

INDUSTRY**Surge in Demand of Copper****Why in News?**

As demand for copper grew by 16% yearly-on-year in FY23, policymakers and corporations have increasingly turned their attention to the critical role of copper in spurring economic growth.

About Copper:

- Copper is a malleable, ductile metal known for its excellent heat and electricity conductivity. It possesses corrosion resistance and antimicrobial properties.
- Malleability refers to the ability of a material to be pressed, or rolled into thin sheets without breaking or cracking.
- Ductility is the property of a material that allows it to be stretched or drawn out into a thin wire without losing its strength or breaking.
- Chile is the top copper producer in the world, with 27% of global copper production.
- In addition, the country is home to the two largest mines in the world, Escondido and Collahuasi.
- Applications:
 - It is widely utilised in construction, consumer durables, transportation, and industrial manufacturing.
 - It is also integral to clean energy technologies such as solar panels, electric vehicles (EVs), and energy-efficient motors.
 - It is a 100% recyclable metal (allows for a circular economy).
- Occurrence and Composition:
 - It is naturally found in various forms in the Earth's crust.
 - It can be found in sulphide deposits (as chalcopyrite, bornite, chalcocite, covellite), in carbonate deposits (as azurite and malachite), in silicate deposits (as chrysocolla and diopside) and as pure native copper.
 - Most commercial copper ore deposits contain an average grade of 0.8% copper, while copper ore in India has an average copper content of around 1%.
- Mining Methods:
 - There are two primary methods of copper mining: open-pit and underground mining.
 - Open-pit mining dominates, constituting 80% of global copper mining operations.
- Copper Deposits in India:
 - Mainly located in Singhbhum (Jharkhand), Balaghat (Madhya Pradesh), and Jhunjhunu and Alwar (Rajasthan) districts.
 - Minor deposits are found in Agnigundala (Andhra Pradesh), Chitradurg and Hasan (Karnataka), and South Arcot (Tamil Nadu) districts.

India's Copper Appetite:

- India's demand for copper is soaring due to rising infrastructure projects, renewable energy initiatives, and urbanisation.
- Despite this, the country heavily relies on copper imports due to limited domestic reserves.
- To address this, the government is promoting investments in smelters and refineries while Indian companies are acquiring copper mines abroad to secure a stable supply and reduce dependence on international markets.
- Recently, the Ministry of Mines has proposed sending an Indian industry delegation to copper-rich Zambia to discuss potential copper exploration and mining projects in the southern African country.
- Recognizing copper's criticality, the government has included it in its list of critical minerals, highlighting the need to reduce import dependence.

Hindustan Copper Limited (HCL):

- Established in 1967 under the Companies Act, It is a Miniratna Category-I enterprise operating under the Ministry of Mines, Government of India.
- It was formed to consolidate all copper exploration and exploitation projects from the National Mineral Development Corporation Ltd.

Copper's Key Importance:

- Copper as an Economic Barometer:

- Copper prices reflect demand/supply dynamics, monetary markets, and speculation, making it a global economic indicator.
- Unlike sector-specific commodities, copper is integral across all economic sectors.
- **Copper for Energy Efficiency:**
 - Copper plays a vital role in promoting energy efficiency in buildings.
 - Its excellent thermal and electrical conductivity make it ideal for wiring, heat exchangers, and roofing, leading to reduced energy consumption for heating, cooling, and lighting.
 - By minimising energy losses throughout a building's lifespan, copper contributes to a more sustainable future.

AGRICULTURE

Amul a Pillar of India's Dairy Sector

Why in News?

The Prime Minister participated in the Golden Jubilee celebration of the Gujarat Cooperative Milk Marketing Federation (GCMMF) and highlighted the success of Anand Milk Union Limited (Amul) which comes from GCMMF.

AMUL

- Amul was established in 1946 as the Kaira District Co-operative Milk Producers' Union Limited in Anand, Gujarat.
- It was founded by Tribhuvandas Patel, with the support of Morarji Desai and Sardar Vallabhbhai Patel.
- In 1950, Amul (Anand Milk Union Limited) was formed as a brand for the dairy products produced by the cooperative.
- Amul is managed by the GCMMF, which is jointly owned by more than 3.6 million milk producers in Gujarat.
- Amul played a pivotal role in India's White Revolution, which aimed to increase milk production and make India self-sufficient in milk.
- Amul spearheaded the White Revolution in India, starting with the introduction of milk powder manufacturing in 1955.

India's White Revolution or Operation Flood

- The National Dairy Development Board (NDDB), chaired by Verghese Kurien ('Father of White Revolution in India'), was established in 1965 to revolutionize India's dairy industry.
- Inspired by the successful "Anand Pattern", NDDB launched the White Revolution, also known as Operation Flood in 1970, connecting rural milk producers with urban consumers through dairy cooperatives.
- This initiative transformed India into the world's largest milk producer, significantly boosting milk production and improving its management efficiency.
- Operation Flood transformed the dairy deficient nation into the global leader in milk production.
- The nationwide Operation Flood unfolded in three phases over three decades.

Phases of Operation Flood:

• Phase I (1970-1980):

- Financed by the sale of skimmed milk powder and butter oil gifted by the European Union (then European Economic Community) through the World Food Programme.
- Operation Flood linked 18 milksheds with consumers in major metropolitan cities.
- Initiated the foundation of a self sustaining system of village cooperatives.

• Phase II (1981-1985):

- Increased milksheds from 18 to 136 and expanded outlets to 290 urban markets.
- Established a self-sustaining system of 43,000 village cooperatives, covering 4.25 million milk producers.
- Significantly increased domestic milk powder production, promoting selfreliance.

• Phase III (1985-1996):

- Enabled dairy cooperatives to expand and strengthen infrastructure for procuring and marketing milk.
- Emphasised veterinary healthcare services, feed, and artificial insemination.
- Added 30,000 new dairy cooperatives and peaked milksheds to 173 in 1988-89.

• **Post-Operation Flood:**

- In 1991, India underwent liberalisation, privatisation and globalization reforms, allowing for private participation in various sectors, including dairy.
- Foreign equity of up to 51% was allowed in milk products, except for malted products.
- The initial phase saw the proliferation of unregulated dairies, leading to concerns of adulterated and contaminated milk.
- The Milk and Milk Products Order (MMPO) was instituted in 1992 to regulate the sector and introduce oversight.
- MMPO is a regulatory order of the Government of India that regulates the production, supply, and distribution of milk and milk products. The MMPO was promulgated under the provisions of the Essential Commodities Act, 1955.
- The order's objective is to maintain and increase the supply of milk and milk products.
- The industry witnessed significant growth in processing capacity, primarily driven by large private players.

Current Milk Production:

- India is the highest milk producer i.e., ranks first position in the world contributing twenty-four percent of global milk production in the year 2021-22.
- In the last 10 years, milk production increased by almost 60% and per capita milk availability has increased by about 40%.
- The top 5 milk-producing states are Rajasthan, Uttar Pradesh, Madhya Pradesh, Gujarat and Andhra Pradesh.
- The Indian dairy sector is growing by 6% per year as compared to the global average of 2%.
- India's Export of Dairy products was 67,572.99 Metric Ton (MT) to the world worth USD 284.65 Mn during the year 2022-23.

Initiatives Related to the Dairy Sector

- Animal Husbandry Infrastructure Development Fund (AHIDF).
- National Programme for Dairy Development.
- Pradhan Mantri Kisan Sampada Yojana
- Kisan Credit Cards (KCC) to Livestock Farmers
- Rashtriya Gokul Mission
- National Livestock Mission

Challenges Faced by the Indian Dairy Sector

- Low Milk Yield:
 - Milk yield per animal in India is significantly lower than the global average. This can be attributed to factors like poor quality feed and fodder, traditional cattle breeds, and lack of proper veterinary care.
- Issues in Milk Collection and Processing:
 - Challenges in collection, pasteurization, and transportation of milk pose significant hurdles, particularly in ensuring safe milk handling in informal dairy setups.
- Adulteration Concerns:
 - Adulteration of milk remains a persistent issue due to difficulties in quality control.
- Profit Disparities:
 - Milk producers often receive low purchase prices compared to market rates, leading to disparities in profit distribution within the value chain.
- Cattle Health Challenges:
 - Frequent outbreaks of diseases like Foot and Mouth Disease, Black Quarter infection, and Influenza significantly impact livestock health and lower productivity.
- Limited Crossbreeding Success:
 - Crossbreeding indigenous species with exotic stocks to improve genetic potential has achieved limited success.

PRELIM FACTS

1. Rupa Tarakasi- GI Tag

Odisha's famous silver filigree Rupa Tarakasi got a GI tag.

About filigree:

- Rupa Tarakasi is one of the most exquisite silver crafts, practised in the Silver City of Cuttack, Odisha.
- The art form has a rich history, dating back as far as the 12th century, and it received considerable patronage under the Mughals. It changed its form with change in ruler.
- In this work of craft, silver bricks are transformed into thin fine wires called tara or foils, from which silver filigree is made with all designs called kasi.

2. Majuli Masks GI Tag

Recently, Assam's traditional Majuli masks got a GI tag.

About Majuli Mask :

- These are handmade masks that are traditionally used to depict characters in bhaonas, or theatrical performances with devotional messages under the neo-Vaishnavite tradition.
- Majuli is the largest river island in the world and the seat of Assam's neo-Vaishnavite tradition. NeoVaishnavite tradition was introduced by the 15th-16th century reformer saint Srimanta Sankardeva.
- The masks can depict gods, goddesses, demons, animals and birds. Ravana, Garuda, Narasimha, Hanuman, Varaha Surpanakha all feature among the masks.
- The masks are made of bamboo, clay, dung, cloth, cotton, wood and other materials available in the riverine surroundings of their makers.

3. Star Dunes

Scientists unveiled the first in-depth study of star dunes, revealing the internal structure of these geological features.

About Star Dunes

- Star dunes are the tallest and most complex type of desert sand formations.
- They reach hundreds of meters in height and are characterized by their pyramidal forms and radiating arms.
- Star dunes are pyramid-shaped sand formations with arms stretching out from a central peak. This gave them a star-like appearance when viewed from above.

Locations:

- Star dunes comprise about 10% of desert dunes on Earth.
- These dunes are found in various deserts across the globe, including the sand seas of Africa, Arabia, China, Saudi Arabia, North America, and even on Mars and Saturn's moon Titan.

Findings of the study

- The study focused upon a star dune named Lala Lallia in eastern Morocco, located within the Sahara Desert.
- Researchers utilized groundpenetrating radar and luminescence dating to estimate the formation time of Lala Lallia, relying on energy trapped within sand grains.
- The findings suggest that Lala Lallia took approximately 900 years to form, accumulating approximately 6,400 metric tons of sand annually as wind carries it across the desert.

4. EFTA

India signed trade pact with EFTA.

About EFTA:

- EFTA is an intergovernmental organization that was established in 1960 as an alternative trade bloc for those European states that were unable or unwilling to join the European Union (EU).
- EFTA comprises Iceland, Liechtenstein, Norway, and Switzerland, which are not part of the EU but have access to its single market through various agreements.
- EFTA is India's 9th largest trading partner, accounting for about 2.5% of India's total merchandise trade in 2020-21.
- The main items of India's exports to EFTA are textiles, chemicals, gems, and jewelry, machinery, and pharmaceuticals.
- The main items of India's imports from EFTA are machinery, chemicals, precious metals, and medical instruments.

ANSWER WRITING

Q. Do you think the exercise of delegated legislation by the executive goes against the principle of separation of powers? Discuss in the context of India.

Delegated legislation or subordinate legislation is the practice of the Parliament making laws in a skeleton form and authorizing the Executive to make detailed rules and regulations within the framework of the parent law.

Since the Indian Constitution has assigned different roles to different organs of the state, delegated legislation seems to go against the principle of 'separation of powers', as:

- Delegated legislation leads to encroachment of legislative power by the Executive, as the delegated authorities tend to amend legislations in the course of their implementation. it may thus turn the Parliament into a rubber stamp legislative body.
- It takes away the power of scrutiny from the hands of the Legislatures since delegated legislation cannot be subject to the level of Parliamentary scrutiny that a legislation passed by the Parliament goes through.
- The extent to which delegation is permissible in India is not clear, which further blurs the boundaries between the existing Legislative and Executive powers.
- Vague and ambiguously worded legislations confer excessive Ministerial discretion since they remain open to wide interpretations.

It is also argued that the idea of delegated legislation is well in sync with the Constitutional scheme of India, and is within the purview of the doctrine of separation of powers in the following manner:

- No strict separation of powers: Indian Constitution provides for a system of checks and balances where each organ is supreme in its domain, but no organ is completely independent of the other organs. For instance, in the Raj Narain Singh case (1975), the Supreme Court of India upheld the delegation of power given to the Executive by the Legislature and stated that separation of powers is limited in India.
- Parliamentary control: Rules formed under delegated legislation are placed before the Parliament for examination and ultimately, the Executive is responsible to the Parliament for rule-making.
- Limited authority: Under delegated legislation, the Executive enjoys only a limited power to decide rules/bye-laws. The Executive cannot go beyond and set any rule/bye-law for which it was not authorized to do so by the Parliament in the first place.
- Constitutional supremacy: Subordinate legislation is subject to the Constitutional principles/provisions, thus, chances of usurping powers of the other organs by the Executive gets reduced.

The tool of delegated legislation is a practical solution to the myriad of challenges facing the Legislature while framing laws in today's modern and complex society. However, the Parliament needs to strengthen its control over delegated legislation by strengthening the functioning of the Committee on Subordinate Legislation. The Committee should scrutinize the actions of the Executive and inform the Parliament about any instance of overreach by the Executive on time.

MCQs

- Consider the following statements about Ammonium Phosphate Sulphate
 - It is a fertilizer made by neutralizing sulphuric acid and phosphoric acid with ammonia.
 - It is a white crystalline organic chemical compound with neutral pH.
 - It is highly soluble and could harm fish and living organisms such as coral reefs and seaweed if released into the sea.
 How many of the above statements are correct?
 - Only one
 - Only two**
 - All three
 - None
- Consider the following statements about National Clean Air Programme (NCAP)
 - It seeks to cut the concentration of coarse and fine particles in air by at least 40% by 2026.
 - NCAP Fund is released by the Ministry of Housing and Urban Affairs to the Central Pollution Control Board for clean air action plans.
 Which of the statements given above is/are not correct?
 - 1 only
 - 2 only**
 - Both 1 and 2
 - Neither 1 nor 2
- Consider the following statements regarding e-Kisan Upaj Nidhi
 - It aims to encourage more farmers to utilise the warehouses and enhance their income.

2. It is a joint initiative of Ministry of Rural Development and Ministry of Agriculture. Which of the statements given above is/are correct?
(a) **1 only**
(b) 2 only
(c) Both 1 and 2
(d) Neither 1 nor 2
4. "Blue Line" serves as the boundary between which of the following two countries?
(a) Russia and Ukraine
(b) Sudan and South Sudan
(c) **Lebanon and Israel**
(d) Afghanistan and Iran
5. With reference to exploration licenses of critical and deep-seated minerals, consider the following statements:
1. The Exploration License holder will identify the areas that can be auctioned for mining lease.
2. The states of Rajasthan and Karnataka have launched India's first exploration licence auction for critical minerals.
Which of the statements given above is/are not correct?
(a) 1 only
(b) 2 only
(c) Both 1 and 2
(d) **Neither 1 nor 2**
6. Consider the following statements with respect to Centre for Research on Energy and Clean Air (CREA):
1. They are traditional sacred groves found in Chhattisgarh. It is an attached agency under the Ministry of Environment, Forest and Climate Change.
2. As per the latest data of CREA, Meghalaya's Byrnihat is the most polluted city in India.
Which of the statements given above is/are not correct?
(a) **1 only**
(b) 2 only
(c) Both 1 and 2
(d) Neither 1 nor 2
7. Consider the following nations:
1. Switzerland
2. Finland
3. Norway
4. Liechtenstein
5. Ireland
How many of the above are part of European Free Trade Association(EFTA)?
(a) Only one
(b) **Only four**
(c) All three
(d) None
8. Which of the following factors can be responsible for Coral Bleaching?
1. El Nino
2. Extremely Low Tides
3. Pollution
4. Overexposure to Sunlight
Select the correct answer using the codes given below:
(a) 1 and 2 only
(b) 2 and 3 only
(c) 1, 2 and 3
(d) **All**
9. Consider the following statements about Blue Leaders:
1. It is a group of countries calling for urgent action to save the global ocean from overfishing and pollution.
2. It has set target to protect at least 50% of the global ocean through a network of highly and fully protected marine areas by 2030.
3. India is a member of this group.
How many of the above items are correct?
(a) **Only one**
(b) Only two
(c) Only three
(d) all five
10. Consider the following statements with respect to the Biodiversity Beyond National Jurisdiction (BBNJ) Treaty:
1. India is a signatory to the treaty.
2. The treaty will ensure that profits from marine genetic resources are shared equitably and fairly.
Which of the statement(s) given above is/are correct?
(a) 1 only
(b) **2 only**
(c) Both 1 and 2
(d) Neither 1 nor