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Today's Current Affairs | 8 October 2026

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RBI hikes repo to 5.5%
रेपो दर 5.5%

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THE HINDU • 8 OCT 2026

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RBI hikes repo to 5.5%

रेपो दर 5.5%

RBI raises repo rate to 5.5% amid 'calibrated tightening'

Lalendu Mishra
MUMBAI

The Monetary Policy Committee (MPC) of the Reserve Bank of India (RBI) on Wednesday raised the policy repo rate under the liquidity adjustment facility (LAF) by 25 basis points to 5.50% and shifted its stance from neutral to calibrated tightening, signalling that rate cuts are off the table in the near term.

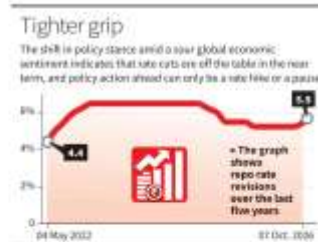
Consequently, the standing deposit facility (SDF) rate stands adjusted to 5.25%, and the marginal standing facility (MSF) rate and the bank rate to 5.75%.

The policy repo rate, which was cut to 5.25% in December 2025, had been kept on hold at the next four MPC meetings. In the easing cycle, the MPC had cut the rate by 125 basis points in phases, from 6.50% to 5.25%, before increasing it on Wednesday.

The sudden re-escalation of the West Asia conflict in September and the consequent hardening and volatility in global crude prices soured global economic sentiment and unsettled financial markets, RBI Governor Sanjay Malhotra said in a statement.

Further tightening of global financial conditions, uncertainty about fair valuation of AI stocks and an elusive resolution of the West Asia conflict pose significant downside risks to the global economic outlook, he highlighted in his statement.

"The duration and extent of the rate hike cycle would be contingent on the actual growth-inflation developments and outlook, especially that of underlying inflation, the extent of broadening of price pressures, and second-round effects of the supply



shock, as also the impact of demand impulses," he emphasised. "Although global growth remains resilient, it is projected to decelerate in 2026 from the previous year. Driven by escalating energy costs and rising food prices, global inflation is projected to increase sharply prompting monetary policy tightening by major central banks," he said. "Lingering trade uncertainty, rising bond yields in advanced economies and an appreciating dollar are keeping global financial market sentiments nervous and fragile," he pointed out.

Why the MPC acted

On the rationale for the MPC's decision, the Governor said, "The MPC noted that the global contest on account of geopolitical developments remains challenging. Nonetheless, the Indian economy has been strong, and the economic momentum remains broad-based. Moreover, the economy is expected to remain resilient."

"It further observed that in light of available data, it is clear that inflation and its outlook are not benign as they were last year, with headline CPI (consumer price index) inflation es-

pected to average almost 5.8% in the next three quarters and core inflation projected at 4.4% this financial year," he said.

Looking ahead, global economic uncertainty and supply-chain disruptions are expected to have some bearing on domestic economic activity. Furthermore, a weak southwest monsoon along with strong El Niño conditions may affect the upcoming rabi season and rural demand, he stated.

"The likely resilient non-farm activity, however, will continue to support rural consumption. Sustained momentum in services, and broadly stable employment conditions are expected to sustain urban demand," he said.

Real GDP growth for 2026-27 is projected at 7.1%, CPI inflation for 2026-27 is projected at 5.2%. Core inflation is projected at 4.4% for 2026-27.

On financial stability, he said the system-level financial parameters related to capital adequacy, liquidity, asset quality and profitability of scheduled commercial banks (SCBs) remained robust. Similarly, the system-level parameters of NBFCs were sound, he said.

MPC'S AUG 5, OCT 7 DECISIONS WERE BOTH UNANIMOUS

Dovish in August to hawkish: How MPC flipped in 2 months

Siddharth Upesani
New Delhi, October 7

IT WAS almost a foregone conclusion that the Reserve Bank of India (RBI) would increase the policy repo rate by 25 basis points (bps) to 5.3% on Wednesday. What was not widely expected was that the Monetary Policy Committee (MPC) would also make the policy stance more restrictive — from 'neutral' to 'calibrated tightening'.

This shift is important. As Governor Sanjay Malhotra said, interest rate cuts are now "off the table in the near term."

According to Madhav Agrawal, Chief Economist at Emkay Global Financial Services, the change means RBI has "clearly prepared markets for a higher-for-longer interest rate environment."

While some economists did not continue to predict only a shallow rate hike cycle of 90 bps or so, markets had already priced in a long-hib hiking cycle of at least 100 bps. This was despite the MPC's unexpected dovishness in August, when it said there were "little signs of generalisation of price pressures so far" — an assessment that left some economists unconvinced.

Generalisation of inflation means higher prices spreading to other parts of the CPI basket. A stark example of this generalisation has been seen recently with commercial cooking gas getting expensive after the start of the West Asia war, restaurants and cafes sharply increased prices on their menu.

Consider the following: the number of items in the CPI basket whose inflation was more than 8% rose to 65 in January and

How CPI, growth forecasts have changed



prices of 314 of the 358 items were higher in August compared to July. In February, this number was 236. Data for September may show more of the same.

Little change in data

When the MPC last met, it had with it the Consumer Price Index (CPI) inflation data for June, which had risen to 4.38% from 3.81% in May.

Meanwhile, Wholesale Price Index (WPI) inflation had edged up slightly to 9.87% from 9.68%.

Since then, inflation developments on both fronts have not been outsized, while retail inflation has risen to 4.82% in August, wholesale prices rose by 9.92%.

The RBI is mandated to target a CPI inflation rate of 4% in the medium term in a band of 2-6%.

Of course, the MPC must be forward-looking and take a view on what it thinks inflation might be a year or so down the line because interest rate changes impact growth and inflation with a delay of 9-12 months. However, the RBI's own projections have not moved dramatically.

"The Governor's statement emphasising that average inflation of 5.8% over the next three

quarters at 4.4% needs policy recalibration reinforces the hawkishness," said Puneet Pal, PGIM India Mutual Fund's Head of Fixed Income. Pal expects incrementally 75-100 bps of rate hikes over the next nine months.

But even back in August, these forecasts were not markedly different. Retail inflation was expected to average almost 5.6% in the three quarters starting October, while core inflation was seen at 4.3% this fiscal. But it is only now that the MPC sees "some evidence of elevated inflation expectations and generalisation of inflation".

What has materially changed is the growth outlook and major central banks having raised their own policy rates.

But the central bank focuses on domestic inflation and growth developments. And signs have been apparent for a while now that price pressures are spreading due to weak rains, the El Niño, and higher memory chip prices, among other factors. The reasons behind the MPC's turn between August and now may explain what lies ahead.

FULL REPORT ON

RBI Raises Repo Rate to 5.5%

Stance: “Calibrated Tightening”

RBI ने रेपो दर 25 bps बढ़ाकर 5.5% की; रुख “तटस्थ” से “कैलिब्रेटेड टाइटनिंग” – निकट भविष्य में दर कटौती नहीं



First hike in ~4 years
~4 वर्ष में पहली बढ़ोतरी

1 The decision | फैसला



- ▶ Repo +25 bps → 5.50% (was 5.25% since Dec 2025)
रेपो 5.50%
- ▶ Stance: neutral → calibrated tightening
रुख सख्त
- ▶ Decision was unanimous
सर्वसम्मत निर्णय
- ▶ Rate cuts “off the table” for now
कटौती अभी नहीं

2 New policy rates | नई दरें %

5.50%

Repo rate
रेपो दर

5.25%

SDF (floor)
SDF

5.75%

MSF & Bank
rate
MSF व बैंक दर

125 bps

Cut earlier
(6.5→5.25)
पहले कटौती

3 Why hike now? | अब क्यों?



- ▶ West Asia conflict → costly, volatile crude oil
कच्चा तेल महंगा
- ▶ Weak monsoon + El Niño → food prices up
खाद्य महंगाई
- ▶ Inflation spreading across CPI basket
महंगाई फैल रही

RBI hikes repo to 5.5% — in depth (1/2)

रेपो दर 5.5% — विस्तार से (1/2)

4

RBI projections FY27
RBI अनुमान



7.1%

Real GDP growth
GDP वृद्धि

5.2%

CPI inflation
CPI महँगाई

4.4%

Core inflation
कोर महँगाई

~5.8%

CPI, next 3 quarters
अगली 3 तिमाही

5

What is “generalisation”?
“सामान्यीकरण” क्या?



► When price rise
spreads beyond food & fuel

भोजन-ईंधन से आगे फैलाव

► **314 of 358** CPI items
costlier in Aug vs July
358 में 314 वस्तुएँ महँगी

► Example: costly **LPG** →
restaurants raise menu
prices

LPG → मेन्यू महँगा

6

Impact on you | आप पर
असर



► Home, car loans
costlier (EBLR banks)
लोन महँगे

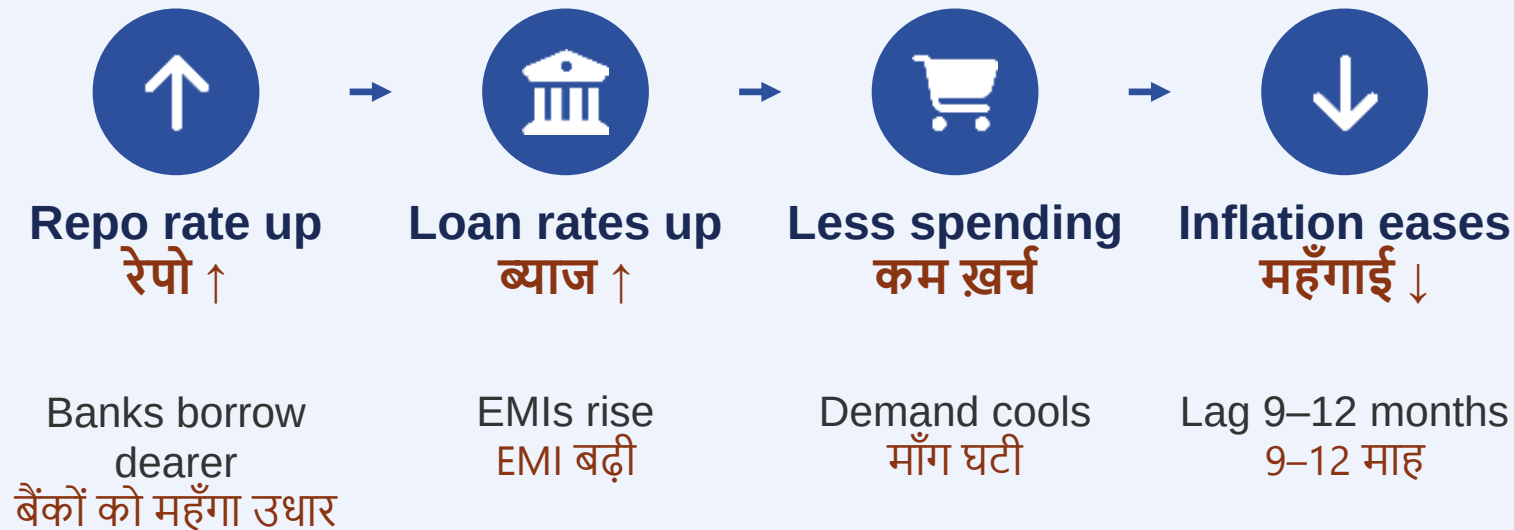
► Fixed deposits may pay
more
FD पर अधिक ब्याज

► Economists expect
another 25–75 bps
और बढ़ोतरी संभव

RBI hikes repo to 5.5% — in depth (2/2)

रेपो दर 5.5% — विस्तार से (2/2)

7 How a repo hike cools inflation | रेपो वृद्धि से महँगाई कैसे घटती है



8 Basics | मूल बातें



► MPC: **6 members** (3 RBI + 3 Govt-nominated) — Sec 45ZB, RBI Act

6 सदस्य

► Target: **CPI 4% ± 2%** (band 2–6%)

4% ± 2%

Chemistry Nobel: Chirality

रसायन नोबेल

Chemistry Nobel for French-Japanese duo who expanded 'mirrored' molecules study

The Hindu Bureau
CHENNAI

French chemist Henri Kagan and Japanese chemist Kenso Soai were on Monday named the winners of the chemistry Nobel Prize for 2026 for their work showing how chemical reactions can amplify small asymmetries in molecules.

Their work centred on chiral molecules, which are molecules that can exist in two mirror-image forms, like a left and a right hand. Professor Kagan's work paved the way for scientists to tune chemical reactions to produce the desirable forms of drugs, agrochemicals, and fragrances. In 1986, Professor

Symmetric study

The duo's work is centred on molecules that can exist in two mirror-image forms, a property called chirality



■ **Henri B. Kagan**
Professor emeritus at the former Université Paris-Sud, France



■ **Kenso Soai**
Professor emeritus at the Tokyo University of Science, Japan

• Their study of chiral molecules expanded the understanding of why many molecules essential for life prefer just one of the two possible forms. The findings have been used to optimise chemical reactions as well

Kagan and his team made a landmark discovery involving catalysts – substances that influence reactions. They showed that a small imbalance in the 'handedness' of a catalyst could disproportionately bias the reaction's end products.

This finding was used to optimise chemical reactions.

Almost a decade on, Professor Soai and his colleagues showed that a chiral molecule could speed up the formation of other molecules with its own

handedness. His work expanded the understanding of why many molecules essential for life prefer just one of the two possible forms. The proteins in our bodies are made mostly of amino acids that have one of the two mirror-image arrangements.

The enzymes that catalyse chemical reactions in cells and the receptors that respond to chemical trigger signals are also chiral. As a result, the differently handed forms of a chiral drug can interact with these molecules to elicit varied responses, only one of which might be desirable. This was a challenge for chemists who had to manufacture the desirably handed form of a drug.

• NOBEL PRIZE IN CHEMISTRY

Mirror-image molecules and the chemistry of life

Some molecules exist in two forms, but life's building blocks use only one. Soai and Kagan showed how to make just that form in labs — crucial for medicines



AMITABH SENIA

CERTAIN MOLECULES exist in two forms, each a non-superimposable mirror image of the other — like the left and right hands of human beings. Chemically, the two forms are the same in the sense that they are composed of the same set of atoms, connected in the same order. The difference is only in the relative three-dimensional arrangement of those atoms, such that one happens to be the mirror image of the other.

This structural asymmetry, called chirality, becomes particularly interesting in biology. Many of the fundamental molecules in biology, like the amino acids that make up proteins or the sugars in DNA, appear in only one form. The mirror image versions of these amino acids or the sugars do exist, but they are rarely used in these biological settings. This preference for homochirality in life forms has intrigued scientists for long.

This year's Nobel Prize in Chemistry has been awarded to two scientists, Henry Kagan and Kenso Soai, for demonstrating how this homochirality can emerge.

The normal chemical processes used to produce a chiral molecule results in the production of both forms, called enantiomers. Kagan developed a way of manipulating these processes in such a manner that one form was produced in much greater proportion than the other. Soai took a step further and designed the first chemical reaction in which only one of the enantiomers was produced. Outside of biological processes, such a result had never been achieved.

The propensity of biochemistry to prefer one particular enantiomer over the other was initially thought to be something unique for life forms. After all, when chiral

molecules were produced in laboratories, a mixture of both enantiomers was obtained in almost even proportions. However, way back in the early 1900s, German chemist Willy Marckwald had been successful in carrying out a chemical reaction in which the proportion of the yield of the two enantiomers was slightly asymmetric. Marckwald had used a catalyst — a chemical that speeds up the reaction without itself getting consumed into it — which itself was chiral. And this had led to one mirror-image form being produced more than the other.

However, subsequent attempts to increase the asymmetry in the yields of the two enantiomers remained unsuccessful.

It was Kagan, working in the 1980s, who eventually answered these questions. Before him, it was believed that there was a

• FOR THE DISCOVERY OF NON-LINEAR EFFECTS AND AUTOCATALYSIS IN ASYMMETRIC ORGANIC SYNTHESIS



"Like hands, all amino acids exist as two mirrored variants, but only one of them is found in the proteins in your cells. The other is rarely found in nature."



HENRI B. KAGAN, 95
Professor Emeritus at then Université Paris-Sud, France



KENSO SOAI, 76
Professor Emeritus at Tokyo University of Science, Japan

WHEN MIRROR-IMAGE MOLECULES HARMED BABIES

A DRUG FOR MORNING SICKNESS. Thalidomide was introduced in the late 1950s and marketed by a West German pharma company as a sedative. It was widely prescribed, including to pregnant women for morning sickness.



BIRTH DEFECTS. By 1961, doctors had linked the drug to severe limb defects. Thousands of babies across 46 countries were affected, many with phocomelia, in which limbs are severely shortened or absent.

THE MIRROR-IMAGE PROBLEM. Thalidomide exists as two mirror-image molecules, or enantiomers. One caused limb defects while the other produced the desired effects. Later, it was found the two forms can interconvert (change into each other) in the body.

ON THURSDAY, NOBEL PRIZE IN LITERATURE

Some key terms

Chirality: The phenomenon of molecules existing in mirror-image forms — much like your left and right hands.

Homochirality: The preference for one mirror-image form of a molecule in life forms.

linear relationship between the catalyst's chirality and the proportion in which the two forms of the product were produced. In other words, if the catalyst itself contained a disproportionate amount of one form, this would get reflected in the proportions of the final product as well.

Kagan was able to show that this was not true, and that much greater asymmetry in production could be achieved even if the catalyst was only mildly chiral. In the process he was also able to demonstrate the internal dynamics of how this was happening.

The next step

This breakthrough created a new excitement in the field. While studying one of his chemical reactions that had produced one particular enantiomer in large quantities, Soai realised that these venous-similar similarities in the catalyst used and the final product. That prompted him to explore autocatalytic reactions — chemical reactions in which the final product them-

selves act as catalysts. None of the autocatalytic reactions known at the time Soai started experimenting with them in the 1990s were known to produce asymmetric formation of enantiomers. After about a decade of trying, he finally succeeded in carrying out an autocatalytic reaction that resulted in the production of one particular enantiomer, which then formed copies of itself in a self-replicating process. The final product contained 99.9% of one enantiomer, a result comparable to the kind of preference seen in biological processes for a particular version of a chiral molecule.

Mysteries of life

The work of Kagan and Soai has demonstrated that homochirality can be obtained in the laboratory as well. It was not exclusive to nature. Their work does not solve the origin of the puzzle of life — how biological processes themselves preferred homochirality. But it did open up fresh avenues for scientists to try and understand the chemistry of life.

Possibly the biggest practical implication of their work has been in the pharmaceutical industry. Many drug molecules are chiral, and it matters immensely which particular enantiomer has to be used.

This is because the human bodies prefer only those enantiomers. The other variety of molecule might not just be ineffective, they can even be harmful. Before this Nobel Prize-winning work showed how one single enantiomer could be produced, pharma companies had been manufacturing the drug molecules as a mixture of both enantiomers, and then the desirable enantiomer was separated through a separate process. This was an expensive, wasteful and often technically difficult way of achieving the final result.

The asymmetric synthesis of a particular enantiomer, as shown by Kagan and Soai, is already being used widely by the pharmaceutical industry. This is relevant for the manufacturing of all other substances that are meant to interact with living organisms, including flavours, fragrances and agricultural chemicals like pesticides.

CM

Chemistry Nobel 2026:

Making “Mirror-Image” Molecules

रसायन नोबेल 2026: हेनरी कगान (फ्रांस) व केन्सो सोआई (जापान) – एक ही “हाथ” वाले (काइरल) अणु बनाने की विधि



Kagan & Soai
कगान व सोआई

1 The winners | विजेता



- ▶ **Henri B. Kagan (96)** – Université Paris-Sud, **France**
फ्रांस
- ▶ **Kenso Soai (76)** – Tokyo University of Science, **Japan**
जापान
- ▶ For “non-linear effects & autocatalysis in asymmetric organic synthesis”
असममित संश्लेषण

2 What is chirality? काइरैलिटी क्या है?



- ▶ Molecules in **two mirror-image forms** – like left & right hands
बाएँ-दाएँ हाथ जैसे
- ▶ Same atoms, same order – only **3-D arrangement** differs
केवल **3-D व्यवस्था** अलग
- ▶ The two forms = **enantiomers**
एनैन्टिओमर

3 Who did what किसने क्या किया



- ▶ **Kagan (1986)**: a slightly chiral **catalyst** can give **much more** of one form
गैर-रैखिक प्रभाव
- ▶ **Soai (1990s)**: product **copies itself** (autocatalysis) → **99.5%** one form
स्व-उत्प्रेरण

Chemistry Nobel: Chirality — in depth (1/2)

रसायन नोबेल — विस्तार से (1/2)

4

Homochirality of life
जीवन की एक-हस्तता



- ▶ Proteins use only **one form of amino acids**
अमीनो अम्ल का एक ही रूप
- ▶ DNA sugars also **one-handed**
DNA शर्करा भी
- ▶ Enzymes & receptors are chiral – they “fit” only one hand
एंजाइम एक ही रूप पहचानते

5

Thalidomide tragedy
थैलिडोमाइड त्रासदी



- ▶ Late **1950s** sedative for **morning sickness**
मॉर्निंग सिकनेस दवा
- ▶ One form helped; **other caused birth defects**
दूसरे रूप से जन्म दोष
- ▶ Babies in **46 countries** affected by **1961**
46 देश

6

Why it matters | महत्व



- ▶ **Safer, cheaper drugs**
– make only the right form
सुरक्षित दवाएँ
- ▶ Less waste than separating a mixture
कम बर्बादी
- ▶ Used for **flavours, fragrances, pesticides**
सुगंध, कीटनाशक

Chemistry Nobel: Chirality — in depth (2/2)

रसायन नोबेल — विस्तार से (2/2)

7 Soai's self-copying reaction | सोआई की स्व-प्रतिकृति अभिक्रिया



Tiny excess of
one form
थोड़ा अधिक एक
रूप

Starting point
शुरुआत



Product acts as
catalyst
उत्पाद ही उत्प्रेरक

Autocatalysis
स्व-उत्प्रेरण



Same form
multiplies
वही रूप बढ़ता

Amplification
प्रवर्धन



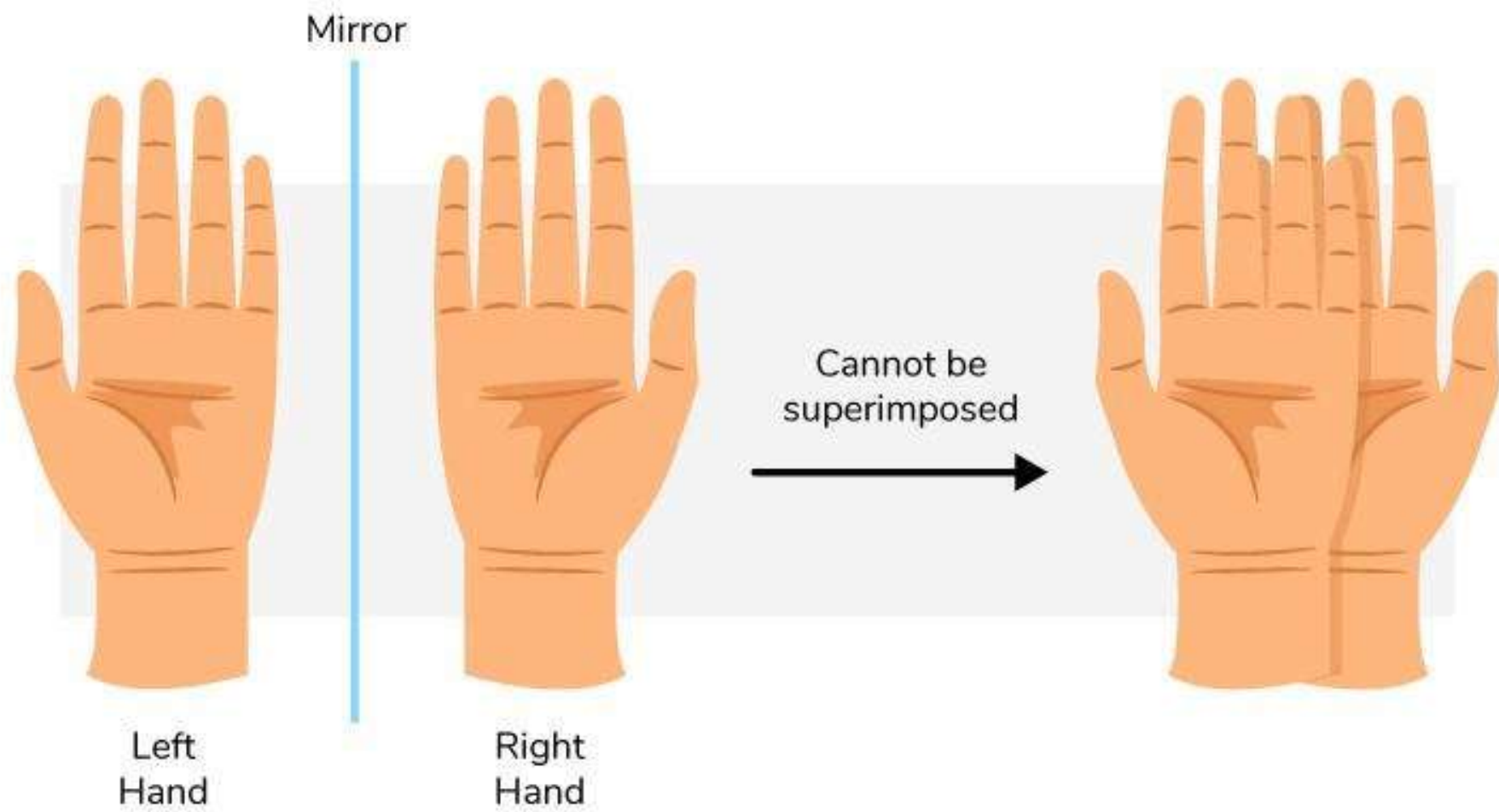
99.5% pure
99.5% शुद्ध

Like nature
प्रकृति जैसा

8 Did you know? क्या आप जानते हैं?



- ▶ Catalyst = speeds a reaction, **not consumed**
उत्प्रेरक खर्च नहीं होता
- ▶ 2025 Chemistry Nobel:
MOFs (Kitagawa, Robson, Yaghi)
2025: **MOF**



1. What exactly did they discover?



Think about your left and right hands. They look similar, but you cannot perfectly place one over the other.

Many molecules also exist in two such forms. One form may be useful as medicine, while the other may be less effective or even harmful.

Their research helped chemists control which molecular form is produced during a chemical reaction, instead of producing a mixture of both.

2. How will this help the common man?

Area	Benefit in everyday life
 Medicines	Helps manufacturers produce more of the desired form of a medicine, potentially reducing unwanted effects.
 Patient safety	Better control of drug molecules can help avoid harmful molecular forms.
 Medicine prices	More efficient manufacturing could reduce production costs, though cheaper retail prices are not guaranteed.
 Agriculture	Could help manufacture more selective agricultural chemicals and potentially reduce unnecessary chemical waste.
 New medicines	Gives scientists better tools to develop new drugs, including some treatments for complex diseases.
 Environment	More selective chemical reactions can reduce unwanted by-products and waste.
 Perfumes and fragrances	Helps manufacturers produce the molecular form responsible for a desired smell.

3. What was special about each scientist's work?

Scientist	Discovery	Simple meaning
Henri B. Kagan	Non-linear effects	A small preference for one molecular form can produce a surprisingly large amount of that form.
Kenso Soai	Autocatalysis	A molecule can help produce more molecules like itself, increasing the amount of one mirror-image form.

These discoveries also provide clues about why living organisms predominantly use one particular molecular form. 

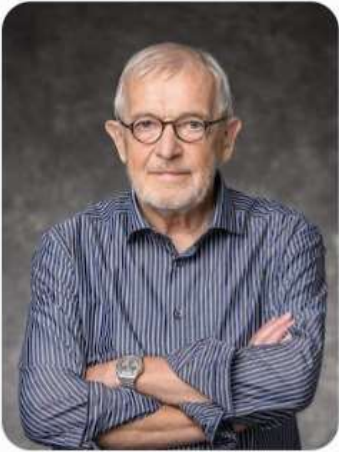
4. Example: Why is this important for medicines?

Imagine a factory making 100 drug molecules.

Without precise control	With precise control
May produce a mixture of left- and right-handed molecules	Can favor production of the desired molecular form
Unwanted form may need removal	Less unwanted material may be produced
Separation can add cost and waste	Manufacturing can become more efficient
Different forms may have different effects	Better control over the medicine's chemical composition

This is an illustration, not a claim that every drug has a harmful mirror-image form.

This Nobel-winning research did not discover a new cure. It helped establish ways to make molecules more precisely, which can support safer medicines and better manufacturing.



Winner: Francis Halzen

Country: Belgian-American scientist

Discovery: Detecting mysterious particles called **Neutrinos** (न्यूट्रिनो) coming from distant space.

Award announced: 6 October 2026

Source: Nobel Committee and US National Science Foundation.  News +1

1. What exactly did he discover?

Imagine the universe is sending billions of invisible messages towards Earth. These messages are carried by tiny particles called **neutrinos**, also known as *ghost particles*.

- They are incredibly small, have no electric charge and hardly interact with anything.
- They pass through your body and even the entire Earth without you noticing.
- Some come from the Sun, while others are produced by extremely powerful events in distant space.

Francis Halzen helped build a giant detector called **IceCube** beneath Antarctica's ice to capture rare signals from these particles and identify high-energy neutrinos coming from space.





ICECUBE

Extreme IceCube Neutrino Observatory

50 m

IceTop



IceCube Laboratory

Data is collected here and sent by satellite to the data warehouse at UW-Madison

1450 m

86 strings of DOMs,
set 125 meters apart



Amundsen-Scott South Pole Station, Antarctica

A National Science Foundation-managed research facility



Digital Optical Module (DOM)

5,160 DOMs
deployed in the ice

2450 m

IceCube
detector

DeepCore

60 DOMs
on each
string

DOMs
are 17
meters
apart







Area	Benefit for ordinary people
🌐 Understanding our universe	Helps us learn where powerful cosmic particles come from and how the universe works.
☀️ Understanding the Sun	Neutrino research helps scientists study processes happening inside stars, including our Sun.
🛡️ Radiation and space research	Better knowledge of cosmic particles may improve future research into space radiation environments.
🔧 New technologies	Building such sensitive detectors develops expertise in sensors, electronics and data analysis.
🏥 Medical technology	Sensor and data-processing research may eventually contribute to medical imaging, but no direct new treatment has resulted from this Nobel discovery.
🎓 Science education	Opens new opportunities for physics, astronomy, engineering and advanced research.

Hope for India's wildlife

वन्यजीव पुनरुद्धार

From the brink to a comeback, hope for India's wildlife

Across the world, scientists, governments and communities are bringing plants and animals back from the brink of extinction. In India, a Great Indian Bustard chick has hatched in Kutch, Gujarat, after a decade, bringing fresh hope for this critically endangered bird. In Spain and Portugal, restoring habitat and prey, breeding lynx and returning them to the wild helped the Iberian lynx grow from 62 mature individuals in 2001 to 648 in 2022. The return of the scimitar-horned oryx to the wild in Chad, Africa, and the saiga antelope's recovery in Kazakhstan offer further proof of what determined action can achieve. During Wildlife Week (October 2-8), we can celebrate these gains while asking what it will take to sustain them.

The Government of India's Integrated Development of Wildlife Habitats scheme supports recovery action for 24 identified species and their habitats. States are mandated to undertake research, habitat improvement, protection and community participation. The species span India's landscapes: the great Indian bustard in Rajasthan's grasslands, the Sangai in Manipur's wetlands, the dugong in coastal seagrass meadows and the hangul in Kashmir's forests. The list is a starting point; India's National Red List Assessment can show where focused efforts are needed next.

India launched its National Red List Roadmap at the IUCN World Conservation Congress in Abu Dhabi in 2025; the aim was to produce National Red Data Books for plants and animals by 2030. India occupies just 3.4% of the world's land area, yet supports nearly 8% of its flora and 7.5% of its fauna. It is one of 17 megadiverse countries and contains parts of four of the world's 36 biodiversity hotspots. Around 28% of its plants and more than 30% of its animals are found nowhere else. Of the 7,516 Indian animal species assessed for the IUCN Red List, 1,062 are threatened, which includes Vulnerable, Endangered and Critically Endangered species.

These assessments cover only 7.2% of India's documented animal species. The figure of 1,062 tells us what is known so far, not the full extent of the threat. The National Red List Assessment can help close that gap and direct recovery efforts where they are needed most.

The projects in States

In Tamil Nadu, Project Nilgiri Tahr combines population surveys, radio-collaring, habitat assessment and mapping across Tamil Nadu and Kerala to conserve the tahr, which is the State animal of Tamil Nadu. Working with the Wildlife Institute of India (WII), the Advanced Institute for Wildlife Conservation, the International Union for Conservation of Nature (IUCN), the Tamil Nadu



Supriya Sahu

A senior administrator in the Government of Tamil Nadu, who has worked extensively on environmental policy, ecosystem restoration, wildlife and biodiversity conservation and climate action. She is a recipient of the UNEP Champions of the Earth award 2025.



Yash Veer Bhattachanagar

The Country Representative for the International Union for Conservation of Nature (IUCN) in India, and a scientist with over three decades of experience in conservation science and practice. He received the SANCTUARY Asia Wildlife Service Award in 2025.

The current state of some of India's endangered species is encouraging, but sustained conservation, science and local action remain

(TANUVAS) and other partners, the project is strengthening the scientific understanding needed to secure the tahr's future. Surveys recorded 1,303 tahrs in 2025 and 1,364 in 2026.

Vulture conservation is an example of how sustained action through conservation breeding, safer habitats, monitoring and public awareness can help reverse a devastating decline. India's ban on the veterinary use of diclofenac, which had caused catastrophic losses in vulture populations, was a crucial step in this effort. At Pinjore, the Jaiyari Conservation Breeding Centre, run by the Haryana Forest Department and the Bombay Natural History Society, works with white-rumped, long-billed and slender-billed vultures. Madhya Pradesh's 2025 census recorded 12,981 vultures, up from 8,397 in 2019. Tamil Nadu's Segur Plateaus remains an important habitat. Tamil Nadu's raptor conservation work, and synchronised surveys across Tamil Nadu, Kerala and Karnataka track these birds, which include breeding populations in the Mudumalai Tiger Reserve.

Long-term protection including habitat management, scientific monitoring and the help of local communities has helped the Asiatic lion in Gujarat – the population rose from 674 in 2020 to 891 in 2025, with lions occupying a wider part of Saurashtra.

Monitoring, grassland management, invasive plant control, research and translocation have helped secure and expand greater one-horned rhinoceros populations against poaching. In Assam's Pobitora Wildlife Sanctuary, which has an exceptionally high rhino density, working with communities on awareness, monitoring, livelihoods and conflict reduction has made rhino protection an enduring part of the landscape.

In Meghalaya, the action plan for the clouded leopard, the elusive State animal, combines habitat protection and restoration, scientific monitoring, frontline training and community participation. As the animal is dispersed across the northeast, 14 priority landscapes have been identified as understanding population connections and keeping them intact are central to its future.

Dugong conservation calls for a different approach. Tamil Nadu established India's first dugong conservation reserve across 448.34 square kilometres of the Palk Bay and its seagrass habitat. A 2026 Wildlife Institute of India assessment estimated a total of 270 dugongs, including 158 dugongs in the Palk Bay and 112 in the Gulf of Mannar, providing a baseline for measuring change. Fishermen who release dugongs caught in nets may lose valuable gear. But the government provides compensation for damaged nets and recognises their efforts.

High up in the Himalayas, science and local

2024, India's first scientific population assessment estimated 798 snow leopards. In Himachal Pradesh, women from Kibber have worked with Forest Department field teams, the Snow Leopard Trust and the Nature Conservation Foundation to set camera traps, monitor population and participate in protection activities.

Political support is essential

Much depends on the commitment of State governments. Political leadership is crucial in prioritising the recovery of species, bringing government departments together and, most importantly sustaining action through successive budgets. Transferring that commitment into land use, infrastructure and livelihood decisions are what will help recovery plans being implemented. State forest teams have to turn plans into work on the ground. Recovery requires lasting cooperation with communities, scientists and national agencies. Results may take years, and setbacks require programmes to adapt. This would require clear goals, steady investment and careful monitoring.

Species that receive little public attention can struggle to attract funding. State-level funds can bring government, industry, philanthropy and scientific institutions together around local priorities. Tamil Nadu's recently established Endangered Species Conservation Fund reflects this approach, with its focus on the malsuier, striped hyena, Madras hedgehog, lion-tailed macaque and the hornbill.

There is similar commitment internationally. Launched in 2026 by Rewild and the Bezos Earth Fund, the Phoenix Species Project has committed \$200 million to recovering 100 of the world's most threatened species, by supporting conservationists, indigenous peoples and local communities over several years. This is a lesson for India: recovery needs dependable resources for habitats, monitoring and the people doing the work.

Forest departments need scientific support close to the field and staff need to be trained in surveys, habitat assessment, conservation breeding and genetic analysis. Communities must be involved meaningfully in surveys, habitat work and ground decisions. Their knowledge can sharpen plans and their true participation can sustain them.

For India, a national picture of risk can guide priorities; States, scientists and communities can translate them into plans with mapped habitats, clear timelines and measurable outcomes. The bustard, vulture, tahr and dugong show that species recover in different ways. But their survival depends on sustained effort – to learn, to act and to stay with a species long enough for its

From the Brink to a Comeback: Hope for India's Wildlife

विलुप्ति के कगार से वापसी: वन्यजीव सप्ताह (2-8 अक्टूबर) पर भारत की संरक्षण सफलताएँ और आगे की राह



Wildlife Week 2-8 Oct
वन्यजीव सप्ताह

1

India's biodiversity
भारत की जैव विविधता



2.4%

World land area
भूमि

~8%

World flora
वनस्पति

7.5%

World fauna
जीव

4 of 36

Biodiversity
hotspots
हॉटस्पॉट

2

Success stories |
सफलताएँ



► Asiatic lion (Gujarat): 674 (2020) → 891 (2025)
एशियाई शेर

► Vultures (MP): 8,397 (2019) → 12,981 (2025)
गिद्ध

► Nilgiri tahr: 1,303 → 1,364 (2026)
नीलगिरि तहर

► Great Indian Bustard chick hatched in Kutch after a decade
गोडावण

3

Gaps | कमियाँ



► 1,012 of 7,516 assessed species **threatened**
1,012 संकटग्रस्त

► Only 7.2% of animal species assessed
केवल 7.2% का आकलन

► Need steady **funds, staff, community role**
धन, स्टाफ़, समुदाय

Hope for India's wildlife — in depth (1/2)

वन्यजीव पुनरुद्धार — विस्तार से (1/2)

4 Species in news चर्चित प्रजातियाँ

Species प्रजाति	Where कहाँ
Great Indian Bustard गोडावण	Rajasthan grasslands राजस्थान
Sangai deer संगाई	Manipur (Keibul Lamjao) मणिपुर
Hangul हंगुल	Kashmir (Dachigam) कश्मीर
Dugong डुगोंग	Palk Bay, Gulf of Mannar पाक खाड़ी
One-horned rhino गैंडा	Pobitora, Assam असम

5 Key steps | प्रमुख कदम

- **Diclofenac ban** (veterinary) saved vultures
डाइक्लोफेनाक प्रतिबंध
- **Jatayu Breeding Centre**, Pinjore (Haryana)
पिंजौर
- India's **1st dugong reserve**: 448 km², Palk Bay (TN)
पहला डुगोंग रिज़र्व
- **IDWH scheme**: recovery of **24 species**
24 प्रजातियाँ

6 More numbers | और आँकड़े

718

Snow leopards (2024)
हिम तेंदुए

270

Dugongs (2026)
डुगोंग

2030

National Red Data Books
रेड डेटा बुक

\$200 mn

Phoenix Species Project
फ़ीनिक्स

Hope for India's wildlife — in depth (2/2)

वन्यजीव पुनरुद्धार — विस्तार से (2/2)

7 Recipe for species recovery | प्रजाति पुनरुद्धार का सूत्र



Red List
assessment

रेड लिस्ट
आकलन

Know the risk
खतरा जानें



Habitat &
breeding

आवास व प्रजनन

Protect + restore
संरक्षण



Community
role

समुदाय

e.g. Kibber
women
किब्बर महिलाएँ



Steady
funding

नियमित धन

State-level funds
राज्य कोष

8

Did you know?
क्या आप जानते हैं?



► India = one of **17 megadiverse** countries

17 महाविविध देश

► **28%** plants & **30%+** animals are **endemic**

स्थानिक

Global Pandemic Agreement

महामारी समझौता

India's stakes in the Global Pandemic Agreement

At the United Nations High Level Meeting (UN HLM), in New York in September 2026, India made official remarks on the Political Declaration on Pandemic Prevention Preparedness and Response (PPPR). The Declaration is part of the emerging global legal regime on pandemics led by the WHO-Pandemic agreement (PA).

Shaping the framework

The PA was adopted by 124 member-states in 2025, including India. No country voted against it, while 11 abstained, reflecting alignment across high-, middle- and low-income countries (HICs/LICs/LMICs). The negotiations hinged on how to balance national sovereignty with international cooperation and solidarity, exposing the fault lines between the Global North and the Global South. Key issues included whether a global treaty can set binding targets for measures such as 'One Health' without securing funding for countries with fragile health systems. Or whether national pandemic regulations can be harmonised through global frameworks. And whether private manufacturers can be required to share vaccines in real time at affordable prices.

The PA is not yet open for ratification because negotiations are still ongoing for an annex concerning the Pathogen Access and Benefit-Sharing (PABS) system. PABS could help ensure that, during a pandemic, LICs and LMICs receive a fair share of vaccines, medicines and other therapeutics.

Even without ratification, the PA has created a first-of-its-kind global legal regime for the PPPR. Operationalisation requires countries such as India to balance interests of the HICs, LICs and LMICs. This will determine whether the PA will further entrench the inequities of the COVID-19 pandemic or make global health governance truly inclusive.

At the UN HLM, India succeeded in enshrining the multilateral components of the PA within the principle of national sovereignty. India reiterated its commitment to strengthen global pandemic preparedness but stressed that effective



Priyadarshini Singh

Research Fellow at the Centre for Social and Economic Progress (CSEP)

pandemic management requires that international coordination is demonstrated. The first is equitable access to drugs, vaccines and therapeutics and the creation of global public goods, such as digital infrastructure (which admittedly align with its own national priorities).

The second is a respect for national sovereignty and the primacy of member-states in shaping global policy interventions according to national circumstance. As a contrast, the United States rejected the Declaration, calling the PABS and WHO's role in declaring pandemics as a challenge to its national interests.

India's line

In its remarks, India has acknowledged the concerns of the Global North and the South. Both sides have upheld national sovereignty as paramount on several provisions. The African countries did not give consent to commitments to monitor the human-animal-environment interface, a key source of pandemic outbreaks, without significant funding, which was not guaranteed by the Global North. Similarly, countries in the Global North did not want binding targets with regards to technology transfer (and other similar provisions).

But as India said at the UN HLM, 'Global Solidarity must be demonstrated through action'; India must be an active player in the finalisation of the global PPPR regime. India is already actively engaged in the PABS negotiations and must lead the Global South in the post PABS context. India can consider three options. First, developing partnerships on technical areas of the PA (One Health, surveillance, health workforce strengthening) to build trust with other countries in the Global South, and a 'store' of operational solutions to tricky national sovereignty problems.

Second, leveraging its leadership role within existing global political groupings. For example, the H20 summit (a health and development G-7 and G-20 partnership) will take place under the United Kingdom's G-20 leadership at the end of 2027; pandemic preparedness is one of the core health agendas. During India's G-20 presidency in

2023, India launched the Global Initiative for Digital Health and holds considerable influence within the platform's health initiatives. Another is 'Partners for Multilateralism', which was launched in 2026 by the European Union (co-sponsors are Australia, Barbados, Brazil, Canada, India and Kenya).

Third, strengthening and aligning domestic policy and regulatory architecture around its own priorities for the PA. Global leadership always rests on domestic strengths. India must ensure that its national policies on PPPR such as regulation of access to biological material and distribution of the benefits uphold the highest standards of equity which India can then demand at the global level.

A South-South health role

An equitable global regime on PPPR is in India's interests as much as a responsibility towards the Global South. India is the pharmacy of the world, manufacturing one of the largest shares of vaccines in the world in terms of volume. Yet, it needs an equitable global vaccine distribution regime. The patents for the vaccines that India manufactures are held by global pharmaceuticals. India is also import-dependent for Active Pharmaceutical Ingredients (APIs).

India needs access to the latest technology from the Global North to strengthen the manufacturing of high-grade personal protective equipment and medical devices. At the same time, India needs to lead South-South Cooperation and share its technological strength with other countries in the Global South.

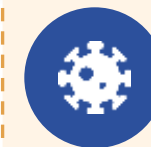
India's health system has a continental scale, and as India's Health Secretary stated at the UN HLM, its interventions in digital health infrastructure, laboratories networks and One Health are valuable as global public goods. An effective PA needs an engaged India, and a strong PA will strengthen India's own pandemic management.

This article is based on a forthcoming CSEP working paper on the Pandemic Agreement

India's leadership can help bridge the divides in global pandemic governance

India's Stakes in the Global Pandemic Agreement

WHO महामारी समझौते में भारत की भूमिका: संप्रभुता बनाए रखते हुए वैश्विक दक्षिण का नेतृत्व



Adopted May 2025
मई 2025

1

The Agreement | समझौता



- ▶ Adopted at **78th World Health Assembly** (May 2025)
78वीं WHA
- ▶ **124** in favour, **0** against, **11** abstained
124 पक्ष में
- ▶ Goal: **prevent, prepare, respond** (PPPR)
रोकथाम, तैयारी, प्रतिक्रिया

2

Pending piece: PABS लंबित: PABS



- ▶ **Pathogen Access & Benefit-Sharing** annex
रोगाणु पहुँच व लाभ-साझा
- ▶ Countries share virus samples → get **fair share of vaccines**
टीकों में हिस्सा
- ▶ Treaty opens for **ratification only after PABS**
उसके बाद अनुसमर्थन

3

North vs South उत्तर बनाम दक्षिण



- ▶ South wants **funds, tech transfer, vaccine equity**
धन, तकनीक
- ▶ North resists **binding tech-transfer** targets
बाध्यकारी लक्ष्य नहीं
- ▶ **USA rejected** the UN declaration
अमेरिका ने अस्वीकारा

Global Pandemic Agreement — in depth (1/2)

महामारी समझौता — विस्तार से (1/2)

4

India's line at UN HLM
UN में भारत



- ▶ **Equitable access** to drugs & vaccines
समान पहुँच
- ▶ Respect **national sovereignty**
राष्ट्रीय संप्रभुता
- ▶ “**Global solidarity must be shown through action**”
“कार्य से एकजुटता”

5

Three options for India
भारत के तीन विकल्प



- ▶ Partner on **One Health, surveillance, workforce**
वन हेल्थ
- ▶ Use groupings – **G20, H20**, Partners for Multilateralism
G20, H20
- ▶ Strengthen **domestic rules** first
घरेलू ढाँचा मज़बूत

6

India's strengths & gaps
ताक़त व कमी



Strength ताक़त	Gap कमी
“ Pharmacy of the world ” विश्व की फ़ार्मसी	Vaccine patents abroad पेटेंट विदेश में
Big vaccine maker बड़ा टीका निर्माता	API import-dependent API आयात
Digital health (GIDH) डिजिटल स्वास्थ्य	PPE tech needed तकनीक चाहिए

Global Pandemic Agreement — in depth (2/2)

महामारी समझौता — विस्तार से (2/2)

7

Road to the global pandemic regime | वैश्विक महामारी व्यवस्था की राह



COVID-19

Inequity exposed
असमानता



May 2025

PA adopted
(WHA78)
अपनाया



Sept 2026

UN HLM
declaration
घोषणा



Next

PABS annex →
ratify
अनुसमर्थन

8

Did you know?
क्या आप जानते हैं?



► **One Health** = human + animal + environment health

वन हेल्थ

► WHO HQ: **Geneva**;
founded **7 April 1948**
(World Health Day)

जिनेवा

Cheetahs: 3rd site in MP

चीते: MP का तीसरा स्थल



Two cheetahs released into M.P.'s third conservation site

Madhya Pradesh Chief Minister Mohan Yadav released two cheetahs in the Veerangana Durgavati Tiger Reserve in Sagar district on Wednesday, marking the expansion of the cheetah conservation project. He said it was a historic day for wildlife in Madhya Pradesh, adding that the cats have been named Vyom and Neera. After Kuno National Park in Sheopur district and Gandhi Sagar Wildlife Sanctuary in Mandsaur, the tiger reserve in the Bundelkhand region will be the third cheetah habitat. He also released the Vulture Population Estimation 2026 report and the book *Veerangana Durgavati Tiger Reserve*. PTI

Two Cheetahs Released at Veerangana Durgavati Tiger Reserve

मध्य प्रदेश के सागर ज़िले के वीरांगना दुर्गावती टाइगर रिज़र्व में दो चीते (व्योम व नीरा) छोड़े गए – चीता परियोजना का तीसरा स्थल



Vyom & Neera
व्योम व नीरा

1 The news | समाचार



- Released by **MP CM Mohan Yadav** on 7 Oct
मोहन यादव
- Place: **Veerangana Durgavati TR, Sagar district**
सागर ज़िला
- Region: **Bundelkhand**
बुंदेलखंड
- Also released **Vulture Population Estimation 2026**
गिद्ध गणना 2026

2 Cheetah sites in MP MP के चीता स्थल



Site स्थल	District ज़िला
Kuno NP कूनो	Sheopur शयोपुर
Gandhi Sagar गांधी सागर	Mandsaur मंदसौर
Durgavati TR दुर्गावती	Sagar सागर

3 Project Cheetah चीता परियोजना



- Launched **17 Sept 2022** at Kuno
17 सितंबर 2022
- Cheetahs from **Namibia & South Africa**
नामीबिया, दक्षिण अफ्रीका
- World's **first inter-continental** large-cat translocation
पहला अंतर-महाद्वीपीय स्थानांतरण

Cheetahs: 3rd site in MP — in depth (1/2)

चीते: MP का तीसरा स्थल — विस्तार से (1/2)

4 Cheetah facts | चीता तथ्य

- ▶ **Fastest land animal** – up to ~**110 km/h**
सबसे तेज़ स्थलीय जीव
- ▶ Declared **extinct in India in 1952**
1952 में विलुप्त घोषित
- ▶ African cheetah: IUCN **Vulnerable**
IUCN सुभेद्य
- ▶ Asiatic cheetah survives only in **Iran**
केवल ईरान में

5 Veerangana Durgavati TR वीरांगना दुर्गावती TR

- ▶ Formerly **Nauradehi WLS**
पूर्व में नौरादेही
- ▶ Notified as tiger reserve in **2023**
2023 में टाइगर रिज़र्व
- ▶ Named after Gond queen **Rani Durgavati**
गोंड रानी दुर्गावती

6 Why more sites? अधिक स्थल क्यों?

- ▶ Kuno has **limited space** & prey
कूनो में सीमित जगह
- ▶ Spreads **risk** of disease/conflict
जोखिम बँटता
- ▶ Builds a connected **meta-population**
जुड़ी आबादी

Cheetahs: 3rd site in MP — in depth (2/2)

चीते: MP का तीसरा स्थल — विस्तार से (2/2)

7 Cheetah comeback timeline | चीता वापसी की समय-रेखा



1952

Declared extinct
विलुप्त



2022

Namibia → Kuno
कूनो



2025

Gandhi Sagar
गांधी सागर



2026

Durgavati TR
दुर्गावती

8 Did you know? क्या आप जानते हैं?



► Cheetah **cannot** roar –
it purrs & chirps

चीता **दहाड़ता नहीं**

► Name from Sanskrit
“**chitraka**” = spotted

चित्रक

Youth groups issue joint call for Oct. 10 agitation

CPI(M) youth groups will continue to demand a system of reserved seats for Dalits in Tamil Nadu to ensure a fair fight by 'the people of India against BJP to save democracy'

By Anand Kumar
New Delhi

Youth organisations from across the country in a joint call for Oct 10 agitation, the CPI(M) Youth League of India (YL) has issued a call for a nationwide agitation on Oct 10 to demand a system of reserved seats for Dalits in Tamil Nadu to ensure a fair fight by 'the people of India against BJP to save democracy'. The call is a part of the 'Save Democracy' campaign, which is being organised by the CPI(M) Youth League of India (YL) across the country. The call is a part of the 'Save Democracy' campaign, which is being organised by the CPI(M) Youth League of India (YL) across the country. The call is a part of the 'Save Democracy' campaign, which is being organised by the CPI(M) Youth League of India (YL) across the country.



Students of a school in Tamil Nadu, India, during a protest.

INDIA bloc yet to get an appointment with Murmu to raise concerns on ECI

The Bharatiya Janata Party (BJP) has not yet received an appointment from the Election Commission of India (ECI) to raise its concerns regarding the proposed changes to the Representation of the People Act, 1950.

By Anand Kumar
New Delhi

The BJP has not yet received an appointment from the Election Commission of India (ECI) to raise its concerns regarding the proposed changes to the Representation of the People Act, 1950. The BJP has not yet received an appointment from the Election Commission of India (ECI) to raise its concerns regarding the proposed changes to the Representation of the People Act, 1950. The BJP has not yet received an appointment from the Election Commission of India (ECI) to raise its concerns regarding the proposed changes to the Representation of the People Act, 1950.



Members of the Bharatiya Janata Party (BJP) standing together.

Rahul, others booked for Akashvani Bhawan entry

The Delhi Police has booked Rahul Gandhi and other leaders of the Indian National Congress for entering the Akashvani Bhawan premises without a valid permit.

By Anand Kumar
New Delhi

The Delhi Police has booked Rahul Gandhi and other leaders of the Indian National Congress for entering the Akashvani Bhawan premises without a valid permit.



Rahul Gandhi and other leaders of the Indian National Congress.

Cong. slams 'manhandling' of Rahul and other MPs

The Bharatiya Janata Party (BJP) has accused the Congress of 'manhandling' its leaders and members of parliament (MPs).

By Anand Kumar
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Can voters caught in tribunal cases be re-enrolled, Bengal CEO asks ECI

The Election Commission of India (ECI) has asked the Chief Electoral Officer (CEO) of Bengal to provide information on whether voters caught in tribunal cases can be re-enrolled.

By Anand Kumar
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Members of the Election Commission of India (ECI) standing together.

1 examine plea on CEC appointment law split verdict

The Supreme Court has examined a plea regarding the appointment of the Chief Electoral Officer (CEO) and issued a split verdict.

By Anand Kumar
New Delhi

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Members of the Supreme Court standing together.

Now, CPI(M) protests against delayed Assam flood relief

The CPI(M) has launched protests in Assam against the delayed relief work for flood victims.

By Anand Kumar
New Delhi

The CPI(M) has launched protests in Assam against the delayed relief work for flood victims. The CPI(M) has launched protests in Assam against the delayed relief work for flood victims. The CPI(M) has launched protests in Assam against the delayed relief work for flood victims.



Members of the CPI(M) standing together.

Vijay inaugurates Aavin's annexure laboratory

The Tamil Nadu government has inaugurated a new laboratory for Aavin, the state milk cooperative.

By Anand Kumar
New Delhi

The Tamil Nadu government has inaugurated a new laboratory for Aavin, the state milk cooperative. The Tamil Nadu government has inaugurated a new laboratory for Aavin, the state milk cooperative. The Tamil Nadu government has inaugurated a new laboratory for Aavin, the state milk cooperative.



Members of the Tamil Nadu government standing together.

Fadnavis meets Shah, seeks aid for State hit by severe drought

The Chief Minister of Gujarat, Kanubhai Fadnavis, has met with the Chief Minister of Maharashtra, Devendra Fadnis, to discuss the severe drought in Gujarat.

By Anand Kumar
New Delhi

The Chief Minister of Gujarat, Kanubhai Fadnavis, has met with the Chief Minister of Maharashtra, Devendra Fadnis, to discuss the severe drought in Gujarat. The Chief Minister of Gujarat, Kanubhai Fadnavis, has met with the Chief Minister of Maharashtra, Devendra Fadnis, to discuss the severe drought in Gujarat. The Chief Minister of Gujarat, Kanubhai Fadnavis, has met with the Chief Minister of Maharashtra, Devendra Fadnis, to discuss the severe drought in Gujarat.



Members of the Gujarat government standing together.

Who appoints the CEC?

CEC नियुक्ति विवाद

SC to examine plea on CEC appointment law split verdict

The Hindu Bureau
NEW DELHI

The Supreme Court on Wednesday agreed to examine and take a call on hearing an application seeking to recall a split verdict pronounced on September 23 in a case challenging the Election Commissioners' appointments law.

The application, orally mentioned before Chief Justice of India Surya Kant by senior advocate Gopal Sankaranarayanan, questions why one of the judges on the apex court Bench, Justice Satish Chandra Sharma, did not reveal during multiple court proceedings that his son was a standing counsel for the Election Commission of India (ECI).

The plea, filed by Naman Sherstra, has sought a recall of the opinion given by Justice Sharma, who was the puisne judge on the Division Bench headed by Justice Datta, on September 23 on the question of referring the challenge to the constitutional validity of the Chief Election Commissioner and Other Election Commissioners (Appointment, Conditions of Service and Term of Office) Act, 2023 to a five-judge Bench.

Differing views

While Justice Dipankar Datta, who was the lead judge on the Bench, in his opinion, had declined the reference to a Constitution Bench, Justice Sharma took an opposing view in favour of the reference.

Eventually, both judges on the Bench passed a common order for the CJI to allocate the case to a Constitution Bench.

The application has objected to this common order, but did not challenge, specifically, the separate opinion given by Justice Datta. Justice Datta had observed in his opinion that the 2023 law was *prima facie* wrong to ignore an earlier Constitution Bench judgment in the *Anoop Baranwal* case, which had included the CJI as a neutral member in the Prime Minister-led selection panel for Chief Election Commissioners (CECs) and Election Commissioners (ECs).

The 2023 law had replaced the CJI with a Union Minister nominated by the Prime Minister.

Who appoints the CEC?

CEC नियुक्ति विवाद

HISTORY



EXPERT EXPLAINS

INDU BHUSHAN

FORMER IAS OFFICER AND ECONOMIST

‘Greatest headache’: Constituent Assembly on appointing Election Commission

ON JUNE 15, 1949, a little-remembered member of the Constituent Assembly named Shibban Lal Saxena rose to object to a deceptively simple clause. The draft Constitution said the President would appoint India’s Election Commissioners. In a parliamentary system, Saxena pointed out, that meant the government of the day would effectively be choosing the referee for its own contests.

“It is quite possible that some party in power who wants to win the next election may appoint a staunch party-man as the

chief Election Commissioner,” he warned.

Saxena said he wasn’t accusing anyone and even called the sitting Prime Minister lucky to have the independence and impartiality he did. But that, he said, was exactly the problem with resting a constitutional safeguard on the character of one man. “We are making a Constitution for ever, and not only for today,” he said.

Saxena proposed that appointing an Election Commissioner should require a two-thirds majority in Parliament: not to make the Commission answerable to Parliament, but to make it impossible for one party to install its own nominee. The Assembly voted his proposal down. But the warning stayed on the record.

The next day, H N Kunzru pushed further. Provincial governments had been kept out of election administration because they might be politically biased. Fair enough, he said — but why assume the Central Government would be any less capable of bias?

Kunzru wanted safeguards strong

enough that Commissioners could act “fearlessly”, and then delivered a stark warning: “Worked by people whose integrity cannot be depended upon, democracy will be poisoned at the source.”

The eventual compromise

Even B R Ambedkar didn’t dismiss the concern. He called it one of the Drafting Committee’s “greatest headaches”. He considered borrowing the American model, where the Senate confirms presidential appointments, but worried it would import its own political games.

The eventual compromise: the Constitution would establish the Election Commission and shield the Chief Election Commissioner from easy removal, but leave Parliament to legislate the actual appointment mechanism. That became Article 324 — a foundation with the front door deliberately left unlocked.

For 74 years, Parliament never walked through that door. No law was passed. Then, in 2023, the Supreme Court did what

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Who appoints the CEC?

CEC नियुक्ति विवाद

Parliament hadn't: in *Anoop Baranwal v. Union of India*, it ruled that until Parliament acted, appointments should be recommended by a committee of the Prime Minister, the Leader of the Opposition, and the Chief Justice of India (CJI), a structure built to keep any one side from controlling the outcome.

Parliament did act. The Chief Election Commissioner and Other Election Commissioners Act, 2023, replaced the CJI on the selection panel with a Union Cabinet Minister nominated by the Prime Minister. Now, two of three seats on the committee effectively answer to the same person.

The perception of impartiality

None of this proves an Election Commissioner appointed under the new law will act improperly, or that the Commission has turned partisan. But it does raise a legitimate constitutional question, and it's almost exactly the one Saxena and Kunzru asked in 1949: does this appointment mechanism give the government enough

distance from the body that referees elections involving the government itself?

Simply put: In an election, the government is one of the contestants. The Election Commission is the referee. The question was never whether the referee will actually favour one side. Actually, most of the time, individual Commissioners will do their jobs honestly. The question is whether a system that lets one contestant hold disproportionate sway over who gets to referee should be designed.

This is precisely why Saxena refused to let the Constitution's safeguards depend on who happened to be Prime Minister at the time. His argument was structural, not personal. It's a design principle, not a character judgment, and it holds regardless of who sits in which chair today. The system should be such that the selection of the referee should not only be impartial but also appear to be so.

This controversy isn't really about any individual Commissioner's competence or integrity. It's about whether the architecture

of appointment produces both the right incentives and the right perception — because in institutions of this kind, the appearance of independence often matters as much as the fact of it. A referee no one fully trusts is, for practical purposes, no referee at all.

Seventy-seven years after Kunzru's warning against a flawed electoral machinery, the argument has looped back to that exact source: who chooses the people who run the machinery? The Constituent Assembly saw the danger clearly, debated it seriously, and then — perhaps wisely, perhaps not — left the final answer to a Parliament that would one day have to decide for itself.

Whether Parliament decided well is the debate we are having today, but what's striking is how little the terms of that debate have changed. Sometimes, the sharpest commentary on the present isn't written by today's columnists at all. It was spoken, on the floor of the Constituent Assembly, by those who could not have known exactly how the future would test their words, only that it eventually would.

Who Picks the Referee?

SC to Hear Plea on CEC Appointment Law

मुख्य चुनाव आयुक्त नियुक्ति क़ानून 2023 पर विभाजित फ़ैसला – सुप्रीम कोर्ट वापसी याचिका पर विचार करेगा; संविधान सभा में भी यहीं बहस थी



Article 324
अनुच्छेद 324

1 The case | मामला



► Challenge to CEC & Other ECs Act, 2023

2023 का क़ानून

► Split verdict (23 Sept): Justice Datta vs Justice S.C. Sharma

विभाजित फ़ैसला

► Common order: send to Constitution Bench

संविधान पीठ

► New plea seeks recall of Justice Sharma's view

वापसी याचिका

2 Selection panel | चयन समिति



Anoop Baranwal (2023) फ़ैसला

2023 Act क़ानून

Prime Minister प्रधानमंत्री

Prime Minister प्रधानमंत्री

Leader of Opposition विपक्ष नेता

Leader of Opposition विपक्ष नेता

Chief Justice of India CJI

Union Minister (PM's pick) केंद्रीय मंत्री

3 The worry | चिंता



► 2 of 3 seats answer to the same side

3 में से 2 सरकार के

► Govt is a **player**; EC is the **referee**

सरकार खिलाड़ी, EC रेफ़री

► Independence must be **seen**, not just real

निष्पक्षता दिखे भी

Who appoints the CEC? — in depth (1/2)

CEC नियुक्ति विवाद — विस्तार से (1/2)

4

Constituent Assembly debate

(1949)

संविधान सभा (1949)



- **Shibban Lal Saxena:** need **2/3 majority** of Parliament
दो-तिहाई बहुमत
- **H.N. Kunzru:** weak safeguards = democracy
“poisoned at the source”
कुंज़रू
- **Ambedkar:** one of the “greatest headaches”
“सबसे बड़ा सिरदर्द”

5

Article 324 | अनुच्छेद 324



- **EC: superintendence, direction & control of elections**
अधीक्षण, निर्देशन, नियंत्रण
- Covers **Parliament, State Legislatures, President, VP**
संसद, विधानमंडल, राष्ट्रपति, उपराष्ट्रपति
- Appointment law left to **Parliament** – passed only in **2023**
क़ानून 2023 में

6

Removal & tenure

हटाना व कार्यकाल



- **CEC:** removed like a **SC judge**
SC न्यायाधीश जैसी प्रक्रिया
- **ECs:** removed on **CEC's recommendation**
CEC की सिफ़ारिश
- Term: **6 years or age 65**
6 वर्ष / 65 वर्ष

Who appoints the CEC? — in depth (2/2)

CEC नियुक्ति विवाद — विस्तार से (2/2)

7 Journey of the appointment question | नियुक्ति प्रश्न की यात्रा



1949

Assembly debate
सभा बहस



1950–2023

Executive
appoints
सरकार नियुक्त



Mar 2023

Baranwal: CJI on
panel
CJI शामिल



Dec 2023

Act: Minister
replaces CJI
मंत्री

8 Did you know? क्या आप जानते हैं?



► ECI set up **25 Jan 1950**
– **National Voters' Day**
राष्ट्रीय मतदाता दिवस

► Multi-member body
since **1 Oct 1993**
1993 से बहु-सदस्यीय

1 India's cement footprint stands in its way to net-zero emissions

Producing cement is highly carbon-intensive and releases greenhouse gases as part of limestone calcination processes, extracting limestone also destroys forests and limits topsoil content so cemented-in modern construction the sector remains exceptionally hard to abate

Byline: Madhulika

By 2050, India plans to become an environmentally developed country. The 2015 Paris climate agreement is a key milestone in this journey. India's cement industry, however, has been a major obstacle in this journey. The industry is one of the most carbon-intensive in the world, and its growth is projected to be rapid in the coming decades.

The sector's emissions are not only a major contributor to India's carbon footprint, but also a significant barrier to achieving net-zero emissions. The industry's growth is projected to be rapid in the coming decades, and its emissions are expected to rise sharply. This is a major challenge for India, as it aims to become a net-zero country by 2050.

India's cement industry is one of the most carbon-intensive in the world. The industry's growth is projected to be rapid in the coming decades, and its emissions are expected to rise sharply. This is a major challenge for India, as it aims to become a net-zero country by 2050.



Storage and processing of cement. New India and India's cement industry is one of the most carbon-intensive in the world. The industry's growth is projected to be rapid in the coming decades, and its emissions are expected to rise sharply. This is a major challenge for India, as it aims to become a net-zero country by 2050.

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A view of a cement plant in the state of Karnataka, India. The plant is one of the largest in the country and is a major contributor to India's carbon footprint.



GPS study aims to reduce human-animal conflicts in Assam

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A view of a cement plant in the state of Karnataka, India. The plant is one of the largest in the country and is a major contributor to India's carbon footprint.

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1 Cement & net-zero | सीमेंट व नेट-ज़ीरो

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A view of a cement plant in the state of Karnataka, India. The plant is one of the largest in the country and is a major contributor to India's carbon footprint.

Cement vs net-zero

सीमेंट व नेट-ज़ीरो

India's cement footprint stands in its way to net-zero emissions

Producing cement is highly carbon-intensive and releases greenhouse gases as part of limestone calcination processes; extracting limestone also destroys forests and fertile topsoil; cement is so entrenched in modern construction that the sector remains exceptionally hard to abate

Monika Mondal
BERLIN

By 2047, India plans to become an economically developed country. By 2070, it aims at becoming a net-zero emissions economy. Achieving both of these targets requires the Indian government to deal with one of the most important sources of emissions: construction.

This sector consumes steel and cement, among other materials, and its footprint contributes 30% to 40% of all greenhouse gas emissions around the world.

Most of these emissions are because of the energy that the steel and cement sectors need to reach extremely high temperatures required for industrial processes. But even between the two, the cement sector also emits carbon when calcinating limestone — a chemical reaction that makes cement one of the few hard-to-abate sectors, and which contributes 7 to 11% of emissions, almost double that of the aviation sector.

Need for cement

Construction activities have been part of human civilisation for many centuries. Cement became the standard binding agent only in the 19th century, with the development of Portland cement in Britain in the 1820s, when builders were trying to meet the demands of rapid industrialisation. Before that, people used mineral-based binders, the material that holds bricks, sand, and stone together.

"Traditionally, India and many other parts of the world used a much wider range of binders and construction systems than Portland cement," Nandini Hakkar, assistant professor at the School of Architecture and Planning, Vishwakarma University, Pune, said. "These included lime-based mortars, lime-surfki mortars, mud/clay mortars, gypsum-based mortars, and, in some contexts, naturally pozzolanic materials."

A pozzolanic material reacts with calcium hydroxide in water to form cementitious compounds, thus strengthening concrete without itself being cement.



Green construction: Traditional ordinary Portland cement consists of over 95% clinker mixed with gypsum. [GRI/WWW.AJL/UK/PLAG](https://www.ajl.org.uk)

Energy and Resources Institute, New Delhi, said India should aim to reduce the emission rate to 0.56 tonnes of carbon dioxide tonne of cement made by 2030 and to 0.51 tonnes of carbon dioxide by 2047.

The same report also estimated cement production in India is expected to rise from 334 million tonnes in 2019-20 to 1,546 million tonnes in 2070.

But "carbon dioxide is not the only environmental concern associated with industrial activity," Ms. Hakkar said. "Cement manufacturing can also be associated with air pollutants such as nitrogen oxides, sulphur dioxide and particulate matter. These should be distinguished from greenhouse gases, which are assessed using their global warming potential."

There are also many "hidden" sources of carbon. Some examples are the carbon cost

Before Portland cement, India and many other parts of the world used a wider range of construction binders like lime, lime-surfki, mud, clay, gypsum, and natural pozzolanic binders

The idea is especially attractive because it also creates an incentive to improve waste management.

The NITI Aayog roadmap recommends that India "increase the use of RDF from municipal solid waste to achieve a 20% thermal substitution rate by 2030, resulting in a cumulative emission reduction of approximately 80 million tonnes of carbon-dioxide-equivalent." But this requires India to do a better job of segregating waste

have a similar setting time of around 30 minutes. OPC gains strength in one week while the other two could take twice as long.

"To push the demand for green cement in the initial few years, maybe the government can do more public procurement of green cement," she suggested.

Since green cement replaces clinker with waste from other industries, it is less expensive. As per NITI Aayog, clinker-to-cement ratio — around 67.5% — in India is already lower than the global average of 77% and can be further reduced.

Some researchers are also working on complementary solutions like using traditional materials to make binders and to design buildings better. Then there is also the challenge of changing people's perceptions about the alternatives.

"Cement is easy to use, relatively

Researchers have suggested that meeting India's infrastructure and housing demands may not be realistic without cement.

However, that does not mean there are no alternatives. The Taj Mahal, which was completed in the mid-17th century, is testimony to the efficacy of lime mortar.

Many Roman buildings until the 4th century AD that used lime-based binders with volcanic pozzolanic materials also still stand.

"The issue is less about the technologies having disappeared and more about the construction industry having developed an enormous ecosystem around cement," Ms. Hakkar noted.

"One of the challenges is that cement has become deeply embedded in the construction industry through standardisation, commercial availability, established supply chains, building practices and extensive marketing. Traditional materials often lack the same level of commercial infrastructure and standardised supply."

Science of cement

"Not just cement production... [The] wider life cycle of cement and concrete has an environmental impact. From extraction and processing of raw materials, subsequent manufacturing, and transportation to construction sites," Dr. Hakkar added.

Limestone — the raw material for cement — is formed when calcium-rich marine life, such as oysters and corals, is fossilised and compressed over millions of years.

Accessing it requires miners to first clear forests and all layers of fertile soil in specific areas to expose the sedimentary rock layer. Depending on the geography, limestone can be found 30 to 60 meters under the topsoil in Karnataka, Chhattisgarh, and Andhra Pradesh and at more shallow depths in Rajasthan.

Once that limestone is brought to a factory, it is mixed with clay and heated to around 1,450 degree Celsius. This heating process alone accounts for 35% to 40% of emissions from cement-making; the rest comes from the chemical breakdown of limestone.

When limestone is heated in the calcination process, it releases carbon dioxide as a by-product along with small stone-like balls called clinkers. These clinkers, responsible for 57% to 63% of emissions, are made of calcium silicates, calcium aluminates, and calcium aluminoferrites. They are crushed into powder and mixed in several ratios with gypsum and fly ash and sold as the various cement types available on the market.

India's cement industry currently emits 0.62 tonnes or 620 kg of carbon dioxide per tonne of cement. In a decarbonisation roadmap prepared with the Global Cement and Concrete Association, experts from The

of cutting down hills to secure the limestone, emissions due to long distance transport, and the long term effects of the loss of vegetation and the corresponding loss of carbon sequestration. And these effects are not typically considered in discussions around the cement industry.

"The dialogue on the effects before and after the cement production units are under-emphasised in current climate debates" in India, Kavitha Ashok, a researcher at the Center for Study of Science, Technology and Policy, Bengaluru, said.

Existing and proposed solutions

Since the dawn of the First Industrial Revolution, engineers and manufacturers have used coal, petroleum coke or natural gas to heat kilns. Today, with the focus on renewable sources of energy, decarbonisation and the use of solid municipal waste to produce refuse-derived fuel (RDF) — to replace coal as a heat source for kilns — are at the forefront, according to Dr. NITI Aayog.

the Indian government's topmost think-tank. RDF is processed waste, typically shredded and sorted, with combustible materials concentrated into a fuel suitable for industrial boilers and cement kilns.

at the source.

Another option focuses on reducing the amount of clinker by mixing it with waste or by-products like slag from heavy industries like power plants and steelmaking. The less clinker cement contains, the greener it is. According to the International Energy Agency, replacing one tonne of clinker can avoid 0.83 tonnes of carbon dioxide emissions.

This said, cement cannot be fully decarbonised, so attaining net-zero emissions makes carbon capture inevitable.

The substitution also presents another limit. "While there are options where substitution goes as high as 50-70%, [in practice] the average substitution cannot be more than 40%," Ms. Ashok added, or a building's integrity could suffer. This is why cement "is called hard-to-abate".

Traditional ordinary Portland cement (OPC) consists of over 95% clinker mixed with gypsum. Portland pozzolana cement has 65-80% of clinker with fly ash and gypsum. Portland slag cement consists of 35-64% of clinker, with the rest a mixture of gypsum and granulated slag from a blast furnace. But per Ms. Ashok, real-estate developers and builders generally prefer OPC. One reason is that while all three types

last-setting, versatile and widely understood by the construction industry, it can be used in a very wide range of structural and architectural applications, and the existing construction ecosystem is built around it," Ms. Hakkar said. "These factors make cement very difficult to replace at scale, even when we recognise its environmental impact."

Looking beyond cement

In her research, Apurva Mathur, assistant professor at the National Institute of Construction Management and Research, Pune, has been studying indigenous construction practices. She said that depending on the requirements, there are several examples of alternatives to conventional cement-based construction around India, each of which evolved in response to the local geography and weather. For example, in Southern India, compressed earth blocks and rammed earth have been used with soil and sand and relatively small amounts of cement or lime.

Ms. Mathur has also identified binding agents such as cactus juice — a thick, water-repellent fluid derived from cactus plants and mixed with lime and mud — and marble powder, a by-product of the marble industry.

Traditional Kath Kuni construction in Himachal Pradesh uses dry masonry and alternating layers of wooden beams without cement, with the structure using a raised stone plinth for better strength. In parts of Northern and Northeastern India, houses are raised above the ground using lightweight wood and bamboo to better survive flooding and earthquakes.

But these options are also not silver bullets, Ms. Hakkar said a material or construction method that works well in one region or for one type of building may not be appropriate elsewhere. Traditional practices may also have to be modified to meet contemporary requirements.

"Cement and concrete are extremely difficult to eliminate from contemporary construction. I cannot realistically tell a client constructing a ten-storey building to simply replace reinforced-concrete construction with soil," Ms. Hakkar said. "The more realistic approach is to reduce dependence where appropriate and design the building and surrounding urban environment to minimise heat gain and heat storage."

There are contemporary practitioners using lime, earth, mud, lime-surfki, and other traditional or natural systems, she added. "The issue is less about the technologies having disappeared and more about the construction industry having developed an enormous ecosystem around cement."

Monika Mondal is a freelance science and environment journalist.
amondamondal@gmail.com



A view of the cement factory at village Bhatnagar, Jodhpur village in Rajasthan, S. M. Taryal/Hindustan

India's Cement Footprint

Stands in the Way of Net-Zero

भारत का सीमेंट उत्सर्जन नेट-ज़ीरो (2070) की राह में बड़ी बाधा – “कठिनाई से घटने वाला” क्षेत्र



Net-zero by 2070
2070 तक नेट-ज़ीरो

1

Why cement is “hard-to-abate”
क्यों कठिन



- ▶ Kiln heat $\sim 1,450^{\circ}\text{C}$ $\rightarrow$ 35–40% of emissions
 $1,450^{\circ}\text{C}$ भट्टी
- ▶ **Calcination**: limestone (CaCO_3) $\rightarrow$ CO_2 released
कैल्सीनेशन
- ▶ **Clinker** = 53–65% of emissions
क्लिंगकर

2

Key numbers | प्रमुख आँकड़े



7–11%

Global CO_2 from cement
वैश्विक CO_2

0.62 t

CO_2 per tonne (India)
प्रति टन

334 $\rightarrow$ 1,546

Mt output 2020 $\rightarrow$ 2070
उत्पादन

67.5%

India clinker ratio
क्लिंगकर अनुपात

3

Hidden costs | छिपी लागत



- ▶ Limestone mining **clears forests & topsoil**
वन व मिट्टी नष्ट
- ▶ Long-distance **transport emissions**
परिवहन उत्सर्जन
- ▶ Air pollutants: **NO_x , SO_2 , PM**
वायु प्रदूषक

Cement vs net-zero — in depth (1/2)

सीमेंट व नेट-ज़ीरो — विस्तार से (1/2)

4 Solutions | समाधान



- **RDF** (refuse-derived fuel) from city waste – **20%** target by 2030 (NITI)

RDF

- Less clinker: blend **fly ash**, **slag**

फ़्लाई ऐश, स्लैग

- Replacing 1 t clinker saves **0.83 t CO₂** (IEA)

0.83 t बचत

- **Carbon capture** unavoidable

कार्बन कैप्चर ज़रूरी

5 Cement types सीमेंट के प्रकार



Type प्रकार	Clinker क्लिंगर
Ordinary Portland (OPC) OPC	>95%
Portland Pozzolana (PPC) PPC	65–80%
Portland Slag (PSC) PSC	35–64%

6 Traditional binders पारंपरिक बाइंडर



- **Lime mortar** – Taj Mahal
चूना – ताजमहल
- **Lime-surkhi**, mud, **rammed earth**
सुर्खी, मिट्टी
- **Kath Kuni** (Himachal) – wood & stone
काठ कुणी

The Problems with Clinker

While clinker is foundational to modern infrastructure, it is the root cause of the cement industry's heaviest environmental and economic challenges.  Homedit +1

1. Massive Carbon Dioxide (CO₂) Emissions

Clinker production is one of the single largest industrial drivers of climate change, with the cement industry accounting for roughly **8% of global CO₂ emissions**. The emissions stem from two main sources:  YouTube · Saint-Gobain

- **The Calcination Process:** When limestone (CaCO₃) is heated, it chemically splits into lime (CaO) and carbon dioxide (CO₂). This chemical reaction alone generates about **half** of the industry's greenhouse gas emissions.  ScienceDirect.com +1
- **Extreme Heat Demand:** Sintering materials at 1,500°C requires burning immense amounts of fossil fuels. The pyroprocessing stage accounts for **over 90%** of a cement plant's total energy use.  ScienceDirect.com +1

2. Resource and Energy Depletion

Clinker production places a massive strain on **non-renewable natural resources**. Millions of tons of limestone and clay must be blasted and quarried every year. Because it is so energy-intensive, fluctuating fuel costs heavily impact the final price of cement.  Amrit Cement +3

Cement vs net-zero — in depth (2/2)

सीमेंट व नेट-ज़ीरो — विस्तार से (2/2)

7 From limestone to cement | चूना-पत्थर से सीमेंट



Mine
limestone
खनन

Forests cleared
वन कटे



Kiln 1,450°C
भट्टी

Fuel CO₂
ईंधन CO₂



Calcination
कैल्सीनेशन

Process CO₂
प्रक्रिया CO₂



Clinker +
gypsum
क्लिंगर + जिप्सम

Cement
सीमेंट

8 Did you know? क्या आप जानते हैं?



- **Portland cement –**
Britain, 1820s
1820 के दशक
- India = **2nd largest**
cement producer (after
China)
दूसरा सबसे बड़ा

Uranium push & geothermal

यूरेनियम व भू-तापीय

UCIL bets on greenfield mines, copper residue to double uranium output

Vinaya Deshpande Pandit
JADUGUDA, JHARKHAND

The Uranium Corporation of India Ltd. (UCIL) plans to double domestic uranium output by 2036, backed by four greenfield mining and processing projects and a novel initiative to recover uranium from copper mine residue.

As part of its push towards a circular economy, UCIL is expected to begin extracting uranium from copper mine residue from 2029-30. An understand-

ing has been reached with Hindustan Copper Ltd. (HCL) for the initiative.

UCIL CMD Kancham Anand Rao disclosed the plans while responding to a question from *The Hindu* at a media workshop here.

“This is a long process. We will take some time till we start this extraction,” Mr. Rao said. “We are not going to mine from HCL plant tailings. HCL mines for copper. But they take out only 5%. 95% is reject. We will take that 95% and recover 10% of it. It will

come to us for processing. So there is no mining cost involved,” he said. The balance waste would be returned to HCL, making the process economically viable and aligned with circular economy principles.

Four greenfield projects

UCIL's production expansion plan comes as India seeks to increase domestic uranium availability to support its growing nuclear power programme. To boost local uranium output in the interim, UCIL

is developing four greenfield projects with the most prominent at Rohil in Rajasthan with a capacity to mine/process 2,500 tonne uranium ore a day. The second project at Gogi in Karnataka is at an early stage. The other two are planned in AP and Chhattisgarh.

Mr. Rao said the entry of private players into nuclear power generation would complement UCIL.

(The writer was at Jaduguda on the invite of the PIB and the Department of Atomic Energy)

Uranium push & geothermal

यूरेनियम व भू-तापीय

Iceland courts India for geothermal, CCUS, 'carbon-to-stone' technologies

Saptaparno Ghosh

NEW DELHI

Iceland is confident about the opportunities emerging in India's evolving geothermal energy landscape and believes regulatory challenges can be overcome, Jóhann Páll Jóhannsson, Iceland's Minister for Energy, Environment and Climate, told *The Hindu* on the sidelines of his visit to New Delhi.

"It (potential challenges originating from India's regulatory framework) is

Iceland generates 70% of electricity from hydropower, 30% via geothermal

something that can be overcome", he said, adding Iceland had the legal expertise to support countries in developing regulatory frameworks for scaling up geothermal energy.

Mr. Jóhannsson also expressed confidence in India's carbon capture, utilisation and storage (CCUS),

pointing to opportunities for Reykjavík to deploy "tried and tested" technology, Carbfix, which converts captured carbon dioxide into stone.

He said Iceland built huge expertise in geothermal energy and wanted to export that knowledge to nations such as India with "large, untapped potential."

Iceland generates about 70% of electricity from hydropower and 30% from geothermal sources. India, meanwhile, has an estimat-

ed geothermal potential of about 10.6 GW, according to government data. He noted New Delhi was also committed to expanding geothermal energy.

Benefit from Carbfix

Mr. Jóhannsson highlighted Iceland's Carbfix technology, which converts carbon dioxide into stone via a process that permanently mineralises the captured CO₂. He said the technology could be useful for sectors such as cement and steel in India.

A IN-X

UCIL to Double Uranium Output; Iceland Courts India on Geothermal

UCIL 2036 तक यूरेनियम उत्पादन दोगुना करेगा (तांबा अवशेष से भी); आइसलैंड भू-तापीय व “कार्बन-से-पत्थर” तकनीक की पेशकश



Clean energy
स्वच्छ ऊर्जा

1 UCIL plan | UCIL की योजना



- ▶ **Double** domestic uranium output **by 2036**
2036 तक दोगुना
- ▶ **4 greenfield** mines: Rohil (Rajasthan), Gogi (Karnataka), AP, Chhattisgarh
4 नई खदानें
- ▶ Rohil: **2,500 t ore/day**
रोहिल

2 Uranium from copper waste तांबे के कचरे से यूरेनियम



- ▶ Tie-up with **Hindustan Copper (HCL)**
HCL के साथ
- ▶ Recover from **tailings** – **no mining cost**
खनन लागत नहीं
- ▶ Starts **2029-30**; **circular economy**
चक्रीय अर्थव्यवस्था

3 Iceland's offer आइसलैंड की पेशकश



- ▶ **Geothermal** expertise & regulatory help
भू-तापीय
- ▶ **Carbfix**: turns CO₂ into **stone**
CO₂ → पत्थर
- ▶ Useful for **cement & steel**
सीमेंट, इस्पात

Uranium push & geothermal — in depth (1/2)

यूरेनियम व भू-तापीय — विस्तार से (1/2)

4 Numbers | आँकड़े

100 GW

Nuclear target
2047
परमाणु लक्ष्य

10.6 GW

India
geothermal
potential
भू-तापीय क्षमता

70% / 30%

Iceland: hydro /
geothermal
आइसलैंड

2036

UCIL doubling
लक्ष्य वर्ष

5 UCIL basics | UCIL परिचय

► PSU under **Dept of Atomic Energy** (est. 1967)

परमाणु ऊर्जा विभाग

► HQ: **Jaduguda, Jharkhand** – India's **1st** uranium mine

जादूगोड़ा

► Big reserve: **Tummalapalle (AP)**
तुम्मलपल्ले

6 Geothermal in India भारत में भू-तापीय

► **Puga Valley, Ladakh** – ONGC pilot
पुगा घाटी

► Hot spring belts: **Himalaya, Son-Narmada-Tapi, Cambay**
गर्म झरने

► Steady **24×7 baseload** power
24×7 बिजली

Uranium push & geothermal — in depth (2/2)

यूरेनियम व भू-तापीय — विस्तार से (2/2)

7 Carbfix: carbon to stone | कार्बोफिक्स: कार्बन से पत्थर



Capture CO₂
CO₂ पकड़ें

From plants
संयंत्र से



Dissolve in water
पानी में घोलें

Like soda
सोडा जैसा



Inject into basalt
बेसाल्ट में

Underground
भूमिगत



Becomes rock
चट्टान बनता

~2 years,
permanent
स्थायी

8 Did you know? क्या आप जानते हैं?



► CCUS = Carbon
Capture, Utilisation &
Storage

CCUS

► India's **Deccan Traps**
are basalt – suit Carbfix
दक्कन ट्रैप

DAY 2 OF DETOUR

High drama gripped Delhi again as an 800km march against the Citizenship Amendment Bill (CAB) continued its second day of protests led by Rahul Gandhi calling for the resignation of BJP government.



Protesters in Delhi on Tuesday, the second day of the 800km march against the Citizenship Amendment Bill (CAB). (Hindustan Times)

IN BRIEF

Mujibma Singh sets to launch MP-Aardra yatra on Oct. 20

Former Union Minister and Bharatiya Janata Party (BJP) leader Mujibma Singh is set to launch the MP-Aardra yatra on October 20 to demand an immediate end to the lockdown. He is expected to lead a team of 100 people on the yatra, which will cover a distance of 100 km per day in the state.

Dhannendra Kashyap to quit BJP, announce next move soon

Former Union Minister and Bharatiya Janata Party (BJP) leader Dhannendra Kashyap is set to quit the party and announce his next move soon. He is expected to lead a team of 100 people on the yatra, which will cover a distance of 100 km per day in the state.

SIR: special camps to restore names left out of Bengal rolls

State CID plans to set up Sir (Special Investigation Report) camps to restore names left out of Bengal rolls. The camps will be held in various parts of the state.

Madras HC on FCRA

The Madras High Court has ruled that the FCRA (Foreign Contribution Regulation Act) is unconstitutional. The court has held that the FCRA is a violation of the fundamental rights of citizens. The court has also held that the FCRA is a violation of the separation of powers between the executive and the judiciary.

BJD backtracks on INDIA bloc's Odisha bandh call for today

The Biju Janata Dal (BJD) has backtracked on its call for a bandh (strike) in Odisha today. The party has decided to support the government's efforts to manage the COVID-19 pandemic.

Madras HC on FCRA

The Madras High Court has ruled that the FCRA (Foreign Contribution Regulation Act) is unconstitutional. The court has held that the FCRA is a violation of the fundamental rights of citizens. The court has also held that the FCRA is a violation of the separation of powers between the executive and the judiciary.

SBI software prevents Christian applicants from selecting 'ST' option, alleges Arunachal forum

The Arunachal Pradesh Christian Forum (APCF) has alleged that the State Bank of India (SBI) software prevents Christian applicants from selecting the 'ST' (Scheduled Tribe) option. The forum has filed a petition in the court to challenge the software. The forum has also alleged that the software is discriminatory and violates the rights of Christians.

1. sations engaged in religious conversion denied FCRA registration: Madras HC

The Madras High Court has ruled that religious conversion organizations are not eligible for FCRA (Foreign Contribution Regulation Act) registration. The court has held that these organizations are not bona fide and are engaged in religious conversion. The court has also held that these organizations are not eligible for FCRA registration.

NSCN leaders withdraw remarks on ex-PM Jammir

The National Socialist Council of Nagaland (NSCN) leaders have withdrawn their remarks on the late Prime Minister I. M. Jammir. The leaders have expressed their regret for the remarks and have apologized to the family of the late PM.

'Coordination with CJP on agenda basis, but alliances are always on radar'

The Congress party is in coordination with the CJP (Congress Joint Party) on an agenda basis, but alliances are always on the radar. The party has decided to support the government's efforts to manage the COVID-19 pandemic. The party has also decided to support the government's efforts to manage the COVID-19 pandemic.

THE HINDU • 8 OCT 2020

Page 2 • States

पृष्ठ 2 • राज्य

Articles covered from this page | इस पृष्ठ से लिए गए लेख

1 Madras HC on FCRA | FCRA पर मद्रास HC

Madras HC on FCRA

FCRA पर मद्रास HC

Organisations engaged in religious conversion shall be denied FCRA registration: Madras HC

The Hindu Bureau
MADURAI

The Madurai Bench of the Madras High Court has said religious organisations engaged in conversions shall be denied Foreign Contribution (Regulation) Act (FCRA) registration, and that only organisations whose activities do not affect the nation's secular fabric and social amity are entitled to registration.

The court was hearing a Civil Miscellaneous Appeal filed by Kanzeon Public Charitable Trust – founded by a Christian priest in Kodaikanal – after its application for registration under the FCRA was rejected.

The appellant said the trust had established a Zen Meditation Centre at Kodaikanal and that its activities could not be labelled as religious. The centre contended that the govern-



We are a pluralist nation. Unlike the USA, we are not a melting pot but a salad bowl, a beautiful metaphor credited to Justice Ruma Pal. This status quo would be upset if one religious group gains ascendancy

**MADURAI BENCH OF THE
MADRAS HIGH COURT**

ment's policy was to check the inflow of foreign funds that might be used for conversion and other activities detrimental to the country's secular fabric.

The Division Bench of Justices G.R. Swaminathan and M.D. Sumathi said, "One cannot forget the fact that Christianity is a messianic religion. Their theological and religious mis-

sion is to bring everyone within the fold of Jesus Christ. There is a saying 'a leopard will not change its spots'. Unlike Hinduism, which is inclusive, the Abrahamic religions are inherently exclusive."

Rule 9 of the FCRA Rules, 2011, states that the application must be in Form FC-3A. Form FC-3A requires the applicant to disclose the nature of the organisation.

"The appellant trust claims to subscribe to Zen Buddhist philosophy. On its own showing, the appellant is a religious organisation. The authority rightly states that Zen Buddhism is a variant of the Mahayana Buddhist School. Every Buddhist school will come under the broad umbrella of Buddhism. Zen can be no exception. Since the appellant's application did not correctly identify its

nature as religious, the application was rightly negated," the court said.

The judges said the appellant need not have been so coy. Section 12 of the FCRA bars only an unregistered religious organisation from accepting foreign contributions. An organisation having a definite religious programme is entitled to apply for a certificate of registration from the Central government under Sections 11 and 12 of the Act.

"We are a pluralist nation. Unlike the USA, we are not a melting pot but a salad bowl, a beautiful metaphor credited to Justice Ruma Pal. This status quo would be upset, if one religious group gains ascendancy," the court said, adding, "One cannot keep any card up one's sleeve. This is no game of hide and seek."

Madras HC: Conversion Groups Can Be Denied FCRA Registration



Madurai Bench
मदुरै पीठ

मद्रास हाई कोर्ट: धर्मांतरण में लगे संगठनों को FCRA पंजीकरण नहीं; “भारत मेल्टिंग पॉट नहीं, सलाद बाउल है”

1 The case | मामला



- ▶ **Kanzeon Public Charitable Trust, Kodaikanal**
कोडाइकनाल ट्रस्ट
- ▶ Ran a **Zen meditation** centre; FCRA plea **rejected**
आवेदन अस्वीकृत
- ▶ HC: Zen = **Mahayana Buddhism** → it is **religious**
ज़ेन = महायान

2 What the court held कोर्ट ने कहा



- ▶ Groups doing **conversions**
→ **no FCRA**
धर्मांतरण → **FCRA नहीं**
- ▶ Must **disclose** true nature in **Form FC-3A**
सही प्रकृति बताएँ
- ▶ Registered **religious** bodies **can** apply (Sec 11–12)
धार्मिक संस्था आवेदन कर सकती

3 The debate | बहस



- ▶ Remarks on religions draw **criticism**
टिप्पणियों पर **आलोचना**
- ▶ Issue: **Art 25** (freedom of religion) vs **public order**
अनुच्छेद 25
- ▶ Bench: Justices **G.R. Swaminathan & M.D. Sumathi**
पीठ

Madras HC on FCRA — in depth (1/2)

FCRA पर मद्रास HC — विस्तार से (1/2)

4 FCRA basics | FCRA परिचय

- ▶ **FCRA 2010** (first law 1976)
2010 (पहला **1976**)
- ▶ Run by **Ministry of Home Affairs**
गृह मंत्रालय
- ▶ Funds only in **SBI, New Delhi Main Branch** account
SBI नई दिल्ली
- ▶ Registration valid **5 years**
5 वर्ष

5 2020 amendment 2020 संशोधन

- ▶ **Admin expense cap: 20%** (was 50%)
20%
- ▶ **No transfer** of foreign funds to other NGOs
हस्तांतरण नहीं
- ▶ **Aadhaar** of office-bearers mandatory
आधार अनिवार्य

6 Who cannot take foreign funds कौन नहीं ले सकता

- ▶ **Election candidates, MPs/MLAs**
प्रत्याशी, सांसद
- ▶ **Govt servants, judges**
सरकारी सेवक, न्यायाधीश
- ▶ **Political parties, journalists/media**
राजनीतिक दल, मीडिया

Madras HC on FCRA — in depth (2/2)

FCRA पर मद्रास HC — विस्तार से (2/2)

7 How FCRA registration works | FCRA पंजीकरण प्रक्रिया



Apply (FC-3A)
आवेदन

Declare nature
प्रकृति बताएँ



MHA scrutiny
जाँच

Activities checked
गतिविधि



SBI Delhi
account
SBI खाता

Funds come here
धन यहाँ



Renew in 5 yrs
नवीनीकरण

Annual returns
वार्षिक रिटर्न

8 Did you know? क्या आप जानते हैं?



► “Salad bowl” metaphor
credited to **Justice Ruma
Pal**

रूमा पाल

► Art 25–28 = freedom of
religion

अनुच्छेद 25–28



FINANCIAL EXPRESS • 8 OCT 2026

Page 5 • Air Force Day

पृष्ठ 5 • वायुसेना दिवस

Articles covered from this page | इस पृष्ठ से लिए गए लेख

1 IAF: engines & squadrons | इंजन व स्काड्रन

1 pushes indigenous engines, faster inductions amid squadron shortage

The Indian Air Force is pushing for faster development of indigenous fighter engines which could address the squadron shortage of fighter squadrons.

In its annual press conference ahead of Air Force Day, Brigadier General A.P. Singh stated that building a domestic engine programme, including indigenous engines, is essential for India's long-term self-reliance.

Responding to media queries, he said engine development would take time and require sustained national effort, and domestic indigenous programmes are critical to creating a foundation for future readiness. The IAF has also been supporting efforts to integrate Indian engines and systems into its platforms.

The immediate concern, however, remains the shrinking fighter fleet, according to the chief, which is critical to the nation's security. The IAF has been supporting efforts to integrate Indian engines and systems into its platforms.

The immediate concern, however, remains the shrinking fighter fleet, according to the chief, which is critical to the nation's security. The IAF has been supporting efforts to integrate Indian engines and systems into its platforms.



Air Force Day: engines & squadrons

वायुसेना दिवस

IAF pushes indigenous engines, faster fighter inductions amid squadron shortage

The Indian Air Force is pushing for faster development of indigenous fighter engines while also seeking quicker aircraft inductions to address a persistent shortage of fighter squadrons.

At his annual press conference ahead of Air Force Day, Air Chief Marshal A.P. Singh stressed that building a domestic aerospace ecosystem, including indigenous propulsion, is essential for India's long-term self-reliance.

Responding to media queries, he said engine development would take time and require sustained national effort. And described indigenous programmes as critical to creating a foundation for future combat aircraft. The IAF has also been supporting efforts to integrate Indian weapons and systems onto its platforms.

The immediate concern, however, remains the shrinking fighter fleet. According to the chief, delays in aircraft induction were hurting the force, particularly following the retirement of MiG-21s.

The IAF needs to induct around 36-40 fighter aircraft annually over the next few years to arrest the decline and eventually move towards its sanctioned strength of 42 squadrons.

The immediate concern, however, remains the shrinking fighter fleet. According to the chief, delays in aircraft induction were hurting the force, particularly following the retirement of MiG-21s.



The planned fighter mix includes the Tejas Mk-1A, Tejas Mk-2, Rafale and the indigenous AMCA. Singh also highlighted that multiple indigenous programmes need to move forward alongside, but with greater prioritisation and tighter timelines.

With engine availability having contributed to delays in the Tejas Mk-1A programme, the message from the IAF is clear: India needs to build indigenous propulsion capability for the future while accelerating fighter production today to close the operational gap.

Air Force Day (8 Oct): IAF Pushes Indigenous Engines, Faster Inductions



94th Air Force Day
94वाँ वायुसेना दिवस

वायुसेना दिवस: स्वदेशी इंजन, तेज़ लड़ाकू विमान शामिल करने पर ज़ोर – स्क्वाड्रन की कमी बड़ी चिंता

1

Chief's message प्रमुख का संदेश



- ▶ Air Chief Marshal **A.P. Singh**
ए.पी. सिंह
- ▶ **Indigenous propulsion** key to self-reliance
स्वदेशी इंजन
- ▶ Engine delays slowed **Tejas Mk-1A**
तेजस में देरी

2

Squadron gap स्क्वाड्रन की कमी



42

Sanctioned
squadrons
स्वीकृत

36–40

Jets needed per
year
प्रति वर्ष

MiG-21

Retired (2025)
सेवानिवृत्त

1932

IAF founded
स्थापना

3

Future fighter mix भावी विमान



- ▶ **Tejas Mk-1A & Tejas Mk-2 (HAL)**
तेजस
- ▶ **Rafale (France)**
राफ़ेल
- ▶ **AMCA – 5th-gen stealth (ADA)**
AMCA

Air Force Day: engines & squadrons — in depth (1/2)

वायुसेना दिवस — विस्तार से (1/2)

4

Engine story
इंजन की कहानी



- ▶ **Kaveri** engine (GTRE)
— fell short for fighters
कावेरी
- ▶ Tejas uses US **GE F404**; Mk-2 → **GE F414**
GE इंजन
- ▶ AMCA engine: co-development with **Safran** (France)
सफ़रान

5

Air Force Day
वायुसेना दिवस



- ▶ Founded **8 Oct 1932** as Royal Indian Air Force
8 अक्टूबर 1932
- ▶ Motto: “नभः स्पृशं दीप्तम्” — from **Bhagavad Gita**
गीता से
- ▶ Only **Marshal of the IAF**: **Arjan Singh**
अर्जन सिंह

6

Drones rising
ड्रोन का उदय



- ▶ **Heron Mk II**, Searcher II in service
हेरॉन
- ▶ **DRDO TAPAS-BH-201** MALE UAV
तपस
- ▶ **Archer-NG** — armed drone in works
आर्चर-NG

Air Force Day: engines & squadrons — in depth (2/2)

वायुसेना दिवस — विस्तार से (2/2)

7 Closing the fighter gap | लड़ाकू विमान कमी कैसे पूरी हो



Own engines
स्वदेशी इंजन

Long-term
दीर्घकालिक



Faster HAL
output
तेज़ उत्पादन

Tejas Mk-1A
तेजस



36–40 jets/yr
प्रति वर्ष

Arrest decline
गिरावट रोकें



42 squadrons
42 स्क्वाड्रन

Sanctioned
strength
स्वीकृत

8 Did you know? क्या आप जानते हैं?



► One fighter squadron ≈
16–18 aircraft

16–18 विमान

► IAF ranked **No. 3**
among world air powers

विश्व में तीसरी

Asked in Exams — guess the answer! | पहले स्वयं उत्तर सोचें

RRB NTPC 2025 (Graduate CBT-2)

Exam date: 10 Jul 2026 (Shift 1) • Topic: RBI repo rate

At the 57th meeting of the Monetary Policy Committee (MPC) of the RBI held from 29 September to 1 October 2025, what decision was taken on the policy repo rate and stance?

- (a) Repo rate kept at 5.50% with a neutral monetary policy stance
- (b) Repo rate hiked to 6.00% with a hawkish monetary policy stance
- (c) Repo rate kept at 5.00% with a calibrated tightening stance
- (d) Repo rate cut to 4.50% with an accommodative stance

UPSC CSE Prelims 2026 (GS Paper I)

Exam date: 24 May 2026 • Topic: Nobel Prize

‘X’, born in the UK, was conferred the Nobel Prize in 2025. He was a professor in an American university when this prize was announced. Identify ‘X’:

- (a) Michel H. Devoret
- (b) Richard Robson
- (c) John Clarke
- (d) Joel Mokyr

Answers & Explanation | उत्तर व व्याख्या

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- (d) Repo rate cut to 4.50% with an accommodative stance

Answer: (a) Held at 5.50%, neutral stance. Today: hiked to 5.50% from 5.25%, stance “calibrated tightening”.
तब 5.50% पर स्थिर; आज 5.25% से बढ़ाकर 5.50%।

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- (c) John Clarke**
- (d) Joel Mokyr

Answer: (c) John Clarke (UK-born, UC Berkeley) – Physics 2025.
जॉन क्लार्क – भौतिकी 2025।

Asked in Exams — guess the answer! | पहले स्वयं उत्तर सोचें

UPSC CSE Prelims 2026 (GS Paper I)

Exam date: 24 May 2026 • Topic: Wildlife – MP reserves

With reference to Madhav National Park, which of the following statements is/are correct? 1. It was declared a Tiger Reserve in India in 2025. 2. Sakhya Sagar, which is designated as a Ramsar Site, is situated within this National Park. 3. Its area is shared between Madhya Pradesh and Rajasthan.

- (a) 1 only
- (b) 1 and 2
- (c) 2 and 3
- (d) 3 only

RRB Group D 2025

Exam date: 18 Aug 2026 (Shift 1) • Topic: Election Commission

In May 2026, the Supreme Court observed that the Election Commission of India's power to conduct a Special Intensive Revision (SIR) of electoral rolls is derived from which of the following Articles of the Constitution?

- (a) Article 324
- (b) Article 327
- (c) Article 326
- (d) Article 325

Answers & Explanation | उत्तर व व्याख्या

UPSC CSE Prelims 2026 (GS Paper I)

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- (a) 1 only
- (b) 1 and 2**
- (c) 2 and 3
- (d) 3 only

Answer: (b) 58th Tiger Reserve (2025), has Sakhya Sagar; wholly in MP (Shivpuri).
केवल MP में।

RRB Group D 2025

Exam date: 18 Aug 2026 (Shift 1) • Topic: Election Commission

In May 2026, the Supreme Court observed that the Election Commission of India's power to conduct a Special Intensive Revision (SIR) of electoral rolls is derived from which of the following Articles of the Constitution?

- (a) Article 324**
- (b) Article 327
- (c) Article 326
- (d) Article 325

Answer: (a) Art 324 – superintendence, direction & control of elections.
अनुच्छेद 324।

Asked in Exams — guess the answer! | पहले स्वयं उत्तर सोचें

RRB NTPC 2024 (CBT-1)

Exam date: 28 Aug 2025 (Shift 3) • Topic: Pandemic Agreement

The world's first Pandemic Agreement was adopted during which session of the World Health Assembly held in May 2025?

- (a) 77th World Health Assembly
- (b) 76th World Health Assembly
- (c) 78th World Health Assembly
- (d) 79th World Health Assembly

UPSC CSE Prelims 2026 (GS Paper I)

Exam date: 24 May 2026 • Topic: Net-zero 2070

Consider: I. India's LT-LEDS is a crucial tool for achieving net zero emissions by 2070. II. India's BUR-4 (Dec 2024) recorded around 8% decrease in GHG emissions in 2020 over 2019. III. Climate-resilient development necessarily depends on quick and short-term achievement of emission reduction targets. Which relationships are correct? 1. Statement I is empirically supported by statement II. 2. Statement III contradicts the approach implicit in statement I. 3. Statement I and statement III together establish the premise of long-term sustainability.

- (a) 1 only
- (b) 1 and 2
- (c) 2 and 3
- (d) 3 only

Answers & Explanation | उत्तर व व्याख्या

RRB NTPC 2024 (CBT-1)

Exam date: 28 Aug 2025 (Shift 3) • Topic: Pandemic Agreement

The world's first Pandemic Agreement was adopted during which session of the World Health Assembly held in May 2025?

- (a) 77th World Health Assembly
- (b) 76th World Health Assembly
- (c) 78th World Health Assembly**
- (d) 79th World Health Assembly

Answer: (c) 78th WHA, Geneva, May 2025.
78वीं WHA।

UPSC CSE Prelims 2026 (GS Paper I)

Exam date: 24 May 2026 • Topic: Net-zero 2070

Consider: I. India's LT-LEDS is a crucial tool for achieving net zero emissions by 2070. II. India's BUR-4 (Dec 2024) recorded around 8% decrease in GHG emissions in 2020 over 2019. III. Climate-resilient development necessarily depends on quick and short-term achievement of emission reduction targets. Which relationships are correct? 1. Statement I is empirically supported by statement II. 2. Statement III contradicts the approach implicit in statement I. 3. Statement I and statement III together establish the premise of long-term sustainability.

- (a) 1 only
- (b) 1 and 2**
- (c) 2 and 3
- (d) 3 only

Answer: (b) II supports I; III (short-term) contradicts I's long-term approach.
1 और 2।

Test Yourself — Q1–4 | स्वयं को परखें

Q1

Consider: 1. The SDF is the floor of the LAF corridor. 2. MSF rate is 25 bps above the repo rate. 3. MPC decisions need the Governor's consent. Correct?

कथन: 1. SDF, LAF गलियारे का निचला स्तर है। 2. MSF रेपो से 25 bps ऊपर। 3. MPC निर्णय पर गवर्नर की सहमति ज़रूरी। सही?

- (a) 1 and 2 only (b) 2 and 3 only
- (c) 1 and 3 only (d) 1, 2 and 3

Q2

The MPC is constituted under which provision?

MPC किस प्रावधान के अंतर्गत गठित है?

- (a) Article 280 (b) Section 45ZB, RBI Act, 1934
- (c) Banking Regulation Act, 1949 (d) FRBM Act, 2003

Q3

“Chirality”, the theme of the 2026 Chemistry Nobel, refers to molecules that:

“काइरैलिटी” का अर्थ है ऐसे अणु जो:

- (a) Have the same formula but different bonds (b) Are non-superimposable mirror images
- (c) Contain only carbon (d) Are radioactive

Q4

Which drug tragedy is the classic example of one enantiomer being harmful?

किस दवा त्रासदी में एक एनैन्टिओमर हानिकारक निकला?

- (a) Aspirin (b) Penicillin
- (c) Thalidomide (d) Paracetamol

Test Yourself — Q5–8 | स्वयं को परखें

Q5

Veerangana Durgavati Tiger Reserve, India's 3rd cheetah site, is in:

वीरांगना दुर्गावती टाइगर रिज़र्व कहाँ है?

- (a) Sheopur, MP (b) Mandsaur, MP
- (c) Sagar, MP (d) Banda, UP

Q6

Match: Pobitora – ?, Keibul Lamjao – ?, Palk Bay – ?

सुमेलित करें: पोबितोरा, केइबुल लामजाओ, पाक खाड़ी

- (a) Rhino, Sangai, Dugong (b) Sangai, Rhino, Dugong
- (c) Dugong, Hangul, Rhino (d) Rhino, Hangul, Sangai

Q7

Under the CEC & Other ECs Act, 2023, the selection committee has:

2023 अधिनियम में चयन समिति:

- (a) PM, LoP, CJI (b) PM, LoP, a Union Cabinet Minister
- (c) PM, CJI, Speaker (d) President, PM, CJI

Q8

The 'PABS' annex of the WHO Pandemic Agreement deals with:

WHO महामारी समझौते का 'PABS' अनुबंध:

- (a) Patent waivers for drugs (b) Pathogen access & benefit-sharing
- (c) Pandemic bonds (d) Border screening

Test Yourself — Q9–10 | स्वयं को परखें

Q9

Consider: 1. Clinker is the main source of cement emissions. 2. PPC uses more clinker than OPC. 3. Fly ash can replace part of clinker. Correct?

1. क्लिंकर उत्सर्जन का मुख्य स्रोत। 2. PPC में OPC से अधिक क्लिंकर। 3. फ्लाई ऐश क्लिंकर का विकल्प। सही?

- (a) 1 only
- (b) 1 and 3 only
- (c) 2 and 3 only
- (d) 1, 2 and 3

Q10

Under FCRA, foreign contributions must first be received in:

FCRA के तहत विदेशी अंशदान पहले कहाँ आना चाहिए?

- (a) Any scheduled bank
- (b) RBI, Mumbai
- (c) SBI, New Delhi Main Branch
- (d) India Post

Answer Key — Q1–5 | उत्तर व व्याख्या

1-a **1 and 2 only** — SDF 5.25% (floor), MSF 5.75%; MPC decides by majority – Governor has only a casting vote.
1 और 2।

2-b **Section 45ZB, RBI Act, 1934** — Sec 45ZB, RBI Act (amended 2016).
धारा 45ZB, RBI अधिनियम।

3-b **Are non-superimposable mirror images** — Like left & right hands – enantiomers.
अध्यारोपित न होने वाले दर्पण-प्रतिबिंब।

4-c **Thalidomide** — Thalidomide (1950s–61): birth defects.
थैलिडोमाइड।

5-c **Sagar, MP** — Sagar district, Bundelkhand.
सागर ज़िला।

Answer Key — Q6–10 | उत्तर व व्याख्या

6-a **Rhino, Sangai, Dugong** — Assam rhino; Manipur sangai; TN dugong reserve.
गैंडा, संगई, डुगोंग।

7-b **PM, LoP, a Union Cabinet Minister** — Minister replaced CJI (Anoop Baranwal model).
CJI की जगह मंत्री।

8-b **Pathogen access & benefit-sharing** — Share pathogens ↔ share vaccines/benefits.
रोगाणु पहुँच व लाभ-साझा।

9-b **1 and 3 only** — OPC >95% clinker; PPC 65–80%.
1 और 3।

10-c **SBI, New Delhi Main Branch** — Mandatory since 2020 amendment.
SBI, नई दिल्ली मुख्य शाखा।

Myth Buster of the Day — Science & Health | आज का मिथक



MYTH | मिथक

“A medicine and its mirror-image molecule are the same drug – they work the same way.”

कोई दवा और उसका दर्पण-प्रतिबिंब अणु एक ही दवा हैं – दोनों एक जैसा काम करते हैं।



FACT | तथ्य

False. Mirror-image forms (enantiomers) have the same atoms, but our body's enzymes and receptors are “handed” like gloves. One form may heal, the other may do nothing – or harm. Thalidomide in the 1950s: one form eased morning sickness, the other caused birth defects. This year's Chemistry Nobel honours ways to make only the right form.

गलत। दर्पण-प्रतिबिंब रूपों (एनैन्टिओमर) में परमाणु समान होते हैं, पर शरीर के एंजाइम व रिसेप्टर दस्ताने जैसे “हाथ” वाले होते हैं। एक रूप इलाज करे, दूसरा बेअसर या हानिकारक हो सकता है। थैलिडोमाइड: एक रूप ने मॉर्निंग सिकनेस घटाई, दूसरे से जन्म दोष हुए। इस वर्ष का रसायन नोबेल सही रूप बनाने की विधि के लिए है।



Look alike is not the same as act alike – details matter. एक जैसा दिखना, एक जैसा काम करना नहीं – बारीकियाँ मायने रखती हैं।



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