



# DAILY CURRENT AFFAIRS

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## Simultaneous Elections

### **Syllabus: GS2/Government Policies and Interventions**

#### News

- Former President Ram Nath Kovind, recently said that holding simultaneous elections would benefit the public and whichever party in power at the Centre.

#### About

- He said the revenue saved can be **used for development work.**
- **The high-level committee, headed by Former President Ram Nath Kovind, was set up by the Law Ministry on September 2, 2023.**

- It will **examine and make recommendations for holding simultaneous elections** to the Lok Sabha, State Assemblies and local bodies.

### **Simultaneous Elections in India (One Nation One Election)**

- Simultaneous Elections refer to the **idea of holding Lok Sabha and State legislative assembly elections together**, with the aim of reducing the frequency of elections and their associated costs.
- Simultaneous elections in India to the Lok Sabha and State Legislative Assemblies were held in the **years 1951-52, 1957, 1962 and 1967**.
  - Thereafter, the schedule could not be maintained and the elections to the Lok Sabha and the State legislative assembly have still not been realigned.
- **The Election Commission in its annual report (1983)** had recommended that a system should be evolved so that elections could be held simultaneously.
- **The Law Commission (170th Report- 1999)** stated that we must go back to the past where the elections to Lok Sabha and all the Vidhan Sabha were held simultaneously.
- **The 79th Report of the Parliamentary Standing Committee (2015)** also favored the idea of the simultaneous elections which was reiterated by a NITI Aayog paper in 2017.

### **Arguments In Favour of One Nation One Election**

- It will **reduce the huge expenditure** incurred for conducting separate elections every year.
- The problem of frequent elections leads to **imposition of MCC over prolonged periods of time which affects the normal governance**. Simultaneous elections can overcome such issues.
- Simultaneous elections **will free the crucial manpower** which is often deployed for prolonged periods on election duties
- The **focus on governance will increase**, instead of being constantly in election mode.

### **Arguments Against One Nation One Election:**

- **Logistical Challenges:** All states and the central government face massive logistical challenges including coordinating the schedules, resources etc.
- **Disadvantage for regional parties:** It may help the dominant national party or the incumbent at the Centre at the cost of regional parties and regions issues can be overshadowed by the national issues.
- **Financial Implications:** Conducting elections is expensive and requires significant resources like manpower.
- **Issue of dissolution:** Prematurely dissolution on account of a **vote of no-confidence** becomes difficult to deal with in case simultaneous elections are there.

### **Way Ahead**

- Considering the fact that **frequent elections led to a huge burden on human resources and affected the development process**, a **sustained debate is required** on the subject.
- All political parties need to arrive at a consensus on the issue of simultaneous elections before taking any step towards it.

Source: [IE](#)

## India and Australia 2+2 Ministerial Dialogue

**Syllabus: GS 2/International Relation**

### **In News**

The second India-Australia 2+2 Dialogue was held in New Delhi.

- The inaugural India-Australia 2 plus 2 Ministerial Dialogue was held on 11 September 2021.

### **Do you know ?**

- India has 2+2 ministerial dialogues with only a handful of countries, including the US, Japan and Russia.
  - The latest edition of India-US 2+2 dialogue was held in New Delhi on November 10

### **Focused Areas of the dialogue**

- They exchanged views on deepening multifaceted ties in several areas.
  - These include **defence** and **security**, trade and investment, critical minerals, energy, climate change, Science and Technology, space, education and people to people linkages.
  - Regional and global issues were also discussed.
    - The two sides also discussed pressing geopolitical issues, including the crisis in West Asia and the war in Ukraine.
- They discussed cooperation for joint research in underwater technologies, and collaboration between defence start-ups of both the countries, including solving challenges jointly.

### **India and Australia relations :Brief Overview**

- **Historical Perspective:** The historical ties between India and Australia started immediately following European settlement in Australia from 1788.
  - They established diplomatic relations in the pre-Independence period, with the establishment of India Trade Office in Sydney in 1941.
- **Strategic :** Australia and India upgraded bilateral relationship from '**Strategic Partnership**' in 2009 to **Comprehensive Strategic Partnership (CSP)** in 2020.

- **Bilateral mechanisms:** Over the years, an array of institutional mechanism has been put in place to promote bilateral cooperation include high level visits, Annual Meetings of Prime Ministers, Foreign Ministers' Framework Dialogue, 2+2 Defence and Foreign Ministers' Dialogue, Joint Trade & Commerce Ministerial Commission, Defence Policy Talks, Australia-India Education Council, Defence Services Staff Talks, Energy Dialogue, JWG's on different issues etc.
- **High-Level Exchanges:** India's relations with Australia reached a new high with the first ever visit of the President of India H.E. Shri Ram Nath Kovind to Australia on 21- 24 November 2018.
  - The two-way Prime Ministerial visits in 2014 gave significant momentum to the bilateral relationship.
- **Economic and Trade Relationship:** They have commercial ties dating back to the 18th century, when India played a central role in nourishing the young colony and trade with Australia came to be an important element in the operations of the East India Company in Bengal.
  - As part of its efforts to develop a strong economic relationship with India, the Australian Government commissioned the India Economic Strategy to 2035 to define a pathway for Australia to unlock opportunities offered by Indian Economic growth.
  - The India-Australia Economic Cooperation and Trade Agreement ("**IndAus ECTA**") was signed .
  - **India-Australia Joint Ministerial Commission (JMC)** was established in 1989 to enable interaction at a government and business level on a range of trade and investment related issues.
  - **Bilateral Trade:** India is Australia's sixth largest trading partner.
    - Bilateral trade between India and Australia increased from US\$ 22.2 billion in 2021 to US\$ 31.4 billion in 2022, registering a growth of 41%. India's total exports to Australia grew by 38% from US\$ 6.3 billion in 2021 to US\$ 8.7 billion.
    - **India's main exports** to Australia are refined petroleum, medicaments (incl. veterinary), pearls & gems, jewellery, made-up textile articles, while
    - **India's major imports** are coal, confidential items of trade, copper ores & concentrates, natural gas, non-ferrous waste & scrap, ferrous waste & scrap and education related services.
- **Civil Nuclear Cooperation:** A Civil Nuclear Cooperation Agreement between the two countries was signed in September 2014
  - The Australian Parliament passed the "Civil Nuclear Transfer to India Bill 2016" on 01 December 2016 which allows Uranium mining companies in

Australia to fulfil contracts to supply Australian uranium to India for civil use .

- **Defence Cooperation:** In November 2014, both sides decided to extend defence cooperation to cover research, development and industry engagement and agreed to hold regular meetings at the level of the Defence Minister, and conduct regular maritime exercises .
  - The first-ever Bilateral Maritime Exercise, **AUSINDEX** was conducted in Visakhapatnam and the Bay of Bengal in September 2015.
  - Australia participated in **Exercise Milan** in 2018, 2020, 2021 and 2022.
  - Indian ships participated in **Kakadu**, the biennial Exercise of the Australian Navy (in which 27 nations participated)
  - Indian Air force participated in **Exercise PITCHBLACK** in 2018 and in September 2022.
  - India participated in the French-led naval exercises **La Perouse** in April 2021 in Bay of Bengal along with Australia, USA and Japan.
  - India and Australia signed a Mutual Logistics Support agreement in 2020, and the two Navies signed the 'Joint Guidance for the India-Australia Navy to Navy Relationship' document in August 2021.
- **Agriculture, Science & Technology :** India-Australia S&T cooperation was formalized through the Inter-Governmental Agreement signed in October 1986 .
- **Education, Sports, Art & Culture:** The number of Indian students currently enrolled for studying in Australia is estimated at around 118,869 (July 2023), making Indian students the second largest cohort of foreign students in Australia
  - India and Australia signed an Educational Exchange Programme (EEP) in 2003.
    - Cricket is something which has kept us connected for ages...and now tennis and movies are other connecting bridges,”
- **Consular Cooperation, People to People linkages :** The Mutual Legal Assistance Treaty (MLAT) and the Extradition Treaty between India and Australia, which were signed in June 2008, have been ratified by both Governments, and have entered into force on 20 January 2011
  - The Indian community in Australia continues to grow and importance, with the population of about 9.76,000 (Census 2021). After England, India is the second largest migrant group in Australia .
- **Quad:** India and Australia's partnership in the Quad format has been beneficial for the Indo-Pacific Region.
  - The first-ever Quad Leaders' Virtual Summit held on 12 March 2021 saw the participation of Prime Ministers of India, Australia, Japan and the President of USA.
- **Latest Developments:** India and Australia are currently engaged in advanced negotiations for a comprehensive economic cooperation agreement (CECA) that

will build on the Economic Cooperation and Trade Agreement (ECTA) signed in April 2022.

Source: [BS](#)

## Governor's Power to Withhold Bills

### **Syllabus: GS2/Structure, organisation and functioning of the Executive** **News**

- The Supreme Court recently held that the **Constitution does not provide the Governor of Tamil Nadu any “discretion” to withhold the 10 Bills “repassed” by the State Legislative Assembly.**

### **Background**

- The Bills had been sent for approval to the Governor’s office in the period between **January 2020 to April 2023**. The State had complained to the court that the Governor was holding them back indefinitely.
- The Governor had withheld assent and “returned” the Bills to the House only recently on November 13.
- The Tamil Nadu Assembly had convened a special session on November 18 to re-pass the Bills and send them back to the Governor for approval.

### **About the ruling**

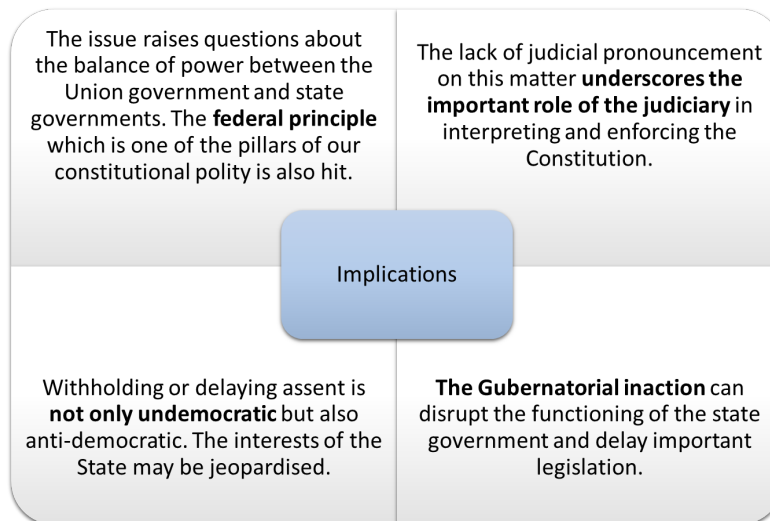
- **Once they have been re-passed, the Bills are put in the same footing as Money Bills.** Then the Governor cannot reject it, said Chief Justice of India D.Y. Chandrachud.
- The court also acknowledged the State’s submission that the **Governor, having withheld assent and sent back the Bills once, cannot refer the reiterated Bills to the President.**

### **Process of granting assent**

- Assent of the Governor is **necessary for a Bill passed by the legislature to become law**. The Constitution is, however, categorical about **Money Bills**, which are automatically considered to have a Governor’s assent.
- When a Bill passed by both Houses of the Legislature is presented to the Governor for his assent, he is empowered under **Article 200** of the Constitution to exercise any of four alternatives:
  - **To give assent**
  - **Withhold assent**
  - **Return the Bill to the Legislative Assembly for reconsideration:**  
If the Governor withhold assent, he should return the Bill ‘**as soon as possible,**’ requesting the Assembly to reconsider the proposed law.

In *Durga Pada Ghosh v. State of West Bengal (1972)*, the Supreme Court interpreted the phrase ‘as soon as possible,’ to mean “as early as practicable without avoidable delay”.

- However, the **Assembly is not obligated to accept these recommendations** and can pass the Bill again in its original form.
  - This time, the **Governor is constitutionally bound to either give assent to it or reserve it for the President’s consideration.**
  - This provision affirms the **primacy of the legislature** comprising elected representatives of the people over the constitutional head of the State.
- **Reserve it for the consideration of the President:** A Bill can be reserved for the President’s consideration **if the Governor is of the opinion that it would endanger the position of the concerned High Court** by whittling away its powers.
- However, there is **no timeline prescribed for Governors to make a decision with regard to a Bill.** This loophole is often misused to delay legislation — a manoeuvre called a ‘**pocket veto**’.
- Similarly, **no timeline has been outlined for the President to decide on the outcome of a Bill.**
  - There is, however, **a time period of six months prescribed for the State Assembly to reconsider a Bill if the President decides to refer it back to the House.**



### Related Supreme Court Rulings

- **Shamsher Singh v. State of Punjab (1974):** Although the Constitution vests the executive power of the State in the Governor, he **can act only on the ‘advice’ of the Council of Ministers, with the Chief Minister** as the head of the Council.
- **Purushothaman Nambudiri v State of Kerala (1962):** Since there is **no time limit** prescribed under Articles 200 for the Governor to give his assent, the **Constitution framers did not intend for a Bill pending assent to be at risk of lapsing on dissolution of the House.**
- **Nabam Rebia and Bamang Felix v. Dy. Speaker (2016):** Governor exercises discretion only with regard to whether a Bill ought to be reserved for consideration of the President or not.
  - It also held that only those matters where the **Constitution expressly permits the Governor to act autonomously** cannot be challenged before a court of law.

### What needs to be done?

- The **1988 Sarkaria Commission report on Centre-State relations** recommended that delay by Governors in assenting to Bills could be avoided by ensuring that **there is prior consultation with the Governor** at the stage of the drafting of the Bill itself, and **by prescribing time limits** for its disposal.
- **The National Commission to Review the Working of the Constitution, 2000** reiterated this view by highlighting that there should be **a time limit, preferably six months**, to give assent or to reserve a Bill for consideration of the President by the Governor and **three months** within which the President should decide if the Bill is reserved for his consideration.
- Time and again, the **Court has cautioned Governors from indefinitely withholding assent to Bills** as it subverts the federal structure and obfuscates governance.



*“Real power vests with the elected representatives of the people in a parliamentary form of democracy. The Governor, as an appointee of the President, is a titular head of the State...The power to take decisions affecting the governance of the State or the nation is essentially entrusted to the elected arm of the state.”*

**Supreme Court**

Source: [TH](#)



# National Pharmacy Commission Bill

**Syllabus: GS2/Health/Education**

## In News

- The Union Health Ministry invited comments from the public and stakeholders on the proposed **National Pharmacy Commission Bill, 2023**.
  - It seeks to repeal the **Pharmacy Act of 1948** and replace the **Pharmacy Council of India with a national commission**.

## Key Highlights of the Bill

- **Aim:** To improve access to affordable, high-quality pharmacy education, and ensure the availability of pharmacy professionals nationwide and seeks to promote equitable healthcare.
- **National Pharmacy Commission:** The Bill proposes to constitute a commission with its head office in Delhi.
  - It shall consist of a Chairperson, thirteen ex officio Members and fourteen part-time Members.
- **Boards:** The following boards will work under the supervision of the Commission:
  - the Pharmacy Education Board;
  - the Pharmacy Assessment and Rating Board; and
  - the Pharmacy Ethics and Registration Board.
- **National Register:** The Pharmacy Ethics and Registration Board will maintain a **National Pharmacy Register** which will have details of pharmacy professionals to ensure transparency.
- **Periodic Assessment:** The Bill also calls for a periodic and transparent assessment of pharmacy institutions.
- **Promote Research and Establish Standards:** It also encourages professionals to integrate the latest research into their work, and uphold high ethical standards and establish an effective grievance redressal mechanism for relevant matters.

## Need for the Bill

- To provide for a pharmacy education system that **ensures availability of adequate and high quality pharmacy professionals** in all parts of the country.
- To promote **equitable and universal healthcare** and make services of pharmacy professionals accessible to all the citizens.
- To promote **national health goals**.

## Pharmaceutical Sector in India

- The Indian Pharmaceuticals industry plays a prominent role in the global pharmaceuticals industry.
- India is a **major exporter of Pharmaceuticals**, with over 200+ countries served by Indian pharma exports.
- India supplies over **50% of Africa's requirement for generics**, ~40% of generic demand in the US and ~25% of all medicine in the UK.
- India also accounts for **~60% of global vaccine demand**, and is a leading supplier of DPT, BCG and Measles vaccines.
- **70% of WHO's vaccines** (as per the essential Immunization schedule) are sourced from India.

#### **Pharmacy Act of 1948**

- It governs the **pharmacy profession** in the country.
- The primary purpose of this act is to **regulate the education and practice of pharmacy** to ensure the quality, safety, and efficacy of drugs and pharmaceuticals.
- The act provides for the establishment of the Pharmacy Council of India, a statutory body constituted in 1949, to regulate the education and practice of pharmacy in India.

Source: [TH](#)

## **Emissions Gap Report 2023**

**Syllabus: GS3/Environmental Impact Assessment**

### **In News**

- **The United Nations Environment Program (UNEP)** has released the **14th edition of Emissions Gap Report 2023**.
  - World leaders will soon meet in Dubai for the **annual U.N. climate summit COP28** with the aim of keeping the **Paris Agreement** warming target of **1.5°C** alive.

### **About the Report**

- It is UNEP's spotlight report launched **annually in advance of the annual Climate negotiations**.
- It **tracks the gap** between where global emissions are heading with current country commitments and where they ought to be to limit warming to 1.5°C.
- Each edition **explores ways to bridge the emissions gap**.
- The report assessed countries' **Nationally Determined Contributions (NDCs)**, which they are **required to update every five years**, to determine how much the world might warm if these plans were fully implemented.

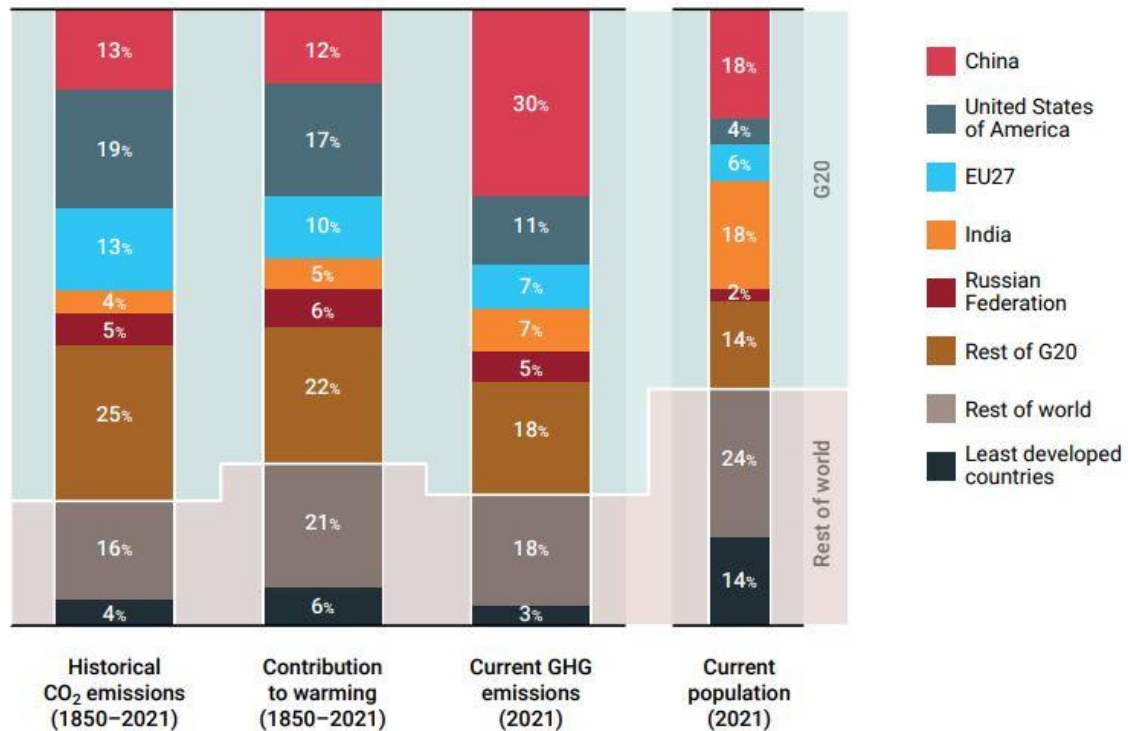
**About The United Nations Environment Program (UNEP)**

- It is the **leading environmental authority** in the United Nations system established in **1972**.
- **The UN Environment Assembly** is the policy-making organ of UNEP.
- **Headquarter:** Nairobi, Kenya.
- **Major Reports:** Global Environment Outlook, The Rise of Environmental Crime Report, Actions on Air Quality, Frontiers Report, Adaptation Gap Report.

### **Major Highlights**

- **Increase in Emissions:** Global GreenHouse Gases (GHG) emissions increased by **1.2 percent from 2021 to 2022**.
- **Breach of 1.5 Degrees:** As many as **86 days** this year so far have already **breached the 1.5 degree Celsius temperature threshold**.
- **Global Emissions Trajectory:** Countries' current emissions pledges to limit climate change would still put the world on track to **warm by nearly 3 degrees Celsius this century**.
  - The anticipated level of warming is slightly **higher than the 2022 projections**, which then pointed toward a **rise of between 2.4°C and 2.6°C by 2100**.
  - Even in the most optimistic emissions scenario, the **chance of now limiting warming to 1.5°C is just 14%**.
- **Policy Recommendations:** The world is heading for a temperature rise far above the Paris Agreement goals unless countries **deliver more than they have promised**.
  - Planet-warming greenhouse gas emissions **must fall by 42% by 2030** to hold warming at 1.5°C.
- **Conclusion:** These findings underline that immediate and unprecedented mitigation action in this decade is essential.
  - Over-complying with current NDC targets for 2030 will enable countries to put forward more ambitious mitigation targets for 2035 in their next NDCs.

**Current and historic contributions to climate change**  
(% share by countries or regions)



### India's Nationally Determined Contribution (NDCs) Goals

- The 2015 NDC comprised eight goals; three of these have **quantitative targets upto 2030** namely:
  - **cumulative electric power installed capacity** from non-fossil sources to **reach 40%**;
  - reduce the emissions intensity of GDP by **33 to 35 percent** compared to 2005 levels and;
  - creation of an **additional carbon sink of 2.5 to 3 billion tonnes** of CO<sub>2</sub> equivalent through additional forest and tree cover.
- As per the **updated NDC**, India now stands committed to reduce **Emissions Intensity of its GDP by 45 percent by 2030**, from 2005 level and achieve about **50 percent** cumulative electric power installed capacity from non-fossil fuel-based energy resources by 2030.

Source: [TH](#)

## NASA's Deep Space Optical Communications (DSOC)

**Syllabus: GS3/Science and Technology**

## News

- NASA's Deep Space Optical Communications (DSOC) experiment has successfully transmitted data via laser to and from beyond the Moon for the first time.

## About

- NASA's DSOC experiment has beamed a **near-infrared laser** encoded with test data from nearly **10 million miles** to the Hale Telescope in San, California. This is the farthest-ever demonstration of optical communications.
- The DSOC experiment has the potential to revolutionize spacecraft communication. It was attached to the recently launched **Psyche spacecraft**.
- It is configured to send high-bandwidth test data to Earth during its two-year technology demonstration as Psyche travels to the main asteroid belt between Mars and Jupiter.
- NASA's Jet Propulsion Laboratory in Southern California manages both DSOC and Psyche.

## Significance

- The DSOC experiment aims to demonstrate **data transmission rates 10 to 100 times greater** than the state-of-the-art radio frequency systems used by spacecraft today.
- Both radio and near-infrared laser communications utilize electromagnetic waves to transmit data, but near-infrared light packs the data into significantly tighter waves, enabling ground stations to receive more data.
- The success of DSOC has paved the way toward higher-data-rate communications capable of sending scientific information, high-definition imagery, and streaming video sending humans to Mars.

## Psyche Spacecraft

- Psyche is a NASA mission to study a metal-rich asteroid with the same name, located in the main asteroid belt between **Mars and Jupiter**.
- The mission was launched in **2023**.
- This is NASA's first mission to study an asteroid that has more metal than rock or ice.

Source: [TOI](#)

# Facts In News

## Fact Check Unit (FCU)

### **Syllabus: GS2/ Governance**

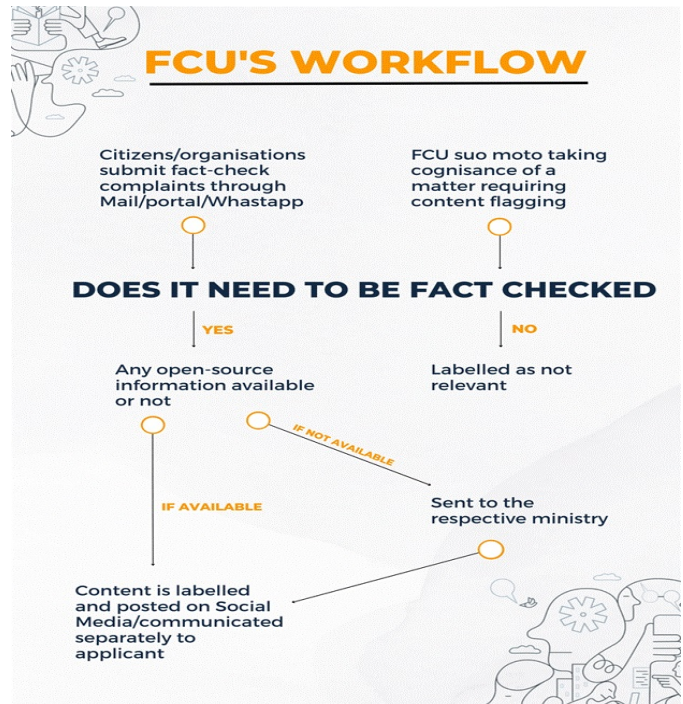
#### **Context**

- The Madras High Court adjourned a public interest litigation petition filed against the Tamil Nadu's Fact Check Unit (FCU).

#### **About**

- FCU is established to assess the accuracy and truthfulness of information.
- It makes sure that only reliable and verified information is available to the public and prevents fake news from spreading.
- According to law, FCU could be created only by the Centre under the **Information Technology Act**.
- Tamil Nadu established Fact Check Unit with *suo motu* powers to deal with 'fake news' related to the state government.
- However it is challenged in court as it can be used by the state government curbing freedom of speech.

**Source:** TH



## PM Awas Yojana-Gramin (PMAY-G)

### **Syllabus: GS2/ Welfare Schemes**

#### **Context**

- Recently, Pradhan Mantri Awaas Yojana – Gramin (PMAY-G) has completed 7 years on 20th November, 2023.

#### **About**

- **Ministry Involved:** Ministry of Rural development.
- **Aim:** To provide a pucca house with all the basic amenities to all rural families achieving the objective of “**Housing for All**”.
- It is a restructured form of the earlier rural housing scheme Indira Awaas Yojana (IAY).
- **Beneficiaries:** Beneficiaries are selected on the basis of - Socio Economic Caste Census 2011, Gram Sabha, and geo-tagging.

- **Funding:** Central and State Governments fund the project in the ratio 60:40 in plain areas and 90:10 for North Eastern and hilly states.

#### **Do you Know?**

- The Ministry of Housing and Urban Affairs is the implementing ministry for the Pradhan Mantri Awas Yojana – Urban.

**Source:** TH

## **China-Myanmar Economic Corridor (CMEC)**

**Syllabus: GS2/International Relations**

### **In Context**

- Recently, China is “prioritising” the extension of the **China-Myanmar Economic Corridor (CMEC)** to Sri Lanka.

### **About**

- CMEC was officially launched in **2018** as a framework for bilateral cooperation between **China and Myanmar**.
- It aims to improve connectivity between **southwestern China (particularly Yunnan Province)** and Myanmar through the development of transportation infrastructure, including roads, railways, and ports.
- It builds upon historical trade and economic ties between the two nations and seeks to modernize and expand infrastructure networks in the region.
- It is an indication that China is looking to scale up the **Belt and Road Initiative (BRI) project in South Asia**, with the extension to Sri Lanka.
- CMEC, being the most **recent addition among the six land corridors** within the Belt and Road Initiative (BRI), has gained prominence, displacing the previous focus on the **Bangladesh China India Myanmar (BCIM) corridor**.
  - **Other land corridors include:**
    - China-Pakistan Economic Corridor (CPEC)
    - China-Central Asia-West Asia Economic Corridor (CAWAEC)
    - China-Mongolia-Russia Economic Corridor (CMREC)
    - Bangladesh-China-India-Myanmar Economic Corridor (It has been dropped of as part of BRI)
    - China-Indochina Peninsula Economic Corridor
    - New Eurasian Land Bridge
- The **corridor's proximity to the Indian Ocean** and the strategic location of Myanmar & Sri Lanka, make it significant for China's long-term strategic interests.
  - It provides China with an alternative trade route that bypasses the **Malacca Strait**, a key maritime choke point.

### **Belt & Road Initiative of China**



- It is a comprehensive **infrastructure and economic development project** initiated in 2013 by China.
- BRI draws inspiration from ancient trade routes like the **Silk Road and the Maritime Silk Road**, which facilitated cultural and economic exchanges between China and other regions in the past.
- It covers a vast geographical area, encompassing over 70 countries across Asia, Europe, Africa, and Oceania. It includes both land and maritime routes.
- It aims to enhance physical and digital connectivity through the construction of roads, railways, ports, airports, and telecommunications networks.
- It includes financial components such as the Silk Road Fund and China's recent Global Development Initiative to support infrastructure financing.
- It has faced criticisms related to debt sustainability, environmental impact, transparency, and concerns about China's geopolitical intentions.



**Source:** [The Hindu](#)

## Ladakh secures GI tag for Sea Buckthorn

**Syllabus:** GS3/ Economy

### **Context**

- After GI Tag for **Apricot (Raktsey Karpo)**, **Pashmina**, and **Ladakhi Wood Carving**, the Geographical Indication Registry, operating under the Ministry of Commerce & Industry, has officially granted the **GI tag to the Ladakh Sea Buckthorn**.

### **About Sea Buckthorn**

- Sea buckthorn (*Hippophae rhamnoides*) is a versatile plant with a widespread presence in Europe and Asia.
- **Natural Habitat :**
  - In India, it thrives above the tree line in the Himalayan region, particularly in arid zones like the cold deserts of Ladakh and Spiti.
  - The shrub's small orange or yellow berries are sour but boast high vitamin content, notably vitamin C.



- Withstanding temperatures from **minus 43 degrees Celsius to 40 degrees Celsius**, sea buckthorn is recognized for its **drought-resistant nature**.
- **Significance:**
  - **Medicinal use:** Every part of the plant—fruit, leaf, twig, root, and thorns—has been employed for medicinal purposes, as a nutritional supplement, as fuel, and even for fencing.
  - **Ecological Impact:** It provides sustenance for various bird species during periods of limited food sources. Additionally, the leaves serve as protein-rich fodder for cold desert animals like sheep, goats, and double-humped camels.
- **Popular Names:**
  - Affectionately known by several names such as the '**Wonder Plant**,' '**Ladakh Gold**,' '**Golden Bush**,' or the '**Gold Mine**' of cold deserts.

#### **Geographical Indication (GI) Tag**

- **About:**
  - GI or Geographical Indication Tag is used for products which have specific geographical origin or have qualities that can be attributed specifically to the region.
  - A GI is primarily an agricultural, natural or a manufactured product (handicrafts and industrial goods) originating from a definite geographical territory.
- **Act in India:**
  - In India, Geographical Indications registration is administered by the **Geographical Indications of Goods (Registration and Protection) Act of 1999**.
  - Once a product gets this tag, any person or company cannot sell a similar item under that name.
  - This tag is valid for a period of **10 years** following which it can be renewed.
- **Benefits of GI Tag:**
  - It confers legal protection to Geographical Indications in India
  - It Prevents unauthorized use of a Registered Geographical Indication by others
  - It provides legal protection to Indian Geographical Indications which in turn boost exports.
  - It promotes the economic prosperity of producers of goods produced in a geographical territory.

**Source: TH**

## **Glyphosate**

**Syllabus:GS3/Agriculture**

## News

- The EU allows use of glyphosate for 10 more years.

## About

- Glyphosate is a widely used **herbicide** that controls broadleaf weeds and grasses.
- Its usage became popular in the country after the illegal cultivation of **herbicide tolerant (Ht) BT cotton** started.
- Glyphosate and its formulations are widely registered and currently used in more than 160 countries, including the EU and the USA.

## Risks associated with Glyphosate

- It is possible that glyphosate residues can occur in food products. It also has a potential link to **cancer in humans**.
- It is also a cause of the **death of important insects**, such as bees. Biologists have sounded the alarm over the serious decline in insect populations that affect species diversity.

**Source: ET**

## Gamma-ray Burst

### **Syllabus:GS3/Science and Technology**

## News

- A gamma-ray burst (GRB) from a star's supernova explosion in a galaxy almost two billion light-years away has created disturbance in Earth's ionosphere.

## A Gamma-ray Burst (GRB)

- It occurs when the core of a massive star runs out of nuclear fuel, collapses under its own weight, and forms a black hole.
- GRBs that last less than two seconds are caused by the **merger of two neutron stars or the merger of a neutron star and a black hole**.
- Longer GRBs, which can last hours, are triggered when a **massive star collapses and births a black hole**.

## What is the Ionosphere?

- The ionosphere is situated about **30-600 miles (50-950 km)** above Earth's surface, stretching to the very edge of space. It contains electrically charged gasses called plasma.
- The layer helps form the boundary between the vacuum of space and the lower atmosphere inhabited by people and Earth's other denizens.

## Effect of GRB on Ionosphere

- The gamma rays cause a strong variation in the ionosphere's electric field. It is similar to the effect which occurs during a solar flare event.

- The layer is highly sensitive to changing magnetic and electrical conditions in space, usually connected to solar activity. It also expands and contracts in response to solar radiation.
- The gamma-ray bursts do not cause deleterious effects for life on Earth. However, it has been hypothesized that a strong one originating within the Milky Way and pointed right at us could pose a danger, including mass extinctions.

**Source:** [TH](#)

## Langlands Program

**Syllabus: GS3/ Science & Technology**

### About

- It deals with complicated ideas that even expert mathematicians find hard to understand.
- **Initiated by:** Mathematician Robert Langlands in 1967.
- **Goal:** Connect two distant parts of math - one dealing with numbers and relationships (number theory) and the other with patterns in waves (harmonic analysis).
- It tries to find links between symmetries in equations (Galois groups) and certain special functions (automorphic functions).
- It helped in solving a famous math problem (Fermat's Last Theorem) and created new ways to understand numbers.
- **Application:** It is connected to other areas like physics, showing how everything is kind of linked in the math world. This program shows how different math ideas can be connected.

**Source:** [TH](#)