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MINISTRY OF
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MK Yadav Sir

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Predictable pause, and a CRR surprise

Rates on hold; 10% incremental CRR to suck ₹1 tn out of market

Gopika Gopakumar
gopika.g@livemint.com
MUMBAI

The Reserve Bank of India's (RBI's) monetary policy committee (MPC) on Thursday kept the policy rate and stance unchanged for the third time in a row, citing the need to watch the evolving inflation trajectory amid adverse weather conditions.

All MPC members voted for a pause in the repo rate at 6.5%. Five out of six members also voted for a continuation of the "withdrawal of accommodation" stance.

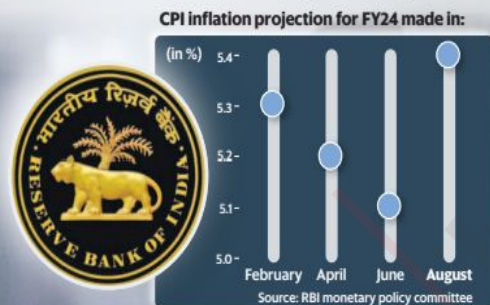
However, in an unexpected move, RBI announced a 10% incremental cash reserve ratio (CRR) for banks on the increase in their net demand and time liabilities (NDTL) between 19 May and 28 July. This is primarily to address the liquidity overhang due to the withdrawal of ₹2,000 notes. This measure is similar to the 100% incremental CRR introduced between 26 November 2016 and 10 December 2016, following the demonetization of high-value notes.

RBI governor Shaktikanta Das said this may suck out nearly ₹1 trillion of liquidity from the system. The total liquidity in the system stood close to ₹3.5 trillion as of 8 August.

"This was considered necessary

CHECKING INFLATION

RBI's MPC cited the need to watch the evolving inflation trajectory amid adverse weather conditions for keeping rates unchanged.



TEMPORARY ARRANGEMENT

DAS said the CRR hike was in the interest of price stability

IT is a temporary measure and will be reviewed on 8 Sep

MPC also revised its FY24 inflation forecast to 5.4% from 5.1%

in the background of liquidity overhang. We considered it desirable in the interest of price and financial stability. It will have an impact on the inflation situation also. It is a temporary measure and will be reviewed on 8 September or earlier," Das said.

MPC also revised its FY24 inflation forecast to 5.4% from 5.1%, raised the September quarter forecast by 100 basis points to 6.2%, and

set a 5.2% forecast for the June quarter of next fiscal year, assuming a normal monsoon.

While the central bank acknowledged that vegetable price increases tend to be transitory and the recent rise could reverse sharply in the coming months, it highlighted other inflation risks from cereals, pulses and global

TURN TO PAGE 6

Context: RBI announced a 10% incremental **cash reserve ratio (CRR)** for banks on the increase in their net demand and time liabilities (NDTL) between 19 May and 28 July.

- This is primarily to **address the liquidity** overhang due to the withdrawal of ₹2,000 notes.

Cash Reserve Ratio (CRR)

- It is a **certain minimum amount of deposit** that the commercial banks have to hold as reserves with the central bank.
- The **percentage of cash required to be kept in reserves**, vis-a-vis a bank's total deposits, is called the Cash Reserve Ratio.
- The cash reserve is **either stored in the bank's vault or is sent to the RBI**.
- Banks do not get any interest** on the money that is with the RBI under the CRR requirements.
- At the time of high inflation, the government needs to ensure that excess money is not available in the economy.
 - To that extent, **RBI increases the Cash Reserve Ratio**, and the amount of money that is available with the banks reduces. This curbs excess flow of money in the economy.
- When the government needs to pump funds into the system, it **lowers the CRR rate**, which in turn, helps the banks provide loans to a large number of businesses and industries for investment purposes.
 - Lower CRR also boosts the growth rate of the economy.



Digital trade issue continues to be a red flag for India

Govt seeks clarity before joining trade pillar under IPEF

SHREYA NANDI
New Delhi, 10 August

The government is divided over its final decision to join the trade pillar under the Indo-Pacific Economic Framework (IPEF), even as member-nations are inching towards finalising agreements on all the four pillars by November.

This is because apart from other sensitive areas such as labour and environment, digital trade continues to remain a major cause for concern and is a 'red flag' for India, people aware of the matter said. "India has also sought some clarity regarding the direction of the negotiations on digital trade from the United States, (since it is a sensitive issue) before firming up a decision on joining the trade pillar negotiations," the person cited above said.

"Even though the first version of the text has been seemingly watered down during negotiations, the digital trade area (in trade pillar) continues to be a red flag for India," the person said.

Under IPEF, India, for the time being, has opted out of the trade pillar, and has an 'observer' status at the moment. While this means that India will have the flexibility of joining the pillar after seeing the final text once the negotiations are over, it also means that it may be losing out on shaping the negotiations with its 'observer' status.

"Since India had last year taken a decision to not join the trade pillar and wanted to wait for the final contours, it is not easy to convince all stakeholders and make them understand why it is also important to be a part of the negotiations," the person said.

Among the 14 countries under IPEF, India is the only nation to have the observer status under the trade pillar. Apart from the US, 13 other members of the IPEF include Australia, Brunei, Fiji, Indonesia, India, Japan, Korea, Malaysia, New Zealand, Philippines, Singapore, Thailand, and Vietnam.

India has been treading cautiously while dealing with sensitive issues such as digital trade. One of the reasons being that India has not been very comfortable giving consent to free flow of data across borders, which has been the top demand for countries such as the US.



CAUSE FOR CONCERN

- IPEF member-nations close to agreements on all four pillars by Nov
- India not comfortable giving consent to free flow of data for all countries
- Govt has opted out of the trade pillar, and has an 'observer' status
- The commerce department will resume inter-ministerial consultations before making a final view

In fact, when the commerce and industry minister announced its decision to not join the trade pillar in September last year, India did not have a legislation of digital personal data protection in place. Besides, it wants to tread cautiously before making any commitments in a plurilateral economic cooperation arrangement.

The digital personal data protection Bill, which was passed earlier this week, has a provision for cross-border transfer of data by all countries, excluding those blacklisted by the government.

"We will work to promote and support, inter alia: (1) trusted and secure cross-border data flows; (2) inclusive, sustainable growth of the digital economy; and (3) the responsible development and use of emerging technologies," according to the zero text of the trade pillar released by the US last year.

INDO-PACIFIC ECONOMIC FRAMEWORK

(Syllabus: GS Paper 3 - Economy)

Context: The government is divided over its final decision to join the trade pillar under the **Indo-Pacific Economic Framework (IPEF)**, even as member-nations are inching towards finalising agreements on all the four pillars by November.

- This is because apart from other sensitive areas such as labour and environment, **digital trade continues to remain a major cause for concern** and is a 'red flag' for India, people aware of the matter said.
- India has also sought some **clarity regarding the direction of the negotiations** on digital trade from the United States, before firming up a decision on joining the trade pillar negotiations.

Cause for Concern

- IPEF member-nations close to **agreements on all four pillars by Nov.**
- **India not comfortable giving consent** to free flow of data for all countries.
- Govt has opted out of the trade pillar, and has an 'observer' status.
- The commerce department will **resume inter-ministerial consultations** before making a final view.

Indo-Pacific Economic Framework (IPEF)

- **About:** The Indo-Pacific Economic Framework is a **unique type of trade pact** that the United States is pushing among the region's governments.
- **Origin:** India and 12 nations **led by the United States** inaugurated the Indo-Pacific Economic Framework (IPEF) on 23rd May 2022 to provide an economic **alternate solution to China's Geostrategic footprint** in the Indo-Pacific area.
- **Partner Countries:** Australia, Brunei, **India**, Indonesia, Japan, the Republic of Korea, Malaysia, New Zealand, the Philippines, Singapore, Thailand, Vietnam and the United States.
 - Within days of its launch, IPEF expanded its membership to the Pacific Island states, with **Fiji** joining the initiative.
- **Objectives:** The IPEF seeks to **strengthen economic relationships** between all of the participating nations to enhance resilience, sustainable development, inclusiveness, economic expansion, fair treatment, and competitive spirit in the Indo-Pacific region.
- **Pillars:** It was proposed as an elaborate framework of rules covering four pillars, namely, **fair and resilient trade, supply chain resiliency, clean energy decarbonisation, and tax and anti-corruption.**

CAG flags Bharatmala bidding irregularities

Says Approval Mechanism Not Strictly Followed

TIMES NEWS NETWORK

New Delhi: The federal auditor, in its latest report, has found irregularities in award of the government's flagship Bharatmala highway projects and said that the implementing agencies violated the tendering processes. The violations include successful bidder not fulfilling tender conditions or bidder selected on the basis of falsified documents and award of works without approved detailed project reports (DPRs) or faulty reports.

The report on "Implementation of Phase-I of Bharatmala Pariyojna", which was submitted to the Parliament on Thursday, also said the implementing agencies were awarding projects without



The report tabled in Parliament said the implementing agencies were awarding projects without ensuring availability of required land and forest clearance

ensuring availability of required land and forest clearance, which are resulting in delayed commencement and completion of projects. The National Highways Authority of India (NHAI) and National Highways and Infrastructure Development Corporation Ltd (NHIDCL) are the implementing agencies. The Comptroller and Auditor

While the original cost of the 34,800 km programme was Rs 5.4 lakh crore, this has crossed Rs 10 lakh crore due to changes in projects and increase in the share of expressway and economic corridors

highways ministry "to have the advantage of the scrutiny at that level". It added that even the appraisal and approval mechanism decided by CCEA was not strictly followed.

The CAG has also flagged that the DPRs prepared by consultants were not appraised with due diligence before their approval.

"Instances of adoption of different specifications by contractors or concessionaires at the time of execution of projects than what were prescribed by detailed project report consultants, highlighted the fact that specifications of

detailed project reports were not found suitable as per site conditions," the CAG said.

On the fund management, the auditor also found that only 75.6% of Cabinet approved length has been awarded while 158% of approved financial outlay had been sanctioned till this March-end. "This has resulted in sanctioned civil cost being Rs 23.89 crore per km as against the CCEA approved cost of Rs 13.96 crore per km and sanctioned pre-construction cost being Rs 8.28 crore per km as against the CCEA approved cost of Rs 1.39 crore per km," it said.

While the original cost of the 34,800 km mega highway development programme was Rs 5.4 lakh crore, this has crossed Rs 10 lakh crore due to changes in projects and increase in the share of expressway and economic corridors. It also said besides increase in requirement of funds, the funds approved for other schemes worth Rs 1.6 lakh crore were being utilised to report the achievement.

BHARATMALA PROJECT

(Syllabus: GS Paper 3 - Infrastructure)

Context: The CAG report has found irregularities in award of the government's flagship **Bharatmala highway projects** and said that the implementing agencies violated the tendering processes.

- The report, titled "**Implementation of Phase-I of Bharatmala Pariyojna**," was submitted to Parliament.

Key Finding of the report

- The violations include **successful bidder not fulfilling tender conditions** or bidder selected on the basis of falsified documents and award of works without approved detailed project reports (DPRs) or faulty reports.
- It highlighted that implementing agencies such as the National Highways Authority of India (NHAI) and the National Highways and Infrastructure Development Corporation Ltd (NHIDCL) were **awarding projects without ensuring the availability of required land and forest clearance**.
- This has resulted in **delays in the commencement** and completion of projects.
- It also identified deficiencies in the appraisal and approval mechanism proposed to the **cabinet committee on economic affairs (CCEA)**.
- **Concerning fund management**, the auditor found that only 75.6% of the Cabinet-approved length has been awarded, while 158% of the approved financial outlay was sanctioned as of March-end.
- This has resulted in a **higher sanctioned civil cost** and pre-construction cost per kilometer compared to the approved costs set by the CCEA.

Bharatmala Project

- **About:** Bharatmala Pariyojana is a new **umbrella program for the highways sector** envisaged by the **Ministry of Road Transport and Highways** that focuses on optimizing the efficiency of freight and passenger movement across the country.
 - Under **Phase-I of Bharatmala Pariyojana**, the implementation of 34,800 km of national highways in 5 years (from 2017 to 2022) has been approved at an estimated outlay of Rs. 5,35,000 crore.

• Key features:

- The Bharatmala project envisions improving the efficiency of the **National Corridor** including the **Golden-Quadrilateral and North, South –East West corridors** by decongesting the choke points through the construction of elevated corridors, bypasses, ring roads, lane expansion, and logistics parks at identified points.
- The project plan includes the **construction of Border Roads of strategic importance** along international boundaries and International Connectivity roads to promote trade with Myanmar, Bangladesh, Bhutan, and Nepal.
- The program has **identified around 26,200 km of Economic Corridors** or routes that have heavy freight traffic.
- **Feeder Corridors** will be developed to address the infrastructure asymmetry that exists in many places.
- All projects implemented under Bharatmala are to be technically, financially, and economically appraised by an empowered Project Appraisal & Technical Scrutiny Committee to be set up in the **National Highways Authority of India (NHAI) and Ministry of Road Transport and Highways (MoRTH)**.
- Emphasis on the **use of scientific and technological planning** for Project Preparation and Asset Monitoring.
- **Satellite mapping** of corridors to identify up-gradation requirements.

Bill to Replace CJ with Cabinet Minister in Panel to Select CEC, ECs Tabled in RS; Oppn Protests

RS Chairman expresses hope of a deal between Treasury & Opposition benches on holding a discussion on Manipur

Rakesh Mohan Chaturvedi
@timesgroup.com

New Delhi: Government on Thursday introduced in the Rajya Sabha a bill that seeks to replace the Chief Justice of India with a Cabinet minister nominated by the prime minister in the selection committee for choosing the chief election commissioner and ECs, virtually giving the dispensation the power to overrule the Leader of the Opposition in the Lok Sabha and hand-pick candidates for these posts.

Law minister Arjun Ram Meghwal introduced The Chief Election Commissioner And Other Election Commissioners (Appointment, Conditions of Service And Term of Office) Bill, 2023, while Opposition members were in the well demanding that a discussion on the situation in Manipur be held. The bill has been introduced after the Supreme Court declared in the Anoop Baranwal vs Union of India case that the appointment of CEC and ECs shall be made on the recommendation of a panel comprising the PM, Leader of the Opposition in Lok Sabha and the Chief Justice of India.

Clause 7 of the bill seeks to alter this provision in the appointment of the CEC and ECs, replacing CJ with a Cabinet minister nominated by the prime minister.

Clause 7(1) states that the CEC and ECs shall be appointed by the President on the recommendation of a selection committee consisting of the prime minister (chairperson), the Leader of the Opposition in the House of the People (or leader of the single largest party in the Lok Sabha) and Union Cabinet minister nominated by the prime minister.

This would ensure that the government has a complete say in the appointment as PM and the nominated Cabinet minister would overrule the LoP in case of a disagreement.

Clause 6 of the bill deals with the search committee for this selection and states that this panel will be headed by the Cabinet Secretary and comprise of two other members not below the rank of secretary of the Government of India, having knowledge and experience in matters relating to elections, "shall prepare a panel of five persons for consideration of the selection committee". John Brittas (CPI-M) objected to Clause 7

Unevenly Balanced

Clause 7 (1) of The Chief Election Commissioner And Other Election Commissioners (Appointment, Conditions of Service And Term of Office) Bill, 2023, says

CEC and ECs shall be appointed by President on the recommendation of a selection committee consisting of the PM (chairperson), the Leader of the Opposition in the House of the People (or leader of the single largest party in the Lok Sabha) and Union Cabinet minister nominated by the PM

Clause 6 says search committee will be headed by the Cabinet Secretary and comprise of two other members not below the rank of secretary of the Government of India

in the House while some Opposition members were of the view that the bill be sent to a select committee of the Rajya Sabha.

Rajya Sabha passed The Pharmacy (Amendment) Bill, 2023, in the din by a voice vote without a discussion.

Meanwhile, Chairman Jagdeep Dhankhar expressed hope that an agreement will be reached between the Treasury and Opposition benches on holding a discussion on Manipur. He mentioned the reported moves by both sides to discuss a "middle path" where the Opposition would give up its demand for a debate under Rule 267 and the government will not insist on Rule 176. Instead, Rule 167 may be invoked which states that a (mutually agreed) resolution be passed after a discussion.

However, with the session ending on Friday and the government not making a firm commitment to this proposal from the Opposition, there is little possibility of a discussion on the situation in Manipur. The government has also made it clear that the prime minister will not break his silence on Manipur and at most home minister Amit Shah will make a statement.

Context: The Union government introduced a Bill removing the Chief Justice of India (CJI) from a panel to select the **Chief Election Commissioner and Election Commissioners**.

- The **Chief Election Commissioner and other Election Commissioners (Appointment, Conditions of Service and Term of Office) Bill, 2023**, was introduced by Law Minister in the Rajya Sabha.

Key Points

- Earlier this year in March, the Supreme Court had ruled that the **selection panel** should comprise the Prime Minister, the Leader of Opposition (LoP) in Lok Sabha and the CJI
- Till the SC ruling, Election Commissioners and Chief Election Commissioners (CECs) had been **appointed by the President** after recommendations by the government.
- According to the Statement and Objectives of the Bill, in case **there is no LoP** in the Lower House of Parliament, the leader of the single largest Opposition party would be considered the LoP.
- At first, a **panel of five persons** would be prepared for consideration of the selection committee, for appointment as the CEC and Election Commissioners.

Election Commission of India (ECI)

- **Constitutional body:** Article 324 of the Constitution provides that the power of superintendence, direction, and control of elections to parliament, state legislatures, the office of the president of India, and the office of vice-president of India shall be vested in the election commission.
- **All India Body:** It is an all-India body in the sense that it is common to both the **Central government and the state governments**.
 - The body administers elections to the **Lok Sabha, Rajya Sabha, State Legislative Assemblies, State Legislative Councils and the offices of the President and Vice President of the country.**

Ministry of Panchayati Raj organizes Two Days National Writeshop on Panchayat Development Index (PDI) Portal for Preparation of Baseline Report and Computation of PDI

Context: Ministry of Panchayati Raj is organizing Two-Days National Writeshop on **Panchayat Development Index Portal** for Preparation of Baseline Report and Computation of Panchayat Development Index from 10th August to 11th August 2023 at Dr. Ambedkar International Centre, New Delhi.

- The Two-Days National Writeshop aims at **emphasizing the prominence of the Baseline Report** for setting the local actions on measurable dimensions to achieve the local targets towards achieving Sustainable Development Goals in rural areas.

Panchayat Development Index (PDI)

- It is a new initiative by the **Ministry of Panchayati Raj** to assess the progress of local development through panchayats, the rural self-government institutions in India.
- The PDI is **based on the concept of Localization of Sustainable Development Goals (LSDGs)**, which aims to align the national and global development goals with the local context and priorities.
- It is designed to be a **compact and comprehensive statistical tool** that captures various aspects of development at the panchayat level.
- It covers nine themes that reflect the **vision of an ideal village**:
 - Poverty-free
 - Healthy
 - Child-friendly
 - Water-sufficient
 - Clean and green
 - Self-sufficient
 - Socially just and secure
 - Well-governed
 - Women-friendly
- The PDI takes into account the **inputs, outputs, and outcomes** of development interventions in each theme.

NATIONAL SOCIAL ASSISTANCE PROGRAMME

(Syllabus: GS Paper 2 - Social Justice)

Rs 79 crore transferred to ineligible beneficiaries under NSAP, finds CAG

This led to several eligible beneficiaries being left out of the scheme

By Shagun
Published: Thursday 10 August 2023



- **National Family Benefit Scheme (NFBS):** In the event of the death of a breadwinner, the family will receive a lump sum assistance of Rs. 20000. The **breadwinner should have been between 18-60 years of age**. The assistance would be provided in every case of the death of a breadwinner in a household.
- **Annapurna Scheme:** This scheme aims to provide food security to meet the requirement of those senior citizens who, though eligible, have remained uncovered under the IGNOAPS. Under the **Annapurna Scheme, 10 kg of free rice** is provided every month to each beneficiary.

Context: Around Rs 79 crore has been transferred to ineligible beneficiaries under the Ministry of Rural Development's **National Social Assistance Programme (NSAP)** between 2017 and 2021, an audit by the Comptroller and Auditor General of India (CAG) has revealed.

- The CAG report **found several irregularities in beneficiary payments**, the most glaring being that all states, except for Haryana and Kerala, did not maintain a database of eligible beneficiaries.
- This led to **several eligible beneficiaries being left out** of the scheme while payments worth several crores were made to ineligible persons.

National Social Assistance Programme

- **About:** It was launched on 15th August 1995. It is under the **Ministry of Rural Development**.
 - It represents a significant step toward the fulfilment of the **Directive Principles in Articles 41 and 42 of the Constitution** recognizing the concurrent responsibility of the Central and State Governments in the matter.
 - In particular, **Article 41 of the Constitution of India** directs the State to provide public assistance to its citizens in case of unemployment, old age, sickness and disablement and in other cases of undeserved want within the limit of its economic capacity and development.
- **Presently NSAP comprises five schemes, namely:**
 - **Indira Gandhi National Old Age Pension Scheme (IGNOAPS):** For individuals aged 60 years and above living Below the Poverty Line. They shall **get Rs. 200 per month** for beneficiaries aged 60-79 and Rs. 500 per month for those 80 years and above.
 - **Indira Gandhi National Widow Pension Scheme (IGNWPS):** Widows aged 40 years and above living Below the Poverty Line. They shall **get Rs. 300 per month** and Rs. 500 for those 80 years and above.
 - **Indira Gandhi National Disability Pension Scheme (IGNDPS):** Individuals aged 18 years and above with more than 80% disability and living below the poverty line. They shall get Rs. 300 per month and Rs. 500 for those 80 years and above.

Villages under Saansad Adarsh Gram Yojana

Context: Indian Navy's indigenous frontline warships INS Sahyadri and INS Kolkata is participating in **Exercise MALABAR 2023** scheduled at/ off Sydney from 11 - 21 August 23 along with ships and aircraft from the US Navy (USN), Japan Maritime Self Defence Force (JMSDF) and the Royal Australian Navy (RAN).

Key Points

- MALABAR series of maritime exercise commenced in 1992 as a bilateral exercise **between Indian Navy and US Navy** and has grown in stature over the years to include four prominent navies in the Indo-Pacific Region.
- The 2020 edition witnessed the maiden participation of the **Royal Australian Navy (RAN)**.
- This year marks the 27th edition of MALABAR which is being **hosted by Royal Australian Navy (RAN)**.
- **MALABAR 2023** is scheduled to be conducted in two phases:
 - The **Harbour Phase** involves wide-ranging activities such as cross-deck visits, professional exchanges, sports fixtures and several interactions for planning and conduct of the Sea Phase.
 - The **Sea Phase** will include various complex and high intensity exercises in all three domains of warfare, encompassing anti-surface, anti-air and anti-submarine exercises including live weapon firing drills.
- The exercise provides an opportunity to the Indian Navy to **enhance and demonstrate interoperability** and also gain from the best practices in maritime security operations from its partner nations.

Other Exercises:

- **India- Japan:** JIMEX (naval exercise), SHINYUU Maitri (air force exercise), and Dharma Guardian (military exercise).
- **India-US:** Yudha Abhyas (Army), Vajra Prahar (Military), Spitting Cobra, SANGAM, RED FLAG, COPE INDIA.
- **India-Australia:** AUSINDEX (Maritime), AUSTRA HIND, Pitch Black
- **Passage Exercises** (PASSEX).

Indian GPS NavIC to be linked to Aadhaar enrolment devices

Jacob Koshy

NEW DELHI

The Navigation with Indian Constellation or NavIC, the seven-satellite system that makes up India's version of the American GPS (global positioning system), will soon be integrated into Aadhaar enrolment devices across the country, the Department of Space (DoS) told the Parliamentary Committee of Science and Technology.

"The department has facilitated successful conduct of field trials, and is providing technical expertise in finalisation of procurement specification of the devices," it said in response to queries by the committee. The committee made its report public on Thursday. Currently, the Aadhaar enrolment kits that are used to collect and verify personal details are linked to GPS.

Context: The **Navigation with Indian Constellation or (NavIC)**, which consists of seven satellites and India's version of the American GPS (global positioning system), will soon be integrated into Aadhaar enrolment devices.

Key Points

- Currently the **Aadhaar enrolment kits** that are used to collect and verify personal details are linked to GPS.
- **NavIC offers two services:** Standard Position Service (SPS) for civilian users and Restricted Service (RS) for strategic users.
- These two services are provided in **both L5 (1176.45 MHz) and S band (2498.028 MHz)**.
- Newer satellites will have an **additional band called L1** that will be compatible with civilian use.

NavIC (Navigation with Indian Constellation)

- **About:** It is an Indian Regional Navigation Satellite System (IRNSS).
- **Origin:** NavIC was originally **approved in 2006 and became operational in 2018**.
- **Developed by:** Indian Space Research Organization (ISRO).
- **Objective:** to provide reliable **position, navigation and timing services** over India and its neighbourhood.
- **IRNSS consists of eight satellites:** 3 satellites in geostationary orbit and 5 satellites in geosynchronous orbit.
 - Total 9 satellites were launched out of which the very first (IRNSS-1A) is partially failed because of some issue in its Atomic Clock.
- **Coverage:** covers the **whole of India's landmass and up to 1,500 km (930 miles)** from its boundaries.
- **Globally certified:** certified by the **3rd Generation Partnership Project (3GPP)**, a global body for coordinating mobile telephony standards.

EL NINO SOUTHERN OSCILLATION

(Syllabus: GS Paper 1 - Geography)

ENSO has affected various parts of India separately in recent decades, says new report; here is how

ENSO has had a greater impact on north India, lesser on central India and relatively constant impact on south India; one of the reasons cited by the study is global warming

NORMAL YEAR



EL NIÑO YEAR



Source: Lantini Taylor depiction based on source data from National Oceanic and Atmospheric Administration (NOAA), National Aeronautics and Space Administration (NASA) and various media reports.

Context: The El Nino Southern Oscillation (ENSO) has had a greater impact on northern parts of India, lesser impact on the central parts and relatively constant impact on the southern parts of the country in recent decades, according to a research paper published in the journal Nature Scientific Reports in August 2023.

El Nino

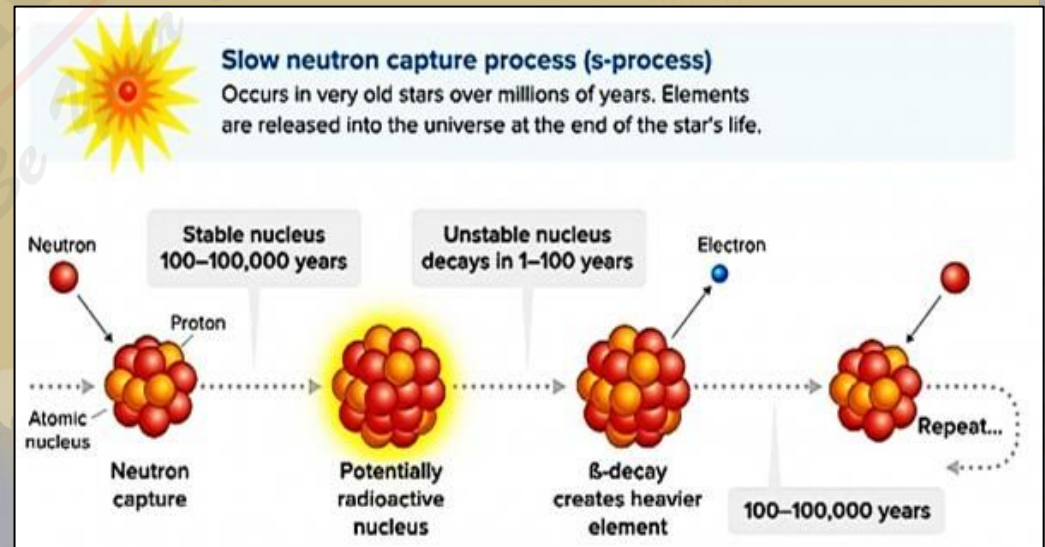
- **About:** It is the name given to the occasional development of warm ocean surface waters **along the coast of Ecuador and Peru**. El Niño events occur irregularly at intervals of 2–7 years, although the average is about once every 3-4 years.
 - After El Nino event weather conditions **usually return back to normal**.
 - However, in some years the trade winds can become extremely strong and an **abnormal accumulation of cold water** can occur in the central and eastern Pacific. This event is called a **La Niña**.
- **Impact on monsoon rainfall in across the globe:** El Nino **impacts ocean temperatures**, the speed and strength of ocean currents, the health of coastal fisheries, and local weather from Australia to South America and beyond.
 - **Rainfall increases drastically** in South America, contributing to coastal flooding and erosion.
- **Impacts on monsoon rainfall in India:** El Nino and Indian monsoons are **inversely related**.
 - The most **prominent droughts in India** – six of them – since 1871 have been El Nino droughts, including the recent ones in 2002 and 2009
 - However, **not all El Nino years led to a drought** in India. For instance, 1997/98 was a strong El Nino year but there was no drought (Because of IOD).
 - On the other hand, a **moderate El Nino in 2002** resulted in one of the worst droughts.
 - **El Nino directly impacts India's agrarian economy** as it tends to lower the production of summer crops such as rice, sugarcane, cotton, and oilseeds.

Unique star discovered that challenges previous understanding of star formation processes

Context: Scientists have discovered a **unique star** named **HE 1005-1439** classified as a **carbon-enhanced metal-poor (CEMP) star**.

Key Points

- The research used **high-resolution spectroscopic data** acquired using High Dispersion Spectrograph (HDS) attached to SUBARU telescope (Japan) to analyze the star's surface chemical composition.
- The team found that the iron content of the star is thousand times less than that of the sun and it is heavily enriched with **neutron-capture elements**.
- The star which defies previous classifications and challenges previous understanding of star formation processes shows signs of having been formed through the combination of **two different neutron-capture processes - the slow (s-) and intermediate (i-) neutron-capture processes**.
- It can help understand how **different star formation processes** influence the elemental composition of stars.
- Elements beyond iron are created due to reactions in nuclear astrophysics called neutron capture processes.
- The **slow (s-) process** is believed to occur in low-mass stars during the asymptotic giant branch (AGB) phase and the rapid (r-) process is believed to occur in Supernovae and Neutron Star mergers.
- One of the proposed sites for intermediate (i-) process is low-metallicity **low-mass AGB stars**.
- Understanding the **relative contributions of these processes** to the elemental composition of stars is important for understanding the chemical evolution of galaxies and the origins of the elements in the universe.



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