



Glacial Landforms

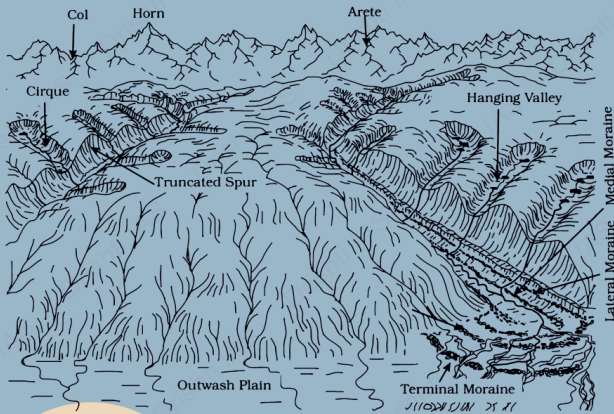
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GLACIAL LANDFORMS

“Glacier is any large mass of perennial ice that originates on land by the recrystallisation of snow or other forms of solid precipitation”

EROSIONAL LANDFORMS



Cirque/ Cirque/ Cwm

- * Small glaciers and are characteristically bowl-shaped
- * Found at the heads of glacial valleys

Horns and Serrated Ridges

- * Form through head ward erosion of the cirque walls
- * Present in areas where multiple glaciers flow in multiple directions

Glacial Valleys /Troughs

- * Trough-like and U-shaped with broad floors and relatively smooth, and steep sides
- * Fjords are deep glacial troughs filled with seawater, forming shorelines

Bergschrund

- * A crevasse/crack or series of crevasses often found near the head of a mountain glacier

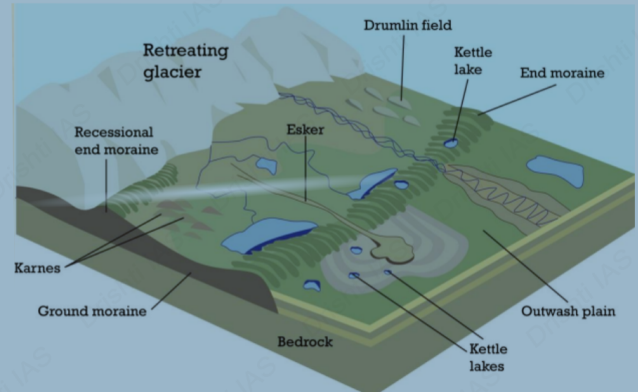
Hanging Valley

- * Form when glacier ice deeply erodes a main or trunk valley, leaving tributary valleys hanging far above the main valley floor.

Crag and Tail

- * **Crag:** Mass of hard rock with a precipitous slope.
- * **Tail:** Formed by the deposition of glacial debris or till as the glacier retreats.

DEPOSITIONAL LANDFORMS



Moraines

- * **Lateral Moraines:** Form on the sides of glaciers
- * **Ground Moraines:** Deposits varying greatly in thickness and in surface topography
- * **Medial Moraines:** Form where two tributary glaciers come together

Eskers

- * Winding ridges of sand and gravel formed by streams flowing within or beneath glaciers

Outwash Plains

- * Deposit of sand and gravel carried by running water from the melting ice of a glacier

Drumlins

- * Hills of sediment that have been streamlined by glacier flow.
- * Up to 1 km in length and 30 m or so in height
- * So commonly described as having a *basket of eggs' topography*



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Hysterectomy

For Prelims: Hysterectomy, Article 21

For Mains: Issues in Women Health and Related Measures, Importance of Maternal Health

Why in News?

Concerned about the **high risk faced by poor and less-educated women**, especially in rural areas, who undergo **unjustified hysterectomies**, the Ministry of Health and Family Welfare, Government of India has **initiated measures to address this issue**.

What is Hysterectomy?

- **About:**
 - A hysterectomy is a **surgical procedure** that involves the **removal of the uterus (womb)**, the organ in a woman's body where a baby develops during pregnancy.
- **Types:**
 - When only the uterus is removed, it is called a **partial hysterectomy**.
 - When the uterus and cervix are removed, it is called a **total hysterectomy**.
 - When the uterus, cervix, part of the vagina, and a wide area of ligaments and tissues around these organs are removed, it is called a **radical hysterectomy**.
- **Indications for Hysterectomy in India:**
 - Hysterectomy is performed in India for gynecological conditions like **fibroids** (non-cancerous growths that develop in or around the womb), **endometriosis** (disease in which tissue similar to the lining of the uterus grows outside the uterus), **abnormal bleeding, and pelvic inflammatory disease**, when other treatments fail.
 - It is also utilized **as part of cancer treatment to remove cancerous tissues** and in cases of severe, unresponsive pelvic pain.

What are the Issues Associated with Hysterectomy in India?

- **Increase Hysterectomies in Younger Women:**
 - The recent **Supreme Court** judgment in *Dr. Narendra Gupta vs Union Of India, 2023* highlighted that in **developed countries, hysterectomies are typically performed on premenopausal women aged 45 and above**.
 - However, **community-based studies in India** have shown an increasing number of hysterectomies among younger women, ranging from **28 to 36 years old**.
- **NFHS Data:**
 - According to the most recent [National Family Health Survey \(NFHS\) -5](#) empirical data, **3% of women aged 15-49 have had a hysterectomy**.
 - The prevalence of hysterectomy is the highest in **Andhra Pradesh (9%), followed by Telangana (8%), and lowest in Sikkim (0.8%) and Meghalaya (0.7%)** among women aged 15-49.
 - The prevalence of hysterectomy was highest in Southern region, i.e., **4.2%, which was also greater than the national prevalence, followed by Eastern part of India (3.8%)**.
 - On the other hand, the **lowest prevalence was observed in the Northeast region, i.e., only 1.2%**
- **Unnecessary Hysterectomies:**
 - A [public interest litigation \(PIL\)](#) filed in 2013 highlighted the issue of "unnecessary hysterectomies".
 - The PIL revealed that in the states of **Bihar, Chhattisgarh, and Rajasthan**, women were subjected to hysterectomies that were deemed **unnecessary, endangering their health**.
 - Private hospitals were found to be involved in performing these unnecessary hysterectomies. **More than two-thirds (70%) of women who have undergone a hysterectomy had the operation in a private health facility**.

- Misuse of the procedure was also observed, with healthcare institutions exploiting it to **claim higher insurance fees** under various [government healthcare schemes](#).

What are the Efforts to Address the Issue?

▪ Supreme Court Direction:

- In response to the PIL, the [Supreme Court](#) directed states and union territories to **adopt the health guidelines formulated by the Centre to monitor and prevent unnecessary hysterectomies**. The implementation of these guidelines was mandated within a **three-month timeframe**.
- There has been a **serious violation of the fundamental rights** of the women who underwent unnecessary hysterectomies.
- The SC in Dr. Narendra Gupta vs Union Of India 2023 acknowledged that the **right to health is an intrinsic part of the right to life under [Article 21 of the Constitution](#)**. **Life, to be enjoyed in all its diverse elements**, must be based on robust conditions of health.
- SC also urged an action plan to tackle the problem including suggestions to **create national, state and district-level hysterectomy monitoring committees and the inauguration of a grievance portal**.

▪ Health Ministry Guidelines:

- In 2022, the **Health Ministry issued guidelines** aimed at preventing unnecessary hysterectomies. States were **instructed to comply with these guidelines to ensure appropriate use of the procedure**.
 - Recently, the ministry has directed the states to share data on the **hysterectomies performed by medical institutions**
 - **Compulsory audits for all hysterectomies** were also advised, similar to the existing audits conducted for [maternal mortality](#).

[Source: TH](#)

Groundwater Extraction and Land Subsidence

For Prelims: [Groundwater extraction](#), [Land subsidence](#), [Urbanization](#), [National Compilation of Dynamic Ground Water Resources in India](#), [Central Ground Water Board \(CGWB\)](#)

For Mains: Status of Ground Water Extraction in India, Land subsidence due to Groundwater Extraction.

Why in News?

Cracks in **buildings and 'sinking' land in [Joshimath](#), Uttarakhand** a hill town in Uttarakhand, made the headlines earlier in 2023.

- A similar phenomenon has been playing out for years in the plains of **Punjab, Haryana, Delhi and Faridabad**. According to the data gathered for years by the [Central Ground Water Board \(CGWB\)](#), **excessive groundwater extraction** is identified as the underlying cause of these alarming incidents

What is Land Subsidence?

- **About:**

- Land subsidence refers to the **gradual sinking or settling of the Earth's surface**, usually due to the compaction of underground layers of **soil, rock, or other materials**.
- It occurs when the **support structures beneath the land**, such as **aquifers, underground mines, or natural gas extraction**, are depleted or when certain geological processes take place.
- **Impact:**
 - In urban areas, it can **damage infrastructure, including roads, buildings, and underground utilities**.
 - It can also increase the **risk of flooding in coastal regions by reducing the elevation of the land relative to sea level**.
 - In agricultural areas, subsidence can affect irrigation systems, disrupt the flow of water in rivers and canals, and cause **permanent damage to farmland**.

What has the CGWB Identified About Groundwater Extraction and Land Subsidence?

- **Land Subsidence Due to Groundwater Extraction:**
 - Digging operations conducted for mining activities demonstrated the **occurrence of "soil settlement" or sinking due to voids created from mining**. Similar observations prompted researchers to **investigate the role of groundwater extraction in land subsidence in India**.
- **Evidence of Land Subsidence in Different Regions:**
 - Unlike **land movement from landslides or earthquakes**, **subsidence from groundwater extraction was gradual and barely visible annually**.
 - Studies utilizing satellite-based analysis of ground movement have identified **building deformities resulting from groundwater withdrawals**.
 - Using data from the Sentinel-1 satellite shows that the **National Capital Region (NCR) sank an average of 15 mm per year from 2011-2017**.
 - **Urbanization and unplanned growth** exacerbated groundwater withdrawal and contributed to subsidence in the NCR.
 - Kolkata and parts of eastern India also **experience overexploited groundwater blocks and land subsidence**.

What is the Status of Ground Water Extraction in India?

- **About:**
 - Currently, **85% of rural and 50% of urban population** is dependent on groundwater for sustenance, **making India the largest groundwater user globally**.
 - India's stage of groundwater extraction, **which is the percentage of utilization of groundwater against recharge**, has **dropped from 61.6% in 2020 to 60.08% in 2022**, according to the report on the [National Compilation of Dynamic Ground Water Resources in India](#).
- **Groundwater Depletion in Northwest India:**
 - Agricultural practices in N-W India heavily depend on **groundwater withdrawal due to limited monsoon rain**.
 - Data from the **CGWB** reveals alarming levels of groundwater exploitation:
 - Punjab: **76% of groundwater blocks are 'over exploited.'**
 - Chandigarh: **64% of groundwater blocks are 'over exploited.'**
 - Delhi: **Approximately 50% of groundwater blocks are 'over exploited.'**
- **Issues Associated:**
 - **Unregulated Pumping:** Several states affected by depletion of groundwater provide **free or heavily subsidized power (including solar pumps)** for pumping groundwater for irrigated agriculture.
 - This enables **overexploitation and depletion of scarce groundwater resources**.
 - **Preference to Water-Intensive Crops:** The **minimum support price** for wheat and rice creates highly skewed incentive structures in **favor of wheat and paddy**, which are water intensive crops and depend heavily on ground water for their growth.

- This makes **groundwater a heavenly resource for their farming.**
- **Saline Water Intrusion:** In coastal areas, excessive groundwater pumping can cause [saline water intrusion](#).
 - As fresh groundwater is depleted, **seawater infiltrates into the aquifers, making the water unsuitable for various uses** and adversely impacting agriculture and ecosystems.
- **Ecological Impacts:** Groundwater depletion affects ecosystems by altering the **flow of water in rivers, lakes, and wetlands.**
 - This **disrupts the natural balance, harming aquatic life and biodiversity.** It also affects the availability of water for plants and animals dependent on groundwater sources.

What are the Government Initiatives Related to Groundwater Conservation?

- [Pradhan Mantri Krishi Sinchayee Yojana](#)
- [Jal Shakti Abhiyan- Catch the Rain Campaign](#)
- [Atal Bhujal Yojana](#)
- [Atal Mission for Rejuvenation and Urban Transformation \(AMRUT\)](#)

Way Forward

- **Crop Diversification and Efficient Irrigation:** There is a need to **promote [crop diversification](#)** and shift to more **water-efficient irrigation** techniques like drip **irrigation and sprinkler systems.**
- **River Catchment Management:** Creation of **green corridors, [rainwater harvesting zones](#)**, **mapping of channels for potential recharge zones** to store floodwater and artificial groundwater recharge structures in the urban areas (where groundwater is five-six meters below the surface), **will subsequently contribute to reducing groundwater depletion.**
- **Technology and Monitoring:** Leverage technology for real-time monitoring of groundwater levels, such as **remote sensing, [IoT devices](#), and data analytics can help in informed decision-making and enable prompt action to mitigate groundwater depletion.**
- **Wastewater Recycling and Reuse:** There is a need to **encourage the use of treated wastewater for non-potable purposes** like industrial processes to reduce the **reliance on [freshwater sources](#)** and alleviate the pressure on **groundwater extraction.**

UPSC Civil Services Examination, Previous Year Question (PYQ)

Prelims

Q.1 Which one of the following ancient towns is well known for its elaborate system of water harvesting and management by building a series of dams and channelizing water into connected reservoirs? (2021)

- (a) Dholavira
- (b) Kalibangan
- (c) Rakhigarhi
- (d) Ropar

Ans: (a)

Q.2 With reference to 'Water Credit', consider the following statements: (2021)

1. It puts microfinance tools to work in the water and sanitation sector.
2. It is a global initiative launched under the aegis of the World Health Organization and the World Bank.

3. It aims to enable the poor people to meet their water needs without depending on subsidies.

Which of the statements given above are correct?

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

Ans: (c)

Mains

Q.1 What are the salient features of the Jal Shakti Abhiyan launched by the Government of India for water conservation and water security? **(2020)**

Q.2 Suggest measures to improve water storage and irrigation system to make its judicious use under the depleting scenario. **(2020)**

Source: TH

India- EU Trade and Technology Council

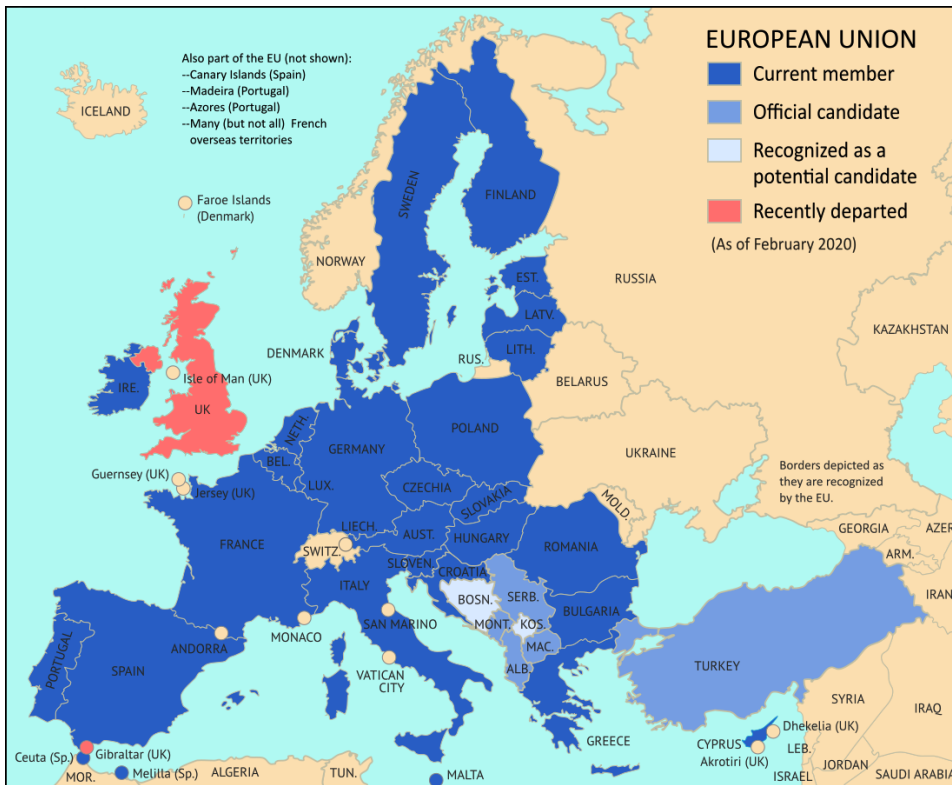
For Prelims: [Green and Clean Energy Technologies](#), [WTO](#), [FTA](#), [Artificial Intelligence](#), EFTA.

For Mains: India- EU Trade and Technology Council.

Why in News?

Recently, the 1st Ministerial meeting of the [India-European Union Trade and Technology Council \(TTC\)](#) took place, in Brussels, Belgium.

- The EU-India Trade and Technology Council is the **second bilateral forum for the EU and the first one established** with any partner for India. The EU and the US launched a TTC in June 2021.



What are the Key Highlights of the Meeting?

- The Meeting involved **discussions on roadmaps for future cooperation** under the three working groups:
 - Strategic Technologies, [Digital Governance](#), and Digital Connectivity
 - [Green and Clean Energy](#) Technologies
 - Trade, Investment, and Resilient Value Chains
- The meeting aimed to **provide direction and lay the roadmap for cooperation between the two sides regarding:**
 - Addressing mutual market access
 - [WTO \(World Trade Organization\)](#) reforms
 - The ongoing negotiations for a [Free Trade Agreement \(FTA\)](#)
 - Cooperation in various areas of mutual interest
- India and the EU were also working to resolve a **looming issue in their trade relationship — the [E.U.'s Carbon Border Adjustment Mechanism \(CBAM\)](#).**
 - The E.U. describes the CBAM as a “landmark tool” which places a “fair price” on carbon emitted during the production of goods that are entering the EU and a mechanism to “encourage cleaner industrial “production outside the EU.

What is India-EU Trade and Technology Council (TTC)?

- **About:**
 - The formation of the TTC was announced by the Indian Prime Minister and **President of the European Commission** in 2022 with the objective of creating a High-level coordination platform to tackle strategic challenges at the nexus of trade, trusted technology and security.
- **Meetings:**
 - **Ministerial meetings of the TTC will be held annually**, ensuring regular high-level engagement between India and the EU.
 - These meetings will alternate in terms of **location, taking place in either India or the EU, to foster balanced participation** and strengthen bilateral cooperation.
- **Working Groups:** The TTC consists of three Working Groups (WGs) that report on roadmaps for future cooperation:

- **WG on Strategic Technologies, Digital Governance, and Digital Connectivity:**
 - It will **work jointly on areas of mutual interest** such as digital connectivity, [Artificial Intelligence](#), [5G/6G](#), high performance and [Quantum Computing](#), [Semiconductors](#), cloud systems, [Cybersecurity](#), digital skills and digital platforms.
- **WG on Green and Clean Energy Technologies:**
 - It will focus on **green technologies, including investment and standards**, with emphasis on research and innovation.
 - Areas to be explored could be clean energy, [Circular Economy](#), waste management, plastic and [litter in the ocean](#), waste to hydrogen and recycling of batteries for e-vehicles.
 - It will also foster cooperation between EU and Indian incubators, SMEs and **start-ups**.
- **WG on Trade, Investment, and Resilient Value Chains:**
 - It will work on the resilience of supply **chains and access to critical components, energy, and raw materials**.
 - It will also work to resolve **identified trade barriers and global trade challenges** by promoting cooperation in multilateral fora. It will work towards promotion of international standards and cooperation on addressing global geopolitical challenges.
- **Significance:**
 - Recognising the evolving geopolitical landscape, both India and the EU acknowledge the importance of **establishing a strong collaborative framework**.
 - The TTC will not only **offer political guidance** but also **provide the necessary structure** to effectively implement political decisions, **coordinate technical endeavors, and ensure accountability** at the political level.
 - The TTC will help increase EU-India bilateral trade, which is **at historical highs, with Euro 120 billion worth of goods traded in 2022**. In 2022, EURO 17 billion of digital products and services were traded.

What is the Significance of the EU for India?

- **Employment:** The EU works closely with **India to promote peace, create jobs, boost economic growth** and enhance sustainable development across the country.
- **Financial Assistance:** As India graduated from a low to medium income country ([OECD 2014](#)), the EU-India cooperation also evolved from a traditional financial assistance type towards a **partnership with a focus on common priorities**.
- **Trade:** The **EU is India's 2nd-largest trading partner** (after the US) and **India's 2nd-largest export market**. India is the EU's 10th largest trading partner, accounting for **2% of EU total trade in goods**.
 - Trade in services between the EU and India reached 40 billion Euro in 2021.
- **Exports:** India's merchandise exports to EU member countries stood at about **USD 65 billion in 2021-22, while imports aggregated at USD 51.4 billion**.
 - In 2022-23, the exports aggregated at USD 67 billion, while imports stood at USD 54.4 billion in 2021-22.
- **Other Bilateral Mechanism:**
 - At the **2017 EU-India Summit**, **leaders reiterated** their intention to strengthen cooperation on the implementation of the [2030 Agenda for Sustainable Development](#) and agreed to explore the continuation of the EU-India Development Dialogue

What is the European Union?

- The European Union is a **group of 27 countries** that operate as a cohesive economic and political block.
- 19 of these countries use **Euro (€) as their official currency**.
 - 8 EU members (Bulgaria, Croatia, Czech Republic, Denmark, Hungary, Poland, Romania and Sweden) **do not use the euro**.
- The EU grew out of a desire to form **a single European political entity to end centuries of warfare among European countries** that culminated with [World War II](#) and decimated much

of the continent.

- The EU has developed an **internal single market through a standardised system of laws** that apply in all member states in matters where members have agreed to act as one.

UPSC Civil Services Examination, Previous Year Question (PYQ)

Prelims:

Q. 'Broad-based Trade and Investment Agreement (BTIA)' is sometimes seen in the news in the context of negotiations held between India and (2017)

- (a) European Union
- (b) Gulf Cooperation Council
- (c) Organization for Economic Cooperation and Development
- (d) Shanghai Cooperation Organization

Ans: (a)

Q. In the context of bilateral trade negotiations between India and European Union, what is the difference between European Commission and European Council? (2010)

1. The European Commission represents the EU in trade negotiations whereas European Council participates in the legislation of matters pertaining to economic policies of the European Union.
2. The European Commission comprises the Heads of State or government of member countries whereas the European Council comprises of the persons nominated by European Parliament.

Which of the statements given above is/are correct?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

Ans: (d)

Source: PIB

Rasht-Astara Railway and INSTC

For Prelims: Rasht-Astara railway, [Central Asia](#), [CPEC](#), [Baltic](#), [Chabahar Port](#), [JCPOA](#).

For mains: [International North-South Transport Corridor](#), significance and Challenges.

Why in News?

Recently, **Russia and Iran** have signed a deal to build an Iranian railway line, the **Rasht-Astara railway** as part of an **International North-South Transport Corridor (INSTC)**.

- The Rasht-Astara railway is seen as an important link in the corridor, **intended to connect India, Iran, Russia, Azerbaijan** and other countries via railways and sea – a route that Russia says can rival the **Suez Canal** as a major global trade route.



What is Rash Astra Railway?

- It is a 162-kilometer railway that will connect the city of **Rasht (Iran) near the Caspian Sea**, to Astara (Azerbaijan) **on the border with Azerbaijan**. The new connection will shave four days off that traveling time frame.
- The unique **North-South transport artery**, of which the Rasht-Astara railway will become a part, will **help to significantly diversify global traffic flows**. Transportation along the new corridor will have significant competitive advantages and will substantially cut travel times and costs and help develop new logistics chains.
- The railway along the Caspian Sea coast would **help to connect Russian ports on the Baltic Sea with Iranian ports in the Indian Ocean** and the Gulf.

What is the International North-South Transport Corridor?

- **About:**
 - It is a 7,200-kilometer **Multi-Mode Transit System** that connects ship, rail, and road routes for moving cargo between India, Iran, Azerbaijan, Russia, Central Asia, and Europe.
 - It was launched on **12th September 2000** in St. Petersburg, by Iran, Russia and India for the purpose of promoting transportation cooperation among the Member States.
 - Since then, INSTC membership has expanded to include 10 more countries – Azerbaijan, Armenia, Kazakhstan, Kyrgyzstan, Tajikistan, Turkey, Ukraine, Syria, Belarus, and Oman.
 - Bulgaria has been included as an observer state. The Baltic countries like **Latvia and Estonia have also expressed willingness** to join.
- **Routes and Modes:**
 - **Central Corridor:** It begins from the Jawaharlal Nehru Port in Mumbai and connects to the **Bandar Abbas port (Iran) on the Strait of Hormuz**. It then passes through the Iranian territory via Nowshahr, Amirabad, and Bandar-e-Anzali, runs along the Caspian Sea to reach the Olya and Astrakhan Ports in Russia.
 - **Western Corridor:** It connects the **railway network of Azerbaijan to that of Iran via the cross-border nodal points** of Astara (Azerbaijan) and Astara (Iran) and further to Jawaharlal Nehru port in India via sea route.

- **Eastern Corridor:** It connects **Russia to India through the Central Asian countries of Kazakhstan, Uzbekistan, and Turkmenistan.**

What is the Significance of INSTC for India?

- **Alternate Route:**
 - India sees INSTC as an alternative means of connecting with [Central Asia](#), **which is rich in hydrocarbons and has strategic importance.**
 - Given the obstacles in the straight route through Pakistan, it creates a permanent **alternate route for trade between Afghanistan** and Central Asia.
 - China and Pakistan are working to strengthen their economic and trade ties through the [China Pakistan Economic Corridor \(CPEC\)](#) and the Gwadar port, both of which are part of China's [Belt and Road Initiative \(BRI\)](#).
- **Reducing Time and Freight Cost:**
 - INSTC consists of sea routes, rail links, and road connections that connect Mumbai in India to Saint Petersburg in Russia, passing through Chabahar.
 - The INSTC is projected to reduce **transit time by 40%**, shortening it from 45-60 days to 25-30 days. Additionally, it is expected to **decrease freight costs by 30%** in comparison to the Suez Canal route.
- **Chabahar Port:**
 - India has invested in the Chabahar Port located in the Iranian province of Sistan-Balochistan and also signed an intergovernmental agreement for the INSTC.
 - The Chabahar port is **regarded as a doorway to golden chances for India**, Iran, and Afghanistan to trade with Central Asian countries.
 - Chabahar is a port in **southwestern Iran on the Gulf of Oman**. It is Iran's sole port with **direct access to the sea**. It is situated on the southern coast of Iran's energy-rich Sistan-Balochistan region.
- **Alternative to Suez Canal:**
 - Suez Canal's blockage in 2021, which roughly cost 12% of global trade and reportedly held up **trade valued at USD 9 billion per day**, has amplified the optimistic outlook towards the INSTC as a **cheaper and faster alternative multimodal transit corridor**.
- **Potential to Connect Baltic:**
 - The INSTC connects India with Central Asia, Russia, and has the potential to expand up to the **Baltic, Nordic, and Arctic regions**.
 - This connectivity initiative, when viewed with its underlying commercial advantages, **can bring about a transformative development** in the region, facilitating not just transit but humanitarian assistance as well as overall economic development.
- **Regional Supply Chains Across Eurasia:**
 - The creation of diverse supply chains across Eurasia might surely alter the stereotype of **East as the producer and West as the consumer**.

What are the Challenges?

- The main challenges faced by INSTC are that the majority of projects associated with the INSTC, have not received financial support from major international financial institutions such as the [World Bank](#), [ADB \(Asian Development Bank\)](#), [European Investment Bank](#) and Islamic Development Bank.
- This is mainly due to the **unilateral sanctions imposed by the United States on Iran**, which has led to **concerns about possible "secondary sanctions."**
- The harsher sanctions imposed on Iran after the US's withdrawal from the [JCPOA \(Joint Comprehensive Plan of Action\)](#) in 2018 resulted in many global companies withdrawing from infrastructure projects in Iran.

Way Forward

- The **INSTC** has great potential for various stakeholders, but realizing its full benefits requires more **financing, cooperation, political will**, and strategic planning.
- Funding is a major challenge, and private sector involvement is limited due to security **threats**

and political instabilities in the region. Harmonization of tariffs and customs is also important for the corridor's success.

- To increase trade volume, it is **crucial to improve informational connectivity** and create demand. Currently, the export of goods from South Asia and Southeast Asia to Europe through the Suez Canal route is insufficient. Addressing this demand deficit is **necessary for the successful implementation of the ambitious INSTC** project.
- Moreover, the INSTC offers member countries the **opportunity to collaborate and enhance economic integration**. Establishing industrial parks and special economic zones focused on sectors of mutual interest, such as pharmaceuticals and agriculture, can further contribute to the development and commercial value of this connectivity corridor.

UPSC Civil Services Examination, Previous Year Question (PYQ)

Q. What is the importance of developing Chabahar Port by India? (2017)

- (a) India's trade with African countries will enormously increase.
- (b) India's relations with oil-producing Arab countries will be strengthened.
- (c) India will not depend on Pakistan for access to Afghanistan and Central Asia.
- (d) Pakistan will facilitate and protect the installation of a gas pipeline between Iraq and India.

Ans: (c)

[Source: TH](#)

World Telecom Day 2023

For Prelims: World Telecom Day, Sanchar Saathi portal, Central Equipment Identity Register, [International Telecommunication Union \(ITU\)](#)

For Mains: [Achievements of India's telecom sector](#). Role of the Sanchar Saathi portal in addressing fraudulent activities, Positioning India as a global telecom power.

Why in News?

India on May 17, 2023, commemorated **World Telecom Day**, celebrating the advancements and **achievements in the telecommunication sector**.

- The **Sanchar Saathi portal** was launched on the day to enhance **transparency, security, and accountability in the telecom industry**.
- The year 2023 also marks the completion of **20 years of [Universal Service Obligation Fund \(USOF\)](#)**.

What is World Telecom Day?

▪ **About:**

- World Telecommunication Day is celebrated annually since 1969, to mark the founding of **International Telecommunication Union (ITU)** and the signing of the first **International Telegraph Convention in 1865**.
 - It aims to raise **awareness of the importance of telecommunication** and its contribution to social and economic development.
- The **World Summit on the Information Society (WSIS)** called for the declaration of **May 17 as World Information Society Day**.
- In 2006, the **ITU combined both tents and celebrated them on May 17 as World Telecommunication and Information Society Day (WTISD)**.

▪ **Theme:**

- The theme of World Telecom Day 2023 is "**Empowering the least developed countries through information and communication technologies**".
 - The theme reflects the commitment of the ITU and its partners to support the **least developed countries (LDCs) in harnessing the power of Information and Communications Technologies (ICT)** for achieving their **sustainable development goals (SDGs)**.

▪ **Highlights from the Event:**

- Exhibition showcasing innovations in the telecom sector by start-ups.
- Recognition of top performing **Bharat Udyamis** ensuring last mile connectivity.
 - Udyami Bharat a programme launched by the government of India to empower the micro, small and medium enterprises (MSMEs) sector.
- Release of a report on the **First International Quantum Communication Conclave**.
 - Insights shared by national and international experts on the roadmap and developments in **quantum technologies** and their potential impact in various sectors.
- Emphasis on the important role played by **USOF** and **BharatNet** in bridging the digital divide and providing connectivity to underserved areas.

What is the Sanchar Saathi Portal?

▪ **About:**

- The **Sanchar Saathi portal**, developed by the **Centre for Development of Telematics (C-DOT)** under the **Department of Telecommunications (DoT)**, is revolutionizing the telecom sector in India.

▪ **Objective:**

- The primary objective of the Sanchar Saathi portal is to address various **fraudulent activities** prevalent in the telecom industry, such as **identity theft, forged KYC, and banking fraud**.
 - By leveraging advanced technologies and frameworks, the portal aims to provide users with a secure and trustworthy telecommunication experience.

▪ **Reforms Introduced:**

- **CEIR (Central Equipment Identity Register):**
 - Implemented to **block stolen or lost mobile phones**.
 - Users can submit **IMEI numbers** along with a copy of the police complaint to verify and block stolen devices.
 - Integrated with Telecom Service Providers and Law Enforcement Agencies.
 - **Prevents stolen devices from being used in Indian networks** and allows tracing by law enforcement when necessary.
- **Know Your Mobile Connections:**
 - Allows users to **check mobile connections registered in their name**.
 - Enables **identification of unauthorized or fraudulent connections**.
 - Users can report fraudulent or unrequired connections, triggering **re-verification and termination of reported connections**.
- **ASTR (Artificial Intelligence and Facial Recognition powered Solution for Telecom SIM Subscriber Verification):**
 - Developed to identify **subscribers who obtain connections using fraudulent or forged documents**.
 - Utilizes **facial recognition and data analytics** techniques.

- Analyzes connections obtained through **paper-based KYC documents**.

▪ **Impact:**

- Over 40 lakh fraudulent connections were identified and over 36 lakh were disconnected using the portal.
- Provides a secure and trustworthy telecommunication experience for users.
- Protects against identity theft, forged KYC, mobile device theft, and banking fraud.
- Enhances user safety and supports the draft Telecom bill.

What is Scenario of India's Telecom Sector?

▪ **About:**

- In 2020-2021 the telecom industry contributed **6% to India's Gross Domestic Product (GDP)** and is set to grow at a CAGR of 9.4% from 2020 to 2025. India is one of the largest consumers of data globally.
- The Union Cabinet approved a Rs. 12,195 crore **production-linked incentive (PLI) scheme** for telecom and networking products under the Department of Telecom.
- Growing demand for skilled workers in 5G-centric technologies: India will need around 22 million skilled workers in areas like **IoT**, and **AI** computing **by 2025**.

▪ **Recent Developments in the Telecom Sector:**

◦ **5G Rollout:**

- Trials and testing conducted in various cities.
- Expected global **5G** subscriptions reach 3.5 billion by 2026.

◦ **BharatNet:**

- Project to provide broadband connectivity to **gram panchayats**.
- Over 180,000 Gram panchayats connected with optical fiber.
- Revised implementation strategy with \$7.8 billion outlay to cover all inhabited villages by August 2023.

◦ **Universal Service Obligation Fund (USOF):**

- USOF ensures that there is **universal non-discriminatory access to quality ICT** (Information and Communications Technology) **services** at economically efficient prices **to people in rural and remote areas**.
- Statutory fund to extend telecom services to rural areas.
- Supports schemes like BharatNet, mobile connectivity, public Wi-Fi hotspots, etc.

◦ **Draft Indian Telecommunication Bill 2022:**

- The **DoT** released the **draft Indian Telecommunications 2022 Bill** to regulate Internet-based **OTT (Over-The-Top)** telecom services.

◦ **Telecom Sector Reforms:**

- Rationalization of Adjusted Gross Revenue (AGR) definition.
- Moratorium on spectrum dues and increased tenure.
- Spectrum sharing, surrender, and trading allowed.
- Rationalization of bank guarantees and increased foreign investment limit.
- Measures to simplify licensing and regulatory compliance.

UPSC Civil Services Examination, Previous Year Question (PYQ)

Prelims

Q. Which of the following is/are the aims/aims of the “Digital India” Plan of the Government of India? (2018)

1. Formation of India’s own Internet companies like China did.
2. Establish a policy framework to encourage overseas multinational corporations that collect Big Data to build their large data centers within our national geographical boundaries.
3. Connect many of our villages to the Internet and bring Wi-Fi to many of our schools, public places and major tourist centers.

Select the correct answer using the code given below:

(a) 1 and 2 only

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

Ans: (b)

Source: PIB

Green Energy Open Access Rules 2022

For Prelims: [Renewable Energy](#), [Green Energy](#), [NDC](#), [Green Hydrogen](#).

For Mains: Green Energy Open Access Rules 2022.

Why in News?

Ministry of Power & NRE (New and Renewable Energy), Government of India has chaired a meeting on **Green Energy Open Access Rules 2022**.

What are Green Energy Open Access Rules 2022?

▪ About:

- In 2022, the Government had notified **Electricity (Promoting Renewable Energy Through Green Energy Open Access) Rules, 2022** in order to further accelerate India's ambitious [Renewable Energy](#) programmes, with the objective of ensuring access to affordable, reliable, sustainable and [Green Energy](#) for all.
- It aims to cut emissions by 45% in line with India's updated [NDC \(Nationally Determined Contributions\) target for 2030](#).
- These rules are notified for **promoting generation, purchase and consumption of green energy including** the energy from Waste-to-Energy plants.

▪ Key Features:

- There would be a uniform **Renewable Purchase Obligation (RPO)**. Green Hydrogen/Green Ammonia has also been included for fulfillment of its RPO.
- Green Open Access would be allowed to any **Open Access Consumer**.
- The Green Open Access is allowed to any consumer and the limit of Open Access Transaction **has been reduced from 1 MW to 100 kW for green energy, to enable small consumers** also to purchase renewable power through open access.
- The transaction limit would be a minimum of 100 KW for non-captive consumers, but there is no limit for open-access transactions that has been kept for captive consumers.
 - **Captive Consumers** are individuals who have limited or no choice but to purchase a **particular product or service due to various factors**, such as market conditions, lack of alternatives, or contractual obligations.
- Consumers are **entitled to demand supply of Green Power from Discoms**. Discoms would be obligated to procure and supply green power to eligible consumers.
- Approval for Green Open Access is to be granted in 15 days or else it will be deemed to have been granted.
- **Commercial and Industrial consumers are allowed to purchase green power** on a voluntary basis.

- Consumers will be given **Green Certificates** if they consume green power and will also be facilitated.
- **Significance:**
 - The move is expected to prompt **smaller industries, commercial consumers, and large households to shift towards green energy.**
 - India added 1.2 GW of **solar open access installations in 2021**, which grew by 22 % to 513 MW during January-March 2022.
 - Hence, Green Open Access Rules 2022 are believed to be a huge steppingstone towards achieving **India's commitment to 500 GW of non-fossil fuel energy by 2030.**

What are the Other Initiatives Related to Green Energy Transition?

- [Pradhan Mantri Sahaj Bijli Har Ghar Yojana \(SAUBHAGYA\)](#)
- [Green Energy Corridor \(GEC\)](#)
- [National Smart Grid Mission \(NSGM\) and Smart Meter National Programme](#)
- [Faster Adoption and Manufacturing of \(Hybrid &\) Electric Vehicles \(FAME\)](#)
- [International Solar Alliance \(ISA\)](#)
- [PM- KUSUM \(Pradhan Mantri-Kisan Urja Suraksha evam Utthaan Mahabhiyan\)](#)

[Source: PIB](#)

Enhanced Production Linked Incentive for IT Hardware

For Prelims: [Production Linked Incentive \(PLI\)](#), [Compounded Annual Growth Rate \(CAGR\)](#), [Union Budget 2021-22.](#)

For Mains: Announced Sectors for PLI, Growth of Electronics Manufacturing in India.

Why in News?

The Union Cabinet recently approved an updated [Production Linked Incentive \(PLI\) scheme for IT hardware manufacturing in India.](#)

- This move comes as India's electronics manufacturing industry has experienced significant growth, achieving a major milestone by crossing **USD 105 billion in production.**

What are the Major Highlights Related to Updated PLI Scheme for IT Hardware?

- **Enhancements to the PLI Scheme for IT Hardware:**
 - The **PLI scheme for IT hardware was first notified in March 2021.** The scheme provides upwards of **4% in incentives** for incremental investment in domestic manufacturing for eligible firms
 - The **Ministry of Electronics and Information Technology (MeitY)**, stated that the incentive has been increased to **5% in the updated scheme.**
 - Additionally, an "**additional optional incentive**" has been introduced for the **utilization of domestically produced components.**

- **Revised Budgetary Outlay and Duration:**
 - The updated PLI scheme for IT hardware has been allocated a budgetary outlay of **₹17,000 crore**. The scheme will have a **tenure of 6 years**, providing a **longer-term incentive for companies** to establish and expand their operations in India.
- **Growth of Electronics Manufacturing in India:**
 - Over the past eight years, the electronics manufacturing sector in India has experienced a [compound annual growth rate \(CAGR\) of 17%](#).
 - In 2023, India surpassed **USD 11 billion** in **mobile phone exports**, solidifying its position as the **2nd-largest mobile handset manufacturer globally, trailing only China**.

What is the Production-Linked Incentives Scheme?

- **About:**
 - The **Production-Linked Incentives (PLI)** scheme is the latest addition to the list of reforms introduced under the aegis of the ['AatmaNirbhar Bharat Abhiyan'](#) (**Self-Reliant India**) initiative.
 - The strategy behind the PLI scheme is to **offer companies incentives on incremental sales from products manufactured in India**, over the base year.
 - The scheme also **invites foreign companies to set up units in India**.
- **Objective:**
 - The scheme aims to **make domestic manufacturing globally competitive and to create global champions in manufacturing**
 - They have been specifically designed to **boost domestic manufacturing in sunrise and strategic sectors**, curb cheaper imports and reduce import bills, improve cost competitiveness of domestically manufactured goods, and **enhance domestic capacity and exports**.
- **Announced Sectors for PLI:**
 - The Union Budget 2021-22 announced an outlay of **INR 1.97 lakh crores for the PLI schemes for 14 key sectors** which have been shortlisted on the basis of their potential for revenue and employment generation.
 - The 14 sectors are **mobile manufacturing, manufacturing of medical devices, automobiles and auto components, pharmaceuticals, drugs, specialty steel, telecom & networking products, electronic products, white goods (ACs and LEDs), food products, textile products, solar PV modules, advanced chemistry cell (ACC) battery, and drones and drone components**.

[Source: TH](#)

Wholesale Price Index

Why in News?

The latest data released by the **Ministry of Commerce and Industry** reveals that the [Wholesale Price Index \(WPI\) in India fell to a near three-year low](#) with **deflation rate of (-) 0.92% in April**, marking its entry into **negative territory** after 33 months.

- The decline in the rate of inflation in April 2023 is **primarily contributed by fall in prices of basic metals, food products, mineral oils, textiles, non-food articles**, chemical & chemical products, rubber & plastic products, and paper & paper products.

What is the Wholesale Price Index?

▪ **About:**

- It measures the changes in the **prices of goods sold and traded in bulk by wholesale businesses to other businesses.**
- Published by the Office of **Economic Adviser, Ministry of Commerce and Industry.**
- It is the most widely used **inflation indicator** in India.
- Major criticism for this index is that the **general public does not buy products at wholesale price.**
- The **base year of All-India WPI** has been revised from **2004-05 to 2011-12 in 2017.**

▪ **Weightage of WPI:**

All Commodities/Major Groups	Weightage (%)	Articles
All Commodities	100	
I. Primary Articles	22.6	Food Articles: Cereals, Paddey, wheat, Pulses, Vegetables, Potato Onion, Fruits, Milk, Eggs, Meat & Fish Non-Food Articles: Oil Seeds Minerals Crude Petroleum
II. Fuel & Power	13.2	LPG, Petrol, High Speed Diesel
III. Manufactured Products	64.2	Mf/o Food Products: Vegetable And Animal Oils and Fats. Mf/o of Beverages. Mf/o of Tobacco Products, Wearing Apparel, Pharmaceuticals, Medicinal Chemical and Botanical Products, and other Non-Metallic Mineral Products etc.
Food Index	24.4	The Food Index consists of ' Food Articles ' from Primary Articles group and ' Food Products ' from Manufactured Products group.

▪ **Factors Influencing WPI Inflation:**

- **High Base Effect:**
 - Experts suggest that WPI inflation is expected to remain moderate due to the high base effect.
- **Easing Global Commodity Prices:**
 - The decline in global commodity prices is anticipated to help keep inflation of manufactured products at a lower level.
- **Food Inflation and Monsoon Prospects:**
 - The prices of **wheat**, affected by market conditions, need to be monitored.
 - Additionally, the monsoon's impact on the inflation of **Kharif crops** is a concern.

What is the Difference Between WPI and CPI?

- WPI tracks **inflation at the producer level** and **Consumer Price Index (CPI)** captures changes in **prices levels at the consumer level.**
 - Both baskets **measure inflationary trends (the movement of price signals) within the broader economy**, the two indices differ in which weightages are assigned to food, fuel and manufactured items.
- WPI does not capture changes in the **prices of services**, which CPI does.
- **In WPI, more weightage is given to manufactured goods**, while in **CPI**, more weightage is

given **to food items**.

- Base year of WPI is 2011-2012 while for CPI is 2012.

UPSC Civil Services Examination, Previous Year Question (PYQ)

Prelims

Q.1 With reference to Indian economy, demand-pull inflation can be caused/increased by which of the following?

1. Expansionary policies
2. Fiscal stimulus
3. Inflation-indexing of wages
4. Higher purchasing power
5. Rising interest rates

Select the correct answer using the code given below:

- (a) 1, 2 and 4 only
(b) 3, 4 and 5 only
(c) 1, 2, 3 and 5 only
(d) 1, 2, 3, 4 and 5

Ans: (a)

Q.2 Consider the following statements: (2020)

1. The weightage of food in Consumer Price Index (CPI) is higher than that in Wholesale Price Index (WPI).
2. The WPI does not capture changes in the prices of services, which CPI does.
3. Reserve Bank of India has now adopted WPI as its key measure of inflation and to decide on changing the key policy rates.

Which of the statements given above is/are correct?

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

Ans: (a)

Source: IE

Rapid Fire Current Affairs

NIA's Operation Dhvast

The [National Investigation Agency \(NIA\)](#) recently conducted a nationwide operation

called '**Operation Dhvast**' targeting the interconnected network of terrorists, gangsters, and drug smugglers. Collaborating with the police in Punjab and Haryana, the NIA carried out raids at 129 locations across multiple states, resulting in the arrest of three individuals. The operation was aimed at breaking the **terror nexus of terrorists, and other notorious gangsters** involved in targeted killings, terror funding of **pro-Khalistan** outfits, and extortion, and smuggling of drugs and weapons.

The **NIA is a federal agency established in 2009** by the Indian government to investigate and prosecute crimes related to **terrorism, insurgency, and national security**. It operates under the Ministry of Home Affairs and has jurisdiction over matters that affect the entire country. The NIA was formed in response to the **2008 Mumbai terrorist attacks** and operates under the **National Investigation Agency (NIA) Act, 2008**. The agency was further empowered by the **National Investigation Agency (Amendment) Act, 2019**. The NIA is authorized to **take over terrorism-related cases from state police forces** and other agencies, and it **can investigate cases across state boundaries** without requiring prior permission from state governments. Its functions include collecting, analyzing, and disseminating intelligence on terrorism and national security, coordinating with law enforcement agencies within and outside India, and **prosecuting cases before the NIA Special Court**. It seeks the sanction of the Central government for prosecuting accused individuals under the **Unlawful Activities (Prevention) Act (UAPA)** and other scheduled offenses.

Read more: [National Investigation Agency \(NIA\)](#)

Caste-Based Survey

The **Supreme Court of India** has refused to lift the **interim stay order** passed by the Patna High Court on the **caste-based survey in Bihar**. The survey was initiated by the Bihar government to **collect data on the socio-economic status and educational level of various castes in the state**. The Supreme Court also said that it needs to determine whether the **survey was a census or a voluntary exercise**.

A caste-based survey is a process of collecting information on the population of different castes in a region or a country. **Caste is a system of social stratification based on birth, occupation, and religion**. Caste-based surveys are often conducted to **identify the backward classes and provide them with reservation and welfare schemes**. However, caste-based surveys are also controversial as they may affect social harmony, political representation, and individual privacy. **Article 340 mandates the appointment of a commission to investigate the conditions of socially and educationally backward classes** and make recommendations as to the steps that should be taken by governments.

Read more: [Caste Census](#)

e-Malkhana

Visakhapatnam Police Commissionerate, Andhra Pradesh is set to introduce **e-Malkhana, a scientific storage system for property and evidence recovered from crime scenes**, in all 23 police stations by June 2023. The initiative aims to **enhance efficiency and organization in storing recovered items**. Previously, properties and evidence **were stored in traditional storerooms**, causing difficulties in retrieval. With e-Malkhana, the seized property and evidence will be stored in **standardized cardboard boxes, each labeled with a unique number and additional details**. A dynamic **QR code** will be generated and affixed to the box, allowing easy access to case-related information through scanning. This technological upgrade streamlines the storage and retrieval process, ensuring greater transparency and convenience for law enforcement officials.

MoU Between CCI and ECA

The Union Cabinet **approved the signing of the Memorandum of Understanding (MoU)** between the **Competition Commission of India (CCI)** and the **Egyptian Competition Authority (ECA)**.

The MoU **envisages the promotion and strengthening of cooperation in competition law and policy** through the exchange of information and sharing of best practices as well as **through various capacity-building initiatives**. The MoU also **aims to develop and strengthen linkages between**

CCI and ECA and learn and emulate from each other's experiences in the enforcement of competition law in their respective jurisdictions through experience sharing and technical cooperation.

Section 18 of the **Competition Act, 2002** permits **CCI to enter into any memorandum or arrangement** with any agency of any foreign country for the purpose of discharging its duties or performing its functions under the Act.

The Competition Act, 2002, **regulates competition in the Indian market and prohibits anti-competitive practices** such as cartels, abuse of dominant market position, and mergers and acquisitions that may have an adverse effect on competition. The **Act has been amended by the Competition (Amendment) Act, 2007.**

Read More: [Competition \(Amendment\) Bill, 2022](#)

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