

DAILY CURRENT AFFAIRS (DCA)

Time: 45 Min

Date: 21-07-2026

Table of Content

India's First and Deepest Geothermal Wells Commissioned in Ladakh

Defections Affect Moral Sanctity of Democracy

India, Moldova Discuss UNSC Reforms

India, Spain Advance talks on UPI-Bizum Interoperability

WTO Agreement on Fisheries Subsidies

Chattigarh's River Protection Measures: Case Study

News In Short

National Maritime Heritage Complex at Lothal

Balochistan

Mount Olympus

Operation Vajra

NAMASTE Scheme

Magnetic Levitation

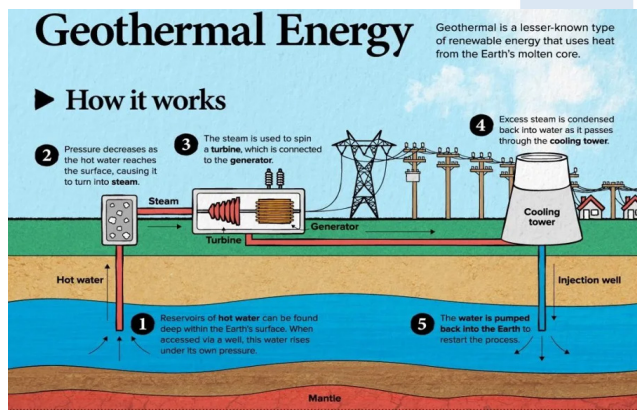
INDIA'S FIRST AND DEEPEST GEOTHERMAL WELLS COMMISSIONED IN LADAKH

In News

- India has commissioned its first and deepest geothermal wells at Puga Valley of Ladakh, a major milestone in the country's clean energy transition.

Geothermal energy

- It refers to the **heat and electricity produced by using the heat from the interior of the Earth.**
- It exists because the **Earth grows progressively hotter** with increasing depth. Where the geothermal gradient is high, high temperatures are found at shallow depths.
- Due to the high temperature, the groundwater in such areas absorbs heat from the rocks and becomes hot, which turns into steam. This steam is used to drive turbines and generate electricity.
- It is a site-specific renewable source of energy specifically suitable for catering to the energy needs of remote/interior localities.



Advantages

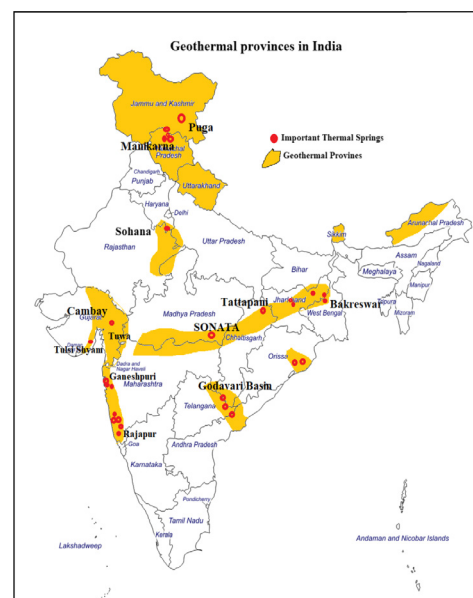
- Environmentally friendly:** Geothermal energy is a clean energy source and has a very low carbon footprint.
- Reliable Renewable Source:** It is a constant and reliable renewable energy source.
- High Efficiency:** The geothermal systems provide efficient energy conversion.
- Flexible Design:** Geothermal plants can be designed to many site conditions.
- Low Maintenance Cost** – Usually these systems require very little maintenance.
- Heat Storage:** Pumps can store heat for later use, offering more flexibility.

Disadvantages/Issues of Geothermal Energy

- Greenhouse Gas Emissions:** Some greenhouse gases are emitted during the extraction process.
- Resource Depletion:** Geothermal resources can be depleted over time.
- Cooling of the Extraction Site :** After prolonged use the particular site used for extraction may cool.
- Technological Challenges:** Using magma as a source of heat poses considerable technical challenges.
- High Capital Costs:** The upfront capital investment for geothermal plants can be significant.
- Water Pollution:** Some plants require large amounts of water and can be responsible for water pollution.
- Proximity to Volcanic Activity :** Geothermal sources are often found near volcanic activity, which can threaten the operation of the plant.
- Hard to find reservoirs.** Geothermal reservoirs are hard to find. Geothermal systems can also be hard to implement in large cities

Potential In India

- India has **381 identified hot springs** with temperature ranging from 35°C to 89°C with considerable geothermal energy potential.
- The Geological Survey of India (GSI) has estimated the **geothermal potential of the country at 10.6 GW** distributed over 10 geothermal provinces.
- These include Himalayan Geothermal Province, Cambay Graben and Andaman & Nicobar Islands.



- The global geothermal power capacity is still below 17 GW, with the US, Indonesia and the Philippines in the lead.
- The Indian market is predicted to grow to 4.2 GW by 2035 and almost 100 GW by 2045.
- In Ladakh, The ONGC Energy Centre has developed two 1,000-metre-deep wells to support India's first 1 MW pilot geothermal power project.

Governments Steps

- The Ministry of New and Renewable Energy (MNRE) has released the **National Policy on Geothermal Energy 2025** to facilitate the exploration and development of untapped geothermal energy resources.
- The policy aims to establish geothermal energy as one of the major pillars of India's renewable energy landscape, reinforcing the commitment to achieve the 2070 Net Zero Goal, and ensuring energy security.
- **100% financial support by MNRE** to government/non-profit research organizations and up to 70% to industry, startups etc.
- Renewable Energy Technology Action Platform under **US - India Strategic Clean Energy Partnership**.

Suggestions

- There is a need to develop **exploratory risk fund mechanisms with government backing to offset** the risk of failure in early stage drilling by private developers.
- There is a need for **Investment in Enhanced Geothermal Systems (EGS)** and closed loop technologies to access deep hot-dry-rock systems outside of natural aquifers.
- There is a need for Designing high-temperature, hard-rock drilling rigs for deep Himalayan granite and complex metamorphic formations.
- There is a need to accelerate non-power thermal applications, such as district space heating and cold-chain infrastructure in border areas, to stimulate local economies in extreme climates.

Source :IE

DEFLECTIONS AFFECT MORAL SANCTITY OF DEMOCRACY

Context

- Frequent post-election defections and party realignments in Indian politics have reignited concerns about the erosion of democratic ethics,

voter trust, and the sanctity of the electoral mandate.

What is Political Defection?

- Political defection refers to the change of party affiliation by an elected representative after being elected on the ticket of another political party.
- In the late 1960s and 70s, defections in Parliament and State Legislatures became so frequent that the epithet "Aaya Ram Gaya Ram" was coined to describe the same.

Why Are Defections a Threat to Democracy?

- **Violation of Electoral Mandate:** Voters choose candidates based on the party's ideology, manifesto, and leadership. However switching parties after the election is betraying the mandate given by the electorate.
- **Promotion of Opportunistic Politics:** Frequent defections make political survival more important than ideology and public service, which encourages transactional rather than principled politics.
- **Weakening of Democratic Competition:** Parliamentary democracy needs both a strong government and an effective Opposition. However, large-scale defections are weakening the Opposition's ability to scrutinize the executive and present a credible alternative.

Anti-Defection Law

- The anti-defection law was introduced through the **Fifty-second Constitutional Amendment in 1985** by incorporating the **Tenth Schedule** into the Constitution.
 - ♦ Its principal objective was the disqualification of the members of Parliament and the state legislatures on the ground of defection from one political party to another.
 - ♦ **An independent member** of a House becomes disqualified to remain a member of the House if he **joins any political party** after such election.
 - ♦ **A nominated member** of a House becomes disqualified for being a member of the House if he **joins any political party after the expiry of six months** from the date on which he takes his seat in the House.
- **The Ninety-first Amendment of 2003** further tightened the law by abolishing the exemption from disqualification for a bloc comprising at least one-third of the members of a legislature party.

- ♦ Thereafter, only a merger supported by at least two-thirds of the members of a legislature party remained eligible for this exemption.

What are the Concerns?

- Under the Tenth Schedule, the authority to decide disqualification petitions rests with the presiding officers of the respective Houses — **the Speaker** in the Lok Sabha and State Legislative Assemblies, and the **Chairmen** in the Rajya Sabha and Legislative Councils.
 - ♦ While the Chairman of the Rajya Sabha is mandated to resign from his parent party, this is not obligatory for the Speakers.
- This arrangement inevitably gives rise to questions about institutional impartiality. Presiding officers have delayed decisions on disqualification petitions for months and years, and at times, for the entire tenure of the House.

Supreme Court Judgements

- **Kihoto Hollohan v. Zachillhu (1992):** The Supreme Court upheld the constitutional validity of the Tenth Schedule and held that the Speaker's decision on disqualification is not absolute and is subject to judicial review.
- **Keisham Meghachandra Singh v. Speaker, Manipur Legislative Assembly (2020):** Supreme Court of India ruled that Speakers of national and state legislatures decide defection cases under the Tenth Schedule within a reasonable time frame, strictly recommending an outer limit of three months

Way Ahead

- **Institutional Reforms:** Establish a time-bound mechanism for deciding disqualification petitions and consider transferring adjudication to an independent tribunal.
- **Political Reforms:** Strengthen internal party democracy and make candidate selection more transparent and ideology-based.
- **Electoral Reforms:** Strengthen the role of the Election Commission in monitoring post-election realignments.

Source: TH

INDIA, MOLDOVA DISCUSS UNSC REFORMS

Context

- India and Moldova discussed **reforms of multilateral organisations, including the UN**

Security Council, as President Droupadi Murmu paid an official visit to the country.

About

- It is the first Indian head of state visit to the landlocked Eastern European country since the **establishment of diplomatic relations in 1992**.
- Both countries are also **exploring cooperation in digital public infrastructure, innovation, food processing, logistics and skills development**.
- India's outreach to Eastern Europe seeks to **diversify its European engagement beyond major Western powers such as France and Germany**.
- Over the next few days, President Murmu will also be visiting **North Macedonia and Romania**.

About Moldova

- Moldova is a **landlocked country** bordering Ukraine and Romania - emerged as an independent republic following the **collapse of the Soviet Union in 1991**.
- Moldova lies to the east of the great arc of the **Carpathian Mountains**.



About the UNSC

- The United Nations Security Council (UNSC) is **one of the principal organs** of the United Nations, responsible for **maintaining international peace and security**.
- It was established in **1945** as part of the UN Charter and is composed of **15 member states**, including **five permanent members** with veto power—China, France, Russia, the United Kingdom, and the United States—and **ten non-permanent members** elected for **two-year terms** by the General Assembly.
- It is headquartered in **New York City**.

Need for the Reforms in the UNSC

- **Current Composition:** The current composition of the Security Council has **under-representation and un-representation of key regions**.

- **Inability to Address Conflicts:** The current composition of the council has an **inability to address critical conflicts** and maintain international peace and security.
- **Changes in World Order:** The world has undergone significant **changes since 1945** and the **new realities need to be reflected** in the permanent membership.
- **Veto Power:** Currently, **only the five permanent members** hold veto powers and through its use have stalled action in the Council to address global challenges and conflicts such as in Ukraine and Gaza.
 - ♦ The remaining 10 nations in the Council are elected to sit as non-permanent members for two-year terms and **do not have veto powers**.
- **Legitimacy:** The disproportionate power held by the five permanent members, particularly their veto power **lead to a perception of unfairness and lack of legitimacy**.

Factors Strengthening India's Bid for a Permanent Seat

- **Global Population and Representation:** India is the world's most populous country, representing approximately 18% of the world's population.
 - ♦ Such demographic significance warrants proportional representation in global decision-making bodies like the UNSC.
- **Economic Powerhouse:** India has emerged as a major global economic force, ranking among the top economies by GDP (nominal) and GDP (PPP).
 - ♦ Its economic strength contributes significantly to global stability and development, which aligns with the UNSC's mandate to maintain international peace and security.
- **Commitment to Peacekeeping:** India has been one of the largest contributors to UN peacekeeping missions, demonstrating its commitment to global peace and security.
- **Strategic Importance:** India occupies a pivotal geopolitical position in South Asia and the broader Indo-Pacific region.
 - ♦ Its influence extends beyond regional boundaries, making it crucial in addressing global security challenges such as terrorism, climate change, and maritime security.
- **Democratic Values:** As the world's largest democracy, India upholds principles of pluralism, tolerance, and inclusivity, which are fundamental to the UN's ethos.

- **Support from Member States:** India enjoys broad support from a significant number of UN member states, this backing reflects recognition of India's global role and its potential contributions to enhancing the UNSC's capacity.

Limitations in Introducing the Reforms in UNSC

- **Veto Power of Permanent Members:** Any reforms to the composition or working methods of the UNSC require the approval of the five permanent members.
 - ♦ These countries have divergent interests and are reluctant to support changes that could diminish their influence within the Council.
- **Regional Dynamics:** Regional rivalries and geopolitical tensions complicate efforts to reform the Council.
- **Complexity of the Reform Process:** Amending the UN Charter to enact reforms requires a lengthy and complex process involving ratification by a significant number of member states, making it difficult to enact substantive reforms.
- **Chinese Opposition:** China being a permanent member blocks the growth of India becoming a Permanent Member.

Way Ahead

- It is important that both the **permanent and non-permanent membership** be representative of the world as it is today, not the world as it existed in the wake of the Second World War.
- **Reforms in the UNSC** are essential for maintaining its relevance, legitimacy, and effectiveness in addressing the complex security challenges facing the international community in the 21st century.
- However, achieving consensus on such reforms among the UN's member states remains a challenging and ongoing process.

Source: IE

INDIA, SPAIN ADVANCE TALKS ON UPI-BIZUM INTEROPERABILITY

Context

- India and Spain have agreed to fast-track discussions on enabling **interoperability between India's Unified Payments Interface (UPI) and Spain's Bizum digital payments platform**.

Other Highlights

- The two countries commemorate **70 years of diplomatic relations** and celebrate the **India-Spain Dual Year of Culture, Tourism and Artificial Intelligence 2026**.
- The two countries have also discussed ways to **strengthen investment facilitation, improving mobility of professionals and promoting joint investments in Latin America**.
- Both sides have also identified significant opportunities in automobiles, pharmaceuticals, chemicals, textiles, renewable energy, tourism and infrastructure.
- During the same Europe tour, India also discussed **fintech cooperation and possible UPI integration with Estonia**.
 - ♦ UPI has already gone international in several countries, including **France, Singapore, the United Arab Emirates, Mauritius, Sri Lanka, Nepal, Bhutan, and Qatar**.

Overview of India-Spain Bilateral Relations

- **Diplomatic relations** between India and Spain were established in **1956**.
 - ♦ Since then, both countries have engaged in high-level visits and discussions to strengthen their political ties.
- **Economic Relations:** Spain is India's 6th largest trade partner in Europe. Bilateral trade reached US\$ 9.9 billion in 2023. India's exports stood at US\$ 7.17 billion while imports stood at US\$ 2.74 billion during the same period.
 - ♦ **India-Spain Joint Commission on Economic Cooperation (JCEC)** was set up under the 1972 Trade and Economic Cooperation Agreement and has since met twelve times.
 - ♦ **Investment:** Spain ranks as the 16th largest foreign investor in India, with cumulative FDI totaling US\$3.94 billion as of December 2023.
- **Defence:** Spain has emerged as a prominent member in Defence diversification and modernization for India.
 - ♦ The procurement of 56 C295 aircraft from Airbus Spain represents the **first Make in India** project in the defence aircraft sector.
- **Tourism** in both directions is growing, with 250,000 Indian tourists travelling to Spain every year, and 40,000 Spanish tourists visiting India.
- **The Spain-India Council Foundation** is a private non-profit organization that functions in

coordination with the Spanish Ministry of Foreign Affairs in collaboration with Observer Research Foundation (ORF).

- ♦ This Forum serves as a crucial tool for promoting bilateral relations between Spain and India.
- **Multilateral Cooperation:** Both nations collaborate in international forums, including the United Nations, G20 and International Solar Alliance (ISA) addressing global challenges such as climate change, terrorism, and sustainable development.
- **Diaspora:** The Indian diaspora in Spain numbers around 75000, concentrated in Catalonia, Valencia, Madrid and Canary Islands.

About Spain

- Spain occupies most of the **Iberian Peninsula**, stretching **south from the Pyrenees Mountains** to the **Strait of Gibraltar**, which separates Spain from Africa.
- Spain is bordered to the west by **Portugal**; to the northeast it borders **France**.
- To the east lies the **Mediterranean Sea**, including Spain's Balearic Islands.
- The southern and eastern coasts of Spain, from the fertile Andalusian plain up to the Pyrenees, are often swept by warm winds called **sirocco winds**.



Way Ahead

- India and Spain's evolving economic and diplomatic relationship holds significant promise, with key areas of cooperation including trade, investment, renewable energy, infrastructure, and defense.

- Spanish expertise in renewable energy, infrastructure, and environmental technology complements India's expanding market.
- Initiatives like "Make in India" and "Digital India" create favorable conditions for further collaboration, encouraging foreign direct investment.
- As both countries continue to leverage their mutual strengths, the future of India-Spain bilateral ties looks bright, with enhanced cooperation.

Source: PIB

WTO AGREEMENT ON FISHERIES SUBSIDIES

Context

- Recently, India deposited its **Instrument of Acceptance** of the **WTO Agreement on Fisheries Subsidies**, becoming the **123rd member** to join the Agreement.

About WTO Agreement on Fisheries Subsidies

- It was adopted by consensus at the **12th WTO Ministerial Conference (MC12)** held in **Geneva in June 2022**.
- It entered into force on **15 September 2025** after receiving acceptance from two-thirds of WTO members.
- It is the **first WTO multilateral agreement with an environmental sustainability objective**.
- **Objectives:**
 - ♦ To eliminate subsidies that encourage **Illegal, Unreported and Unregulated (IUU) fishing**.
 - ♦ To discourage subsidies contributing to the **overfishing of depleted fish stocks**.
 - ♦ For the **sustainable use and long-term conservation of marine resources**.
 - ♦ To establish a rules-based global fisheries governance framework.
- **Scope of Agreement:** The Agreement covers marine wild capture fisheries and fishing-related activities conducted at sea.
 - ♦ It **excludes aquaculture and inland fisheries**.

Other WTO subsidies

- **Agreement on Subsidies and Countervailing Measures (SCM Agreement):** Deals with subsidies that **affect trade in goods**. It prohibits export subsidies and import substitution subsidies and allows action against subsidies which cause injury.

- **Agreement on Agriculture (AoA):** Covering domestic support, export subsidies and market access. Domestic support is classified in terms of trade distortion into **Amber Box, Blue Box and Green Box**.
- **General Agreement on Trade in Services (GATS):** There is no comprehensive discipline on subsidies under GATS. WTO members continue talks on developing rules for services subsidies.

Differences

- **SCM Agreement:** Subsidies on industrial/manufactured products.
- **Agreement on Agriculture (AoA):** It includes subsidies and export support for farmers.
- **GATS:** Services subsidies are **not yet covered** by WTO rules.

Why is India's Acceptance Significant?

- **Safeguarding Small-Scale Fishers:** India's fisheries sector is dominated by **traditional and artisanal fishers**, unlike several developed countries that operate large distant-water industrial fleets.
 - ♦ The Agreement sets up a more equitable international fisheries regime.
 - ♦ It examines harmful subsidies that promote industrial scale fishing and supports the protection of livelihoods that depend on marine resources.
- **Enhanced Sustainable Fisheries:** India's approval is in line with its broader **Blue Economy** and **SDG-14 (Life Below Water)** commitments.
 - ♦ The Agreement promotes responsible fishing practices, conservation of marine biodiversity and sustainable use of fish stocks.
- **Boost to India's Seafood Exports:** Global seafood markets are demanding more and more sustainable sourcing, traceability and environment-friendly production practices.
 - ♦ India's accession is likely to enhance its credibility as a responsible seafood exporter, improve access to premium international markets and increase the confidence of importing countries.
- The agreement is **unlikely to have an adverse impact on India's export competitiveness** as India's seafood exports are **mainly aquaculture based**.

Present Fisheries Management System in India

- **Sustainable Harnessing of Fisheries in the EEZ Rules, 2025:** It provides for fishing in India's **Exclusive Economic Zone (EEZ)** and promotes sustainable harvesting practices.
- **Guidelines for Sustainable Harnessing of Fisheries in the High Seas (2025):** It regulates the functioning of vessels flying the Indian flag in international waters, and promotes responsible fishing.
- **Pradhan Mantri Matsya Sampada Yojana (PMMSY):** It aims at capacity building, infrastructure development, sustainable fisheries, fisheries value chains and welfare of fishers.
- These measures ensure marine conservation and maintain sufficient policy space for **traditional and small-scale fishers**.

Benefits for India

- **Economic:** Increased market access; improved export reputation; and continued competitiveness of prawn exports.
- **Environmental:** Decreased pressure on marine ecosystems; conservation of fish stocks; and improved marine governance.
- **Social:** Livelihoods, support to coastal communities, equitable resource use.
- **Strategic:** Supports India's commitment to a rules-based multilateral trading system; and shows leadership in sustainable ocean governance.

Challenges Ahead

- Effective monitoring of **Illegal, Unreported and Unregulated (IUU)** fishing.
- Enhanced surveillance in India's EEZ.
- Balancing conservation and livelihood concerns.
- Ensuring sufficient support to small fishers during implementation.
- Addressing outstanding negotiations on broader fisheries subsidies under the WTO framework.

Source: PIB

CHATTIGARH'S RIVER PROTECTION MEASURES: CASE STUDY

In News

- The Chhattisgarh government has informed the High Court that it has taken several measures to prevent river pollution following concerns raised over untreated industrial water discharge,

polluted water and fish deaths in the **Shivnath and Kharun rivers**.

River conservation

- It is the planned protection and sustainable management of rivers and their ecosystems to ensure long term availability of freshwater for human needs, agriculture, industry and biodiversity.
- There is a need for strict and effective river laws as pressures from climate change, population growth, pollution, illegal encroachments and excessive water extraction mount up.

Major initiatives of Chattigarh: A Case Study

- **Geo-tagging & digital mapping of the river** origin points on PM Gati Shakti platform
- Formulation of **River Revival Plans** for each district, and scientific monitoring of river discharge, groundwater levels and water quality.
- IIT Roorkee, NIT Raipur and CSVTU Bhilai are working on sustainable restoration plans.
- A **State Level Source Festival and Workshop** to be held to bring together experts and stakeholders to further strengthen the river rejuvenation efforts.
- The government has also directed the district collectors to undertake scientifically sound conservation works, undertake desiltation, riverbank protection, flood control measures and submit geo tagged evidence of restoration activities.
- For example, the revival plan of **Hasdeo river** includes catchment treatment, desiltation, plantation, groundwater and water quality monitoring and eco-friendly development of its source.

Other Government Conservation Initiatives

- **River Basin Management (RBM) Scheme:** It is a central sector scheme of the Department of Water Resources, River Development, and Ganga Rejuvenation under the Ministry of Jal Shakti.
- The scheme aims to facilitate integrated planning, investigation, and development of water resources at the river basin level, including both surface water and groundwater systems.
- It is implemented through three key organisations—namely, the Brahmaputra Board, the Central Water Commission (CWC), and the National Water Development Agency (NWDA)

- **Namami Gange Programme:** It is an Integrated Conservation Mission, approved as 'Flagship Programme' by the Union Government in June 2014 with budget outlay of Rs.20,000 Crore to accomplish the twin objectives of effective abatement of pollution, conservation and rejuvenation of National River Ganga.
- **National River Conservation Plan (NRCP):** It is the Centrally Sponsored Scheme implemented for abatement of pollution in identified stretches of rivers in the country, excluding those in Ganga basin, by providing financial and technical assistance to the States/Union Territories (UTs) on cost sharing basis.
- **Central Pollution Control Board (CPCB):** In association with the State Pollution Control Boards/Committees in different States/UTs has been monitoring water quality of rivers and other water bodies in the country through a network of monitoring stations under the National Water Quality Monitoring Programme..

Source: IE

NEWS IN SHORT

NATIONAL MARITIME HERITAGE COMPLEX AT LOTHAL

In News

- India is setting up the **National Maritime Heritage Complex (NMHC)** at **Lothal in Gujarat** to display the country's 4,500-year-old maritime history and the legacy of the **Indus Valley Civilisation**.

Lothal

- Lothal was a **major city of the Indus Valley Civilisation** around 2400 BCE.
 - ♦ In Gujarati, its name means 'the mound of the dead'.
- The site was excavated by the Archaeological Survey of India (ASI) from 1955 to 1960, and a highly developed urban settlement and trading centre was found.
- Archaeologists believe Lothal was strategically placed along a **major river system** that formed part of the old trade route linking Sindh to Saurashtra in Gujarat.
- Its most important find is the **oldest known man-made dockyard** in the world, along with an acropolis, lower town, bead factory, warehouses, markets and sophisticated drainage system.

- The engineering skills of Harappans is reflected in the **planned canals and dock facilities of the city**.
- Lothal is one of the most **important trading ports of the ancient world**.
- Archaeological evidence suggests that **Lothal was connected by trade with far off lands like Mesopotamia, Egypt and Persia**.

UNESCO nomination

- The Lothal site was nominated, in April 2014, as a UNESCO World Heritage Site, and its application is pending on the tentative list of UNESCO.

National Maritime Heritage Complex

- It is a Rs 4,000 crore project, which was approved by the **Union Cabinet in 2024**.
 - ♦ It is located around 80 km from Ahmedabad.
- It will recreate Harappan streets, markets, dockyards and civic spaces, giving visitors a chance to experience ancient urban life beyond the traditional museum display.
- The museum has been designed on the lines of Harappan architecture with elevated flood-resistant structures and ship-like forms.
- The project aims to create a global cultural and educational destination to showcase India's ancient maritime prowess and the technological advancement of Harappan civilisation.

Source :IE

BALUCHISTAN

Context

- Pakistan recently launched **Operation Shaban** in Balochistan after attacks that killed policemen and civilians, bringing renewed attention to the long-running Baloch insurgency.

Historical roots of the conflict

- **Accession of Kalat:** Kalat was the largest princely state in present-day Balochistan during British India. At the time of Partition, the princely state of Kalat initially sought independence.
 - ♦ Under political and military pressure, the Khan of Kalat acceded to Pakistan in **1948**.
 - ♦ Baloch nationalists regard the accession as coerced, while Pakistan considers it legal and final.
- **Sui gas grievance:** Local resentment grew over the perception that Balochistan's natural resources benefited the central government more than local communities.

About Balochistan

- Balochistan is the **largest province of Pakistan by area**, and covers approximately **44%** of the country's landmass.
- **Capital:** Quetta.
- **Borders:** It borders Iran (west), Afghanistan (north), and the Arabian Sea (south).
- **Resources:** It is rich in natural gas, copper, gold, coal, and other mineral resources.
 - ♦ **Reko Diq:** One of the world's largest undeveloped copper-gold deposits.
 - ♦ **Saindak:** A major copper-gold mining project operated with Chinese involvement.
- **Significance:** It hosts **Gwadar Port**, a key node of the China-Pakistan Economic Corridor (CPEC).

Source: IE

MOUNT OLYMBUS

In News

- **Mount Olympus**, the mythological home of Zeus and the ancient Greek gods, is being considered for **UNESCO World Heritage status** as Greece seeks protection for its tallest mountain.
 - ♦ The nomination, launched in 2014, is now being evaluated by Unesco's World Heritage Committee.

Mount Olympus

- **Location :** Mount Olympus (2,918 m) is the highest mountain in Greece and is located between Macedonia and Thessaly.
 - ♦ It is known for its special microclimate, exceptional biodiversity and spectacular landscapes.
- **Mythological and Cultural Importance :** It was revered in ancient Greek mythology as the home of Zeus and the Twelve Olympian Gods.
 - ♦ It was described by Homer and Hesiod as the divine abode where Zeus defeated the Titans and reigned over Gods and men.
 - ♦ **Archaeological findings**, such as the Temple of Olympian Zeus on the peak of Agios Antonios and ancient settlements in the vicinity, testify to its longstanding religious and historical importance.
 - ♦ Olympus also has Christian heritage, with the 16th-century Chapel of Prophet Elias, the highest Orthodox chapel, and the Old Monastery of Hosios Dionysios.

- **Natural Heritage :** In 1938 it was declared Greece's first National Forest and is known for its abundant ecosystems, with four distinct vegetation zones, from Mediterranean forests to alpine meadows above the highest tree line in the Balkans, with many rare and endemic plant species

Source: TOI

OPERATION VAJRA

Context

- **The Central Bureau of Narcotics (CBN)** prevented illegal trafficking of **high-strength Tramadol Hydrochloride (250 mg)** tablets under the **Operation Vajra**.

What makes this seizure particularly significant?

- Tramadol is a **synthetic opioid painkiller**, popularly known as the **'Fighter Drug'**. It has reportedly been misused by fighters, including ISIS militants, to suppress pain and fatigue.
- While Tramadol has legitimate medical uses, its **illegal diversion and misuse can lead to dependence** and pose serious public health and security concerns.
 - ♦ In 2018, India brought Tramadol under the ambit of the **Narcotic Drugs and Psychotropic Substances Act, 1985**, making its production and sale without approval from the Central Bureau of Narcotics illegal.
- The seizure also highlights the larger challenge of drug trafficking in Asia, which is home to two major illicit drug-producing regions: **the Golden Crescent and the Golden Triangle**.

About CBN

- **Administrative Ministry:** Department of Revenue, Ministry of Finance.
- **Headquarters:** Gwalior, Madhya Pradesh (shifted from Shimla in 1960).
- **The responsibilities of CBN cover the following:**
 - ♦ Supervision over licit cultivation of opium poppy in India.
 - ♦ Investigation of cases under the NDPS Act, 1985 and filing of complaint in the Court.
 - ♦ Action for tracing and freezing of illegally acquired property.
 - ♦ Issue of licences for manufacture of synthetic narcotic drugs.

- ♦ Issuance of Export Authorisations/ Import Certificate for export/ import of Narcotic Drugs and Psychotropic Substances.
- India is a signatory to the **UN Convention on Narcotic Drugs 1961, UN Convention on Psychotropic Substances 1971 & UN Convention against the Illicit Traffic in Narcotic Drugs and Psychotropic Substances, 1988** which obligates member countries to monitor the implementation of the United Nations drug control conventions.

Source: PIB

NAMASTE SCHEME

Context

- As part of its latest achievements, 89,915 Sewer and Septic Tank Workers and 2,81,117 Waste Pickers have been validated under the NAMASTE scheme.

About

- **National Action for Mechanised Sanitation Ecosystem (NAMASTE)** is a flagship initiative to ensure the safety, dignity and social security of sanitation workers.
- The scheme aim to eliminate hazardous manual cleaning of sewers and septic tanks by promoting mechanised cleaning practices.
- It is jointly implemented by the **Ministry of Social Justice and Empowerment and the Ministry of Housing and Urban Affairs.**
- **The sanitation workers are provided with a range of benefits:**
 - ♦ Personal Protective Equipment (PPE), health insurance, Ayushman Bharat coverage, occupational safety training, skill development, financial assistance for self-employment and access to modern mechanised sanitation equipment.
- It seeks to achieve **zero fatalities in sanitation work and eliminate direct human contact with hazardous waste.**
 - ♦ It also seeks to build a **skilled sanitation workforce and promote entrepreneurship** among sanitation workers through Self-Help Groups and other livelihood opportunities.

Source: PIB

MAGNETIC LEVITATION

In News

- Japan has approved the building of its first **500-km superconducting maglev (SCMAGLEV) railway connecting** Tokyo and Osaka via Nagano, Nagoya and Kyoto.

Maglev (Magnetic Levitation)

- Maglev means to lift a vehicle without any mechanical support with the help of **magnetic field** generated by either permanent magnets or electromagnets.
- Maglev trains use powerful magnetic fields instead of wheels to lift and propel the train, eliminating rolling friction and enabling smooth travel at speeds exceeding 400 km/h.

Technologies Used

- **Electromagnetic Suspension (EMS)**, where electromagnets on the train attract it to the guideway and keep it levitating about 10 mm above the track using sensors, and
- **Electrodynamic Suspension (EDS)**, where superconducting magnets induce electric currents in track coils to generate a repulsive force, allowing the train to hover about 100 mm above the track after reaching roughly 100 km/h.

How does the train move forward?

- Movement is achieved through linear motors, in which alternating current (AC) in guideway coils creates a moving magnetic field that pulls the train forward and pushes it from behind
- regenerative braking and friction brakes ensure safe deceleration and emergency stopping.

Benefits of Maglev (Magnetic Levitation)

- Very high speeds (400-600 kmh)
- Smooth and silent ride.
- No rolling friction Less wear and maintenance.
- The high reliability in bad weather conditions.

Other Applications

- Magnetic levitation technology is not just for high-speed trains. It is used in magnetic bearings to suspend turbine and compressor shafts. This reduces friction and allows faster rotation.
- The same linear motor technology is used to launch aircraft off the runways of aircraft carriers.

- In industries maglev systems provide fast, precise motion in semiconductor manufacturing, packaging, CNC machining, laser/X-ray inspection, and DNA sequencing.
- Scientists also use magnetic fields to levitate biological samples, liquids, molten metals, and small animals for research purposes.
- In 1997, physicists Andre Geim and Michael Berry balanced Earth's gravity against a weak magnetic property called diamagnetism to levitate a frog, using a powerful 10-tesla magnet.
- In 2000, they were awarded the Ig Nobel Prize for their quirky experiment, and Geim went on to become the only scientist to win both an Ig Nobel and a Nobel Prize.

Constraints

- Requires dedicated tracks and stations; existing rail infrastructure cannot be reused.
- Very high costs for building and maintenance.
- High passenger demand is essential for economic viability, and at speeds above 300 km/h, aerodynamic drag becomes a major challenge, necessitating advanced streamlined designs.

Source: TH

■■■■

