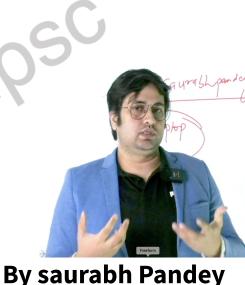
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- Biotechnology and Agriculture
- Aircraft Accident Investigation Bureau (AAIB)
- The Indian Ocean Rim Association (IORA)
- USD-INR Swap Auction
- Mapping → The Mount Lewotobi Laki Laki

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By saurabh

pandey sir

There is progress on GM food crops, says official

Remark comes amid apprehensions over the Environment Ministry's approval for commercial cultivation of GM mustard in 2022; Supreme Court is set to hear pleas on the same next month

Jacob Koshy NEW DELHI

head of a fresh series of hearings in the Supreme Court next month over genetically modified (GM) food crops, the Department of Biotechnology (DBT) said there was "progress" on this front.

"The matter is *sub judice* but GM mustard stories are being taken up again," DBT Secretary Rajesh Gokhale said at a biotechnology event on Friday. The DBT, which has for years funded research and development into transgenic and GM food crops, comes under the Ministry of Science and Technology.

At present, Bt cotton is the only genetically modified crop allowed to be cultivated. Though the Environment Ministry gave its conditional go-ahead for commercial cultivation of GM mustard in 2022, it has not taken off as it was challenged in the Supreme Court.

Science Minister Jitendra Singh who was also at the event, said, "There is so much dynamism in bio-



Awaiting hearing: Petitioners have challenged the Environment Ministry's approval for cultivation of GM mustard. R.V. MOORTHY

technology development that we cannot look at tomorrow through the prism of today."

Hearing from April 15

On March 6, a three-judge Bench of the Supreme Court said it will begin hearing from April 15 petitions challenging the Environment Ministry's approval for cultivation of GM mustard. The court has told all parties to file their written submissions within a week.

A two-judge Bench of the top court, on July 23, 2024, gave a split verdict

on the validity of the Centre's 2022 decision granting conditional approval for the environmental release of GM mustard crop. However, it also directed the Centre to formulate a "national policy" on GM crops. Mr. Gokhale told The Hindu that the DBT had provided "technical inputs" to the Union Environment Ministry, which was formulating the policy and was the "nodal coordinator".

Safety concerns

GM mustard, developed sion agi using public funds, was the gies," th

first transgenic food crop to be approved for farmer fields by the Genetic Engineering Appraisal Committee, a scientific body. However, it wasn't approved for cultivation following safety objections by activist groups.

However, the use of biotechnology to improve food crops – as in the case of GM mustard – is a key focus of the government's BioE3 policy.

This involves manufacturing new kinds of enzymes, pharmacueticals and agricultural products while applying techniques, including genetic engineering.

A report released by the DBT at the event on Friday on the current state of India's 'bio-economy' says that bio-agriculture accounts for 8.1% – the smallest share – of the \$165.7 billion bio-economy in India.

"Valued at \$13.5 billion, this segment enhances agricultural productivity and resilience through genetically modified crops like Bt Cotton and precision agriculture technologies," the report notes.



Biotechnology and Agriculture

Saura



- At present, Bt cotton is the only genetically modified crop allowed to be cultivated.
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It represents a paradigm shift in India's approach to biotechnology, aiming to position the nation as a frontrunner in biomanufacturing and sustainable practices.

Vision of the BioE3 Policy

The core vision of the BioE3 Policy is to transform India into a global leader in biomanufacturing, contributing significantly to a sustainable and inclusive economy. This vision is grounded in the belief that biotechnology can serve as a catalyst for economic growth while addressing pressing environmental challenges.

Global Leadership: Striving for India to be at the forefront of biomanufacturing innovations.

Sustainability: Commitment to eco-friendly practices that ensure long-term economic viability.

Inclusivity: Fostering an inclusive economy where biotechnology benefits all segments of society.

Key Focus Areas

The BioE3 Policy delineates several focus areas crucial for advancing India's biotechnology landscape:

Smart Proteins & Functional Foods:

Harnessing synthetic biology to optimize the production of proteins from diverse sources.

Emphasizing health and wellness through functional food innovations.

High-Value Bio-based Chemicals, Biopolymers & Enzymes:

Development and scaling of bio-based materials to reduce reliance on fossil fuels.

Promoting the production of biodegradable alternatives.

Precision Biotherapeutics:

Advancing technologies like cell and gene therapy to revolutionize treatment options.

Enhancing patient-specific therapeutic approaches.



Climate Resilient Agriculture:



Innovating agricultural technologies to enhance crop resilience against climate change.

Promoting sustainable farming practices to boost productivity.

Carbon Capture & Utilization:

Exploring biotechnological solutions to effectively capture and utilize carbon emissions.

Contributing to global climate action efforts.

Marine and Space Research:

Leveraging biotechnology for research in marine ecosystems and space exploration.

Expanding the horizon of biotechnological applications.



To accelerate the development and commercialization of bio-based products, the BioE3 Policy incorporates several enabling mechanisms:

BioEnablers: Establishment of Bio-Artificial Intelligence Hubs, Biofoundries, and Biomanufacturing Hubs across the nation.

Biomanufacturing Initiative: A focused initiative aimed at transforming manufacturing paradigms to embrace regenerative principles.

Collaboration: Encouraging partnerships between government, academia, and industry to foster innovation and growth.

Anticipated Economic Impact

caul



The implementation of the BioE3 Policy is projected to significantly boost India's bioeconomy, with expectations of tripling its current value to \$300 billion by 2030.

Growth Projections: The policy is expected to catalyze economic development through enhanced biomanufacturing capabilities.

Government Support: Strategic government initiatives will play a vital role in supporting the policy's objectives and fostering a conducive environment for innovation

AAIB to conduct in-depth probe into all tail strikes involving IndiGo aircraft

SAURABH PANDEY

Jagriti Chandra NEW DELHI

With an IndiGo A321 Neo aircraft scraping the runway in Chennai earlier this month – the sixth known incident in two years – the Aircraft Accident Investigation Bureau (AAIB) is now digging into every prior tail strike by the airline.

"Due to the criticality of the recent cases as well as the frequent occurrence of tail strikes at IndiGo, we have decided to investigate them in totality," a senior AAIB official told The Hindu. The official said it will investigating various be factors such as training or procedural lapses, air crew profiling, and any glaring behind the pattern incidents.

On March 8, the tail section of an IndiGo Airbus A321 Neo aircraft from Mumbai hit the runway at



IndiGo flights scraped runways six times in two years, most recently on March 8 in Chennai.

the Chennai airport during landing. The aircraft registered as VT-IBI was also involved in a previous tail strike on September 9, 2024, following which it was grounded for over five months for maintenance until February 6. The aircraft conducted 190 flights before it encountered another tail hit in March.

Both pilots on the Mumbai-Chennai flight were "reasonably" experienced. The flight was an annual proficiency check flight for a captain, under the supervision of a trainer. At the time of landing, the trainer was commanding the flight, said sources.

Significant damage

Initial investigation into the incident was carried out by the Directorate General of Civil Aviation (DGCA), but as there were significant internal damage to the aircraft due to the scraping of its tail section, it was categorised as a "serious incident" and the probe transferred to the AAIB.

The investigation into the September 9 tail strike of IndiGo, which was also categorised as a serious incident, is still under way. Airbus has also submitted its inputs to the probe agency.

Agency Overview



M Agency Overview: The Aircraft Accident Investigation Bureau (AAIB) is a division of the Ministry of Civil Aviation, Government of India, responsible for investigating aircraft accidents and incidents in India.

Head Office Location

Head Office Location: The AAIB's head office is located in Udaan Bhawan at Safdarjung Airport, New Delhi

Historical Context

Historical Context: Before the establishment of the AAIB, the Directorate General of Civil Aviation (DGCA) was responsible for conducting investigations and providing information for inquiries.

International Compliance



International Compliance: The AAIB was created to align with the Standards And Recommended Practices (SARPs) set by the International Civil Aviation Organisation (ICAO).

Establishment Date

The agency was officially established by Order No. AV-15029/002/2008-CG on 26 May 2011.

Regulatory Framework

Regulatory Framework: The Aircraft (Investigation of Accidents and Incidents) Rules, 2012, which came into effect on 5 July 2012, formalized the establishment of the AAIB.

Purpose

Purpose: The AAIB serves to ensure independent and thorough investigations into aircraft accidents and incidents, enhancing aviation safety in India.

Charting a route for IORA under India's chairship



he Indian Ocean Rim Association (IORA) is an apex regional organisation that promotes open regionalism between the countries of Asia, Africa and Australia, connected via Indian Ocean waters. As the Indian leadership prepares to step up to chair IORA from November 2025 – it is now Vice-Chair – it can bring impetus to increased resilience in its governance structure. As IORA chair for the next two years, India will have three priorities: creating funding opportunities to enlarge IORA's budget; integrating technology for data management and policy analysis, and creating maritime-ready courses with academic and research institutions using collaborations.

The Indian Ocean Region and IORA

Geostrategically, the Indian Ocean Region (IOR) is a subset of the Indo-Pacific, yet unique. The Indian Ocean, home to two-thirds of humanity, has a rich and diverse marine life. It also transports 75% of global trade and 50% of daily oil consumption. It produces \$1 trillion in goods and services, and its intra-IORA trade was \$800 billion in 2023. However, this region is also marred by poor development, troubled political systems, climate change-induced disasters, and environmental degradation. It also faces security challenges such as piracy, terrorism, and human and drug trafficking. These supranational issues compel the regional countries to cooperate and find workable solutions.

Therefore, as one of the oldest regional inter-governmental organisations, IORA has been working to further cooperation among its members by facilitating dialogue on cultural and academic exchanges and crucial issues such as disaster risk management. While the United



Pooja Bhatt

is an Associate Professor at O.P. Jindal Global University, Sonepat and teaches maritime geopolitics and regional institutions



New Delhi must strengthen the foundation for meaningful and ground-level governance States, China and the European Union are IORA's dialogue partners, it is mainly driven by only middle and small powers and, therefore, requires a tour de force to become more relevant.

Issues faced by IORA

The Indian Ocean region is relatively free of the great power competition yet has its own set of challenges, including funding. IORA's annual budget is member-dependent. Barring Singapore, the United Arab Emirates (UAE) and France, the member-states are developing Asian and African economies. The budget is indicated to be just a few million. Incidentally, the Indian Ocean Commission, which has only five IO countries, has a \$1.3 billion budget for the 2020-25 time frame. Thus, the funds generated fall short of achieving IORA's growing areas of engagement such as maritime safety and security, fisheries management, disaster risk management, technology and innovation, and the blue economy.

Notably, each of these pillars is resource-intensive and requires constant engagement. One way to generate more funds would be to include private players as consultative partners as they are some of the biggest players in the maritime domain. From shipping companies to marine-related industries such as oil and gas, and marine tourism, these industries are relevant to the blue economy. These industries can be involved in maritime policy-making and also contribute to the IORA fund. The IORA has a small Secretariat with limited staff based in Mauritius. Since government-based structures and institutions have limited bandwidth for data processing, technology can be a big help in improving

governance. Accounting for data is laborious with a large margin of error, and quick and efficient policy analysis would be made easier with digitised record keeping.

Other suggestions for India

India's Security and Growth for All (SAGAR) vision complements IORA's objectives and must leverage its excellent relations with IORA member-states to develop workable solutions. IORA members, such as Australia, have made significant contributions to research in marine science and technology. France and Singapore, have their strength in marine-related technologies, and the UAE and Oman can contribute through investments in sectors where IORA seeks help. Traditional knowledge that exists in coastal and small island nations (Sri Lanka, Seychelles, Mauritius) should be mainstreamed for developing sustainable methods of marine governance. To further productive outcomes, IORA needs sustained and improved collaborative avenues.

Lastly, as marine and maritime-related employment opportunities will only multiply, industrial leaders should collaborate with educational and research institutions to provide problem statements and seek solutions, and to create newer, industry-related courses. Marine accounting is an interdisciplinary course that could help create a base for a blue economy. With the available talent in the region, scholars and practitioners are most likely to work out solutions.

IORA holds immense promise for regional prosperity and India must use its leadership to overcome the existing issues at the institutional level.

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Introduction to IORA

- The Indian Ocean Rim Association (IORA) is a key regional organization promoting open regionalism among countries in Asia, Africa, and Australia.
- India is set to lead IORA in November 2025, currently serving as Vice-Chair, aiming to strengthen IORA's governance.

The Importance of the Indian Ocean Region

Geostrategic Significance: The Indian Ocean Region (IOR) is a dynamic part of the Indo-Pacific, rich in cultural diversity and economic potential.

Economic Contributions:



Trade and Oil Transportation: The Indian Ocean handles 75% of global trade and 50% of daily oil consumption.

Intra-IORA Trade: In 2023, intra-IORA trade reached \$800 billion, highlighting economic interdependence.

Challenges Facing the Indian Ocean Region

Development and Political Issues: The region faces poor development and unstable political systems.

Environmental Concerns: Climate change and environmental degradation threaten marine biodiversity.

Security Challenges: Issues like piracy, terrorism, and human trafficking require collaborative solutions.

IORA's Role in Regional Cooperation



Dialogue and Cultural Exchanges: IORA promotes dialogue and cultural exchanges, fostering cooperation on issues like disaster risk management.

Engagement with Global Powers: While engaging with global powers, IORA is primarily driven by middle and small powers

Current Issues Faced by IORA

Funding Challenges: IORA relies on member contributions, often limited due to developing economies.

Resource-Intensive Engagement Areas: Focus areas like maritime safety and technology innovation require more resources.

India's Leadership in IORA



Priorities for India's Chairmanship:

- Funding Opportunities: Expanding IORA's budget is crucial. Technology Integration: Streamlining operations through technology.
- Maritime Education and Collaboration: Developing courses for future leaders.

Suggestions for Enhancing IORA's Effectiveness

Involving Private Sector: Engaging private players can bolster funding.

Leveraging Traditional Knowledge: Utilizing traditional knowledge for sustainable marine governance.

Conclusion

Saura



IORA holds immense promise for regional prosperity. With India's leadership, there is an opportunity to address challenges and enhance cooperation.

Rupee climbs to a 10-week high

The domestic currency's gain was supported by stronger-than-expected trade data and a rise in foreign exchange reserves following the RBI's USD/INR swap intervention; rupee emerges 'top performer' among Asian currencies so far this month

Lalatendu Mishra Ashokamithran T. MUMBAI

he rupee on Friday climbed to a 10week high of ₹86 against the U.S. dollar due to a surge in foreign inflows into domestic equities and debt markets, analysts said. The domestic currency was trading at ₹85.89 a dollar on January 9, 2025.

The rupee surged nearly 0.1% on Friday, making it the eighth consecutive day of appreciation against the dollar. It closed at ₹85.98 against the U.S. dollar.

On a weekly basis, the

Bullish streak The chart shows the value of the rupee against the dollar since January 1, 2025. The rupee gained by 1.2%, rising for the sixth straight session



rupee surged 1.1% with the appreciation on Friday.

"The rupee's gain was supported by strongerthan-expected trade data and a rise in foreign exchange reserves following the Reserve Bank of India's (RBI) USD/INR swap intervention," said Dilip Parmar, Research Analyst, HDFC Securities.

"The central bank's efforts have paid off, with the rupee emerging as the top performer among Asian currencies so far this month," he said, adding that in the short term, the rupee is expected to receive support at 85.70 and resistance at 86.45.

Jateen Trivedi, Vice President, Research Analyst – Commodity and Currency, LKP Securities said, "Rupee strengthened as FII inflows surged with strong buying figures in recent days." "The Fed's decision to hold rates steady and its forecast for lower interest rates ahead pulled the dollar down, providing significant support to the rupee but major capital market strengthening gives rupee the strong push higher," he added. Equity markets also reported gains on Friday, with frontline indices rising by 0.7%.

The NSE Nifty extended its bullish run for a fifth consecutive session, closing higher by 159 points, or 0.69%, at 23,350. NSE cash market volumes surged dramatically by 53% from the previous day, reaching their highest level since November 25, 2024.



What is a Dollar/Rupee Buy-Sell Swap Auction?

A forex instrument used by the RBI to manage liquidity. Involves a two-step process: buying USD from banks and selling it back later with a premium



Swap Mechanism

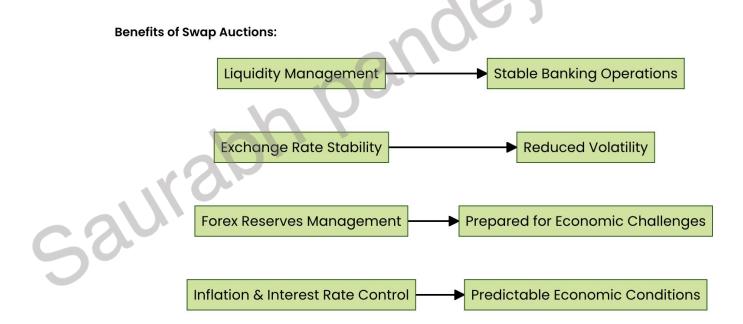
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- In the first leg, participating banks will sell USD to the RBI at the FBIL Reference Rate and receive equivalent Rupee liquidity in their current accounts.
 - The FBIL Reference Rate is a benchmark rate for currency pairs, such as the Indian rupee (INR) against the US dollar (USD), euro (EUR), pound sterling (GBP), and Japanese yen (JPY).
 - **FBIL stands for Financial Benchmarks India Private Limited.**
- In the reverse leg, banks will repurchase USD from the RBI by returning the Rupee funds along with the agreed swap premium

Why Are Swap Auctions Necessary?



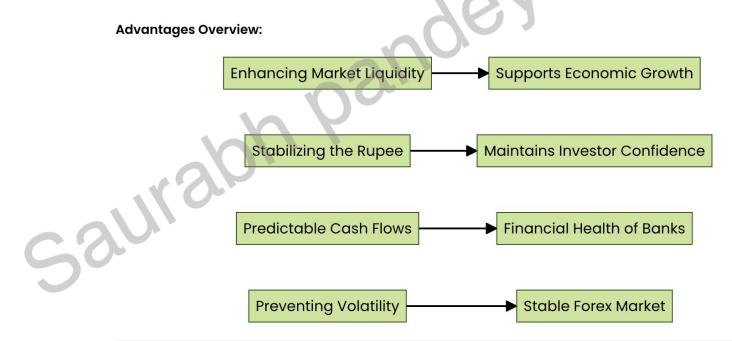
Liquidity Management: Ensures banks have enough cash. Exchange Rate Stability: Reduces USD/INR volatility. Foreign Exchange Reserves Management: Efficient use of reserves. Inflation & Interest Rate Control: Influences economic conditions.



Advantages of the USD-INR Swap Auction



Enhancing Market Liquidity: Supports credit flow. Stabilizing the Rupee: Mitigates pressure during forex outflows. Predictable Cash Flows for Banks: Assists in managing forex positions. Preventing Excessive Volatility: Boosts investor confidence



Challenges of the Swap Auction



Impact on Forex Reserves: Requires careful balancing. Dependence on External Factors: Global conditions affect effectiveness.

Market Reaction Uncertainty: Risk of unintended speculation. Limited Long-Term Solution: Not a permanent fix for liquidity issues

RBI's Upcoming USD-INR Buy/Sell Swap Auction

Key Details: \$10 billion auction, three-year tenor, starting February 28, 2025.

Expected Impact: Short-term stability for the Rupee, potential movement towards 86.30 USD-INR spot rate

Conclusion



The \$10-billion USD-INR swap auction is a significant move for liquidity management.

Offers advantages but also presents challenges.

Saura

Future impacts on the Rupee and economy remain to be seen.



JAKARTA

Indonesia raises alert as Mount Lewotobi Laki Laki volcano erupts



AP



Indonesia's Mount Lewotobi Laki Laki erupted thrice on Friday, sending ash 8,000 metres (26,000 feet) high and injuring several residents in the nearby villages. Authorities raised the eruption alert to the highest level and expanded the danger zone from seven to eight kilometres. Flights to Bali were cancelled. AP

The Mount Lewotobi Laki Laki volcano

San

- SAURABH PANDEY EXECUTION DATE FEILING
- The Mount Lewotobi Laki Laki volcano in south-central Indonesia.
- The volcano on the remote island of Flores in East Nusa Tenggara province has had hundreds of earthquakes
- Indonesia is an archipelago of 270 million people with frequent seismic activity. It has 120 active volcanos and sits along the "Ring of Fire," a horseshoe-shaped series of seismic fault lines encircling the Pacific Basin



Indonesia volcano



Mapping

Sanra



Heathrow Airport, also colloquially known as London Heathrow Airport and named London Airport until 1966, is the primary and largest international airport serving London, the capital and most populous city of England and the United Kingdom



Mapping

South Cascade Glacier in the U.S. Northwest.

South Cascade Glacier sits in a basin at the head of the South Fork of the Cascade river, which flows down ultimately into Puget Sound.

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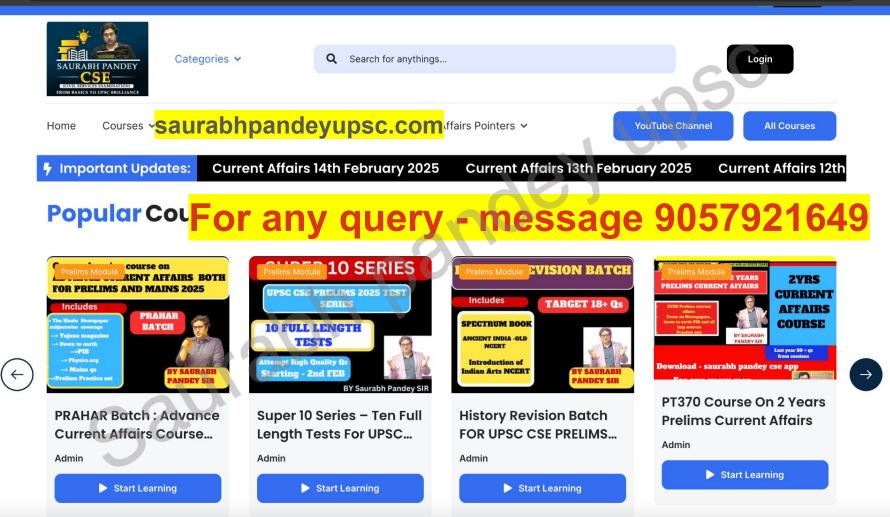
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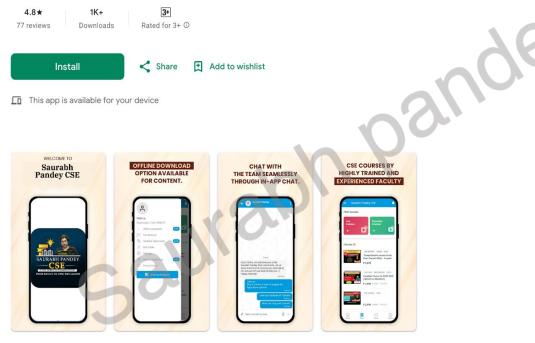






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