

SAGARMALA PROGRAMME



- It was launched in **2015** to **promote port-led development**.
- It aims to improve **logistics efficiency**, reduce transportation costs, and support trade by increasing the use of coastal shipping and inland waterways alongside existing road and rail networks.
- The overall projects under the **Sagarmala Programme** are **divided into 5 pillars**.

Components of Sagarmala Programme

- **Port Modernization and New Port Development:** It focuses on upgrading existing ports and developing new ones to expand capacity and improve operational efficiency.
- **Port Connectivity Enhancement:** It aims to strengthen connectivity between ports and the hinterland to facilitate faster and more cost-efficient cargo movement.
- **Port-Led Industrialization:** It promotes the development of industrial clusters in port-proximate areas to support manufacturing and economic activity.
- **Coastal Community Development:** It focuses on improving livelihoods and promoting sustainable development in coastal regions.
- **Coastal Shipping and Inland Waterways Transport:** It encourages greater use of coastal shipping and inland waterways for cargo movement.

Institutional Backbone of Sagarmala

- It is supported by a **multi-tier framework** designed to enable coordinated planning, efficient implementation, and continuous monitoring across the Centre and States.
- **National Sagarmala Apex Committee (NSAC):** Constituted in May 2015, NSAC is the apex body **providing overall policy guidance** and oversight for the programme.

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- **Maritime States Development Council (MSDC):** It is convened periodically to facilitate centre–state coordination. It brings together all stakeholders and promotes coordinated development of ports and related infrastructure.
- **State Sagarmala Committees (SSCs):** Constituted in coastal states and union territories (UTs), SSCs are responsible for identifying projects, coordinating implementation, and monitoring progress at the state level.
- **Sagarmala Finance Corporation Limited (SMFCL):** Sagarmala Development Company Limited (SDCL), established in August 2016, has played an important role in advancing India’s maritime infrastructure.
- In June 2025, SDCL restructured as the Sagarmala Finance Corporation Limited (SMFCL).

KHANIJ BIDESH INDIA LIMITED (KABIL)



It is a **joint venture** company of three Central Public Sector Enterprises, namely, National Aluminium Company Ltd. (NALCO), Hindustan Copper Ltd. (HCL), and Mineral

Exploration and Consultancy Ltd. (MECL) in the ratio of **40:30:30**.

- It was **incorporated** under Companies Act 2013, with an **objective** to **identify, explore, and acquire overseas mineral deposits & bring strategic minerals into India**.
- It is under the aegis of the **Ministry of Mines**, Government of India.
- The company is **currently focusing on two prime critical and strategic minerals, i.e., Lithium and Cobalt**, and significant **projects are underway in Argentina, Australia, and Chile**.
- Amongst the three promoters, NALCO is **one of the largest integrated primary producers of aluminum in Asia**, HCL is India’s only vertically integrated copper producer, whereas MECL is **one of the largest mineral exploration agencies of India**.
- The registered office of KABIL is situated in New Delhi and managed by the lead partner NALCO.

KEY FACTS ABOUT WULAR LAKE



- It is the **largest freshwater lake in India** and the **second largest freshwater lake in Asia**.
- **Location:**
 - It is located in the Bandipore district of **Jammu and Kashmir**
 - It lies at the **north end of the Vale of Kashmir**
 - The lake lies at the **foothills of Haramuk Mountain**.
- The lake **controls the flow of the Jhelum River**, which runs through it.
- The **lake basin was formed as a result of tectonic activity**.
- It is also **said to be a remnant of Satisar Lake that existed in ancient times**.
- This lake also has a small **island** in its centre called the '**Zaina Lank**'. This island was **constructed by King Zainul-Abi-Din**.
- It is an important habitat for fish and contributes about **60 percent** of the **fish yield of the Kashmir Valley**.
- In 1990, it was designated as a **Wetland of International Importance** under the **Ramsar Convention**.

KEY FACTS ABOUT VITAMIN D



- A new study says that your vitamin D level in your 30s and 40s is a determining factor of your brain age in your 60s and 70s.
- Vitamin D (also referred to as **calciferol**) is a **fat-soluble** vitamin that is **naturally present in a few foods**, added to others, and available as a dietary supplement.
 - It is also **produced endogenously** when ultraviolet (UV) rays from sunlight **strike the skin** and trigger vitamin D synthesis.

- During periods of sunlight, vitamin D is stored in fat and then released when sunlight is not available.
- Very few foods naturally contain vitamin D. Most people get vitamin D in their diet from foods that are fortified. This means that vitamin D is added to the food. These foods may include milk, cereal, and yogurt.
- Foods that naturally have vitamin D include egg yolks, saltwater fish, and liver.
- The amount of vitamin D one needs each day depends on one's age.

Why is Vitamin D So Important?

- Vitamin D promotes calcium absorption and helps maintain adequate levels of calcium and phosphorus in the blood, which is necessary for healthy bones and teeth.
- Without sufficient vitamin D, bones can become thin, brittle, or misshapen.
- Vitamin D has other roles in the body, including reduction of inflammation as well as modulation of such processes as cell growth, neuromuscular and immune function, and glucose metabolism.

Vitamin D Deficiency:

- In children, vitamin D deficiency causes rickets, a disease in which the bones become soft, weak, deformed, and painful.
- In teens and adults, vitamin D deficiency causes osteomalacia, a disorder that causes bone pain and muscle weakness.
- Vitamin D deficiency may be more common in people with higher skin melanin content (darker skin) and who wear clothing with extensive skin coverage.

Can Vitamin D be Harmful?

- Very high levels of vitamin D in your blood can cause nausea, vomiting, muscle weakness, confusion, pain, loss of appetite, dehydration, excessive urination and thirst, and kidney stones.
- Extremely high levels of vitamin D can cause kidney failure, irregular heartbeat, and even death.

BALANCING FOREST RIGHTS AND CONSERVATION - FRA VS FOREST CONSERVATION ACT DEBATE

- A legal dispute before the Supreme Court of India (SC) has brought into focus the tension between tribal housing rights and forest conservation laws.
- The case concerns construction of **houses** under the Pradhan Mantri Awas Yojana–Gramin (PMAY-G) **on forest land** for the Sahariya tribe in Shivpuri, Madhya Pradesh.
- This has raised critical questions about the interpretation of the Forest Rights Act (FRA), 2006 and the Forest (Conservation) Act, 1980.

Legal and Policy Framework:

- **Forest Rights Act (FRA), 2006:**
 - It recognises individual and community forest rights of Scheduled Tribes (ST) and forest dwellers.
 - It empowers Gram Sabhas as the primary authority for claims verification.
 - It also imposes duties on rights holders to conserve forests, biodiversity, and wildlife.
- **Forest (Conservation) Act, 1980:** The law regulates diversion of forest land for non-forest purposes, and requires prior approval from the Centre for such activities.
- **Government's stand:**
 - The Centre argues that once forest rights are recognised under FRA, prior approval under the Forest Conservation Act is not required.
 - This emphasises **harmonious interpretation** of both laws to ensure social justice and ecological protection.

Key Issue Before the Court:

- Whether construction of houses under PMAY-G on forest land **violates** forest conservation norms.
- Whether recognition of rights under FRA **overrides** procedural requirements under the Forest Conservation Act.

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- The apex court will also **examine** the National Green Tribunal's (NGT) order, which held the PMAY-G constructions as violative of the Forest Conservation Act.
 - A contempt petition was filed alleging non-compliance with NGT orders.
 - The Supreme Court sought clarity on regulatory safeguards and convergence of both laws.

Key Challenges:

- **Legal ambiguity:** Conflict between individual rights (FRA) and collective ecological safeguards (FCA).
- **Implementation deficits:** Variations across states in claim verification and approval. Risks of erroneous recognition or rejection.
- **Environmental concerns:** Potential fragmentation of forest ecosystems. Weak monitoring post-recognition of rights.
- **Institutional overlap:** Multiple authorities result in coordination challenges. There are also Centre vs State jurisdiction issues.
- **Misuse and encroachment:** Allegations of non-tribal encroachment on CFR lands. Weak enforcement against violations.

Way Forward:

- **Harmonised legal framework:** Clear judicial guidelines on FRA–FCA convergence. Codify principles of “development with conservation”.
- **Strengthening Gram Sabhas:** Capacity building for evidence-based decision-making, ensuring genuine community participation.
- **Robust monitoring mechanisms:** Use of GIS mapping and satellite imagery. Periodic audits of forest land use.
- **Safeguarding community forest resources:** Clear demarcation of CFR vs individual rights land, preventing elite capture and misuse.
- **Inter-departmental coordination:** Better synergy between the Tribal Affairs Ministry, Environment Ministry, and the State governments.

INDUCTION VS INFRARED: POWER GRID IMPLICATIONS OF INDIA'S ELECTRIC COOKING PUSH

Induction Cooktops as an Alternative to LPG

- A basic induction cooktop costs around ₹3,000–4,000, comparable to the price of an LPG cylinder in the black market. This makes it an affordable entry point for households considering a shift to electric cooking.
- **Working Mechanism**
 - Induction cooktops do not use an open flame. They generate a **rapidly changing electromagnetic field**, which heats the vessel directly.
 - Heat is produced through **electrical resistance**, converting energy into thermal heat efficiently.
 - Direct heating of the vessel ensures **higher energy efficiency**. Absence of flame makes induction cooktops **safer and cleaner** compared to gas stoves.
- **Compatibility Constraints**
 - Induction cooktops require **ferromagnetic cookware** such as cast iron or magnetic stainless steel. Not all traditional utensils are compatible due to differences in electrical resistance.

Infrared Cooktops: Working Mechanism and Rising Adoption

- Infrared cooktops are gaining popularity despite higher costs due to their **versatility and compatibility with all types of cookware**.
- **How Infrared Cooktops Work?**
 - Electricity heats a coil or halogen element beneath a ceramic glass surface.
 - The element becomes red-hot, similar to a toaster coil.
 - It emits infrared radiation, an invisible form of electromagnetic energy.
 - Infrared radiation passes through the glass surface and is absorbed by the cookware.
 - This causes molecules in the vessel to vibrate and generate heat, cooking the food.

- **Growing Market Demand**

- Unlike induction, infrared cooktops work with steel, aluminium, glass, and ceramic vessels. This eliminates the need for specialised cookware.
- Demand has surged significantly, with sales increasing nearly fourfold on platforms like Amazon India.
- The ease of use and flexibility are key factors behind this trend.

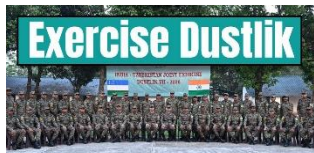
Challenges of Infrared Cooktops

- **Lower Energy Efficiency** - Infrared cooktops operate at 70–80% efficiency, compared to 85–95% for induction cooktops. Heat is generated in stages—coil → glass → vessel—leading to greater energy loss.
- **Higher Electricity Consumption** - Due to indirect heating, infrared cooktops consume more electricity than induction cooktops for the same cooking task.
- **Heat Control Limitations** - Induction cooktops use advanced power electronics (like pulse-width modulation) to maintain efficiency even at low heat. Infrared cooktops rely on phase-angle control, switching the coil on and off to regulate heat.

Electric Cooking and Stress on Power Grid Infrastructure

- **Peak-Time Demand Pressure** - Electric cooking demand is concentrated during morning and evening hours. Even a 3–5 GW increase during these periods can significantly strain local distribution networks.
- **Localised Load Challenges** - The impact is often highly localised, with clusters of households or businesses shifting to electric cooking. This can overload distribution transformers, causing outages and infrastructure stress.
- **Infrastructure Limitations** - Existing grid infrastructure in many areas is not designed for sudden demand spikes. Managing these sharp increases poses a major operational challenge for utilities.
- **Long-Term Demand Implications** - A sustained shift away from LPG to electric cooking could lead to a persistent rise in electricity demand. This would require significant upgrades in infrastructure and power supply capacity.

EXERCISE DUSTLIK



Recently, the Indian Army contingent departed for participating in the 7th edition of the Exercise Dustlik.

- It is a **joint military exercise** conducted between **India and Uzbekistan**.
- It is a yearly event conducted alternatively in India and Uzbekistan.

Participating Forces: It is mainly Indian Army's Battalion of the MAHAR Regiment and personnel from the Indian Air Force.

Aim: To foster **military cooperation** and enhance combined capabilities to execute joint operations in semi-mountainous terrain.

- It will also establish a **unified operational algorithm** between the command-and-control structures of both the contingents for planning and execution of joint operations.
- Key operational aspects to be practiced include **land navigation, strike missions** on enemy bases and seizure of enemy-held areas.

It will enable the two sides

- To share their best practices in **Tactics, Techniques and Procedures** of conducting joint operations.
- To further strengthen **interoperability, operational synergy** and joint command and control coordination between the contingents.