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DISCLAIMER The current affairs articles are segregated from prelims and mains perspective, such separation is maintained in terms of structure of articles. Mains articles have more focus on analysis and prelims articles have more focus on facts. However, this doesn't mean that Mains articles don't cover facts and PT articles can't have analysis. You are suggested to read all of them for all stages of examination.

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SECTION -A MAINS ISSUES

CHINA'S MASSIVE BRAHMAPUTRA DAM PROJECT

Context

China has recently approved the construction of a massive hydropower project on the Brahmaputra River (known as the Yarlung Zangbo River in Tibet). This dam, set to be the world's largest infrastructure project, is expected to cost around \$137 billion, making it bigger than any other global project, including China's own Three Gorges Dam. The project has been approved as part of China's 14th Five-Year Plan (2021-2025), with further plans outlined until 2035.

Key Details of the Dam:

Location: The dam will be built in the Tibetan region, in a gorge where the Brahmaputra River makes a significant turn before flowing into India's Arunachal Pradesh and later Bangladesh.

- Investment: The dam will cost over 1 trillion yuan (approx. \$137 billion), and it will be the largest infrastructure project globally.
- Capacity: The dam will generate over 300 billion kWh
 of electricity annually, which is enough to meet the
 electricity needs of more than 300 million people.
- Environmental Importance: This hydropower project is part of China's push for clean energy (hydropower, solar, and wind), aimed at addressing carbon neutrality and climate change.
- Economic and Strategic Importance:
 - Energy Generation: The project will provide substantial power, contributing to China's green energy goals. It will also boost the economy of

- **Tibet** and improve infrastructure like electricity, water management, and transportation in the region.
- Regional Cooperation: China emphasizes that the dam will not only support national security but also enhance cooperation with South Asia by ensuring energy stability.
- Impact on Local Industries: The project is expected to generate significant income for Tibet (around \$3 billion annually) and create jobs, especially in engineering, logistics, and trade sectors.

Concerns for India and Bangladesh:

- Water Control: The project could give China significant control over the Brahmaputra River, which flows through India and Bangladesh, causing fears of potential water shortages or floods, especially in times of tension.
- Flood Risk: The size of the dam could also allow China to release large amounts of water downstream, potentially flooding areas along India's border, especially in Arunachal Pradesh.
- Data Sharing: India and China have an existing Expert Level Mechanism (ELM), under which China shares hydrological data on the Brahmaputra during the flood season. There are concerns that China might reduce or control this data sharing to its advantage.
- Geopolitics: While China presents the project as a green initiative for clean energy and regional development, the dam raises significant concerns for India and Bangladesh, primarily due to its potential impact on water security and regional geopolitics.

Challenges and Engineering Feats:

Seismic Concerns: The region is located on a tectonic plate boundary, making it prone to earthquakes. However, China assures that the project will be built with



extensive geological studies and advanced engineering to ensure safety and ecological protection.

Engineering Complexity: The project site has a **vertical** drop of 2,000 meters over just 50 kilometers of river, which makes it one of the world's most hydropowerrich areas. To harness this energy, the project involves drilling four to six 20 km tunnels through the Namcha Barwa mountain to divert half of the river's flow.

UKRAINE ENDS TRANSIT OF **RUSSIAN GAS TO EU**

Context:

Ukraine's gas transit agreement with Russia expired on January 1, 2025. Ukraine decided not to renew this agreement due to the ongoing war with Russia.

About the Agreement

- This agreement, signed in 2019, allowed Russia to send gas to European Union (EU) countries through Ukraine.
- The gas is sent through the Soviet-era Urengoy-Pomary-Uzhgorod pipeline from Siberia through

- Sudzha, a town in Russia's Kursk region which is now under the Ukrainian military's control.
- The gas moves via Ukraine into Slovakia.
- There, the pipeline splits into branches which take the supply to the Czech Republic and Austria.
- The pipeline passing through Ukraine was one of the last functional routes used to export Russian gas.
 - ▶ Other pipelines were shut in the wake of the 2022 Ukraine war, including the Yamal-Europe pipeline through Belarus and the Nord Stream pipeline under the Baltic Sea which sent gas to Germany.
- Russia still uses the TurkStream pipeline on the bed of the Black Sea to export gas. The pipeline goes under the Black Sea to Turkey and then to other countries like Serbia, Bulgaria, and Hungary. However, it has limited capacity.

Impact on Russia and the EU:

Loss of Market Share for Russia: Before the war, Russia supplied about 35% of Europe's natural gas. This dropped dramatically after the war started and has now fallen to around 8%.

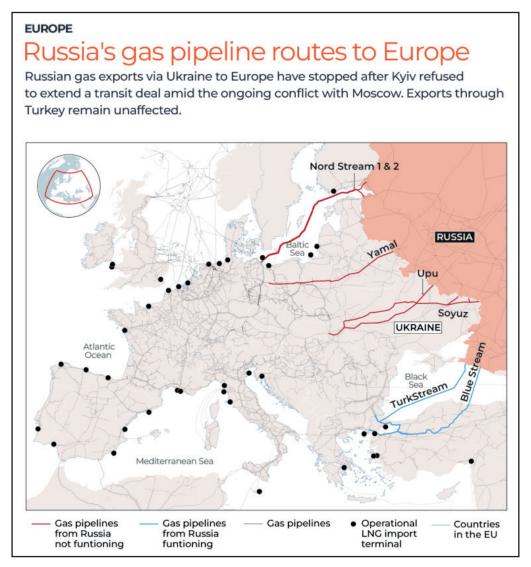


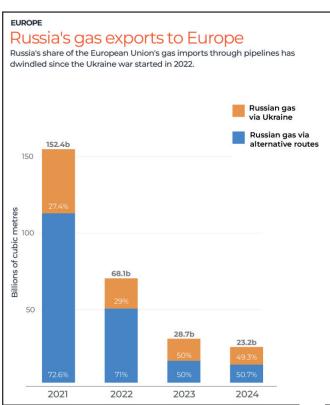
Figure No. 01



- ➤ The EU has reduced its dependence on Russian gas by sourcing more gas from countries like Norway, the US, and Qatar.
- Gas Prices and Availability: Gas prices in the EU spiked to record highs in 2022 after Russia's supply was reduced.
 With Ukraine halting the transit of gas, gas supplies to the EU are now much smaller.

o Countries Most Affected:

- ➤ Austria and Slovakia are the most impacted by Ukraine's decision because they receive a large portion of their Russian gas through Ukraine.
- ► Hungary remains mostly unaffected by the halt, as it receives Russian gas via the TurkStream pipeline under the Black Sea, not through Ukraine.
- ➤ **Moldova**, a small country near Ukraine, faces the most serious situation. It relies on Russian gas, and with Ukraine stopping its gas transit, Moldova is at risk of running out of gas.



SITUATION OF ROHINGYA REFUGEES IN INDIA

Context

Rohingya refugees in India face **severe legal, humanitarian**, and **political challenges**. While international law, including the **UN Refugee Convention**, offers protection against forced return (non-refoulement), India's position on refugees remains complex. The **lack of a refugee policy**, discriminatory laws like the **Citizenship Amendment Act (CAA)**, and **poor detention conditions** continue to put Rohingya refugees in vulnerable situations, raising concerns over their **human rights** and **legal protection** in India.

The Issue: Rohingya Refugees in India

- The Rohingya people are a stateless minority from Myanmar, facing persecution by Myanmar's military. Around 2.8 million Rohingya exist globally, with nearly 22,500 refugees currently residing in India.
- Persecution: The Rohingya have been subjected to genocidal violence and human rights violations in Myanmar, which forced many to flee their country and seek refuge in neighboring nations, including India.

International Legal Protections

- Non-Refoulement: According to international law, especially the 1951 Refugee Convention and the 1967 Protocol, countries are forbidden from sending refugees back to places where they could face persecution, torture, or inhuman treatment. This principle is part of customary international law, meaning it's binding even for countries that haven't signed these treaties.
- India's Position: Although India has signed international human rights treaties like the International Covenant on Civil and Political Rights (ICCPR), it is not a signatory to the 1951 Refugee Convention. India claims that since it is not legally bound to the Refugee Convention, it doesn't have an obligation to follow the principle of non-refoulement.

Legal Situation in India

- Domestic Law: India does not have a refugee law but uses laws like the Foreigners Act, 1946 and the Passport Act, 1967 to treat Rohingya refugees as illegal migrants.
- Supreme Court Rulings:
 - ➤ In 2021, the Supreme Court of India ruled that while Rohingya refugees have the right to life under Article 21 of the Constitution, they do not have the right to reside or settle in India.
 - ➤ The Court also dismissed a plea to prevent the **deportation** of 170 Rohingya refugees detained in **Srinagar**, citing **national security** concerns.
- In October 2024, the Delhi High Court dismissed a plea seeking the admission of Rohingya children in schools, as the issue required a policy decision from the Union government.

India's International Obligations

- While India is not legally bound by the Refugee Convention, it is still bound by international human rights laws. The International Covenant on Civil and Political Rights (ICCPR) and Convention Against Torture require India to refrain from refouling individuals to places where they may face torture or cruel, inhuman treatment.
- Supreme Court Rulings on Non-Refoulement:
 - ➤ The Indian Supreme Court has ruled that international law must be applied by Indian courts in the absence of specific domestic laws. The Court has upheld the principle of non-refoulement in some cases, including for refugees from different countries.



➤ This includes rulings from **Gujarat High Court** (1998) and **Delhi High Court** (2015), which affirmed that refugees must be protected from deportation to places where they could face harm.

Concerns Regarding Rohingya Refugees in India

- Lack of Legal Protection: India has no standardized refugee policy, leading to inconsistent treatment of various refugee groups. For instance, Tibetan, Sri Lankan, and Afghan refugees often receive special treatment, such as refugee certificates or long-term visas, but Rohingya refugees, despite being registered with the UNHCR, face detention and imprisonment.
- Citizenship Amendment Act (CAA): The CAA, passed in 2019, allows non-Muslim minorities from neighboring countries to apply for Indian citizenship, but it excludes the Rohingya, who are Muslim. This has worsened their status in India.
- Detention Conditions: Rohingya refugees in detention centers, including pregnant women and children, are often subjected to dehumanizing conditions. For example, the Matia Transit Camp in Assam has been criticized for its poor conditions.
- Lack of Legal Aid: Civil society organizations that work with Rohingya refugees face funding issues due to the revocation of Foreign Contribution (Regulation) Act (FCRA) licenses. This has made it difficult for lawyers to take on cases involving Rohingya refugees, as they fear government retaliation.
- Human Rights Violations: A recent report by The Azadi Project and Refugees International reveals gross violations of Rohingya refugees' constitutional and human rights in India. Many refugees are being held in detention even after completing their sentences, and their basic rights are not being upheld.



Refugee, Asylum - Seeker and Migrant

- Refugee: Refugees are persons who are outside their country of origin for reasons of feared persecution, conflict, generalized violence, or other circumstances that have seriously disturbed public order and, as a result, require international protection.
 - The refugee definition can be found in the 1951 Convention and regional refugee instruments, as well as UNHCR's Statute.
- Migrant: While there is no formal legal definition of an international migrant, most experts agree that an international migrant is someone who changes his or her country of usual residence, irrespective of the reason for migration or legal status.
 - ➤ Generally, a distinction is made between shortterm or temporary migration, covering movements with duration between three and 12 months, and long-term or permanent migration, referring to a change of country of residence for duration of one year or more.

- Asylum-seeker: An asylum-seeker is a person who has left their country and is seeking protection from persecution and serious human rights violations in another country, but who hasn't yet been legally recognized as a refugee and is waiting to receive a decision on their asylum claim.
 - Seeking asylum is a human right.
 - ➤ This means everyone should be allowed to enter another country to seek asylum.

KEY CONSTITUTION BENCH DECISIONS OF 2024

Context

In 2024, the **Supreme Court of India** delivered **12 major Constitution Bench judgments**, covering a wide range of legal and constitutional matters. These cases were decided by **five-, seven-, and nine-judge benches**. The year stands out due to its high level of judicial activity compared to previous years.

Summary of each significant decision made in 2024:

- Constitutionality of the Electoral Bonds Scheme (5-judge bench)
 - Case: Association for Democratic Reforms v Union of India
 - ➤ **Key Point**: The Court struck down the **Electoral Bonds Scheme**, which allowed anonymous political donations. The Court ruled that the right to privacy of donors cannot outweigh voters' right to information about who is funding political parties. The practice of "unlimited corporate funding" was found to promote quid pro quo relationships between donors and political parties.
 - ► **Electoral Bonds** were introduced in 2018 to allow anonymous donations to political parties.

Automatic Vacation of Stay Orders (5-judge bench)

- ► Case: High Court Bar Association Allahabad v The State of Uttar Pradesh
- ➤ **Key Point**: The Supreme Court clarified that stay orders do not automatically lapse after six months unless extended by a subsequent order. This decision overruled a previous judgment (2018) that imposed an automatic timeline. The Court emphasized that vacating stay orders should be a **judicial discretion**, not a mechanical process.
- Legislative Immunity for Accepting Bribes (7-judge bench)
 - ➤ Case: Sita Soren v Union of India
 - ➤ **Key Point**: The Supreme Court overruled a 1998 decision that granted immunity to legislators from



prosecution for bribery tied to their speeches or votes in Parliament. The Court held that bribery undermines democracy and should not be protected by immunity.

Legislative immunity traditionally protected legislators from prosecution for actions related to speeches or votes made in the legislature.

States' Power to Tax Mines and Minerals (9-judge bench)

- ➤ Case: Mineral Area Development Authority v Steel Authority of India
- **Key Point**: The Court ruled that **royalty** payments made by miners to landowners are not considered taxes under the Mines and Minerals (Development and Regulation) Act, 1957. States are allowed to levy taxes on mines and minerals. This decision overruled a 1989 judgment and clarified that royalty is not the same as a tax.
 - Royalties refer to the fees paid to the owner of a product in exchange for the right to use that product.
 - Royalties are based on specific contracts or agreements between the mining leaseholder and the lessor (the person who leases the property) who can even be a private party.
 - Section 9 of the Mines and Minerals (Development and Regulation) Act, 1957 (MMDRA) requires those who obtain leases to conduct mining activities to "pay royalty in respect of any mineral removed" to the individual or corporation who leased the land to them.
 - Under the State List, states are given the exclusive power to make laws relating to "Taxes on mineral rights subject to any limitations imposed by Parliament by law relating to mineral development" (Entry 50).

Validity of Sub-Classification Within Reserved Categories (7-judge bench)

- Case: State of Punjab v Davinder Singh
- ➤ **Key Point**: The Court upheld the power of states to create sub-classifications within the Scheduled Castes and Scheduled Tribes (SC/ST) categories. This judgment stated that sub-classification was valid as it does not alter the Presidential List of SCs and STs. However, one judge dissented, arguing that it violated Article 14 (Right to Equality).

Section 6A of the Citizenship Act, 1955 (5-judge bench)

- ➤ Case: In re: Section 6A of the Citizenship Act, 1955
- ➤ Key Point: The Court upheld Section 6A of the Citizenship Act, which grants citizenship to migrants who entered **Assam** from **Bangladesh** before March 1971. The Court ruled that the law did not alter Assam's culture, but a judge dissented, arguing that the provision had become unconstitutional over time due to delayed implementation.

Section 6A of the Citizenship Act grants **Indian citizenship** to those who migrated from Bangladesh to Assam before March 1971.

States' Power to Regulate Industrial Alcohol (9-judge bench)

- ➤ Case: State of Uttar Pradesh v Lalta Prasad Vaish
- **Key Point**: The Court upheld that **state governments** can regulate industrial alcohol under Entry 8 of the **State List**, meaning they have jurisdiction over industrial alcohol, not just potable liquor. This decision overturned a 1989 ruling that limited intoxicating liquor to alcoholic beverages for consumption.

Nature of Private Property (9-judge) bench)

- ➤ Case: Property Owners Association v State of Maharashtra
- **Key Point**: The Court ruled that not all privately owned property qualifies as a material resource of the community under Article 39(b). It upheld that **private property** cannot be considered a community resource unless it serves a larger public good. One judge dissented, arguing that all private property is a material resource of the community.

Validity of Light Motor Vehicle Licence to Drive Transport Vehicles (5-judge bench)

- ► Case: Bajaj Allianz General Insurance v Rambha Devi
- ➤ **Key Point**: The Court ruled that a **Light Motor Vehicle (LMV) licence** allows the holder to drive transport vehicles weighing less than 7500 kg, without requiring a separate licence. However, a separate licence is required for vehicles like e-rickshaws or those carrying hazardous goods.

Altering Rules for Appointment to **Public Posts (5-judge bench)**

- ➤ Case: Tej Prakash Pathak v Rajasthan High Court
- **Key Point**: The Court ruled that **public sector** employers cannot alter recruitment rules after the process has begun. This was in response to a case where the Rajasthan High Court introduced a cut-off after the recruitment process had started. The Court emphasized that recruitment processes must adhere to established rules and constitutional principles.

Aligarh Muslim University's Minority Status (7-judge bench)

- ► Case: Aligarh Muslim University v Naresh Agarwal
- ➤ Key Point: The Supreme Court overruled a 1967 judgment and granted minority status to Aligarh Muslim University (AMU). The Court also laid down **new criteria** to determine what constitutes a minority institution under Article 30 of the Constitution. This marks a significant shift in recognizing institutions based on their establishment by a minority community.



- Minority Institutions: According to Section 2(g) of the National Commission for Minority Education Institution Act, a minority institution means a college or institution (other than a university) established or maintained by a person or group of person from amongst the minority.
 - Constitutional provisions: The Constitution provides for the cultural and educational rights of the minorities under Article 29 and 30.
 - Article 29 is general protection to the minorities to conserve their language etc. It protects the rights only of the Indian citizens.
 - Article 30 deals explicitly with the rights of the minorities to establish institutions of their choice.

Appointment of Arbitrators by Ineligible Persons (5-judge bench)

- ➤ Case: Central Organisation for Railway Electrification v ECL-SPIC-SMO-MCML (JV)
- ➤ **Key Point**: The Court ruled that **arbitration clauses** providing for **unilateral appointments** to the arbitral tribunal are **invalid**. The Court emphasized that all parties in an arbitration process must be treated equally, and unilateral appointments violate **Article 14** (Right to Equality). However, some judges dissented, saying that arbitration laws should be governed by the **Arbitration Act**, not constitutional principles.

JUDICIAL ACCOUNTABILITY AND IMPEACHMENT PROCESS

Context:

Recently, a Judge of the **Allahabad High Court** made controversial remarks within the Court precincts. This has raised concerns about the difficulties in holding judges of India's higher judiciary accountable for misconduct.

Judicial Accountability Mechanism

- The mechanism to hold judges accountable in India is complex and has several steps. The process to remove a judge involves an **impeachment procedure**, which is difficult to initiate and even harder to complete. Here's how it works:
- Judicial Misbehaviour or Incapacity: The Judges (Inquiry) Act, 1968, sets out the process for investigating judicial misconduct. If there is an allegation of misbehaviour or incapacity by a judge, a three-member committee is formed to look into the matter. The committee consists of:
 - ➤ A Supreme Court judge,
 - A Chief Justice of a High Court, and
 - ➤ An eminent jurist.
 - This committee functions similarly to a trial court, investigating whether the judge's conduct warrants impeachment.

- Initiating the Impeachment: Before the committee can begin its investigation, the impeachment process must be initiated by either the Lok Sabha (Lower House of Parliament) or the Rajya Sabha (Upper House of Parliament). This can be done if:
 - ➤ A **motion** is brought in either House to impeach the judge.
 - ➤ The motion must be supported by **two-thirds of the members present** in the House. This means that
 even if most members agree with the motion, it can
 fail if too many members abstain from voting.
- Role of Parliament: Once the committee investigates the charges, it submits its findings to Parliament. The impeachment process requires Parliament to vote on whether to remove the judge from office. If the committee finds the judge guilty of misbehaviour or incapacity, Parliament votes to remove the judge.
 - ➤ However, **removal is not automatic**, and if Parliament does not vote in favor (due to absences or political factors), the judge may not be removed.
- Historical Cases of Impeachment: There have been only two cases of successful impeachment proceedings, both involving serious misconduct: Justice V. Ramaswami (1990s) and Justice Soumitra Sen (2011)

Problems with the Current System

The current judicial accountability system has several flaws:

- Political Interference: The impeachment process can be hindered by political factors, such as abstentions in Parliament.
- Resignation Loophole: Judges who face impeachment can resign, effectively avoiding accountability and preventing the investigation from continuing. This gives them immunity from punishment, unlike elected officials.
- Slow Process: The entire process is lengthy, and even if a judge is found guilty, they may continue to hold their position until the impeachment is passed, which requires significant political support.

POLIO RESURGENCE

Context

The World Health Organization (WHO) has reported a **resurgence of polio globally**, with cases and environmental samples of polio virus detected in several countries.

Global Spread of Polio:

- Wild poliovirus cases have decreased by over 99% since 1988, from an estimated 350 000 cases in more than 125 endemic countries to 12 reported cases in 2023.
- Of the 3 strains of wild poliovirus (type 1, type 2 and type 3), wild poliovirus type 2 was eradicated in 1999 and wild poliovirus type 3 was eradicated in 2020.
- As of 2024, endemic wild poliovirus type 1 remains in two countries: Pakistan and Afghanistan.
- However, the virus has been found in wastewater samples from countries like Finland, Germany, Poland,



Spain, and the UK. While no confirmed human cases have been reported in these countries, the detection of the virus highlights the ongoing risk of polio despite high vaccination coverage.

- In addition to European countries, cases of wild poliovirus (WPV) and vaccine-derived poliovirus (cVDPV) have been detected in countries like Pakistan, Cameroon, Cote d'Ivoire, Chad, and Nigeria.
- The virus has been found in sewage samples in cities such as Barcelona (Spain), Warsaw (Poland), and several cities in Germany and the UK.
- Notably, these viruses are genetically linked to strains from countries like Nigeria.
- Ongoing Surveillance and Vaccination: WHO continues to emphasize the importance of surveillance and vaccination.
 - ➤ Despite high vaccination coverage (85-95% of children receiving polio vaccines), there are pockets of undervaccination in certain areas, leaving gaps in immunity that can allow the virus to spread.
 - ➤ These gaps must be addressed through targeted vaccination campaigns and continuous monitoring of immunity levels.

The Debate Over Polio Vaccines:

- Role of Oral Polio Vaccine (OPV): The oral polio vaccine (OPV) has been a key tool in the global effort to eradicate polio.
 - It is a live-attenuated vaccine, meaning it uses a weakened form of the virus to stimulate immunity.
 - ➤ OPV has been effective in large-scale immunization campaigns, especially in low-resource settings.
 - ► However, OPV has a downside: in rare cases, it can lead to vaccine-derived polio (cVDPV), where the weakened virus in the vaccine mutates and causes new polio outbreaks.
- Shift in Transmission Theory: For years, polio was thought to primarily spread through the faecal-oral route—when contaminated feces from an infected person are ingested, often through dirty water or food.
 - ➤ This led to the widespread use of OPV. However, recent research suggests that respiratory transmission—through coughing or sneezing—may play a larger role in spreading the virus than previously thought.
 - ➤ This theory challenges the long-held belief in the faecal-oral route as the dominant mode of transmission.
- Case for Injected Polio Vaccine (IPV): A recent report argues that respiratory transmission might be the main way polio spreads, particularly for wild poliovirus (WPV) and vaccine-derived poliovirus (cVDPV).
 - ➤ They suggest that injectable polio vaccine (IPV), which is non-transmissible (unlike OPV), should be used exclusively for polio eradication.
 - ➤ IPV is injected rather than taken orally, and does not carry the risk of vaccine-derived polio. The OPVto-IPV switch should be accelerated globally to effectively eradicate polio.

What is Polio?

- The World Health Organization (WHO) defines polio or poliomyelitis as a highly infectious viral disease, which mainly affects young children.
- The virus is transmitted by person-to-person, spread mainly through the faecal-oral route or, less frequently, by a common vehicle (e.g. contaminated water or food) and multiplies in the intestine, from where it can invade the nervous system and can cause paralysis.
- There are three wild-types of poliovirus that cause the disease:
 - ➤ Wild Poliovirus 1 (WP1)
 - ➤ Wild Poliovirus 2 (WP2)
 - ➤ Wild Poliovirus 3 (WP3)
- Out of the three, WPV-2 was interrupted successfully more than a decade ago.
- The two remaining viruses, now seen in Pakistan, Afghanistan and Nigeria, are WPV-1 and WPV-3.
- Symptoms: Initial symptoms of polio include fever, fatigue, headache, vomiting, stiffness in the neck, and pain in the limbs.
- Effect: In a small proportion of cases, the disease causes paralysis, which is often permanent. There is no cure for polio, it can only be prevented by immunization."

Treatment of Polio:

- There are two vaccines available to fight polio:
 - ➤ Inactivated poliovirus (IPV): IPV consists of a series of injections that start 2 months after birth and continue until the child is 4 to 6 years old. This version of the vaccine is provided to most children in the U.S. The vaccine is made from inactive poliovirus. It is very safe and effective and cannot cause polio.
 - ➤ Oral polio vaccine (OPV): OPV is created from a weakened form of poliovirus. This version is the vaccine of choice in many countries because it is a low cost, easy to administer, and gives an excellent level of immunity. However, in very rare cases, OPV has been known to revert to a dangerous form of poliovirus, which is able to cause paralysis.
- Polio vaccinations, or boosters, are highly recommended for anyone who is not vaccinated or is unsure whether they are.

DELHI'S GOVERNANCE STRUCTURE

Context

Ahead of the **Delhi Assembly elections in 2025**, the longstanding power struggle between the **Delhi**



government, led by the **Aam Aadmi Party (AAP)**, and the **Union government** is intensifying once again.

How Delhi's Governance Structure Was Established

- Pre-Independence: In 1947, as India was about to gain independence, the Constituent Assembly discussed the structure of Delhi's governance. Delhi was made a Union Territory (UT), directly controlled by the Central government.
- 1991 The Change: After India's Constitution was amended in 1991, Delhi got a Legislative Assembly (like a state) under the National Capital Territory (NCT) Act. However, key areas like public order, police, and land remained under the control of the Central government. This made Delhi a special kind of Union Territory with some autonomy.
- The Power Struggle After 2015: In 2015, the Union government issued a notification removing Delhi's control over services and gave more powers to the Lieutenant Governor (LG). The Delhi government protested, claiming that this undermined the elected government of Delhi.

Key Court Rulings and Legal Battles

- Delhi High Court (2016): The Delhi High Court ruled that the LG is the "administrative head" of Delhi, meaning the Union government has the final say over key matters like services. The Court said that Delhi continues to be a Union Territory and the Delhi Legislative Assembly has limited powers.
- Supreme Court Ruling (2018): In 2018, the Supreme Court ruled that the Lieutenant Governor must act based on the aid and advice of the Delhi Council of Ministers for most matters, except for areas like public order, police, and land. This was a win for the Delhi government, as it said the LG's role should be limited to consultation, not concurrence.
- Union Government's Response: Despite the Supreme Court's ruling, the Union government passed the Government of National Capital Territory (Amendment) Act, 2021. This Act expanded the LG's powers, giving him more control, especially over the services and other matters. The Act also allowed the LG to have a say in Bills passed by the Delhi Legislative Assembly, undermining the Delhi government's authority.

The 2023 Developments: New Ordinance and Legislation

- 2023 Supreme Court's Judgment: In 2023, the Supreme Court gave another verdict that returned control over services to the Delhi government, ruling that the LG cannot have independent powers in matters of services like the posting of officers.
- Union Government's Response (2023): In response, the Union government passed an Ordinance (a temporary law) to again take away control over services from the Delhi government. The Ordinance created the National

- Capital Civil Services Authority, a body made up of the Chief Minister of Delhi, Chief Secretary, and Principal Secretary. This body would recommend decisions on transfers, postings, and disciplinary actions of Delhi's civil servants to the LG, who would have final discretion over these matters.
- The 2023 Bill: In August 2023, the Union government introduced the Government of National Capital Territory (Amendment) Bill, 2023. The Bill was passed by Parliament and received the President's assent in August 2023. It confirmed the LG's powers over Delhi's administration, even more than before.
 - The Delhi government has challenged the 2023 Ordinance and the Amendment Bill in the Supreme Court. The matter is still pending, and the Supreme Court has yet to give a final decision on whether the Ordinance and the new law are constitutional

Why is this issue so important?

- Delhi's Special Status: Delhi is not just any state or Union Territory; it is the national capital of India. The Constitution gives Delhi special provisions under Article 239AA, creating a unique relationship between the Delhi government and the Union government.
- Key Areas of Dispute: The core issue is about who controls the administration of Delhi.
 - The Delhi government argues that it should have full control over Delhi's civil services and should be able to make decisions without interference from the Central government.
 - The Union government, on the other hand, claims that because Delhi is the national capital, it should maintain significant control over key matters, including services, law enforcement, and land management.

INDIA'S LOGISTICS SECTOR

Context

The logistics sector in India made significant progress in 2024 towards achieving the goals outlined in the **National Logistics Policy (NLP)** launched in 2022. The sector saw improvements in efficiency, cost reduction, and infrastructure, driven by key government initiatives and reforms.

Current status of India's Logistics Sector

- The logistics sector contributes around 13-14% to GDP and provides livelihood for more than 22 million people.
- It enables timely delivery, decreases costs, and enhances competitiveness, crucial for thriving businesses.
- The logistics industry employs over 22 million people in India, making it a significant contributor to the country's employment landscape.
- The demand for India's logistics sector is expected to rise significantly due to several key factors.



- India's projected GDP growth of USD 26 trillion by fiscal year 2048 (with USD 6 trillion by 2030) and the goal of boosting merchandise exports to USD 1 trillion by 2030 will create substantial opportunities for the transport and logistics industry.
- Projections suggest that the sector will grow at a CAGR of 4.5 per cent from 2022 to 2050, reaching 15.6 trillion tonnes.

Key Developments in 2024:

- Logistics Cost Reduction: India's logistics cost remains high at 10-14% of GDP, but the government aims to reduce this. Efforts to lower logistics costs were emphasized after India improved its World Bank Logistics Performance Index ranking to 38th globally in 2023.
 - The Goods and Services Tax (GST) has notably cut waiting times at state borders, reducing truck travel time by nearly 30%, thereby helping to reduce logistics costs and increasing the average distance trucks travel.
- Infrastructure and Investment: The logistics sector saw significant investments in infrastructure, with a 11.1% increase in capital expenditure for infrastructure development. This growth aligns with India's ambition to become a \$5 trillion economy by 2027.
 - Progress in multi-modal connectivity was marked by improvements in rail, waterway, and highway infrastructure. The Sagar Sethu maritime portal and other digital initiatives like the Coastal Shipping Bill and Sagar Ankalan portal are helping to modernize port logistics.
- Digital Transformation and Policy Support: The logistics industry experienced transformative changes in 2024, including deeper digital adoption and enhanced focus on risk management.
 - The One Network for Digital Commerce (ONDC) and government-backed initiatives like UDAN (to promote regional air connectivity) contributed to enhanced logistics efficiency.
- Growth Prospects: The logistics sector, valued at USD 250 billion and contributing 14% to India's GDP, is expected to continue growing, supported by increased e-commerce demand, faster delivery needs, and expanding exports.

Challenges and Future Focus:

- Despite significant progress, there is need for further technology integration to reduce logistics costs and improve the ease of doing business.
- Maritime connectivity projects identified in the Union Budget with an outlay of Rs 75,000 crore need to be expedited to strengthen coastal transportation.

Government measures targeting India's logistics

- Dedicated Freight Corridors: The government has established high-speed, large-capacity railway corridors to facilitate the transportation of goods.
 - ➤ As of January 2023, 1,724 km of these corridors have been completed, connecting major cities such as **Delhi, Mumbai, Chennai, and Howrah**, helping improve logistics efficiency.
- Multi-modal Logistics Parks: These parks are designed to integrate different transportation modes (road, rail, air) and provide advanced facilities like mechanized warehouses, cold storage, and customs clearance.
- Parivahan Portal: The portal integrates digital services for driving licenses and vehicle registrations. It includes a mobile application, 'mParivahan,' to simplify administrative procedures, improving logistics operations by reducing paperwork and enhancing efficiency.
- E-way Bill System: Introduced in 2018, the e-way bill system requires electronic documentation for goods valued above Rs. 50,000. This has reduced the need for physical paperwork at state borders.
- PM GatiShakti: Launched in October 2021, PM GatiShakti aims to boostlogistics efficiency by creating a National Master Plan for integrated infrastructure. With Rs. 7.5 lakh crore invested in 2022-23, it focuses on reducing disruptions and improving multi-modal connectivity to lower logistics costs.
- National Logistics Policy (NLP): The NLP, launched in 2022, aims to reduce logistics costs as a percentage of GDP, targeting a seamless and integrated logistics market. It seeks to create a single-window e-logistics platform to make MSMEs more competitive and enhance the logistics sector's overall efficiency.
- Unified Logistics Interface Platform (ULIP) is designed to enhance efficiency and reduce the cost of logistics in India
- Logistics Efficiency Enhancement Programme (LEEP): LEEP is designed to improve freight transport efficiency by addressing infrastructure gaps, reducing transportation time, and optimizing goods transfer processes through the use of technology and improved logistics practices.
- Trade Facilitation Measures: To boost trade, the government has developed an Export-Import (EXIM) Logistics Group and a comprehensive plan for port connectivity. Additionally, the Logistics Data Bank tracks EXIM cargo, improving supply chain transparency and reducing costs. 60 road projects by MORTH and 47 rail projects by Indian Railways are aimed at strengthening port connectivity.



- The Land Ports Authority of India (LPAI) has made it easier to move and release wagons more quickly by electrifying the short railway lines that connect railway yards to inland container depots and container freight stations.
- The launch of the NLP Marine policy helped improve connectivity, especially for port-related logistics and railway connections to inland container depots.
- The Goods and Services Tax (GST) has significantly decreased the cost of logistics. The "one nation, one tax" policy has reduced truck wait times at state crossings, which has resulted in a nearly 30% reduction in travel time.
- Digitalisation, augmented connectivity, and the adoption of cutting-edge innovations such as Radio Frequency Identification (RFID) and Global Positioning System (GPS) are bolstering operational efficiency while mitigating costs.

UPSC PYQ

Q: The Gati-Shakti Yojana needs meticulous coordination between the government and the private sector to achieve the goal of connectivity. Discuss (UPSC 2022)

DRAFT NATIONAL POLICY FRAMEWORK ON AGRICULTURAL MARKETING

Context

Farmer unions tell Union government to reject policy on agriculture marketing.

What is Agricultural marketing?

- Agricultural marketing is a critical link between farmers and consumers, ensuring that agricultural produce reaches the right buyers at fair prices.
- It is not just about selling crops but understanding market demands, facilitating the distribution process, and ensuring equitable transactions throughout the supply chain.
- Components: Production Planning; Pricing; Promotion; Distribution; Sales.
- Key components of India's agricultural marketing system include the Agricultural Produce Market Committee (APMC), which regulates the trade of agricultural commodities to ensure fair practices.
 - ➤ Agricultural Produce Market Committee (APMC) is a regulatory body that oversees agricultural commodity markets in India.
 - ▶ It was established under the **APMC Acts**, and its primary role is to manage and regulate the markets where agricultural products are sold.

- ➤ APMCs operate under the jurisdiction of the State Governments in India, aiming to ensure fair and transparent trading of agricultural produce.
- ➤ Market Structure: APMCs, commonly known as mandis, are the primary platforms where agricultural products are sold. These mandis are regulated by state governments and are used by farmers to sell their produce to wholesalers, retailers, or processors. Agricultural markets are divided into:
 - Primary Markets: Village-level markets.
 - **Secondary Markets:** Larger markets at the district level.
 - **Terminal Markets:** Large urban centers where products are traded in bulk.
- > Objectives of the APMC:
 - Manage Farm-to-Retail Price
 - Timely Payments to Farmers
 - ♦ Limit Distress Sale by Farmers
 - Prevent Exploitation by Intermediaries

What is the Draft National Policy Framework on Agricultural Marketing?

The draft National Policy Framework on Agricultural Marketing released by the Central government aims to create a competitive and transparent agricultural marketing ecosystem. The focus is on ensuring that farmers have access to diverse markets and can secure better prices for their produce. The key aspects of the framework:

- Digital Innovations and Market Access: The policy emphasizes digital innovations to improve the agricultural marketing ecosystem. By adopting technologies like blockchain, the framework aims to enhance transparency and efficiency in trading processes. Farmers will also be allowed to sell their produce across various platforms, such as:
 - > Traditional mandis (regulated markets)
 - > Private buyers
 - > Direct sales to consumers
- Promoting Private Investment in Infrastructure: The policy highlights the need for private investment in essential agricultural market infrastructure. This includes building warehouses, cold storage facilities, and other logistics solutions to improve the storage and handling of agricultural produce. This is expected to reduce postharvest losses and ensure that farmers receive fair prices for their products.
- Simplifying Regulations and Improving Market Coordination:
 - ➤ **Simplification of licensing norms** to make market entry easier for traders.
 - ➤ Reduction of state-specific restrictions that hinder the free movement of agricultural produce across states.
 - ➤ **Grievance redressal mechanisms** for both farmers and buyers to resolve issues and disputes quickly.



- Addressing Challenges Facing Farmers: The policy acknowledges the challenges faced by small and marginal farmers, including:
 - > Fragmented landholdings
 - > Inadequate market access
 - > Price volatility
- These issues often lead to unfair pricing and low income for farmers, necessitating urgent policy interventions. The framework proposes a set of measures to improve market access, ensure fair prices, and support sustained income for farmers.

Criticisms and Farmer Concerns

- While the policy aims for **inclusive growth**, critics argue that the framework echoes aspects of the farm laws introduced in 2020, which were later repealed after widespread protests.
 - > The draft policy talks about dismantling Agriculture Produce Marketing Committee (APMC) markets and promoting contract farming, which was one of the key points in the three farm laws that farmers had protested against.
- There are concerns that the policy could still lead to privatization of agricultural markets and further weaken minimum support price (MSP) mechanisms.
- The major concern among farmers is **contract farming**, a subject which was a part of the three repealed farm laws, equipping APMC markets with specific infrastructure and services in Public Private Partnership (PPP) mode and the push for reforms in the state's agricultural marketing laws and policies.

Reforms in Agricultural Marketing

The government promotes reforms in state marketing laws and policies to develop accessible competitive markets for farmers, such as direct marketing and private markets.

- e-NAM Initiative: Launched in 2016, the National Agriculture Market (e-NAM) enables farmers to sell their produce transparently to a large number of buyers across multiple markets electronically.
- **FPO Scheme:** The government launched the **10,000** Farmer Producer Organizations (FPOs) scheme in 2020 to provide market linkages, access to e-markets, futures markets, and export markets, while also offering collective bargaining power for farmers.
- o Agriculture Infrastructure Fund (AIF): The Agriculture Infrastructure Fund (AIF) is a central sector scheme providing Rs. 1,00,000 Crore in loans for investing in post-harvest market infrastructure like warehouses and cold storage facilities.

- Agricultural Marketing Infrastructure (AMI) **Scheme:** The Agricultural Marketing Infrastructure (AMI) scheme, part of the Integrated Scheme for Agricultural Marketing (ISAM), provides financial assistance for the construction of godowns/ warehouses in rural areas to enhance the storage capacity for agricultural produce.
- FPOs Access to Various Markets: FPOs enable farmers to access e-markets, futures markets, export markets, and benefit from collective bargaining and sale of value-added products.

MAINS PYO

- How does e-Technology help farmers in production and marketing of agricultural produce? Explain it. (UPSC 2023)
- What are the main constraints in transport and marketing of agricultural produce in India? (UPSC 2020)

UPSC PRELIMS PYQ

- What is/are the advantage/advantages of implementing the 'National Agriculture Market' scheme? (UPSC 2017)
 - (1) It is a pan-India electronic trading portal for agricultural commodities.
 - It provides the farmers access to nationwide market, with prices commensurate with the quality of their produce.

Select the correct answer using the code given below:

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

Solution: (c)

INDIA'S FISHERIES AND AQUACULTURE SECTOR

Context

India's fisheries and aquaculture sector is in the spotlight as the country continues to experience significant growth in fish production.

Current state of India's fisheries and aquaculture sector

India's fisheries and aquaculture sector has grown significantly in recent years, contributing to the livelihoods of approximately **three crore** fishers and fish farmers.



- The country's fish production reached a record 175 lakh tons in 2022-23, marking an 83% increase in production since 2013-14.
- A significant portion of this production (about 75%) comes from inland fisheries, making India the secondlargest fish and aquaculture producer in the world.
- Given this, improving the extension services that support fishers and fish farmers is crucial to ensure the sustainable growth of the sector.

Role of Extension Services in Fisheries and Aquaculture

Extension services are critical for **disseminating knowledge** and providing technical support to fishers and fish farmers. These services should focus on:

- Offering request-based support regarding the life cycle of improved species, water quality, disease management, and rearing technologies.
- Addressing the needs of seed growers and hatcheries to enhance productivity.
- Providing need-based training to promote sustainable practices and fisheries-based business models.

Critical extension initiative

Matsya Seva Kendras, Sagar Mitras, and digital platformslike AquaBazaar are pivotal in delivering technical support and capacity building to fishers and fish farmers.

- Matsya Seva Kendras (MSK): Under the Pradhan Mantri Matsya Sampada Yojana (PMMSY), the government has introduced Matsya Seva Kendras (MSKs) to enhance fisheries extension services. These Kendras are envisioned as one-stop solutions for fishers and fish farmers, offering a range of services delivered by trained aquaculture professionals.
- Key Features of Matsya Seva Kendras:
 - Support for Women and Weaker Sections: The government provides 60% financial assistance to set up MSKs targeting women and marginalized communities.
 - ➤ **Services Offered**: MSKs provide a variety of services, including water quality testing, disease diagnosis, capacity building, and technology infusion for better fish farming.
 - For example, the MSK in Thrissur, Kerala has a laboratory for water, soil, and microbial analysis, and provides disease testing based on requests.
 - The MSKs in Nasik and Sangli (Maharashtra) focus on capacity building related to seed and feed inputs and the use of new technologies.
 - Community and Cooperative Engagement: The government encourages MSKs to engage with startups, cooperatives, producer organizations, selfhelp groups, and joint liability groups to foster knowledge-sharing and the adoption of sustainable fishing practices.

- Impact of MSKs: MSKs aim to promote a "whole of government" approach, meaning a collaborative effort across various government and community sectors to address challenges like climate change and improve fisheries management. They play a pivotal role in promoting conservation and regenerative practices in both inland and marine fisheries.
- Sagar Mitras: Connecting Sea-Borne Fishers: Another critical extension initiative is the deployment of Sagar Mitras, or sea helpers, in coastal regions of India. These individuals act as an interface between the government and sea-borne fishers, providing essential support and information.

Key Functions of Sagar Mitras:

- Data Collection: Sagar Mitras gather and compile data on daily marine catches, price fluctuations, and marketing needs at fish landing centers and harbours.
- ► **Information Dissemination**: They relay vital information to fishers about:
 - Local regulations
 - Weather forecasts
 - Natural calamities
 - Hygienic fish handling practices
 - Fishing zones in the seas
- ➤ This **real-time support** helps fishers adapt to changing market conditions and weather, ensuring better productivity and safety.

Improving Extension Services in Fisheries

To make fisheries extension services more effective and accessible, two main strategies are recommended:

- Institutional Convergence: There is a need to integrate the Matsya Seva Kendras with the existing extension networks, such as the Krishi Vigyan Kendras (KVKs) of the Indian Council of Agricultural Research (ICAR) and the State extension services. This will create a more efficient, broad-reaching extension system across the country.
- Digital Outreach: Promoting the use of digital platforms is crucial to expand access to expert advice. A major initiative in this regard is the AquaBazaar platform, initiated by the National Fisheries Development Board (NFDB). AquaBazaar provides:
 - Virtual learning opportunities
 - Practical demonstrations for fishers
 - Clarification of key concepts related to fish breeding, seed production, and commercial fish farming.



MANMOHAN SINGH, ARCHITECT OF ECONOMIC REFORMS

Context

Manmohan Singh, former Prime Minister and Finance Minister of India, passed away on December 26, 2023, at the age of 92. He will always be remembered for playing a pivotal role in saving India's economy during the 1991 economic crisis.

Brief background

- During the 1991 economic crisis, India was on the verge of a sovereign default (unable to pay off its debts), with extremely low foreign exchange reserves. The government even had to pledge its gold reserves to raise money.
- This crisis was caused by years of poor economic management, where the government was spending more than it earned, leading to high levels of debt.
- India's economy was also heavily controlled by the government through the License-Quota Raj, which restricted business growth and hindered private enterprise.
- In 1991, when Singh took over as Finance Minister in P.V. Narasimha Rao's government, he introduced a series of economic reforms that transformed India's economic landscape:
 - ➤ **Deregulation:** Industries that were previously tightly controlled by the government were opened up for private sector participation.
 - ➤ **Trade liberalization:** The government reduced import tariffs (taxes on imports) and removed restrictions on exports.
 - Devaluation of the rupee: The Indian currency was made weaker to make Indian products cheaper abroad, boosting exports.

Key Achievements of the Reforms

- India's Growth in the Global Economy: The 1991 reforms played a crucial role in increasing India's presence in the global economy.
 - According to World Bank data, India's share in global GDP (the total economic output of the world) had been declining since the 1960s. However, after the reforms, India's economic growth accelerated, and its share in global GDP began to rise. Today, India is on track to become the third-largest economy in the world.
- Poverty Reduction and Welfare Programs: Another major achievement of the reforms was a significant reduction in extreme poverty. As the economy grew, the government was able to generate more revenue, which it could then use to fund welfare programs aimed at helping the poor.
 - Although poverty is still a problem in India, especially in rural areas, the economic growth resulting from

the reforms has helped lift millions out of extreme poverty. The reforms also created a cycle of wealth generation, which improved the government's ability to address poverty.

- Rise of Private Businesses and the Stock Market: The reforms helped unleash the power of private enterprise. By deregulating industries, businesses were no longer restricted by government controls, allowing them to grow, create jobs, and compete globally.
 - ➤ The stock market also grew rapidly after the reforms. In the early 1990s, companies like Infosys were able to list their shares on the stock market, which sparked the development of an equity culture in India.
- Increased Foreign Investment: Following the reforms, India became a more attractive destination for foreign investors. The liberalization of markets and the opening up of sectors to private businesses helped bring in foreign direct investment (FDI). This investment provided stability to India's economy, even as imports increased.
 - ➤ The inflow of foreign capital also helped stabilize the Indian rupee and supported the growth of India's stock market.

Challenges That Remain

- Manufacturing Sector Stagnation: Despite the impressive growth in sectors like services (IT, software, etc.), India has not been able to boost its manufacturing sector as much as other countries like China.
 - ➤ The share of manufacturing in India's GDP has remained stagnant since the reforms. This has been a big concern because a strong manufacturing sector can create jobs for millions of people and lead to more inclusive growth.
 - ➤ Even though India missed the opportunity to become a major manufacturing hub, some states have done better than others in attracting manufacturing investments. Moving forward, India's policymakers need to focus more on building up the manufacturing sector to create more jobs and strengthen the economy.
- Inequality and Regional Disparities: While the economic reforms helped reduce extreme poverty, they did not equally benefit all parts of India. Inequality remains a challenge, with some regions and states growing faster than others. The growth has been more visible in urban areas, while rural regions have seen slower development.
 - ➤ There is also concern about the growing gap between the rich and poor, as a large chunk of the wealth created by the reforms has been concentrated among a smaller group of people.
- The 1991 economic reforms led by Manmohan Singh marked a turning point in India's history. The country went from being an economically closed nation with a struggling economy to an open, fast-growing economy that is now one of the world's largest. Manmohan Singh's legacy will always be tied to the economic transformation he helped bring about.



'SEVERE NATURE' DISASTER STATUS FOR WAYANAD

Context

The Central government officially recognised the catastrophic landslides in Wayanad as a disaster of "severe nature," five months after the devastation hit the Kerala district. This declaration acknowledges the immense scale and impact of the disaster that struck the region, resulting in significant loss of life and widespread destruction.

What Does 'Severe Nature' Disaster Status Mean for Wayanad?

- The designation of "severe nature" carries significant implications for Wayanad's recovery.
- The official recognition of the disaster's severity paves the way for more substantial financial support from both the State and National Disaster Response Funds.
 - ➤ The SDRF will provide initial relief, and the NDRF will follow, depending on assessments by the IMCT, ensuring that the region receives the financial resources required for reconstruction and rehabilitation efforts.
- This classification will also expedite the release of funds for relief work and help in the restoration of essential services like healthcare, education, and infrastructure.
- Additionally, it signals a commitment to address the long-term rehabilitation needs of the displaced population, ensuring that the affected communities can rebuild their lives and livelihoods.

FACT BOX

What is Disaster?

- The DM Act defines "disaster" to mean 'a catastrophe, mishap, calamity or grave occurrence in any area, arising from natural or man-made causes, or by accident or negligence which results in substantial loss of life or human suffering or damage to, and destruction of, property, or damage to, or degradation of, environment, and is of such a nature or magnitude as to be beyond the coping capacity of the community of the affected area.'
- NDRF is meant to "meet the expenses for emergency response, relief and rehabilitation" for any threatening disaster situation.
- Although Section 46 includes a clause regarding grants made by any person or institution, provisions for such donations had not been made.

National Disaster Response Fund (NDRF)

 The National Disaster Response Fund (NDRF), constituted under Section 46 of the Disaster Management Act, 2005.

- It acts as a fund managed by the Central Government for meeting the expenses for emergency response, relief and rehabilitation due to any threatening disaster situation or disaster.
- NDRF is located in the "Public Accounts" of Government of India under "Reserve Funds not bearing interest".
- Comptroller and Auditor General of India (CAG) audits the accounts of NDRF.

UK'S ASSISTED DYING

Context

The **UK House of Commons** voted to legalize **assisted dying**, also known as **assisted suicide**, in England and Wales. This marks a significant step towards a more compassionate approach to end-of-life choices.

The Proposed Law:

- Key Provisions: The new Bill proposes to allow terminally ill adults who are mentally competent and have less than six months to live to seek assistance in ending their lives. The process involves:
 - ➤ **Authorization**: Any request must be approved by **two doctors** and a **High Court judge**.
 - ➤ **Criteria**: Only those with a **terminal condition** and the mental capacity to make such a decision would be eligible.
- Support for the Bill: Assisted dying offers a humane and compassionate option for terminally ill adults to end their suffering. It would allow people who are facing unbearable pain and have no hope of recovery to make a choice about how and when they die.
- Opposition to the Bill: This could lead vulnerable, severely disabled people to feel pressured into ending their lives to avoid burdening their families. There are also fears that the focus on assisted dying might undermine investments in hospice and palliative care.

Current Law in the UK:

- Assisted Suicide: Suicide itself is not a criminal offense in England and Wales.
- However, under the 1961 Suicide Act, assisting someone to commit suicide is a criminal act, and those found guilty could face up to 14 years in prison. The law currently makes it illegal to help anyone, even a terminally ill person, to end their life.

Status in Other Countries:

- Many countries have taken different approaches to assisted dying or euthanasia:
 - Switzerland: The first country to legalize assisted dying in 1942.
 - ➤ **USA**: States like **Oregon** passed the **Death with Dignity Act** in **1997**, allowing mentally sound adults with terminal illness to end their lives with self-administered drugs.



- ➤ Canada: Since 2016, Canada's Medical Assistance in Dying (MAID) law allows both terminal and nonterminal patients (if the condition is grievous or irremediable) to seek help in ending their lives.
- ➤ **Netherlands and Belgium**: Both countries have comprehensive **euthanasia laws**, with Belgium extending euthanasia to minors with parental consent.
- ➤ **Spain and Germany**: These countries have passed laws, but their implementation is at various stages.
- ► France and Ireland: These countries are still deliberating on assisted dying legislation.

Position in India:

 Right to Die with Dignity: In 2018, India's Supreme Court ruled that the right to die with dignity is part of the right to life under Article 21 of the Indian Constitution.

- ➤ The Court legalized **passive euthanasia**, allowing the withdrawal of life support from terminally ill patients or those in a permanent vegetative state. This allows people to die naturally without prolonged medical intervention.
- ➤ In **2019**, the guidelines for passive euthanasia were simplified to address practical concerns. These included:
 - **Living wills** for terminal patients to choose whether to withdraw medical treatment.
 - Strict timelines and reduced bureaucratic hurdles for judicial approval.
- ➤ In 2023, new guidelines were issued to help doctors navigate the withdrawal of medical support in a compassionate and regulated manner.









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SECTION -B

QUICK BYTES

LOTHAL MARITIME HERITAGE COMPLEX

Context

The government recently assessed the progress of the National Maritime Heritage Complex (NMHC) in Lothal, Gujarat.

About National Maritime Heritage Complex

- o The Ministry of Ports, Shipping, and Waterways, under Sagarmala Programme is developing the National Maritime Heritage Complex, a world-class facility which will showcase India's maritime heritage from ancient to modern times, adopting an innovative "edutainment" approach using cutting-edge technology to spread awareness and attract international tourists.
- The National Maritime Heritage Complex (NMHC) in Lothal, Gujarat, is set to become an international tourist hotspot, celebrating India's rich maritime legacy.
- Spanning from ancient civilisations to modern times, the complex will use a unique blend of education and entertainment, incorporating the latest technology to immerse visitors in the country's maritime history.
- Key project landmarks include INS Nishank, the Lothal Jetty Walkway, and the Museum Block



FACT BOX

Lothal

- Lothal is a portmanteau of Loth and thal which means "the mound of the dead."
- It was a prominent city of the ancient Indus Valley Civilisation dating back to 2400 BCE.
- It holds historical significance for its advanced dockyard, thriving trade, and renowned bead-making industry.
- Artifacts such as seals, tools, and pottery unearthed by archaeologists reveal a rich cultural and economic history, making it a pivotal site of the Harappan civilisation.
- It was located in the Bhāl region in what is presentday Gujarat.
- Lothal, home to the world's oldest dockyard, was once a vibrant melting pot of civilisations, ideas, and, of course, trade.
- Town Planning And The Culture
 - Dockyard: It is thought to have had the world's first known dock - which connected Lothal to the Sabarmati River on the trade route between Harappan cities in Sindh and Saurashtra.
 - **Drainage System:** Just like Harappan Civilization Lothal civilization has a well-planned drainage system.
 - Administrative Building: Unlike the citadel in Mohenjo Daro or Harappa, it is not separate and fortified; it is located in the main settlement.

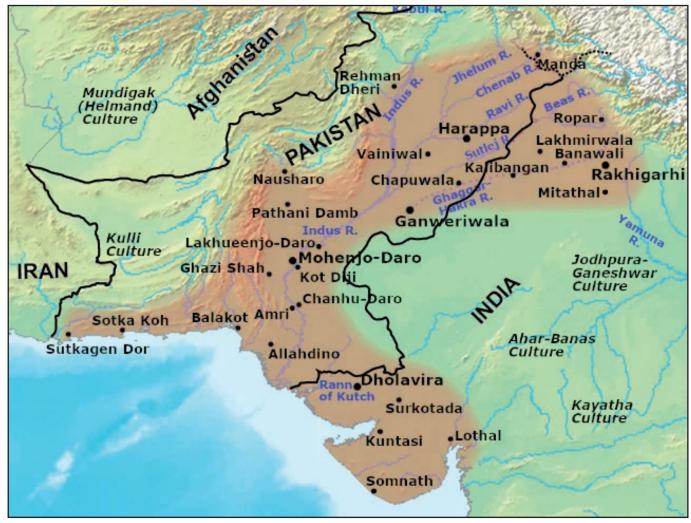


Figure No. 01

- ➤ **Cultivation And Diet:** The major cultivation of the Lothal India was rice and cotton.
- o Indus Valley Civilisation:
 - ➤ After the Mesapotamium and Egyptian Era, Indus Valley Civilisation is one of the oldest civilizations in the world.
 - ➤ Also known as Harappan Civilisation, IVC extended from modern-day northeast Afghanistan to Pakistan and northwest India.

(see Figure No. 01 above)

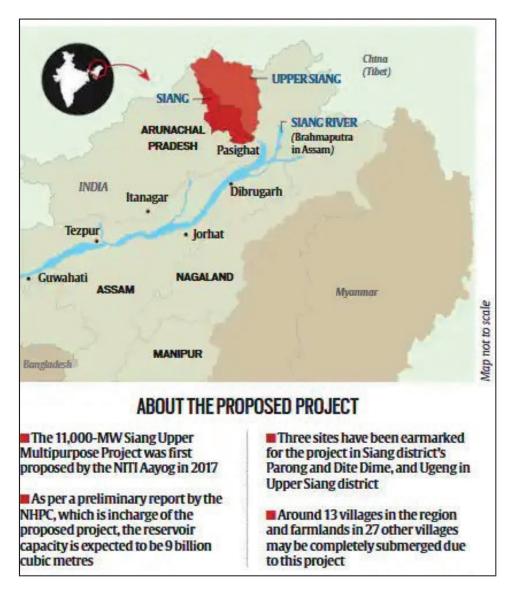
SIANG UPPER MULTIPURPOSE PROJECT (SUMP)

Context

With an eye on China developing a mega hydro project in the vicinity of Arunachal Pradesh, the Centre has accelerated the development of its colossal dam in the **Siang upper valley**, which will be the country's biggest to date.

What is the Siang Upper Multipurpose Project (SUMP)?

- The proposed dam on the Siang river will be the largest hydropower project in India, with a capacity to generate 10-12 gigawatts (GW) of power. The total estimated cost of the project is approximately Rs 1 trillion.
- The dam will serve three primary objectives:
 - ► **Flood Management** To prevent flash floods in the region caused by irregular water flow.
 - ➤ Water Flow Correction To address changes in the flow patterns of the river, particularly those influenced by external factors.
 - ➤ **Power Generation** To generate significant hydropower as a by-product, which will be essential for meeting peak power demands in the region.
- The three sites earmarked for SUMP are Parong and Dite Dime in Siang district, and Ugeng in Upper Siang district.
- The project is being spearheaded by **NHPC** (**National Hydroelectric Power Corporation**), which has been tasked with developing the detailed project report (DPR) and project feasibility report (PFR) for the dam.
- While the project has received approval and funding, it continues to face hurdles due to local opposition (effect on aquatic life and the overall ecological balance) and logistical challenges.



WEEKLY CURRENT AFFAIRS | QUICK BYTES |

Figure No. 01

- **Need of the project:** A major factor driving the urgency of the Siang valley project is the construction of a massive hydropower project by China on the Yarlung Tsangpo river, which flows into India as the Brahmaputra (Siang) river.
 - Chinese project, named the **Motong** Hydropower Station, has the potential to divert a significant amount of water from the Brahmaputra river system.
 - Initial studies suggest that China's project could reduce water flow to India by up to 80%, impacting regions like Arunachal Pradesh and Assam.

FACT BOX

Siang

- The Siang originates near Mount Kailash in Tibet, where it is known as the Yarlung Tsangpo.
- It traverses over 1,000 km eastward before forming a horseshoe bend around the towering Namcha Barwa peak and entering Arunachal Pradesh as the Siang.

Further downstream, in **Assam**, it joins tributaries like the **Dibang and Lohit** to become the Brahmaputra.

UPSC PYQ

- Which of the following is/are tributary/ tributaries of Brahmaputra? (UPSC 2016)
 - (1) 1. Dibang
 - (2) 2. Kameng
 - (3) 3. Lohit

Select the correct answer using the code given below.

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



JIMMY CARTER (1924-2024)

Jimmy Carter, the 39th president of the United States, died Sunday at the age of 100. He became the oldest living US president in history after George H.W. Bush died in 2018 at the age of 94.

Key Achievements:

Key Achievements:

- ➤ Camp David Accords (1978): He brokered a peace agreement between Egypt and Israel.
- ▶ **Human Rights**: He emphasized global human rights in U.S. foreign policy.
- > SALT II Treaty (1979): He signed with the Soviet Union to limit nuclear arms (later abandoned after the Soviet invasion of Afghanistan).
- > Relations with China: He played a role in normalizing U.S.-China relations.
- > Panama Canal Treaty (1977): He negotiated the return of the Panama Canal to Panama.
- > Criticism of U.S. Foreign Policy: He publicly opposed the 2003 Iraq War and critiqued Israeli-Palestinian issues in his book "Palestine: Peace Not Apartheid."

Challenges:

- ▶ Iranian Hostage Crisis (1979): 52 Americans held hostage for 444 days in Tehran.
- **Economic Struggles**: US faced high inflation and an energy crisis.

Key Post-Presidency Contributions:

- ▶ Guinea Worm Disease Eradication: Led efforts to reduce cases from millions to a handful.
- ➤ **Election Monitoring**: The Carter Center observed over 113 elections worldwide, ensuring their fairness and transparency.
- > Peace and Conflict Resolution: Worked in places like North Korea, Sudan, and Bosnia to help broker ceasefires and peace agreements.
- > Promotion of Democracy: Focused on global democracy, conflict resolution, and combatting corruption.

Relationship with India

- Nuclear Concerns: India's 1974 nuclear test, known as Smiling Buddha, caused considerable anger in the United States, leading Carter to press India on the Non-Proliferation Treaty (NPT), which the U.S. strongly supported. He strongly opposed India's nuclear ambitions after their 1974 nuclear test.
- **Diplomatic Balance**: While tensions existed due to nuclear issues, Carter laid the groundwork for improving U.S.-India relations, particularly after his presidency.

- In 1978, Carter and then First Lady Rosalynn Carter travelled to the village of Daulatpur Nasirabad, an hour southwest of New Delhi.
- The visit was so successful that shortly after, village residents renamed the area 'Carterpuri' and remained in contact with the White House for the rest of President Carter's tenure. The trip made a lasting impression: Festivities abounded in the village when President Carter won the Nobel Peace Prize in 2002, and January 3 remains a holiday in Carterpuri.
- Since the Carter administration, the US and India have worked closely on energy, humanitarian aid, technology, space cooperation, maritime security, disaster relief, counterterrorism, and more.
- Indo-U.S. Civilian Nuclear Deal: It took over three decades for the U.S. and India to resolve their nuclear issues through the Indo-U.S. civilian nuclear deal in 2006, which was negotiated under Prime Minister Manmohan Singh and U.S. President George W. Bush.
 - Carter's Return to India (2006): Coincidentally, as the nuclear deal was being finalized, Carter returned to India and met with Singh.

DEMOGRAPHIC MAPPING IN NORTHEASTERN STATES

Context

The Ministry of Home Affairs (MHA) plans to map demographic data along the India-Myanmar border, and the suspension of the Free Movement Regime (FMR) particularly in **Nagaland, Mizoram, and Manipur**, to help in the fencing of the border and prevent illegal infiltration.

What is FMR?

- The **1,643-km-long India-Myanmar border**, spanning Mizoram, Manipur, Nagaland, and Arunachal Pradesh, operated under the FMR, which permits individuals living near the India-Myanmar border to travel 16 km into each other's territories without a visa.
 - ▶ Initiated in 2018, the FMR policy was a component of India's Act East policy.
- Suspension of the FMR: However, the MHA recently decided to scrap the Free Movement Regime (FMR) to enhance internal security.
 - ▶ A **new protocol** was finalized, which allows movement of people within 10 km (down from the earlier 16 km).

India's Northeast

- The northeast (eight northeastern States: Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Tripura, and Sikkim) is blessed with vast natural resources.
- Its strategic location, sharing borders with Nepal, Bhutan, China, Bangladesh and Myanmar, is an asset.

- The region is connected to the rest of the country by a narrow land corridor- **Siliguri Corridor**, also known as the "Chicken's Neck".
- The region contributes 2.8 percent of India's GDP.
- It is also resource-rich, with supplies of limestone, coal, natural oil and gas, uranium, copper, rare herbs.
- Challenges: The region has faced long-standing separatist insurgencies, leading to both internal security problems and cross-border tensions. These insurgencies have made the region volatile and have led to a sense of **insecurity** among locals.
- Myanmar Border: India shares a long border with Myanmar, which is porous and prone to crossborder terrorism and refugee flows.
 - Four northeastern states Arunachal Pradesh (520 km), Manipur (398 km), Nagaland (215 **km) and Mizoram (510 km)** - share 1,643-km unfenced border with Myanmar.

APPOINTMENT OF GOVERNOR

Context

In a significant reshuffle, President Droupadi Murmu appointed two new governors and reassigned three others, reorganising the leadership in five states.

Recent Governor Appointments:

State	New Governor	Previous Governor
Bihar	Arif Mohammed Khan	Rajendra Vishwanath Arlekar
Kerala	Rajendra Vishwanath Arlekar	Arif Mohammed Khan
Odisha	Hari Babu Kambhampati	Raghubar Das
Manipur	Ajay Kumar Bhalla	Anusuiya Uikey
Mizoram	General (Dr.) Vijay Kumar Singh	Hari Babu Kambhampati

How is a Governor Appointed?

- A Governor is appointed by the President of India under Articles 155 and 156 of the Indian Constitution.
- The Governor serves "during the pleasure of the **President,"** meaning that the President has the power to remove the Governor at any time before the completion of their five-year term.
 - The President typically works in consultation with the Prime Minister and the Council of Ministers, and this process governs the appointment and removal of the Governor.

- Article 153 of the Constitution mandates that there shall be a Governor for each state. However, a 1956 amendment allowed the same person to be appointed as Governor for two or more states.
- Article 163 establishes that there shall be a Council of Ministers, headed by the Chief Minister, to assist and advise the Governor in the exercise of his functions. The Governor, however, can act in his discretion in certain matters as outlined in the Constitution.

Pleasure Doctrine

- ➤ The 'Pleasure Doctrine' asserts that a position can be terminated by the appointing authority at any time without any notice or reason. In India, this principle is reflected in **Article 310** of the Constitution, which states that persons in the Union or State civil services serve at the "pleasure" of the President or Governor, respectively.
- ▶ In the context of a Governor, the 'pleasure' extends to the Chief Minister and other ministers in the state. Article 164 specifies that the Governor appoints the Chief Minister and other ministers on the advice of the Chief Minister, but ministers serve at the Governor's pleasure. However, the Governor cannot independently remove a minister; this is at the discretion of the Chief Minister.
- Qualifications of a Governor: As per Articles 157 and 158 of the Indian Constitution, the qualifications for the office of Governor are:
 - The person must be an **Indian citizen**.
 - The person must be at least 35 years of age.
 - The person must not be a **Member of Parliament** or a member of any state legislature.
 - ➤ The person must not hold any **other office of profit**.

UPSC PYO

- With reference to the Legislative Assembly of a State in India, consider the following statements: (UPSC 2019)
 - The Governor makes a customary address to Members of the House at the commencement of the first session of the year.
 - When a State Legislature does not have a rule on a particular matter, it follows the Lok Sabha rule on that matter.

Which of the statements given above is/are correct?

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

Solution: (c)



- Which one of the following suggested that the Governor should be an eminent person from outside the State and should be a detached figure without intense political links or should not have taken part in politics in the recent past? (UPSC 2019)
 - First Administrative Reforms Commission (1966)
 - (f) Rajamannar Committee (1969)
 - Sarkaria Commission (1983)
 - National Commission to Review the Working of the Constitution (2000)

Solution: (c)

MUNICIPAL CORPORATION

Context

The Gujarat cabinet approved the conversion of nine municipalities into municipal corporations, taking the total number of civic bodies in the state to 17.

What is a Municipal Corporation?

- A Municipal Corporation is a local self-government **body** responsible for managing urban areas, particularly cities with large populations, typically over one million. It is tasked with providing essential community services and city planning in metropolitan areas.
 - ▶ The British first established Municipal Corporations in Madras (1688), followed by Bombay and Calcutta (1726). In India, it is known by different names, such as Nagar Nigam, Mahanagar Palika, and others depending on the state.

Structure & Functions:

- ▶ The Municipal Corporation is made up of various departments to serve community needs, such as water supply, sewage disposal, healthcare, education, housing, and public safety.
- The Mayor serves as the ceremonial head, while the Municipal Commissioner holds executive and administrative powers.
- The Corporation is mainly funded by property taxes and grants from the state government.
- Constitutional Provision: The Constitution of India introduced local self-governance through Article 40 of the Directive Principles of State Policy. The 74th Amendment Act, 1992, mandated the formation of **Urban Local Bodies (ULBs).**
 - The Amendment added Part IX-A to the Constitution, covering the creation and functioning of municipalities, with specific provisions for Municipal Corporations from Articles 243P to 243ZG.

Composition & Authority:

- ► The composition and division of the Municipal Corporation are decided by the State Legislature.
- The city is divided into wards, each represented by an elected member who serves for five years.
- The Mayor is elected by the State law, while the Municipal Commissioner is responsible for the executive functions.
- **Reserved seats** are available for Scheduled Castes, Scheduled Tribes, women, and disadvantaged classes.

Authorities of the Municipal **Corporation:**

- ▶ Municipal Council: The legislative body made up of members elected by the people. The Mayor heads this council.
- Standing Committee: It helps in the functioning of the Municipal Council, with specific committees handling different matters like health, education, taxation, etc.
- **Municipal Commissioner**: The chief executive officer responsible for executing decisions made by the council and standing committees. This post is typically held by an IAS officer and is appointed by the State Legislature.

Qualifications for Membership:

- Citizens above 21 years of age.
- ▶ Must be registered on the electoral roll.
- Cannot be disqualified from contesting municipal elections.
- **Elections:** Municipal Corporation elections are held every five years and are overseen by the State Election Commission, as per Article 243K of the Constitution. The Corporation can be dissolved if it fails to perform its duties, misuses power, or if elections are declared void.

CHHATRAPATI SHIVAJI MAHARAJ'S STATUE NEAR LAC

Context

A statue of **Chhatrapati Shivaji Maharaj** was unveiled on the banks of the serene **Pangong Tso** in Ladakh, situated at an impressive altitude of 14,300 feet.

About the location of Statue

Chhatrapati Shivaji's statue on the shore of the picturesque Pangong Tso in eastern Ladakh holds significance amid India's recent border disengagement process with China.

The 135-kilometre-long strategic lake straddles the LAC, the *de facto* border between the two neighbours.

▶ In October, India and China completed the disengagement of troops in the two friction points of **Demchok and Depsang** at the LAC in eastern Ladakh.



This marked the end of the roughly four-and-halfyear-long border standoff, which broke out in 2020 on several points along the LAC after a violent clash between the Indian and Chinese troops in the Pangong Lake area.

FACT BOX

Pangong Lake

- Pangong Lake, situated at a height of almost 4,350m in the disputed region of Aksai Chin, is the world's highest saltwater lake.
- Pangong Lake, one of the most famous lakes in Leh Ladakh, derives its name from the Tibetan word, "Pangong Tso", which means "high grassland lake".
- One-third of the nearly 160 kilometres-long lake lies in India, other two-thirds in China.
- It was one of the prominent flashpoints when border tensions between the two countries flared up in June

Chhatrapati Shivaji Maharaj (1630-1680)

- He was born on 19th February 1630 at Shivneri Fort in District Pune in the present-day state of Maharashtra.
- He was born to Shahaji Bhonsle, a Maratha general who held the jagirs of Pune and Supe under the Bijapur Sultanate, and Jijabai, a pious woman whose religious qualities had a profound influence on him.
- Shivaji was not named after Lord Shiva. His name was derived from the name of a regional deity – 'Goddess Shivai.'

Contributions:

- He revived ancient Hindu political traditions and court conventions and promoted the usage of Marathi and Sanskrit, rather than Persian, in court and administration.
- **India's first-ever navy** in the modern era was built by Shivaji to protect the coast of Maharashtra.
- He established a competent and progressive civil rule with the help of disciplined military and well-structured administrative organizations.
 - The Ashta Pradhan (Marathi: Council of Eight) set up by the Chhatrapati Shivaji Maharaj
 - Peshwa (Prime Minister)
 - Amatya (Finance Minister)
 - Shurunavis (Secretary)
 - Waqia-Navis (Interior Minister)
 - Sar-i-Naubat (Commander-in-Chief)
 - Sumant (Foreign Minister)
 - Nyayadhish (Chief Justice)
 - Panditrao (High Priest)
- He innovated military tactics, pioneering nonconventional methods (querrilla warfare) and leveraged strategic factors like geography, speed, and surprise.
 - He focused on pinpoint attacks to defeat his larger and more powerful enemies.
 - brave and genuinely secular ruler, he respected women and cared for the downtrodden and farmers.
- He died on 3rd April 1680.

Important Battle:		
Battle of Pratapgad, 1659	Fought at the fort of Pratapgad near the town of Satara, Maharashtra, between the forces of the Maratha king Chhatrapati Shivaji Maharaj and the Adilshahi general Afzal Khan.	
Battle of PavanKhind, 1660	Fought at a mountain pass in the vicinity of fort Vishalgad, near the city of Kolhapur, Maharashtra, between the Maratha Sardar Baji Prabhu Deshpande and Siddi Masud of Adilshahi.	
Sacking of Surat, 1664	Fought near the city of Surat, Gujarat, between Chhatrapati Shivaji Maharaj and Inayat Khan, a Mughal captain.	
Battle of Purandar, 1665	Fought between the Mughal Empire and Maratha Empire.	
Battle of Sinhagad, 1670	Fought on the fort of Sinhagad near the city of Pune, Maharashtra between Tanaji Malusare, a commander of Maratha ruler Shivaji Maharaj and Udaybhan Rathod, fort keeper under Jai Singh I who was a Mughal Army Chief.	
Battle of Kalyan, 1682-83	Bahadur Khan of the Mughal Empire defeated the Maratha army and took over Kalyan.	
Battle of Sangamner, 1679	Fought between the Mughal Empire and Maratha Empire. This was the last battle in which the Maratha King Shivaji fought.	

PRIME MINISTER'S INTERNSHIP **SCHEME**

Context

The Union Corporate Affairs Ministry stated that the pilot scheme of the Prime Minister's Internship Scheme received approximately 6.21 lakh applications against 1.27 lakh opportunities.

About the Scheme

- Conducting Authority: Ministry of Corporate Affairs
- The internship scheme was announced in the previous Union budget, and it aims to provide internship opportunities to one crore youth in the top 500 companies over five years.
- The interns will be provided with financial assistance of Rs 5,000 per month (for 12 months), of which Rs 4,500 would be disbursed by the Union government, and Rs 500 per month would be paid by the company from its CSR [corporate social responsibility] funds.
- Additionally, the Corporate Affairs Ministry will also provide a one-time grant of Rs 6,000 for incidentals to each intern, upon joining the place of internship.

Important Government Initiatives for skill development and employment

- Skill India Mission
- Pradhan Mantri Kaushal Vikas Yojana (PMKVY)
- Deen Dayal Upadhyaya Grameen Kaushalya Yojana (DDU-GKY)
- National Apprenticeship Promotion Scheme (NAPS)
- Rural Self Employment Training Institutes (RSETIs)
- Atal Innovation Mission (AIM)
- National Skill Development Corporation (NSDC)
- Udaan
- The Entrepreneurship Development Program (EDP)
- Integrated Skill Development Scheme (ISDS)

BHOPAL GAS TRAGEDY

Context

In Bhopal, 377 tonnes of hazardous waste is set to be removed from the now dysfunctional Union Carbide factory. On the intervening night of December 2-3, 1984, the highly toxic gas methyl isocyanate (MIC) leaked from the Union Carbide pesticides factory killing 5,479 people and leaving more than five lakh others with health effects and long-term disabilities.

Key Toxic Compounds Associated with the Disaster

The disaster site and surrounding areas still show significant levels of toxic contamination, with several harmful chemicals present in the environment:

- Methyl isocyanate: It is extremely toxic gas and if its concentration in the air touches 21ppm (parts per million), it can cause death within minutes of inhaling the gas.
- **Mercury**: A highly toxic heavy metal known to accumulate in soft tissue, mercury can damage multiple organs and interfere with cellular functions. It is dangerous even at low concentrations and poses long-term environmental and health risks.
- Heavy Metals: Other heavy metals like chromium, copper, nickel, and lead were also found in the area. These metals are carcinogenic and can cause immune system damage and various cancers, particularly of the lungs, kidneys, and brain.
- Hexachlorobutadiene: This compound potential carcinogen and can cause severe damage to the **liver**, **kidneys**, and **brain**. Exposure also leads to fat accumulation in the liver, cellular destruction, and nervous system impairment.
- **Chloroform**: Known for affecting the **central nervous** system, chloroform can lead to fainting at lower concentrations and death at higher concentrations. It is also classified as possibly carcinogenic to humans.
- Carbon Tetrachloride: This chemical is a health **hazard** and can damage the **liver**, causing **cancer**. Exposure can also affect vision and heart function.
- **Trichlorobenzene**: These volatile compounds spread easily in the air and accumulate in the body's fatty tissues. They can damage the liver and kidneys.
- Persistent Organic Pollutants (POPs): These are chemicals that persist in the environment and bioaccumulate. They are linked to cancers, nervous system damage, reproductive disorders, developmental issues. POPs also disrupt the immune system and are associated with serious health outcomes, including cancer of the liver, breast, pancreas, and prostate.

Legal safeguards against chemical and industrial disasters in India

- **Bhopal Gas Leak (Processing of Claims) Act, 1985**: This Act was specifically introduced in response to the Bhopal gas tragedy. It empowers the central government to handle claims arising from the disaster. It allows the government to act on behalf of victims and to expedite the settlement of claims related to the tragedy. The Act ensures that compensation is provided in a timely and equitable manner.
- The Environment Protection Act, 1986: This Act provides the central government with the authority to take necessary measures to protect and improve the environment. It allows the government to set standards for pollutants and conduct inspections of industrial units. The Act also grants the government powers to direct industries to take measures to prevent environmental harm, especially concerning hazardous materials.



- The Public Liability Insurance Act, 1991: This Act requires industries dealing with hazardous substances to obtain insurance to compensate victims in the event of accidents. The law ensures that people affected by accidents involving hazardous substances can quickly access compensation. It is particularly relevant in cases where industrial accidents lead to injury, death, or environmental damage.
- The National Environment Appellate Authority Act, 1997: This Act establishes the National Environment Appellate Authority to hear appeals related to environmental restrictions on industrial activities. It allows industries or operations affected by restrictions under the Environment Protection Act to challenge such decisions. The Authority ensures that environmental laws are implemented fairly, while also considering the interests of industrial operations.
- National Green Tribunal Act, 2010: This Act established the National Green Tribunal (NGT) to provide a specialized forum for the fast and effective disposal of environmental cases. The NGT deals with matters related to environmental protection, forest conservation, and biodiversity. It is empowered to provide remedies to victims of environmental damage and to penalize violators of environmental laws.
 - The National Green Tribunal has become the primary forum for hearing environmental matters, including those related to industrial accidents like the Bhopal gas tragedy.

INDIA'S RECORD REMITTANCES **IN 2024**

Context

In 2024, India set a new global record by receiving an estimated \$129.1 billion in remittances, the highest amount ever for any country in a single year. This accounts for 14.3% of global remittances, marking the highest share India has had in global remittances since the year 2000. This data was highlighted in a blog article by the World Bank published recently.

What Are Remittances?

- Remittances refer to the money sent by individuals working abroad to support their families back home.
- For many developing countries, remittances are a critical source of income for households and have a major impact on the economy.
- Key Insights from 2024 Remittance Data
 - > Top Recipients of Remittances in 2024:
 - India received the highest remittances, followed by Mexico and China.
 - Other countries in the top 10 list include the Philippines, France, Pakistan, Bangladesh, Egypt, Guatemala, and Germany.

China's Decline:

China's share of global remittances has **declined** sharply from over 10% in the 2010s to 5.3% in 2024. This decrease is attributed to China's growing economic prosperity and an ageing population, which have slowed the migration of less-skilled workers.

India's Growing Share:

- India's share in global remittances has remained above 10% for most years since 2000, with a significant increase in the post-pandemic period.
- In 2024, India's remittance inflows were twice as high as Mexico's, which was second at 7.5% of global remittances.

> Remittances as a Share of GDP:

- In some countries, remittances are a larger proportion of GDP compared to India. For example, Nepal saw over 25% of its GDP from remittances in 2024.
- India's remittances accounted for 3.3% of its GDP in 2024.

Remittances vs Other Financial Flows:

- In low- and middle-income countries, remittances have been the largest source of external financial flow, surpassing both Foreign Direct Investment (FDI) and Official **Development Assistance (ODA)** in recent years.
- From 2000 to 2024, remittances to these countries increased by 57%, while FDI declined by 41%.

NEW EXTENSION TO SUEZ CANAL

Context

Egypt has tested a newly constructed 10-kilometre extension of the Suez Canal aimed at reducing the impact of water and air currents on shipping, as well as enhancing the overall capacity of the canal.

Background:

- This project follows a major \$8 billion expansion of the canal in 2015 and aims to continue improving the canal's efficiency. The Suez Canal has been a critical source of foreign currency for Egypt, but its revenue has fallen by up to 70% in recent years due to disruptions caused by Houthi rebel attacks on shipping in the Red Sea.
- **Functionality**: The extension will improve navigational safety, and it will also reduce the effects of strong winds and sandstorms, which have previously caused incidents like vessels running aground. In 2021, the Ever Given, a large container ship, was lodged in the canal for nearly a week, causing significant trade delays.

What is the Suez Canal?

- The Suez Canal is a waterway that connects the Atlantic Ocean to the Indian Ocean through the Mediterranean and Red Sea respectively.
 - Prior to the canal being built, ships would circumnavigate Africa to connect goods between Asia and Europe. The construction of the canal cut down the travel time and the costs involved by a huge margin gaining widespread popularity.
- The Suez Canal was built as a joint enterprise between the French and the Ottoman Empire.
- Connecting Ports: The canal extends from the northern terminus of Port Said to the Southern end of Port Tewfik at the city of Suez.
- Upon its construction, the Suez Canal became the lifeline for all trade between the East and the West. Today, roughly 12 per cent of global trade, 7 per cent of the world's oil, and 30 per cent of daily container traffic passes through the canal. More than 20,000 ships pass through the canal daily.

HOUSEHOLD CONSUMPTION EXPENDITURE SURVEY (HCES): 2023-24

Context

The **Household Consumption Expenditure Survey** (**HCES**) **2023-24** has been recently released by the Ministry of Statistics and Programme Implementation (MoSPI).

What is the Household Consumption Expenditure Survey (HCES)?

- The Household Consumption Expenditure Survey (HCES) is conducted by the Ministry of Statistics and Programme Implementation (MoSPI).
- The survey collects data on what households in India spend on goods and services.
- This data helps in understanding trends in economic well-being, updating the Consumer Price Index (CPI), and measuring poverty, inequality, and social exclusion
- The survey also helps update the basket of goods and services used for calculating the CPI and tracks changes in the standard of living.
- HCES 2023-24: Ongoing from August 2023 to July 2024. The summary results for this year have been released in the form of a factsheet.

Key Findings of HCES: 2023-24

Average Monthly Per Capita Consumption Expenditure (MPCE)

- Without imputed values for free items:
 - Rural MPCE: Rs 4,122Urban MPCE: Rs 6,996

 With imputed values for free items (like government benefits):

Rural MPCE: Rs 4,247Urban MPCE: Rs 7,078

Comparison with Last Year (2022-23)

• Nominal increase in MPCE (compared to 2022-23):

Rural areas: +9%Urban areas: +8%

- Rural-Urban Gap:
 - ➤ The gap in MPCE has narrowed:
 - In 2022-23: **84% higher in urban areas**
 - In 2023-24: **70% higher in urban areas**
 - ➤ This means that **rural consumption** is growing at a faster pace.

Increase in Consumption for Bottom 5-10%

 The bottom 5-10% of the population (ranked by consumption) has seen the highest increase in MPCE, both in rural and urban areas, indicating more inclusive growth.

Key Expenditure Patterns

Rural vs Urban Expenditure

- Rural Areas:
 - ➤ Non-food items make up 53% of rural MPCE.
 - ➤ Major non-food expenditures include:
 - **Conveyance** (e.g., transport costs)
 - Clothing, bedding, and footwear
 - Miscellaneous goods & entertainment
 - Durable goods (e.g., vehicles, household appliances)
 - ▶ Urban Areas:
 - Non-food items make up 60% of urban MPCE.
 - Major non-food expenditures in urban areas are similar to rural areas but include rent (7% share in urban areas).

Food Expenditures

- Major food items contributing to household spending:
 - > Beverages, refreshments, and processed foods
 - > Milk & milk products
 - Vegetables

Inequality in Consumption

- Consumption Inequality: The survey measures how evenly or unevenly consumption is distributed across different households using the Gini coefficient.
 - ➤ Rural Areas: The Gini coefficient dropped from 0.266 in 2022-23 to 0.237 in 2023-24, indicating a decline in inequality.



Urban Areas: The Gini coefficient dropped from **0.314** in 2022-23 to **0.284** in 2023-24, also showing reduced inequality.

Fractile Analysis of MPCE

- **MPCE across different income groups**: The survey also divides households into fractiles (income groups) to show how different income groups are doing.
 - ➤ Bottom 5%:

Rural: Rs 1,677 **Urban**:Rs 2,376

➤ Top 5%:

Rural: Rs 10,137

Urban: Rs 20,310

▶ **Growth** in MPCE (from 2022-23 to 2023-24):

Bottom 5% rural: Increase of 22% Bottom 5% urban: Increase of 19%

State-wise Variation

- Top States in MPCE:
 - ➤ Rural MPCE: Highest in Sikkim (Rs 9,377) and lowest in Chhattisgarh (Rs 2,739).
 - ▶ Urban MPCE: Highest in Sikkim (Rs 13,927) and lowest in **Chhattisgarh** (Rs 4,927).
- Top UTs in MPCE:
 - ➤ Chandigarh has the highest MPCE in both rural (Rs 8,857) and urban (Rs 13,425) areas.
 - > Dadra and Nagar Haveli and Daman and Diu have the lowest MPCE in rural areas (Rs 4,311), while Jammu & Kashmir has the lowest in urban areas (Rs 6,327).

Key Observations

- Non-food Items Dominate Expenditure: Both in rural and urban India, non-food items contribute more to total consumption, with categories like conveyance, clothing, durable goods, and entertainment being major contributors.
- **Consumption Patterns**: In both rural and urban India, beverages and processed foods contribute the most to food-related expenditure.
- **Improvement in Inequality**: There is a clear decline in income inequality between 2022-23 and 2023-24, both in rural and urban areas.

RUPEE HITS ALL-TIME LOW

Context

The **Indian rupee** dropped to a record low of **85.80** per **US** dollar. It later closed at 85.52. This is the fourth consecutive day of decline for the rupee.

Key Reasons for the Fall:

Dollar Strength: The **US dollar** has been strengthening globally, partly due to higher US Treasury yields (around 4.50% for 10-year bonds), making the dollar more attractive to investors.

- **Dollar Demand from Importers**: Indian **importers** need more dollars to pay for goods and services at the **month-end**, increasing demand for the greenback.
- Capital Outflows: Foreign Institutional Investors (FIIs) sold shares worth Rs 2,376 crore on Thursday, leading to outflows from the Indian market, which increases the demand for dollars.
- Crude Oil Prices: While crude oil prices rose slightly, they continue to put pressure on the rupee since India imports a large amount of oil and needs more dollars for payment.



FACT BOX

What is Rupee's Decline?

- The decline of the rupee (Currency depreciation) refers to the fall in the value of the Indian rupee (INR) relative to other currencies, particularly the US dollar (USD).
- This means that the rupee becomes weaker, and it takes more rupees to buy one US dollar.
 - For example, if the rupee's value goes from INR 80 to INR 85 per dollar, it means the rupee has **declined** because it is now weaker and you need more rupees to purchase the same amount of dollar

REAL EFFECTIVE EXCHANGE RATE (REER)

Context

The Real Effective Exchange Rate (REER) of the rupee increased to 108.14 in November from 107.20 in October, appreciating by 0.9 per cent.

About Real Effective Exchange Rate (REER)

- REER represents the inflation-adjusted, tradeweighted average value of a currency against its trading partners and it is often used as an indicator of external competitiveness.
- The real effective exchange rate (REER) is the weighted average of a country's currency in relation to an index or basket of other major currencies.
- The weights are determined by comparing the relative trade balance of a country's currency against that of each country in the index.
- An increase in a nation's REER is an indication that its exports are becoming more expensive and its imports are becoming cheaper, reducing its trade competitiveness.

GOVERNMENT EXTENDS ADDITIONAL SUBSIDY ON DAP

Context

In a bid to provide continued relief to farmers and ensure the affordability of fertilisers, the Indian government has extended its additional subsidy on Di-Ammonium Phosphate (DAP) beyond December 2024. This move will enable fertiliser companies to keep the retail price of DAP, avoiding a price hike that could have impacted the agricultural sector.

What is DAP?

- Di-Ammonium Phosphate (DAP) is one of the most commonly used fertilisers in India, second only to urea.
- It is rich in two essential nutrients for plants: **phosphorus** and nitrogen, both of which play a crucial role in the growth of crops.

Properties:

- ▶ It is a very popular fertilizer because of its excellent physical properties and nutrient content.
- ▶ It is free flowing, dust-free and does not normally give any storage problem.
- ▶ DAP is almost water-soluble and ultimately leaves acid effect on soils because of ammonia (NH4) it contains.
- DAP on incorporation into soil, reacts with water and gets converted into HPO4 and NH4.
- Ammonium (NH4) follows the same routes as in case of urea.
- ▶ Phosphorus in DAP is present in best available from (HPO4).
- ▶ Depending upon the **soil reaction (pH)**, phosphorus exists in 3 forms which can be absorbed by plant roots.
- These are **HPO4**, **H2PO4** and **PO4**. Phosphorus, which is immobile in soil, is not subjected to leaching
- DAP is widely used to support the development of strong root systems, enhance flower and fruit production, and improve overall crop health.
- Due to its significant role in Indian agriculture, DAP is in high demand across the country, particularly during the Kharif and Rabi seasons.
- India imports around half of its annual DAP requirement, which amounts to 11 million tonnes. The cost of DAP has been volatile due to factors such as **geopolitical tensions** and increased transportation costs for raw materials, which has led to higher prices for imported DAP.

FACT BOX

About Fertilisers

Fertilisers are basically **food for crops**, containing nutrients necessary for plant growth and grain yields.

- Balanced fertilisation means supplying these following nutrients in the right proportion, based on soil type and the crop's own requirement at different growth stages.
 - **Primary** (N, phosphorus-P and potassium-K)
 - **Secondary** (sulphur-S, calcium, magnesium)
 - Micro (iron, zinc, copper, manganese, boron, molybdenum)
- India is among the world's largest buyers of fertiliser, besides China, Brazil, and the US.

India imports four types of fertilisers:

- Urea
- Diammonium phosphate (DAP)
- Muriate of potash (MOP)
- Nitrogen-phosphorous-potassium (NPK)

Government Policy for Fertilizer Subsidy in India

- Nutrient-Based Subsidy (NBS) for P&K Fertilizers: Introduced in 2010, the Nutrient-Based Subsidy (NBS) scheme provides subsidies based on the nutrient content of P&K fertilizers, including DAP. The prices are set by companies but are monitored by the government to ensure they remain affordable for farmers. This system allows companies flexibility in production and import based on market conditions.
- Special Subsidy Packages for DAP: Due to geopolitical issues affecting the cost of DAP, the government approved a one-time special package to ensure affordable prices. This subsidy is in addition to the NBS rates and helps offset the higher procurement costs of DAP.
- Urea Subsidy: Urea is provided at a fixed MRP of Rs 242 per 45 kg bag, unchanged since 2018. The government compensates urea manufacturers for the difference between the cost and the price farmers pay, ensuring continued availability at subsidized rates.
- PM-PRANAM for Sustainable Fertilizer Use: Launched in 2023, the PM-PRANAM scheme encourages states to reduce chemical fertilizer consumption by offering grants for savings. The initiative promotes organic farming and resource conservation technologies to ensure long-term sustainability in agriculture.
- **Promotion of Organic Fertilizers**: The government also provides Rs 1,500 per MT under the GOBARdhan initiative to promote organic fertilizers. The scheme supports biogas plants and aims to reduce dependence on
- chemical fertilizers, contributing to sustainable agriculture.



GST COLLECTION

Context

The total gross Goods and Services Tax (GST) revenue grew 7.3 per cent to Rs 1.77 lakh crore in December as compared to Rs 1.65 lakh crore in the same month a year ago.

GST Collection

- The total gross GST revenue for December was split across the following categories:
 - Central GST (CGST): Rs 32,836 crore
 - ➤ State GST (SGST): Rs 40,499 crore
 - ▶ Integrated GST (IGST): Rs 47,783 crore (including Rs 18,310 crore collected on imports)
 - ➤ Cess: Rs 11,471 crore (including Rs 1,258 crore collected on imports)

What is GST?

- GST (Goods and Services Tax), is an **indirect tax** imposed in India on the supply of goods and services.
- GST was introduced in India on July 1, 2017.
- A value-added tax, GST is imposed at each stage of the supply chain on the exact amount of value-addition achieved. Applicable across India, GST can also be described as a destination-based tax on consumption.
- **Types of GST:** GST is divided into four types:
 - ➤ Central Goods and Services Tax or CGST: CGST is imposed on the supply of products and services from one state to another.
 - > State Goods and Services Tax or SGST: SGST is imposed on the supply of goods and services within a state.
 - Integrated Goods and Services Tax or IGST: IGST is imposed on inter-state transactions of products and services.
 - ➤ Union Territory Goods and Services Tax or **UTGST:** UTGST is charged on the supply of products and services in Union Territories along with CGST.

GST Council:

- ➤ The GST Council is a **joint forum** of the centre and the states. The GST Council is responsible for making recommendations to the union and the states on GST-related issues.
- ➤ The GST Council consists of the following members:
 - Union finance minister as the chairperson.
 - Union minister of state, in charge of revenue of finance as a member.
 - Minister in charge of finance or taxation or any other minister nominated by each state government as members.

UPSC PYQ

Q: Consider the following items: (UPSC 2018)

- (1) Cereal grains hulled
- (2) Chicken eggs cooked
- (3) Fish processed and canned
- Newspapers containing advertising material

Which of the above items is/are exempted under **GST** (Goods and Services Tax)?

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

Solution: (c)

- What is/are the most likely advantages of implementing 'Goods and Services Tax (GST)'? (UPSC 2017)
 - It will replace multiple taxes collected by multiple authorities and will thus create a single market in India.
 - It will **drastically reduce** the 'Current Account Deficit' of India and will enable it to increase its foreign exchange reserves.
 - It will enormously increase the growth and size of economy of India and will enable it to overtake China in the near future.

Select the correct answer using the code given below:

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

Solution: (a)

EXCESS NITRATES IN GROUNDWATER

Context

As of 2023, 440 districts in India have been identified with excessive levels of nitrates in their groundwater, a significant increase from 359 districts in 2017, according to a report by the Central Groundwater Board (CGWB).

Key Findings:

Excessive Nitrate Contamination: 56% of India's districts have groundwater with nitrate levels exceeding the safe limit of 45 mg per liter.



- The contamination is primarily attributed to the widespread use of subsidized nitrogenous fertilizers used in agriculture, which are a major source of nitrate leaching into groundwater.
- **Groundwater Samples with Nitrate Contamination**: Out of 15,239 groundwater samples collected across India for testing, 19.8% had nitrate levels above safe limits
 - ▶ In comparison, 21.6% of the 13,028 samples tested in 2017 exceeded safe nitrate levels.

Regional Concerns:

- States such as Rajasthan, Karnataka, and Tamil Nadu report the highest levels of nitrate contamination, with 49%, 48%, and 37% of their tested samples exceeding the safe limit, respectively.
- > Regions like Maharashtra, Telangana, Andhra Pradesh, and Madhya Pradesh are seeing increasing nitrate contamination, raising alarms.
- ▶ Monsoon rains tend to exacerbate nitrate levels in groundwater, with a slight increase in contamination after the rainy season.

Other Chemical Contaminants:

- **Uranium contamination** in groundwater is another serious issue, especially in Rajasthan, Punjab, Haryana, Karnataka, and Andhra Pradesh.
- **Fluoride contamination** is a significant concern in states such as Rajasthan, Haryana, and Karnataka.
- **Groundwater Over-Exploitation**: The over-extraction of groundwater is also linked to rising uranium contamination, particularly in areas with deeper water extraction.
 - The **CGWB report** suggests that excessive water extraction in states like Rajasthan, Gujarat, Haryana, and **Punjab** is exacerbating contamination.
- **Groundwater Availability: 60.4%** of groundwater extraction across India is considered sustainable, remaining constant since 2009.
- 73% of groundwater blocks are now classified as safe, a notable improvement from 67.4% in 2022, although fewer blocks were analyzed for the 2024 assessment.

Factors contributing to contamination:

- Naturally Occurring Contaminants: Fluoride, arsenic, nitrate, iron, and heavy metals naturally exist in certain geological formations, affecting water quality.
- Industrial Activities: Untreated or poorly treated industrial effluents discharged into water bodies contaminate surface and groundwater sources.
- Agricultural Activities: Excessive use of pesticides, fertilizers, and agrochemicals in agriculture leads to water contamination over time.
- Sanitation Practices: Inadequate sanitation facilities and open defecation, especially in rural areas, contribute to water source contamination.
- **Geogenic Processes:** Geogenic processes, such as those causing uranium contamination, can occur naturally, exacerbated by groundwater overexploitation.

Improper Waste Disposal: Improper disposal of biowaste contaminates groundwater and surface water, increasing the risk of waterborne diseases.

Impact of Groundwater Contamination

- Public Health Risks: Consumption of contaminated groundwater can lead to various health issues, including gastrointestinal disorders, neurological problems, skeletal deformities, and even cancer.
- **Common Contaminants and Health Impacts:**
 - > Arsenic: Chronic exposure can lead to black foot disease and poses significant health risks.
 - **Fluoride:** High fluoride intake causes neuromuscular disorders, dental deformities, and skeletal fluorosis.
 - Nitrates: Excessive nitrate levels in water can result in methemoglobinemia and blue baby syndrome.
 - **Uranium:** Elevated uranium levels in drinking water can cause kidney toxicity.
 - ▶ **Radon:** Presence of radioactive radon in groundwater poses risks of lung cancer.
- **Economic Burden:** Treating water-related illnesses imposes significant healthcare costs on individuals and communities. Productivity losses due to sickness also impact economic development.
- **Degradation**: **Environmental** Contaminated groundwater affects ecosystems, harming aquatic life and disrupting biodiversity. It can also degrade soil quality and impair agricultural productivity.
- Social Inequities: Communities reliant on contaminated groundwater often face socio-economic challenges, including limited access to safe drinking water, reduced educational opportunities, and compromised livelihoods.
- **Long-Term Consequences**: Groundwater contamination can persist for decades or even centuries, posing ongoing risks to human health and the environment. Remediation efforts may require substantial time, resources, and technological interventions.

UPSC PYQ

- Which of the following can be found as pollutants in the drinking water in some parts of India? (UPSC 2013)
 - (1) Arsenic
 - (2) Sorbitol
 - (3) Fluoride
 - Formaldehyde
 - Uranium

Select the correct answer using the codes given below.

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

Solution: (c)



INDIGENOUS PROTECTED **AREAS (IPAS)**

Context

Indigenous Protected Areas (IPAs) are a critical part of global environmental conservation and cultural preservation.

What are Indigenous Protected Areas (IPAs)?

- IPAs are areas where Indigenous peoples commit to conserving the environment through their traditional knowledge and practices.
- These areas can include forests, deserts, rivers, and even marine ecosystems.
 - The concept of IPAs emerged in the 1990s, particularly in Australia, where the first IPA was established in
- IPAs are recognized by national governments and often form part of a larger conservation network, contributing significantly to the protection of biodiversity and ecosystems.
- **Global Distribution of IPAs:** As of 2023, there are more than 3,000 IPAs worldwide, covering approximately 8.8 million square kilometers. This represents about 6% of the planet's terrestrial protected areas. The distribution of IPAs varies significantly across the globe, with large concentrations found in Australia, Canada, Brazil, and the United States.
 - Australia: With 78 declared IPAs, Australia has the largest network, covering over 74 million hectares, nearly 50% of the country's National Reserve System.
 - ▶ Canada: Over 20 IPAs are located primarily in northern territories, spanning around 35 million hectares.
 - Brazil: Known as Indigenous Lands (Terras Indígenas), Brazil's IPAs cover an area of 117 million hectares, making up 14% of the country's total land area.
 - ▶ United States: The U.S. has numerous IPAs, particularly in Alaska, managed by tribal nations and Indigenous organizations.
- Biodiversity: According to the World Wildlife Fund (WWF), IPAs are home to:
 - 25% of the world's biodiversity hotspots.
 - 40% of the remaining tropical and subtropical
 - 50% of the world's freshwater resources.

COMMON MURRE (URIA AALGE)

Context

An extreme marine heatwave linked to climate change devastated Alaska's common murre (Uria aalge) **population**, wiping out nearly four million seabirds — about half of their global numbers — over a three-year period.

About

- Common murres are long-lived diving seabirds that inhabit temperate and subarctic marine ecosystems in the Northern Hemisphere.
- They feed on small schooling fish, juvenile predatory fish and krill, diving as deep as 200 metres to forage.
- Common Murres are dapper, black-and-white seabirds that nest in raucous throngs on crowded sea cliffs.
- Often described as "flying penguins," they have a tuxedoed look but are actually relatives of auks and puffins.
- Habitat: It has a circumpolar distribution, occurring in low-Arctic and boreal waters in the North Atlantic and North Pacific. It spends most of its time at sea, only coming to land to breed on rocky cliff shores or islands.

CHANDRAYAAN-3 TARDIGRADE

Context:

A newly discovered species of water bear (also called tardigrade) has been found to possess an extraordinary ability to survive radiation levels that are up to 1,000 times higher than what humans can endure. This microscopic organism has been named Chandrayaan-3 tardigrade in honor of India's successful lunar mission, Chandrayaan-3.

Key Features of the Chandrayaan-3 Tardigrade:

- The Chandrayaan-3 tardigrade was named to honor India's third lunar mission, Chandrayaan-3.
 - This mission marked an important achievement in India's space exploration efforts. The name celebrates India's contribution to space science and symbolizes the spirit of discovery and scientific innovation.
- Extreme Radiation Resistance: The Chandrayaan-3 tardigrade can endure radiation doses of 3,000 to 5,000 grays (Gy). For comparison, a dose of about 3 to 5 grays can be lethal to humans. This means the tardigrade can survive 1,000 times higher levels of radiation than humans can tolerate.
- Unique Mechanisms for Surviving Radiation: The tardigrade's resistance to radiation is due to several biological features:
 - Betalains: These are pigments that the tardigrade produces to neutralize harmful molecules created by radiation.
 - > TRID1 Protein: This special protein helps the tardigrade repair its DNA quickly, fixing any radiation-induced damage.
 - ▶ BCS1 and NDUFB8 Proteins: These proteins help the tardigrade's cells maintain energy and protect against radiation damage.

CHINA LAUNCHES ADVANCED AMPHIBIOUS ASSAULT SHIP

Context

China has launched a **next-generation amphibious assault ship** named **Sichuan**, marking an important milestone in its naval expansion. This new ship, the **Type 076**, strengthens China's rapidly growing navy and aims to challenge the military power of the United States.

Key Features of the Type 076 Ship

- Size and Capacity: The Type 076 weighs over 40,000 tons, making it one of the world's largest amphibious assault ships.
 - ▶ It has a twin-island superstructure and a fulllength flight deck, allowing it to carry both aircraft and amphibious equipment.
- Electromagnetic Catapult System: The ship is equipped with an electromagnetic catapult, a technology used to launch heavier and larger aircraft. This improves the ship's ability to launch fixed-wing aircraft, which can carry more fuel, bombs, or missiles, enhancing the range and combat capabilities of the aircraft.
 - ➤ Only one other warship in the world uses this system—the **US Navy's USS Gerald R. Ford** aircraft carrier
- Potential for UAVs (Drones): While China's Fujian aircraft carrier is still in trials and may carry fixed-wing aircraft, there is speculation that the Type 076 might be used primarily for unmanned aerial vehicles (UAVs), like stealth drones and reconnaissance drones. These could include advanced drones like the GJ-11 and WZ-7.
- Helicopters and Amphibious Capability: The ship is also designed to carry helicopters and amphibious landing craft, capable of deploying more than 1,000 marines for amphibious assaults.

Strategic Implications

- China is already the largest naval force in the world, and it is building more advanced warships at an impressive pace. The launch of the Type 076 ship is part of China's broader strategy to expand its military reach and increase its global power projection, especially in comparison to the US Navy.
- Competition with the US: This launch is part of the broader military competition between the US and China. As the US Navy's focus has shifted in recent years, with a reduced commitment to expeditionary and amphibious missions, China's Type 076 could fill that gap in the Pacific and beyond, enhancing China's military footprint in key regions.

INDIA'S DEFENCE MINISTRY SIGNS CONTRACTS FOR SCORPENE SUBMARINES

Context

India's **Ministry of Defence** signed two significant defence contracts totaling **Rs 2,867 crore** to enhance its **Scorpene-class submarines**. These contracts are part of India's push for greater **self-reliance** in defence under the **'Atmanirbhar Bharat'** initiative.

Key Contracts:

- Deal with Mazagon Dock Shipbuilders (Rs 1,990 crore): This deal focuses on the construction and integration of an Air Independent Propulsion (AIP) system for the Scorpene-class submarines.
 - ➤ **AIP technology** allows submarines to stay submerged for longer durations without needing to surface for air, significantly increasing their endurance.
 - This system is indigenously developed by the Defence Research and Development Organisation (DRDO) and will be integrated into the submarines at Mazagon Dock Shipbuilders in Mumbai.
 - ➤ The project will also contribute to **employment** generation, with an estimated **3 lakh man-days**.
 - ➤ This contract aligns with India's goal of boosting indigenous defence capabilities and reducing reliance on foreign technology.
- Deal with France's Naval Group (Rs 877 crore):
 This contract pertains to the integration of Electronic
 Heavy Weight Torpedoes (EHWT), also known as F21
 Torpedoes, into the Kalvari-class submarines.
 - ➤ The EHWT features advanced technology, including aluminum silver oxide technology, which enhances its range and speed, making it a much more lethal weapon.
 - ➤ The torpedo is designed to be safe, ensuring that it will **never explode** onboard a submarine, even in case of a fire or accidental drop.
 - ➤ This collaboration involves the **Indian Navy**, **DRDO**, and the **Naval Group**, France, and will significantly enhance the **firepower capabilities** of the Kalvariclass submarines.



FACT BOX

AIP (Air Independent Propulsion)

 AIP is a technology used in conventional (nonnuclear) submarines to enable them to stay submerged for longer periods without needing to surface or use their snorkels for air.



- Traditionally, conventional submarines use **diesel** engines that require access to atmospheric oxygen, which means they have to periodically come to the surface or use a snorkel (a pipe that reaches the surface while the submarine is submerged) to draw in air for the engines.
- With AIP technology, the submarine can generate power and remain submerged for much longer durations—sometimes even for weeks—without needing to surface.
- This is because AIP systems allow submarines to operate without the need for atmospheric oxygen, using alternative energy sources like fuel cells, stirling engines, or liquid oxygen systems.
- In simpler terms, AIP acts as a force multiplier for conventional submarines, giving them increased endurance and stealth by reducing the need to surface, making them harder to detect by enemy forces. This makes them more effective for surveillance, patrolling, and defense missions.

Electronic Heavy Weight Torpedoes (EHWT)

- EHWT refers to a type of advanced torpedo that is designed to be used by **heavyweight submarines** like the Scorpene-class.
- These torpedoes are a critical part of the submarine's offensive weaponry and are used to target other naval vessels or submarines.
- The specific torpedo mentioned in the contract, the F21 Heavy Weight Torpedo, is developed by Naval Group (France) and is described as highly advanced in terms of **technology** and **performance**. Some key features of the **EHWT** (F21) include:
 - ➤ Increased Range and Speed: The torpedo uses aluminum silver oxide technology, which helps it travel faster and farther, making it a more lethal weapon compared to older torpedo designs.
 - ➤ Safety Features: A key safety feature of the EHWT is that it is designed to **never explode** onboard the submarine, even if there is a fire or if it is dropped or fired accidentally. This is an important safety feature, as torpedoes are explosive weapons.
 - **Enhanced Accuracy and Lethality**: The torpedo is designed to be more accurate and lethal, giving submarines a significant edge in naval combat.

SPACE DOCKING EXPERIMENT (SPADEX)

Context

The Indian Space Research Organisation (ISRO) is set to launch its Space Docking Experiment (SpaDeX) onboard the PSLV-C60 rocket.

What is Space Docking?

- Space docking refers to the process of bringing two spacecraft together in orbit to physically link them. This technology is essential for a variety of advanced space missions, including:
 - ▶ Human spaceflight missions, such as sending humans to the Moon and later bringing lunar samples back to Earth.
 - > Building and operating a space station, such as India's planned Bharatiya Antariksh Station.
 - > Satellite servicing missions, where one spacecraft can dock with another to perform maintenance or refueling.

The SpaDeX Mission

- SpaDeX is a key mission for ISRO as it aims to demonstrate India's capability in orbital docking. If successful, it will place India alongside space giants like China, Russia, and the United States, who have already achieved docking technology.
- The mission also supports cost-effective satellite **operations**, especially in scenarios where multiple rocket launches are needed to achieve shared objectives.
- Key Details of the SpaDeX Mission:
 - ▶ **Primary Payloads**: The mission involves two spacecraft—SDX01 (Chaser) and SDX02 (Target) that will be launched into an orbit 5 km apart.
 - ▶ Mission Process: Over the course of 10 to 14 days, ISRO scientists will attempt to bring the two spacecraft closer to a distance of just 3 meters before they dock at an altitude of 470 km above Earth.
 - > Payloads on the Spacecraft:
 - SDX01 (Chaser) carries a High Resolution Camera.
 - SDX02 (Target) includes Miniature а Multispectral Payload and a Radiation Monitor Payload. These payloads will help in capturing high-resolution images and monitoring natural resources and vegetation.
 - ► Launch Vehicle: The PSLV-C60 is the rocket carrying the SpaDeX mission. It will also carry **24 secondary payloads** in addition to the two primary spacecraft.





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