industrial fabric. The bottom line: In the race for investment, every State that wins for itself, also wins for India.

States are no longer queuing for Delhi's patronage but are campaigning with investors and pitching their case with confidence and data

Fine-tune the AI labelling regulations framework

Two months ago, millions of Indians watched the Finance Minister Nirmala Sitharaman speak about indirect tax reforms. At the same time, a video travelled across instant messaging platforms in which the Minister appeared to endorse an investment scheme promising “30x returns in seven days”. A Roorkee resident (Uttarakhand) lost ₹66 lakh after viewing this viral video, later found to have been created using Artificial Intelligence (AI) tools.

The rapid rise of near-indistinguishable digital alterations demands urgent, multi-stakeholder action.

Although the government initially recognised the existing framework as sufficient to tackle synthetic media, it has now introduced draft amendments to the Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021. The amendments mandate that large social media platforms/Significant Social Media Intermediaries (SSMIs) clearly label synthetic or AI-generated media.

While the proposed rules mark a meaningful step forward, their real-world implementation will be complex and require engagement across multiple stakeholders.

Noble intent, ambiguous grouping

Synthetic media is defined as content that is artificially or algorithmically created, modified, or generated to appear authentic. However, labelling a broad range of content created with computer-generated imagery or altered with editing software can be complicated, since these are not technically made by generative AI. Given the volume of synthetic media and the fact that not all of it is problematic, the focus should be on harmful and/or misleading synthetic media. To put things in perspective, over 50% of all content on the Internet is now considered AI-generated, as per a recent report.

To fix accountability, the draft rules mandate that platforms introduce labels covering at least 10% of visual area of synthetic videos, or 10% of initial duration of synthetic audio; but its application to mixed media – say, real visuals



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Precision is the key for a balance between control and creativity

with cloned audio – remains unclear.

Additionally, will a three-second disclaimer in a 30 second audio clip be effective? Or will it be ignored like the fine print in advertisements? Similarly, will a three-minute disclaimer in a 30-minute video inform viewers or overwhelm them?

We are still in the development phase of AI, and any prescriptive mandate on labels would not be principle-based, future-proof and technology-neutral. In some cases, it may not meet the reasonable person test like the 10% rule.

But it is not the question of labels alone. Watermarks promised by AI companies lack reliability. Within days of a large company releasing a text-to-video social media platform, with assurances that these videos would bear watermarks declaring them synthetic, tools emerged that could scrub these markings entirely.

Consequently, the framework needs fine-tuning and precise standards for each category. A tiered-labelling system that distinguishes between ‘fully AI-generated’, ‘AI-assisted’, and ‘AI-altered’ content may be more effective.

Graded compliance, targeted intervention

The proposed rules mandate intermediaries such as Facebook, Instagram, YouTube and X to analyse and label synthetic media, and they must broaden the scope to include creators directly. Creators frequently employ AI for visual storytelling tasks and also generate avatars and digital twins. But few inform the audience about their use. Although certain videos exhibit clear indicators of manipulation, other synthetic media have now achieved such realism that viewers struggle to distinguish between human- and AI-created content.

Also, creators above a follower threshold should disclose AI use similar to SSMIs; voluntary self-labelling can be promoted among smaller ones.

Graded compliance will acknowledge that professional creators hold significant influence and, therefore, owe transparency to their

audiences. It can help creators not just gain and retain public trust but also keep up with evolving regulations.

Verification needs more hands on deck

Currently, the rules require SSMIs to ask users to label their content as synthetic. Platforms also have to deploy tools to verify the accuracy of such declarations. But synthetic media is multiplying faster than verification technology, and platforms have, so far, had limited success with labelling.

Most social media platforms adhere to Coalition for Content Provenance and Authenticity (C2PA) standards to identify and establish the origins of digital content. However, as C2PA evolves, content is not strictly labelled as a norm. Besides, it is challenging for social media platforms to detect AI-generated or algorithmically-created content. Ultimately, the platforms would require the assistance of third-party detection tools, which are only as reliable as their training and accuracy.

So far, platforms have not refined their tools. An audit by Indicator, a publication that monitors digital deception, found that most failed to label AI content: Only 30% of its 516 AI-generated test posts across Instagram, LinkedIn, Pinterest, TikTok and YouTube were correctly flagged. Google and Meta did not label content from their own AI tools, TikTok only flagged its in-app creations, and Pinterest, the top performer, effectively labelled just 55%.

As the focus shifts to providing credible information, the social media ecosystem should also rely on the discernment of independent information verifiers and auditors. This is especially critical for harmful, fraudulent and misleading content where the stakes are high. Such auditors can be trusted to close gaps in automated detection systems through human judgment, helping platforms become more resilient to deepfakes and protecting users.

The adage, “If it sounds too good to be true, it probably is”, will soon be codified into India's IT laws. With nuance, users will no longer need to second-guess authenticity. The label will provide clarity.

Three out of four Indians believe climate change is affecting them

Close to 80% of them said they were willing to change their lifestyle to help reduce its impact

DATA POINT

The Hindu Data Team

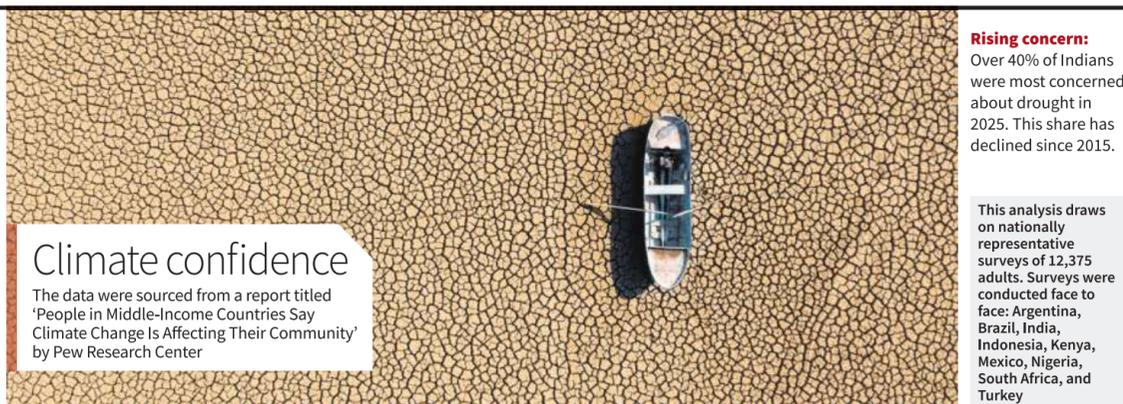
At least three out of four Indians believe that climate change is affecting the area they live in and is harming them. Most were willing to make lifestyle changes to help reduce its impact, according to a Pew survey, conducted between January 8 and April 21, 2025. **Chart 1** shows the results for nine middle-income countries across all age groups (18-34, 35-49 and 50+) were willing to make a lot of lifestyle changes or some lifestyle changes. In contrast, in many other countries, older age groups were far less likely to express such willingness (**Chart 2**).

India is one of the few countries where the willingness to make changes was uniformly high across all age groups. Over 75% of Indians across all age groups (18-34, 35-49 and 50+) were willing to make a lot of lifestyle changes even when they said climate change was not affecting their area – the second highest among the countries surveyed.

India is also among the few countries where the likelihood of making lifestyle changes to counter climate change did not differ much between those who said their area has been affected by climate change and those who said it has not (**Chart 3**). About 35% were willing to make a lot of lifestyle changes even when they said climate change was not affecting their area – the second highest among the countries surveyed.

Indians also stand out for their confidence in the international community's ability to address climate change. Over 70% are confident that actions taken will significantly reduce the effects of climate change (**Chart 4**).

Over 40% of Indians said they are most concerned about drought in 2025, although this share has declined since 2015. Meanwhile, the proportion of those citing unusually long periods of hot weather as a major concern has risen sharply to 26%.



Climate confidence

The data were sourced from a report titled 'People in Middle-Income Countries Say Climate Change Is Affecting Their Community' by Pew Research Center

Rising concern: Over 40% of Indians were most concerned about drought in 2025. This share has declined since 2015.

This analysis draws on nationally representative surveys of 12,375 adults. Surveys were conducted face to face: Argentina, Brazil, India, Indonesia, Kenya, Mexico, Nigeria, South Africa, and Turkey

Chart 1: Percentage who say global climate change is affecting the area where they live and work. Most people in the 9 middle-income countries believe climate change is affecting the area where they live

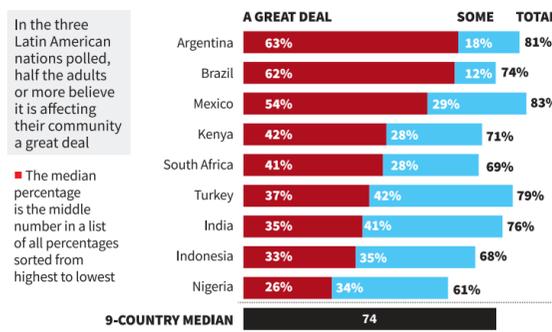


Chart 3: Percentage willing to make a lot of/some changes to how they live and work to help reduce the effects of global climate change, by age

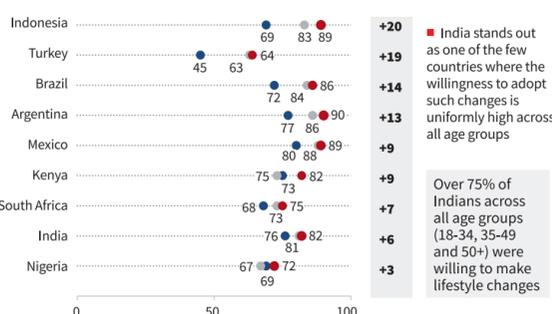


Chart 2: Percentage willing to make a lot of changes to how they live and work to help reduce the effects of global climate change

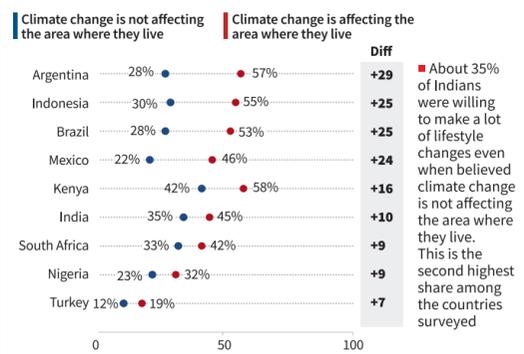
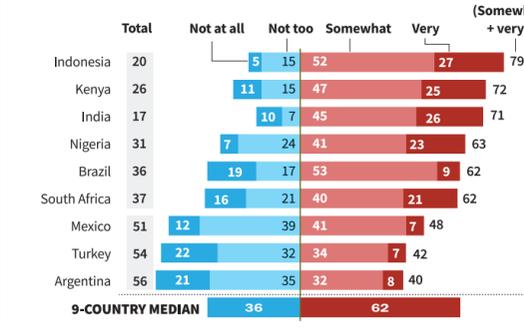


Chart 4: % who are ___ confident that actions taken by the international community will reduce the effects of climate change



Text & Context

Why does India's road safety system keep failing?

How do poorly constructed roads and infrastructure lead to road crashes?

Piyush Tewari

The story so far:

In November 10, the Supreme Court took cognisance of two mass-casualty road crashes in Phalodi, Rajasthan (14 killed) and NH 163, Telangana (19 killed). More than 1.7 lakh lives were lost in 2023 alone due to road crashes.

What are the problems in licensing?

Licensing and training need to be the first line of defence against crashes, not just an administrative formality. The driver licensing system is meant to be a filtration process, determining who is fit to operate a vehicle and who is not. But, across much of India, driving licences can be obtained without formal training. Driving tests are often reduced to perfunctory turns on small test tracks. For commercial drivers, whose vehicles can weigh more than 15 tonnes and carry dozens of

passengers, there is no structured, standardised safety training. And once a licence is issued, few checks are carried out to assess a driver's continuing skill, physical fitness, or mental alertness. Heavily fatigued drivers – some with compromised vision or chronic illness – routinely operate heavy vehicles carrying unsuspecting passengers, with no mechanism to detect or restrict them.

What is the role of enforcement?

Speeding, overloading, lane violations, and driving under the influence remain among the top causes of fatal crashes. Enforcement against these, however, continue to rely heavily on resource-constrained and unskilled manual policing, making it inconsistent and susceptible to both human error and discretion. Even where technology exists – such as automated cameras and digital challan systems – coverage is limited, data integration is weak, and penalties are

often not recovered. The Supreme Court has repeatedly emphasised the need for electronic enforcement standards and technology-based deterrence. But adoption remains patchy across States.

What about weak infrastructure?

From poorly banked curves and no crash barriers to inadequate illumination and missing rest areas that force heavy vehicles to park on the highways, the physical environment of India's highways and urban roads often turns minor mistakes into fatal outcomes. Many State and national highways were designed decades ago for speed and throughput, not safety. The result has given way to 'unforgiving roads' – corridors where a moment's lapse can mean disaster. Maintenance gaps such as broken dividers, exposed concrete structures, unmarked construction zones, and encroachments are common. In urban areas, pedestrian infrastructure remains

minimal or absent, leaving those on foot to compete with heavy vehicles for space.

Evidence from pilot projects show that design-led interventions can reverse this trend. On the Mumbai-Pune Expressway, for instance, evidence-based engineering and enforcement changes under the Zero Fatality Corridor programme have cut crash deaths by more than half.

How can trauma care be improved?

For many victims of road crashes in India, survival depends not on the impact itself, but on what happens in the critical hour that follows. Ambulance networks vary widely in availability and efficiency across the country. In rural areas, delays in decisive care can stretch beyond an hour; even in cities, victims are often extracted by bystanders or the police without proper equipment and little to no medical support. Facilities closest to crash sites often lack trauma specialists, blood banks, or basic resuscitation facilities. A proposed Right to Trauma Care law could mandate time-bound emergency response standards and a coordinated trauma network.

Moreover, licensing, infrastructure, and trauma care are treated as separate silos managed by different departments. Safety can only be achieved when they function as one, reinforced by accountability and coordination.

Piyush Tewari is the Founder and CEO of SaveLIFE Foundation.

THE GIST

▼ Licensing and training need to be the first line of defence against accidents, not just an administrative formality.

▼ Speeding, overloading, lane violations, and driving under the influence remain among the top causes of fatal crashes.

▼ For many victims of road crashes in India, survival depends not on the impact itself, but on what happens in the critical hour that follows.

BIBLIOGRAPHY



Towards a better future: A skill training hub at the Pahadpur village in Odisha in 2024. BISWARANJAN ROUT

How grassroots movements and campaigns are shaping India

In a democracy, peoples' aspirations should drive systemic change that boosts equality, education, careers, and economic development. Writers who have worked among the people, from Bela Bhatia to Subroto Bagchi, report on what is happening on the ground and the lessons to be learnt

Soma Basu

There is a heart-warming story about Nunaram Hansda in Subroto Bagchi's book *The Day the Chariot Moved: How India Grows at the Grassroots* (Penguin Business). Born to tribal parents in the interior forests of Simlipal, one of India's largest biospheres in Odisha, his parents sent him to Ashram School (run by the Ministry of Tribal Affairs) as they could not afford to raise him.

Later, Nunaram joined the Industrial Training Institute (ITI) in Rourkela. He had no money to pay the fees and his teachers had to pool the required amount from their paltry salaries. Today, Nunaram heads the insulin manufacturing line at Biocon. In Bagchi's book, we meet many people like Nunaram, who have achieved success despite the huge economic crisis and odds they face.

Odisha's journey

When Bagchi was called by then Odisha Chief Minister Naveen Patnaik in 2016 to helm the Skill Development Authority to transform the State, he encountered the ground reality – how governments function and its schemes are implemented and why the leaders among ordinary people keep the world moving but do not write or speak about who they are and what they do. The book, Bagchi says, is a tribute to this grassroots India. With his crossover experience from corporate life in IT to a Cabinet-rank government position, he builds his book on individual stories that highlight the many facets of development, and also what ails and fails the system.

He layers the saga of human development in narratives of achievements, frustrations, yearnings and hope because governments, he says, are characterised by stereotypes of unreasonableness, sloth and arrogance wrapped in corruption and personified by

crafty politicians. But lives function because some government servants and people at the grassroots are different and willing to take on the challenges of poverty, unemployment, health, education and infrastructure.

Divided into seven sections, the book details Bagchi's life, his return to his home State after four decades, the stories of the poor and marginalised and how government initiatives are foiled due to inaccessibility, inertia and incompetence. Strategic perspectives that empower the people can change the scenario as Bagchi tries to demonstrate. He travelled 3,000 kms across 30 districts in 30 days to understand the requirements of people who either languished or made it out. His objective: to humanise the development agenda for policy makers and corporate leaders.

Bagchi writes about the projections that blew his mind; a staggering 96% of the entire workforce in India is in the unorganised sector. Even as India is set to become one of the top economies of the world, there is an increasing wage disparity, forced migration, digital divide and receding women participation. Only 2% of the youth population under-30 had received formal skill training while 8% had received informal training though the country is in need of many more skilled workers.

But even amidst widespread disdain, Bagchi came across people like Muni Tigga, born in a tribal village in Nuagan Tehsil, where girls were not sent to school. Despite taunts from the villagers, with her mother's support, Muni worked as a daily wager at a plant 37 km from her home. Later, she enrolled at ITI Bargarh and landed a job as a loco pilot in the Indian Railways. The skilled training she received empowered her enough to earn a respectable identity.

But there are many more families that manage life one day at a time. The need for skill development across the State was seen as a means to human development.

It was kept above politics to make Odisha a sandbox of innovation, writes Bagchi. Every new idea such as the Fix (problems), Scale (skill development programmes), Accelerate (establishment of new institutes) strategy caught the imagination of many and produced what Bagchi calls "nano unicorns" – people who had the ability to learn new skills and seize the opportunity.

Conversations on change

Opening conversations on change with the future in mind is also discussed by Bela Bhatia in her book, *India's Forgotten Country: A View From the Margins* (Penguin Viking), shortlisted for the NIF Kamaladevi Chattopadhyay Book Prize 2025. When she worked with Dalits, Adivasis, women, bonded labourers, ethnic and religious minorities and other downtrodden groups living in hamlets, villages and slums, the oppressive forces that ruled and ruined them with brutality revealed itself assertively.

Bhatia's work encapsulates her research on the Naxalite movement, the conflict between the state and Maoists in Bastar, alongside her experiences as a rural activist in Gujarat. The book is a powerful critique of oppressive actions, and Bhatia offers empathetic narratives of life, death, and sufferings covering States such as Bihar, Telangana, Rajasthan, Kashmir and Nagaland. Standing by the marginalised to whom the governments and elites turn a blind eye, Bhatia gives several accounts of caste discrimination, communal massacres, untouchability, bonded labour, hunger, widowhood, armed uprisings and forced displacement. These sensitively expose the predicament of real India.

While the searing book stirs the public conscience, it also serves as an inspiring account of resilience, courage and hope at the grassroots level.

Diverse examples

Anchoring Change: Seventy-Five Years of

Grassroots Intervention That Made a Difference by Jayapadma R.V., Neelima Khetan, Vikram Singh Mehta, (Harper Collins India) looks at why we despair more about our inability to realise our full potential as a country and find fault with the leadership, state of our institutions and the economic model. The book tries to answer questions through examples of organisations working with the grassroots since Independence and underlines the need to reflect on the micro successes and the several cases of hugely impactful grassroots interventions that helped steer society in a positive direction.

The authors' idea is to revisit examples of civic action and explore their relevance for the future. It serves two purposes, they say: to shift the conversation from failure to success; and to distil from these successes relevant design principles that might have wide relevance to create an alternative, grassroots-based, sustainable development model.

Sampat Kale's book *Grassroots Development Initiatives in India: Rights Based Approach to Development and Advocacy* (Routledge and Aakar Books) examines the way voluntary organisations engage with development programmes for marginalised sections to empower them and make them independent and self-sufficient.

Another interesting book, *Grassroots Innovation Movements* (Routledge), by Adrian Smith, Mariano Fressoli, Dinesh Abrol, Elisa Arond and Adrian Ely, examines six diverse grassroots innovation movements in India, South America and Europe in dynamic historical contexts and explains why each movement frames innovation and development differently, resulting in a variety of strategies.

These books remind us of the contributions and the neglected questions which grassroots innovation movements identify. They reflect on both progress and the need for further improvement and empowerment.

From Page One

Retail inflation hits record low of 0.25%

Most of the other categories in the CPI saw inflation higher in October 2025 than in the same month last year.

The data show that the food and beverages category saw prices contract 3.7% in October 2025, following up on a contraction of 1.4% in September.

In fact, food and beverage prices have contracted in four out of the seven months of this financial year so far.

“The decline in headline inflation and food inflation during the month of October 2025 is mainly attributed to the full month’s impact of decline in Goods and Service Tax [rates], favourable base effect and to drop in inflation of oils and fats, vegetables, fruits, egg, footwear, cereals and products, transport and communication, etc.,” the Ministry of Statistics and Programme Implementation said in its release.

According to economists, this decline is however due to a statistical base effect rather than an actual fall in prices.

That is, because food inflation in the same month of last year was 9.7%, the change in prices this October looks relatively better.

“Food inflation has come down mainly due to base effects,” Madan Sabnavis, chief economist at the Bank of Baroda, said.

The data show that this base effect in food inflation was the driving factor behind the fall in overall inflation. For example, inflation in the fuel and light category stood at 2% in October 2025, compared to a contraction of 1.7% in October of the previous year.

Inflation in the housing category, too, accelerated to 3% in October 2025 from 2.8% in October 2024.

The clothing and footwear category was one of the few other than food that saw inflation easing in October, to 1.7% from 2.7% in October last year, likely on account of the GST rate cuts.

All HCs must upload timeline of verdicts: SC

Justice Bagchi said there ought to be a dashboard on High Court websites, exclusively focusing on the reservation and pronouncement of judgments.

“That will show the transparency and accountability of the judiciary to the people,” Justice Bagchi remarked.

The top court, in its order on Wednesday, directed the State High Courts to file reports on their existing mechanisms to bring into the public domain the dates when pending judgments were reserved, the time taken between the reservation of judgments and their pronouncement, and when a pronounced judgment is actually uploaded on their official websites.

The Bench specifically sought from the High Courts details of judgments reserved after January 31, 2025, and details of pronouncement of judgments till October 31, 2025. This would include the uploading of the judgments on the websites.

The High Courts have been asked for their views about framing a uniform mechanism to disclose the dates of reservation, pronouncement of judgments and their uploading on websites.

The Bench said the High Courts could be frank about their apprehensions about laying bare such details in the public domain.

The court underscored that the High Courts must be frank about the adverse consequences that may result from such disclosures.

In an earlier hearing of the case in September, the top court had emphasised the urgent need to evaluate the performance of High Court judges. “Our intention is not to act as a school principal and monitor everything, but there should be broad guidelines. Judges should know the task before them,” the top court had observed then.

Enumeration forms distributed to 73% voters in Phase 2 of SIR, says EC

Lakshadweep has topped the list, covering all but one voter — 57,812 of 57,813 voters; Goa is a close second, while Kerala trails due to upcoming local body polls; Bengal and T.N. covered 88.8% and 78.09% voters, respectively, according to EC

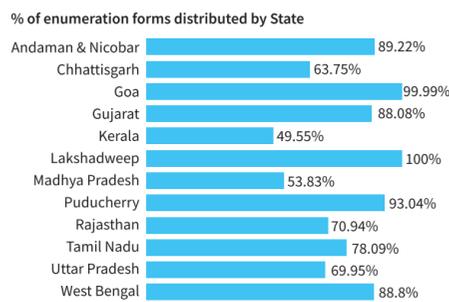
Sreeparna Chakrabarty
NEW DELHI

A week since the distribution of enumeration forms for the second phase of the special intensive revision (SIR) of electoral rolls in 12 States began, the forms have been distributed to around 73% voters whose names are present in the current voter lists, the Election Commission (EC) said on Wednesday.

Final rolls by February
A total of 37,05,68,109 enumeration forms have been distributed in the 12 States and Union Territories — Uttar Pradesh, West Bengal, Kerala, Tamil Nadu, Chhattisgarh, Madhya Pradesh, Rajasthan, Gujarat, Goa, Andaman and Nicobar Islands, Lakshadweep, and Puducherry. The number of electors as on October 27, 2025, in

Voter update

The house-to-house enumeration runs from November 4 to December 4, with draft rolls to be published on December 9 and final rolls on February 7, 2026



these States stands at 50,99,72,687.

The house-to-house enumeration process will take place for a month, from November 4 to December 4, and the draft rolls will be published on

December 9.

Between December 9 and January 8, the voters can file claims and objections, while notices will be issued and hearings and verifications will take place from December 9 to Janu-

ary 31. The final electoral rolls will be published on February 7.

Lakshadweep has topped the list covering all but one voter — 57,812 of 57,813 voters or nearly 100% till 3 p.m. on Wednesday, while Goa is a close second, having covered 99.99% or just 119 of 11.85 lakh voters left to be given enumeration forms.

Kerala is lagging behind other States with only 49.55% having been covered. The State had notably sought that the SIR process be postponed due to the upcoming local body polls.

West Bengal and Tamil Nadu, which witnessed large-scale demonstrations against the SIR, have covered 88.8% and 78.09% voters, respectively, who appear in the rolls as on October 27.

In West Bengal, forms of 6.80 crore of 7.66 crore vo-

ters have been distributed, while in Tamil Nadu, it was five crore out of a total of 6.41 crore.

In Madhya Pradesh, 53.83% of forms have been distributed, while Chhattisgarh recorded 63.75% coverage, along with Uttar Pradesh at 69.95%.

In Gujarat, 88.08% forms have been distributed, the corresponding figures in Rajasthan were 70.94%, Puducherry 93.04% and Andaman and Nicobar 89.22%.

The EC said in a statement that printing of enumeration forms has been completed in all States except Madhya Pradesh, Rajasthan, Uttar Pradesh, and West Bengal.

In Madhya Pradesh, 95.54% of enumeration forms have been printed, while in Rajasthan it was 99.58%, West Bengal 99.75% and Uttar Pradesh 99.99%.

Union Cabinet clears new royalty rates of critical minerals

The Hindu Bureau
NEW DELHI

Seeking to reduce import dependence and vulnerabilities in the supply chain of critical minerals, the Union Cabinet on Wednesday approved the rationalisation of royalty rates of graphite, caesium, rubidium, and zirconium.

With the rationalisation structure, graphite, wherein royalty was previously sought on per tonne-basis (that is, a fixed amount for a specific weight of ore), will now be charged on an ad valorem basis.

Graphite with less than 80% fixed carbon content will be subject to 4% royalty of the average sale price, whilst that with 80% or more carbon content would attract 2%.

Caesium and rubidium would be subject to a royal-

Caesium and rubidium will be subject to a royalty rate of 2% on the average sale price

ty rate of 2% on the average sale price based on the specific metal contained in the ore produced. A royalty rate of 1% would apply to zirconium.

Promoting auction

In a statement, the Cabinet said that the decision to rationalise would promote the auction of mineral blocks of caesium, rubidium, and zirconium.

“Today’s approval of the Union Cabinet on the rate of royalty will help the bidders to rationally submit their financial bids in the auction,” the Cabinet statement emphasised.

Bombay HC criticises govt. over malnutrition deaths in Maharashtra’s tribal regions

Snehal Mutha
MUMBAI

The Bombay High Court on Wednesday pulled up the Maharashtra and Union governments for an “extremely casual” approach over handling the malnutrition issue among infants in the State’s tribal regions.

The Bench comprising Justices Revati Mohite Dere and Sandesh Patil was hearing a series of petitions filed over the infant deaths due to malnourishment in Amravati district’s Melghat region, a tribal-dominant area, where chronic malnutrition has existed for years. The court called the situation “horrific”, saying “the government should be concerned”.

During the hearing, the petitioner drew attention to the fact that from June



multispecialty hospital in the area was actually implemented?” No answer was received.

‘Extremely casual’

Calling out the State government, the court said: “This shows your seriousness on the issue. The approach is extremely casual, and many things need answers from you.”

On the documents presented by the State reflecting the efforts taken, the court stated: “Everything looks good on paper, but far from reality.”

The court ordered Principal Secretaries of Public Health, Tribal Affairs, Women and Child Development, and Finance departments to submit affidavits on the measures taken in detail and appear in court on November 24.

2025 to date, 65 infants in the age group of 0-6 months had died due to malnutrition in Melghat. The court noted that despite several orders since 2001, the problem persists like a plague due to a lack of implementation of those directives.

However, the State government claimed these deaths happened due to pneumonia and not malnutrition. To this, the court asked, “Whether the 2001 court order to construct a

INBRIEF



India, Botswana announce cheetah translocation pact

India and Botswana on Wednesday formally announced the translocation of eight cheetahs from the African nation during the state visit of President Droupadi Murmu. Thanking her counterpart, President Duma Gideon Boko, and the people of Botswana, President Murmu assured Mr. Boko that India would take good care of the animals. Botswana will symbolically hand over the big cats to Ms. Murmu on Thursday. The two heads of state will preside over an event where five of the eight captured cheetahs will be released into a quarantine facility at the Mokolodi nature reserve, marking the symbolic handing over of the hunting cats to India by Botswana as part of Project Cheetah. PTI

MEA launches new version of Passport Seva Programme

The Ministry of External Affairs has rolled out the “upgraded version” of its Passport Seva Programme (PSP), the MEA said in a statement on Wednesday. The rollout included the Passport Seva Programme (PSP V2.0), the Global Passport Seva Programme and the e-passport for citizens in India and for the Indian citizens living abroad. The MEA described the introduction of e-passports alongside PSP V2.0 a “significant milestone for the Ministry”. “The new and improved passport website and mobile app give users a better experience through features like auto-filled forms, simpler document uploads, and easy online payments...,” the Ministry said.

India ninth worst affected by extreme weather: study

Purnima Sah
MUMBAI

A new report, Climate Risk Index (CRI) 2026, published by Germanwatch, released at COP30 in Belém on Tuesday evening, finds that more than 832,000 people died, nearly 5.7 billion were affected, and economic losses exceeded \$4.5 trillion (inflation-adjusted) from over 9,700 extreme weather events between 1995 and 2024.

Germanwatch is a Bonn-based environmental and development organisation that advocates for global equity and sustainability in climate policy.

India ranks ninth among the countries most affected during this period, facing recurring floods, cyclones, droughts, and increasingly severe heatwaves. “Countries such as Haiti, the Philippines, and India - all of which are among the ten most affected - face particular challenges. They are hit by floods, heatwaves, or storms so regularly that entire regions can hardly recover from the impacts until the next event strikes,” said Vera Künzel, senior advisor on climate change adaptation and human rights at Germanwatch.

Tuberculosis incidence falling in India by 21% a year: WHO report

Bindu Shajan Perappadan
NEW DELHI

India's tuberculosis (TB) incidence, with new cases emerging every year, fell by 21% - from 237 TB cases per lakh population in 2015 to 187 per lakh population in 2024 - almost double the pace of decline observed globally, at 12%, according to the World Health Organization (WHO) Global TB Report, 2025, the Union Health Ministry said in a release issued on Wednesday. This was one of the highest declines in TB incidence globally, outpacing reductions noted among other high-burden countries.

“India's innovative case finding approach, driven by the swift uptake of newer technologies, decentralisation of services, and large-scale community mobilisation, has led to the

India leads global TB fight

India records one of the world's steepest tuberculosis declines, doubling global progress through innovation and outreach

■ TB incidence fell 21% (2015-2024), from 237 to 187 cases per lakh.

■ Treatment coverage rose from 53% (2015) to 92% (2024)

■ 26.18 lakh diagnosed out of 27 lakh estimated cases



■ The number of missing cases reduced from 15 lakh (2015) to <1 lakh (2024)

■ The treatment success rate in India was about 90%, against the global average of 88%

■ TB mortality declined from 28 deaths per lakh to 21 deaths per lakh (2015-2024)

country's treatment coverage to surge to over 92% in 2024, from 53% in 2015 - with 26.18 lakh TB patients being diagnosed in 2024, out of an estimated incidence of 27 lakh cases,” the release said.

The Ministry said this had helped reduce the number of “missing cases” - those who had TB but were not reported to the programme - from an estimated 15 lakh in 2015 to less than one lakh in 2024.

Also, there is no significant increase in the number of multidrug-resistant (MDR) TB patients in the country, adding that treatment success rate under the TB Mukta Bharat Abhiyan increases to 90%, ahead of the global treatment success rate of 88%.

India's TB mortality rate has also decreased from 28 per lakh population in 2015 to 21 per lakh population in 2024, reflecting significant progress in reducing deaths due to TB.

Since its launch in December 2024, India's flagship TB elimination mission, the TB Mukta Bharat Abhiyan, has achieved extensive reach, screening over 19 crore vulnerable individuals for TB across the country, leading to the detection of over 24.5 lakh TB patients, including 8.61 lakh asymptomatic TB cases, the report said.

GI tag fee cut to ₹1,000; Minister promises backing for tribal goods

The Hindu Bureau
NEW DELHI

Commerce and Industry Minister Piyush Goyal announced here on Wednesday that the application fee for the Geographical Indications (GI) tag had been reduced to ₹1,000 from ₹5,000.

At the inaugural Tribal Business Conclave, he urged tribal artisans to register and protect traditional products and crafts. He further promised the support of his Ministry in creating export and e-commerce linkages for tribal enterprises and international warehouses for their products.

The conclave, held by the Ministries of Tribal Affairs and Culture and the Department of Promotion of Industry and Internal Trade (DPIIT) at the Yashobhoomi Convention



Ministers Jual Oram and Piyush Goyal with a tribal entrepreneur at the business conclave on Wednesday. SPECIAL ARRANGEMENT

Centre, featured panel discussions and masterclasses on topics such as financing innovations for, and investments in, tribal enterprises, partnerships, industry linkages, and skilling.

Mr. Goyal said schools, universities, industries, and the government must work together to ensure that products made by tribal artisans reach the larg-

er domestic and global markets. The Minister promised the full support of his Ministry and the DPIIT in this mission, by creating export and e-commerce linkages and facilitating international warehouses for tribal goods.

The conclave was part of the Government of India's Janjatiya Gaurav Varsh celebrations, to

mark the 150th birth anniversary year of tribal icon Birsa Munda.

Tribal Affairs Minister Jual Oram thanked Prime Minister Narendra Modi for coming up with the initiative.

GI tags distributed

The event also saw GI tag certificates being distributed for crafts and products such as *Kammadippaya* (bamboo mat) of Kerala, *Apatani* textile of Arunachal Pradesh, *Marthandam* honey of Tamil Nadu, *Lepcha Tungbuk* of Sikkim, *Bodo Aronai* of Assam, *Ambaji* white marble of Gujarat, and *Bedu* and *Badri* cow ghee of Uttarakhand.

The Tribal Affairs Ministry announced a Tribal Affairs Grand Challenge, inviting enterprises to design solutions for tribal communities.

SEBI panel proposes 'wider' conflict of interest regulations

High-level committee recommends office of ethics and compliance headed by an executive director-level officer to oversee framework

Ashokamithran T.
MUMBAI

A high level committee under markets regulator SEBI has proposed expanding the definition of family, strengthening disclosures and placing investment restrictions on board members under its new framework on overhauling conflict of interest regulations, according to a report released on Wednesday.

The Securities and Exchange Board of India had formed the high-level committee headed by former CVC chief Pratyush Sinha following allegations of violating conflict of interest regulations by former SEBI chief Madhabi Puri Buch, from which she was later exonerated.

The committee recommended the formation of an office of ethics and compliance headed by an executive director level officer to oversee the framework.

Significant proposals include the expansion of the definition of family to "any person for whom the member/employee serves as a legal guardian and any other person related to, by blood or marriage to the employee or to his spouse and substantially dependent on such employee." These rules will apply to employees and board members.



The chief compliance officer will be the nodal officer to oversee the recusal process.

In the 2008 guidelines, the definition of family was limited to spouse and children. Further, the word 'relative' will now be defined akin to the Companies Act, 2013, and will be applied to both members and employees. The list of relatives in companies rules 77(2) includes parents, spouse, children and their spouses, and siblings. This definition is in addition to the existing definitions in SEBI rules.

Investment restrictions will, however, be applied only to family members as defined in the new framework, the report stated.

The committee also recommended multiple levels of conflict of interest management. "The committee recommends initial, annual, event-based and exit [on the date of demitting office in SEBI] disclosures of assets, liabilities, trading activities and fami-

ly and other relationships for board members and employees to SEBI's proposed Office of Ethics and Compliance (OEC) and the Oversight Committee on Ethics and Compliance (OCEC)," the report stated.

The committee proposed the chairperson, whole time members (WTM), executive directors, and chief general managers disclose assets and liabilities. All other employees must make internal disclosures. Part-time members shall not be subjected to the disclosure norms as they are not involved in the day-to-day activities of SEBI, the committee said. On lateral entry, the chairperson and WTMs must make disclosure of "actual, potential, and perceived conflicts," the committee proposed defining each of them.

The chairperson and WTMs will be allowed to invest in mutual funds and similar products as long as they do not exceed one-fourth of their portfolios.

The committee also recommended that SEBI put in a "robust framework" to decide on recusal in case of conflict of interest.

The chief compliance officer will be the nodal officer to oversee the recusal process. It was also proposed that the summary of the recusals be mentioned in the annual reports.

Puri, Canadian minister discuss hydrocarbons trade

The Hindu Bureau
NEW DELHI

Petroleum Minister Hardeep Singh Puri met Canada's Minister for Interna-

tional Trade Maninder Sidhu on Wednesday to discuss bilateral hydrocarbon trade between the two nations. Mr. Puri wrote on social media that the bilat-

eral hydrocarbons trade that scaled \$226.45 million in the fiscal year 2024-25 also had a "substantial upside potential".

The meeting was part of

Mr. Sidhu's official visit to India wherein the North American country is seeking to "find opportunities to advance trade and investment linkages" bet-

ween the two nations.

Ottawa is seeking to diversify avenues for hydrocarbons exports, and is at the receiving end of the Trump tariff regime.

Immune cells primed for rheumatoid arthritis years before symptoms appear

A study in which researchers mapped the hidden preclinical evolution of rheumatoid arthritis at the molecular level could lead to the next leap in patient outcomes; in the future, clinicians could potentially intervene early before joints sustain painful, and often crippling, irreversible damage

Manjeera Gowravaram

For millions worldwide, waking up with stiff, aching fingers that take hours to loosen is a daily battle – one waged by their own immune system. This is rheumatoid arthritis, a condition where the body's defences mistakenly attack the joints they're meant to protect.

Currently affecting about 18 million people worldwide, the Global Burden of Diseases, Injuries, and Risk Factors Study projected an alarming 80% rise in rheumatoid arthritis cases over the next 30 years.

Rheumatoid arthritis often strikes between the ages 30 and 60, and women are three times more likely to develop it than men. Scientists still don't know exactly why, but genetics, hormones, and environmental triggers like smoking or certain infections all appear to play a role.

While modern therapies have considerably improved patients' quality of life, most patients are diagnosed only after the immune disruption has reached an advanced stage. The condition can affect the joints as well as the lungs, the heart, eyes, skin, and many other organs. Chronic inflammation increases the risk of heart disease and causes fatigue, fever, and depression.

A new study in *Science Translational Medicine*, in which researchers mapped the hidden preclinical evolution of rheumatoid arthritis at the molecular level, could lead to the next leap in patient outcomes. The study has revealed that the immune cells are primed to become troublesome years before the first symptoms appear. In future, therefore, clinicians could potentially intervene early before joints are damaged.

Silent stage

One of the earliest warning signs of RA is the presence of anticitrullinated protein antibodies (ACPAs). These antibodies can appear in blood tests three to five years before the first clinical signs of arthritis. People who test positive for these antibodies but have no symptoms are labelled "at-risk individuals," a definition adopted by clinical trials such as APIPRA.

Not everyone in this group will develop RA. Roughly a third progress to the disease, while the rest remain symptom-free.

"Because they don't have symptoms, it's difficult to identify them early on," Neha Singh, a rheumatologist at the University of California, Los Angeles, said. "You don't want to treat everyone unnecessarily and risk side effects, but you also don't want to miss early intervention opportunities."

That uncertainty, who will progress and who won't, remains a challenge. The new study set out to understand what tips the balance.

Researchers recruited 45 ACPA-positive at-risk individuals without symptoms, 11 patients with early-stage disease, and 38 healthy individuals. Over 18 months, 16 participants developed clinical rheumatoid arthritis, which the researchers named "converters". The team then compared immune profiles across all groups.

Using multi-omic approaches to examine plasma proteins, single-cell RNA



Rheumatoid arthritis usually occurs between the ages of 30 and 60, and women are three times more likely to develop it than men. Representative image. GETTY / ISTOCK PHOTO

sequencing, and chromatin accessibility, the study created a detailed map of how the immune system shifts from healthy to autoimmune.

One of the evident findings was that systemic inflammation is already present in the at-risk stage, even in people who feel healthy. Compared with controls, these individuals had higher levels of several inflammatory proteins such as CXCL3, CXCL5, and CXCL13, all chemokines that guide immune cells to inflamed tissue.

Importantly, these signals appeared in both those who later developed RA and those who didn't, showing that "silent" immune activation preceded arthritis.

Primed state

The study paid particular attention to T cells and B cells, two major players in adaptive immunity. Naïve T cells, which are usually inactive until they encounter a new antigen, showed gene signatures indicating that they were already predisposed to activation. Epigenetic analysis revealed that DNA regions linked to the NFAT-calcium signalling pathway, a key driver of T cell activity, were more accessible in these individuals.

Naïve B cells expressed early signs of switching towards antibody types associated with inflammatory responses, particularly IgG3. In functional tests, B cells from at-risk individuals secreted higher levels of molecules such as interleukin-6 and RANKL after stimulation, pointing to a readiness to drive inflammation.

According to Dr. Singh, this finding confirms what researchers have suspected for some time.

"They showed that inflammation and immune changes are already happening before the final stage of joint pain. Once pain begins, we know clinical rheumatoid arthritis has set in. But this study shows changes even earlier – in that subclinical phase."

One of the earliest warning signs is the presence of ACPAs. These antibodies can appear in blood tests three to five years before the first clinical signs of arthritis. People who test positive for these antibodies but have no symptoms are labelled at-risk individuals

Mohini Gray, a rheumatologist at the University of Edinburgh, said, "The data support the idea that immune cells are primed during the pre-arthritis period. RA often begins years before symptoms, so the findings aren't surprising."

However, Dr. Singh cautioned, "It's hard to say if this priming is causal or just correlational. In genetically susceptible individuals, a citrullinated protein may be presented as foreign, triggering T and B cells. The study shows this: a rise in certain T and B cell populations."

For the individuals who did go on to develop RA during the study, the immune system showed clear warning signs. A group of T cells that normally help coordinate immune responses began to grow in number. Instead of protecting the body, they seemed to encourage B cells to make harmful antibodies. The B cells themselves also changed, taking on unusual forms linked to long-term autoimmune activity. When arthritis symptoms finally appeared, another shift occurred: inflammatory cells called monocytes became very active, releasing powerful molecules like TNF and IL-1B. These changes spilled into the joints, driving the painful swelling and damage seen in RA.

The researchers also searched for genetic activity patterns to separate "converters" from "non-converters." Only minor differences appeared, likely due to patient variability and the study's limited size.

One of the most clinically relevant findings was that the gene signatures observed in "converters" resembled the immune changes reversed by abatacept, a drug that blocks T cell co-stimulation. By contrast, they did not overlap with the effects of TNF inhibitors, which are standard treatments once RA is established.

The researchers suggest that early intervention targeting T cell activation, rather than late-stage inflammation, could delay or prevent disease onset.

New avenues for intervention

"Abatacept, a CTLA4-Ig fusion protein, has already been tested in at-risk individuals," said Dr. Singh. "These findings fit with that, adding to what we know, but don't change clinical management yet."

As multi-omic technologies continue to drop in cost, their use in early disease detection and prevention is becoming increasingly feasible. A similar strategy is already being applied in type 1 diabetes. In 2022, the FDA approved teplizumab, an anti-CD3 monoclonal antibody, as the treatment shown to delay the onset of type 1 diabetes in high-risk individuals. This success points to the possibility of applying comparable approaches in rheumatoid arthritis.

Beyond the specific findings, the researchers have made their dataset publicly available through an interactive online portal. This will allow other scientists to explore the detailed profiles of immune cells and plasma proteins at various stages of RA progression. The hope is that such resources can accelerate discovery not just for RA, but for other autoimmune conditions such as lupus, type 1 diabetes, and multiple sclerosis, where preclinical changes precede symptoms.

(Manjeera Gowravaram has a PhD in RNA biochemistry and works as a freelance science writer. gmanjeera@gmail.com)



Japan Ground Self-Defense Force sets up a box trap to capture bears in Kazuno, Japan, on November 5, 2025. AP

Japan battles spike in bear attacks

Agence France Presse

The sense of fear is palpable in parts of northern Japan, where some locals have fastened bells to their bags hoping the noise will keep bears away, while signs warn people to be on guard.

The animals have killed a record 13 people across the country since April, with a steady flow of reports of bears entering homes, roaming near schools, and rampaging in supermarkets.

The number of fatalities this year is double the previous record of 2023-2024, with five months of the fiscal year still to go. Official data show the number of wounded is also on course to be a record, tallying over 100 people in the six months to September.

Scientists say the surge in attacks is being driven by a fast-growing bear population combined with this year's bad acorn harvest, leaving some mountains "overcrowded" with hungry bears.

Troops have been deployed to provide logistical help for trapping and hunting bears, while riot police will be allowed to use rifles to shoot the animals, which can weigh half a tonne and outrun a human.

The victims include a 67-year-old man in Iwate, whose body was found outside his home, with animal bite marks and scars. Hunters were called to the scene and shot a bear near the house.

Also in Iwate, a 60-year-old man is thought to have been attacked while cleaning an outdoor bath at a remote hot spring resort. His body was discovered in nearby woods.

A major issue is the expanding bear

Steady rural depopulation due to a chronically low birthrate and young people moving to cities has also reduced the human presence at the edges of forests and mountains, blurring the traditional boundaries between people and bears

population, which is growing fast due to an abundance of food – including acorns, deer, and boars – under the influence of a warming climate, experts say. Japan's brown bear population has doubled in three decades and now stands at around 12,000, according to a recent government report.

"The size of the bear population has gone beyond the capacity of the mountains to hold them," Forestry and Forest Products Research Institute researcher Naoki Ohnishi said.

Although rising temperatures have led to more frequent bumper crops of acorns, the nuts still produce good and bad harvests every two to five years as part of their normal cycle.

While most bears still stay in the mountains, recent bad harvests have led some to wander into towns to look for food, said Shinsuke Koike, professor at the Tokyo University of Agriculture and Technology.

With exposure to humans, cubs become less fearful and develop a taste for farmed produce and common fruits such as persimmon, Koike added.

Steady rural depopulation due to a chronically low birthrate and young people moving to cities has also reduced the human presence at the edges of forests and mountains, blurring the traditional boundaries between people and bears.

"Thorough culling" to reduce the number of bears is the only effective way to reduce the risk for local people, Ohnishi said.

The government last year added bears to the list of animals subject to population control, reversing protection that had helped bears thrive. But rural resources are stretched thin and the number of hunters is less than half of what it was in 1980.

THE SCIENCE QUIZ

Kindness in the animal kingdom

Vasudevan Mukunth

QUESTION 1

Individuals of this nocturnal flying mammal sometimes return from a night hunt and share a blood meal by mouth with a roost-mate that's failed to feed. Name this mammal, which "donates" food in this way to protect its fellow members and build lasting social bonds?

QUESTION 2

Which small desert-dwelling carnivore lives in family groups on the African savannah, where some stand upright on watch and others mind the pups underground while other relatives forage? Name this animal? Members of these groups also rotate the roles so everyone can also eat.

QUESTION 3

Name the highly social marine mammals that travel in pods and communicate with whistles and clicks, sometimes even addressing individuals by unique signature calls. Members of this species have also been seen supporting an injured companion at the surface with their bodies so it can breathe between waves?

QUESTION 4

On the coldest Antarctic nights, adult members of this bird gather with chicks in big crèches while the grown-ups take turns to move from the windy edge to the warmer center. Name this species, which also uses organised huddling to help many young survive before the parents return from the sea.

QUESTION 5

Some huge ocean migrants with long, white-edged flippers have been filmed

charging toward hunting orcas and breaking up attacks on seal or gray whale calves. Which particular singing species intervenes the most often in this way, even when the threatened baby isn't its own?

Answers to November 6 quiz:

1. Rotating stellar remnant that experiences starquakes – **Ans: Magnetar**
 2. Small, rocky objects free of any star, spotted with microlensing – **Ans: Rogue planets**
 3. Stars flung from galactic centres at extreme speeds – **Ans: Hypervelocity stars**
 4. Faint, circular structures around distant galaxies – **Ans: Odd radio circles**
 5. Hypothetical star made of protons' constituent particles – **Ans: Quark star**
- Visual: **Hoag's object**
First contact: K.N. Viswanathan | Tamal Biswas | Anmol Agrawal | Sadhan Kumar Panda



Visual: Name these ants, famed for their size, their termite-feeding behaviour, and for carrying injured mates back from termite nests. ETf89 (CC BY-SA)

Please send in your answers to
science@thehindu.co.in