



INFOCADEMY

INFOGRAPHICS

MIND MAPS

FLOWCHARTS

TIMELINES

DARK HUMOR

LEAKS²⁰²⁷

Not the questions. The possibilities.

WEEKLY-1

ASTRA MK-I MISSILE

INDIRA POINT

HEAT DOME

THORIUM RESOURCES

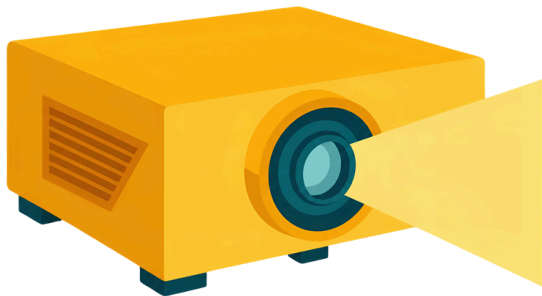
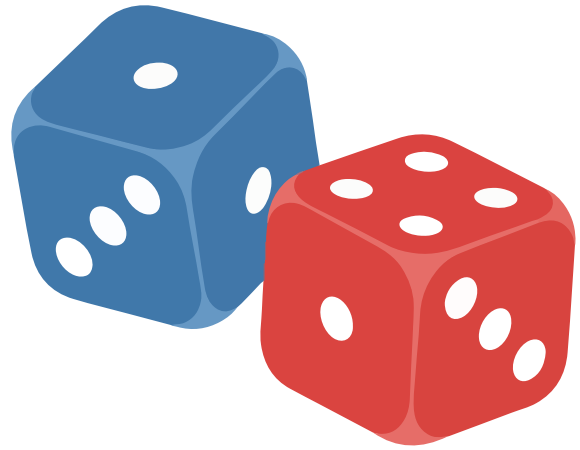
PRAGATI PLATFORM

COPPER CRITICAL MINERAL

WHY LEAKS 2027?

PROBABILITY DRIVEN SELECTION—

AI models, including Empirical and Bayesian probability Theories, analyse the last three years' UPSC Prelims patterns to prioritise high-probability topics.



VISUAL INFOGRAPHICS—

Every topic is presented through engaging infographics to strengthen pictorial memory and improve revision.

NO INFORMATION OVERLOAD—

No lengthy stories, editorials or unnecessary research content—only what matters for UPSC Prelims.

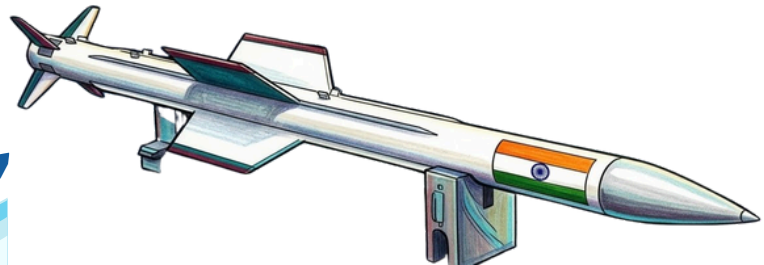


NO ONE CAN COVER 100% OF THE CURRENT AFFAIRS; IT'S WISER TO TAKE A SMALL GAMBLE BY OMITTING LOW-PROBABILITY TOPICS.

ASTRA MK-1 MISSILE



WHAT IS ASTRA MK-1?



WHY IN NEWS?

- India signed a deal to export Astra Mk-I missiles to Indonesia
- The missiles will be used in Su-30 fighter aircraft.
- First-ever export of the Astra missile system.

Indigenous **BVRAAM** (Beyond-Visual-Range Air-to-Air Missile).

Developed by **DRDO**.

Built with support from nearly 50 public & private organisations.

Part of the "Astra missile family".

KEY FEATURES?



What is

BEYOND VISUAL RANGE?

Hits targets beyond the pilot's eyesight.

Engages enemy aircraft beyond 37 km (20 nautical miles).

Uses radar & guidance systems.



PRELIMS TRAP POINTS

- ✗ Surface-to-air
- ✗ Ballistic missile
- ✗ Unguided rocket
- ✓ Air-to-air missile
- ✓ Guided missile

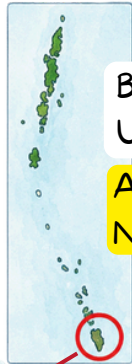
Astra	BrahMos
Air-to-air missile	Supersonic cruise missile
Fired from aircraft	Land, sea & air launch



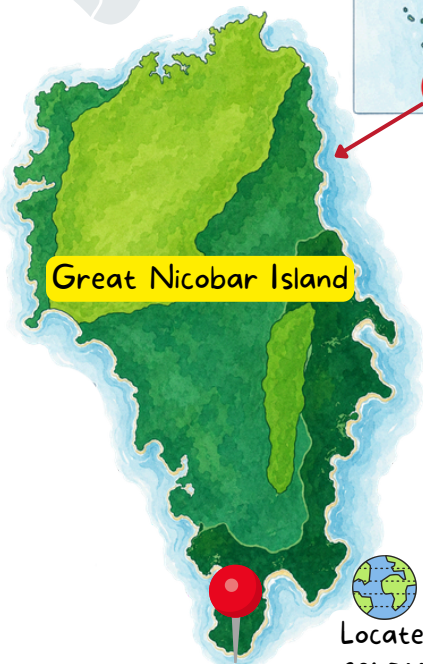


INDIRA POINT

Indira Point is the
"Southernmost point of India"



Belongs to the
Union Territory of
**Andaman &
Nicobar Island**



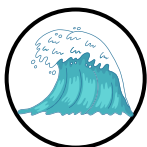
Great Nicobar Island

Located at
6°45' N latitude

Indira Point as
Pygmalion Point.



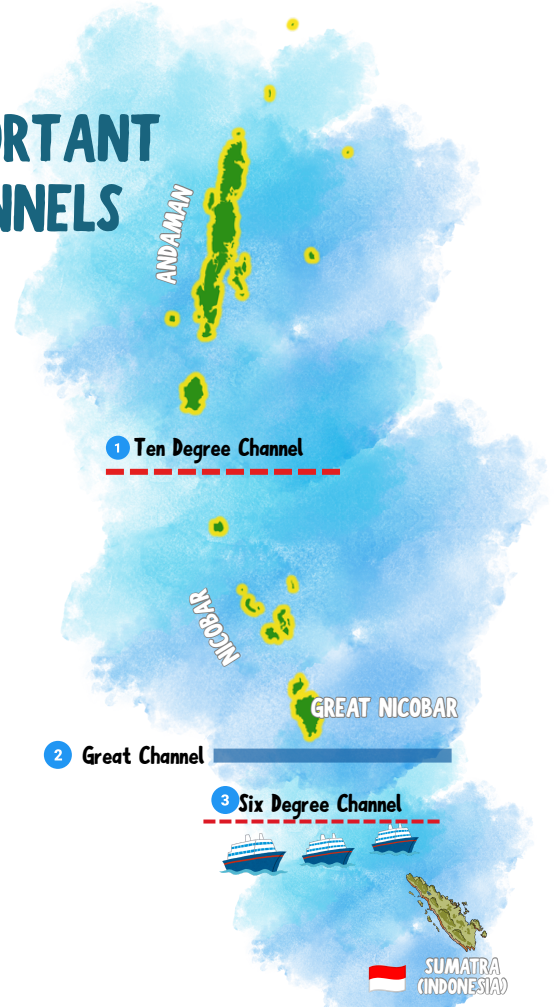
Renamed Indira Point
after former Prime
Minister Indira Gandhi.



Land subsidence
occurred after the
2004 tsunami.

Indira Point
Lighthouse was
partially submerged.

IMPORTANT CHANNELS



- 1 TEN DEGREE CHANNEL**
Separates:
Andaman Islands ↔ Nicobar Islands
- 2 GREAT CHANNEL**
Separates:
Great Nicobar ↔  Sumatra
- 3 SIX DEGREE CHANNEL**
 Between Great Nicobar and Sumatra.
 Important international shipping route.

PRELIMS TRAP POINTS

-  Indira Point lies in the Southern Hemisphere.
-  Indira Point lies in the Northern Hemisphere.

 **UPSC
INFOCADEMY**

HEAT DOME

WHAT IS A HEAT DOME?



A heat dome is a persistent high-pressure system in the upper atmosphere



Acts like a lid, preventing heat from escaping.



It traps hot air over a region



Can remain for days or weeks.

WHY IN NEWS?

A massive heat dome affected large parts of **the USA** (July 2026)

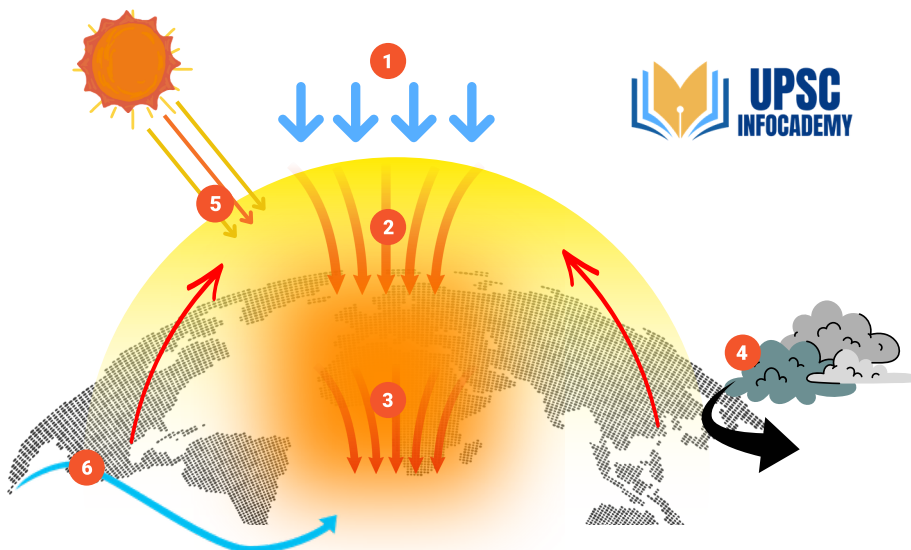


It caused prolonged and dangerous daytime and nighttime heat.

Western Europe recorded its hottest June in 2026.

HOW DOES IT FORM?

- 1 Strong **high pressure** develops in the upper atmosphere.
- 2 **Air sinks** toward the Earth's surface
- 3 Sinking air gets **compressed and heated**.
- 4 **High pressure** suppresses clouds and rainfall
- 5 Clear skies increase **solar heating**.
- 6 **Slow-moving jet streams** keep the system stationary.



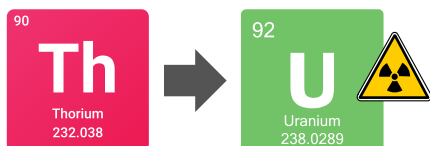
PRELIMS TRAP POINTS

- ☀ A heat dome is associated with **high pressure**, not low pressure.
- ☀ Heat dome refers to the **atmospheric mechanism**; a heatwave refers to the resulting period of abnormally high temperature.
- ☀ Heat domes are often linked to blocking patterns and meanders in the **jet stream**.
- ☀ "Heat dome" is not a separate heatwave category declared by the India Meteorological Department; **IMD** declares heatwaves using actual temperatures and departures from normal.

THORIUM RESOURCE IN INDIA

WHAT IS THORIUM?

- It is a naturally occurring radioactive metallic element.
- Most common isotope: **Th-232**
- Its **fertile**, not fissile.
- It absorbs a neutron and is eventually converted into **Uranium-233**, which is fissile (usable nuclear fuel)



CONVERSION CHAIN

Th-232
↓
Th-233
↓
Pa-233
↓
U-233
↓
Nuclear Energy



MONAZITE

Radioactive phosphate mineral
Rich in **Thorium**
Contains **Rare Earth Elements**
Found in **beach & placer sands**

Why in News?



NTPC is exploring cooperation with the US-based **Clean Core Thorium Energy** to develop thorium-based nuclear fuel.

The proposed fuel could potentially be used in India's existing **Pressurised Heavy Water Reactors (PHWRs)**, strengthening domestic nuclear-fuel security.



THORIUM IN INDIA

Inland River Sands

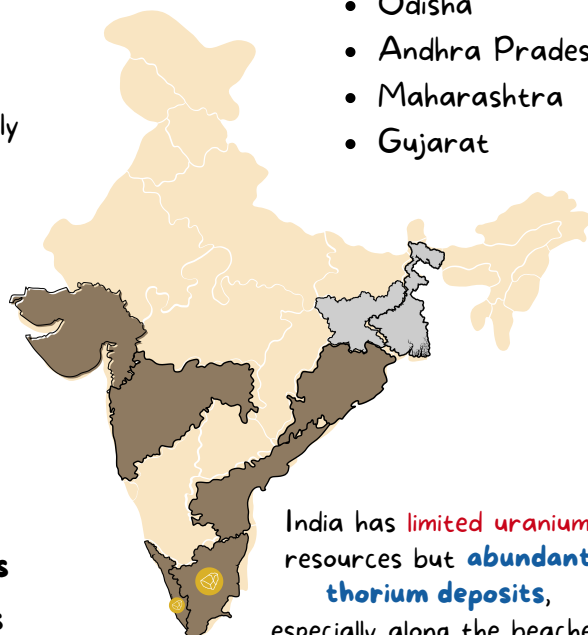
- Jharkhand
- West Bengal

Coastal Deposits

- Kerala
- Tamil Nadu
- Odisha
- Andhra Pradesh
- Maharashtra
- Gujarat



Thorium occurs mainly in monazite-bearing mineral sands.



India has **limited** uranium resources but **abundant** **thorium** deposits, especially along the beaches of Kerala and Odisha.

INDIA'S THREE-STAGE NUCLEAR PROGRAMME

India's three-stage nuclear programme was designed to ultimately utilise its large thorium resources:

Stage I: PHWRs

Use natural uranium and produce plutonium.



Stage II: Fast Breeder Reactor (FBR)

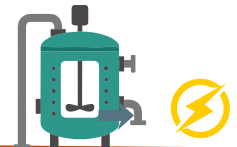
FBR use plutonium and help convert thorium into Uranium-233



Stage III Advanced Thorium Cycle

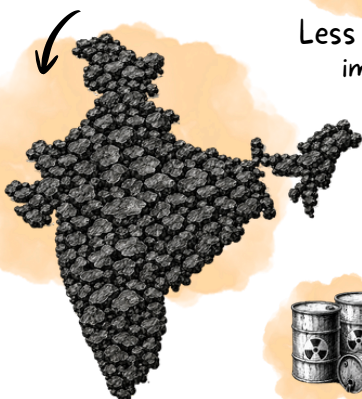
Uranium-233 is used with thorium to generate nuclear energy.

★ Thorium utilisation mainly occurs here



Why THORIUM MATTERS

Abundant in India



Less Uranium imports



Greater proliferation resistance



Less long-lived nuclear waste



Long-term energy security

! PRELIMS TRAP POINTS



✗ Trap 1
Thorium-232 = Fissile



✓ Correct
Thorium-232 = Fertile

✗ Trap 2
Thorium directly produces energy

✓ Correct
Thorium first becomes Uranium-233

✗ Trap 3
Thorium only in beaches

✓ Correct
Beach sands + Inland riverine sands

✗ Trap 4
Thorium in Bauxite

✓ Correct
Thorium mainly occurs in Monazite

✗ Trap 5
Thorium used in Stage I

✓ Correct
Mainly Stage III

PRAGATI PLATFORM



Launched: 2015



An ICT-based governance & project-monitoring platform.



Operates under the Prime Minister's Office.



Developed by
PMO + National
Informatics Centre

WHAT DOES IT MONITOR?



Union & State Government Programmes



Infrastructure Projects



Delayed Projects & Bottlenecks



Public Grievances



PARTICIPANTS



Prime Minister



Union government secretaries



Chief secretaries of States and Union Territories



Thus it promotes
Cooperative Federalism
Centre-State Coordination

Why in NEWS?



Recently, the PM conducted the 50th PRAGATI meeting.

During the last 10 years, PRAGATI has monitored projects worth ₹85 lakh crore+

This meeting reviewed:

Roads, Railways, Power, Water, Coal

TECHNOLOGY USED

Digital Data Management

Video conferencing

Geospatial Technology



UPSC TRAP POINTS



✗ Wrong Assumption ✓ Correct Fact

Cabinet Secretary

PM chairs PRAGATI

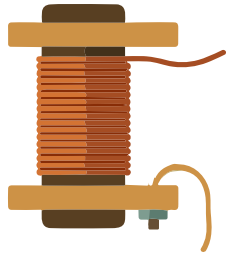
NITI Aayog

Works under PMO

Statutory body

Executive ICT platform

COPPER CRITICAL MINERAL



? CRITICAL MINERAL

Copper is a
Critical Mineral in
India.

A mineral that is essential for:



Economy



Modern
technology



National
security



Vulnerable to supply disruptions



Difficult to substitute

WHY IN NEWS?



Global copper prices hit record highs because of:



Supply disruptions at
major mines



Trade restrictions
& stockpiling

Growing demands for
EVs, renewable energy,
power grids,
AI data centres

Supply issues in:

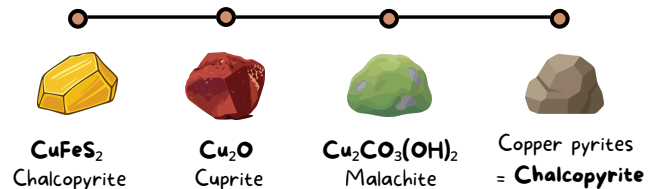
Indonesia
Chile
DR Cong



WHY IS COPPER CRITICAL?



IMPORTANT COPPER ORES



MAJOR COPPER REGIONS IN INDIA

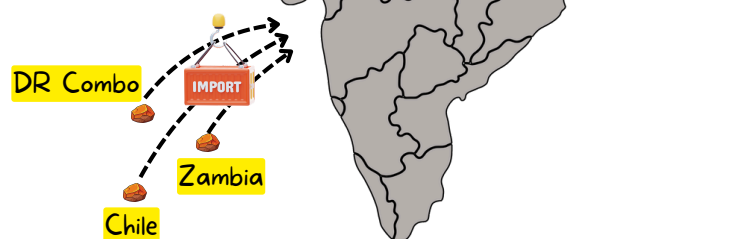
Khetri belt – Rajasthan
Malanjkhand – Madhya Pradesh
Singhbhum belt – Jharkhand

MAJOR USES

- ⚡ Power transmission & grids
- ☀ Solar & wind energy
- 🚗 EVs & charging stations
- 🔋 Batteries, motors & transformers
- 💻 Electronics & semiconductors
- 🤖 AI data centres
- 🛡 Defence & communication
- 🏗 Construction & manufacturing



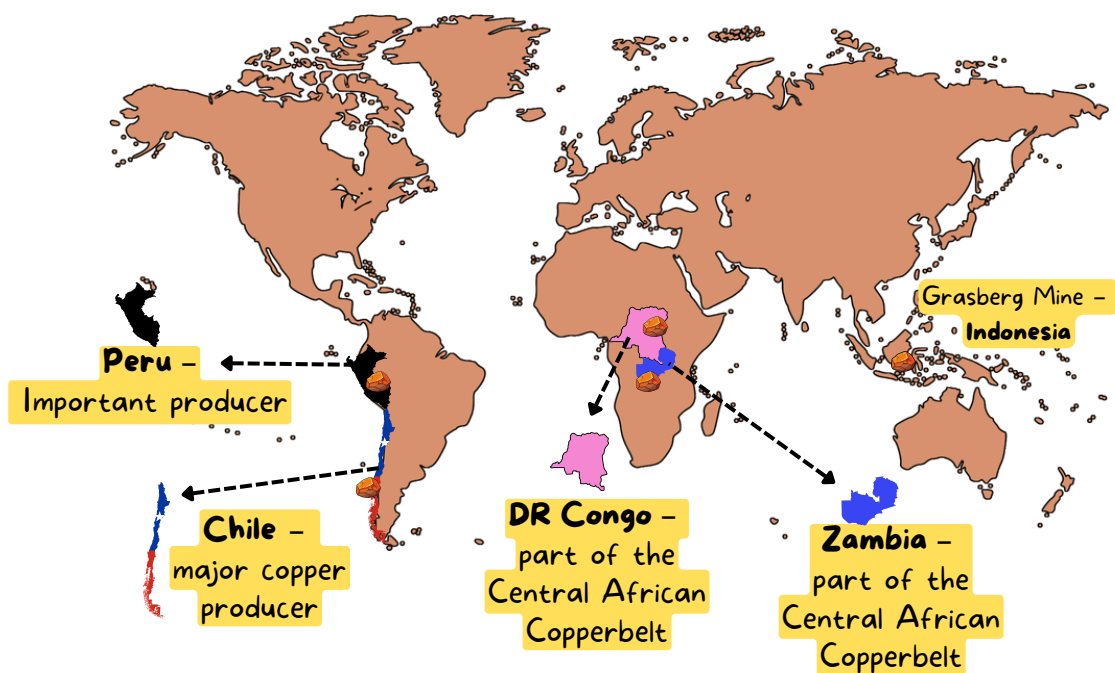
India is acquiring
copper assets in:





India possesses copper deposits, but many require extensive exploration before commercial mining.

IMPORTANT GLOBAL MAP LOCATIONS



NATIONAL CRITICAL MINERAL MISSION

Covers:



EXPLORATION



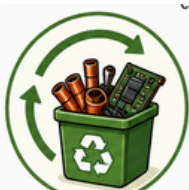
MINING



BENEFICIATION



PROCESSING



RECYCLING AND RECOVERY

UPSC TRAP DETECTOR



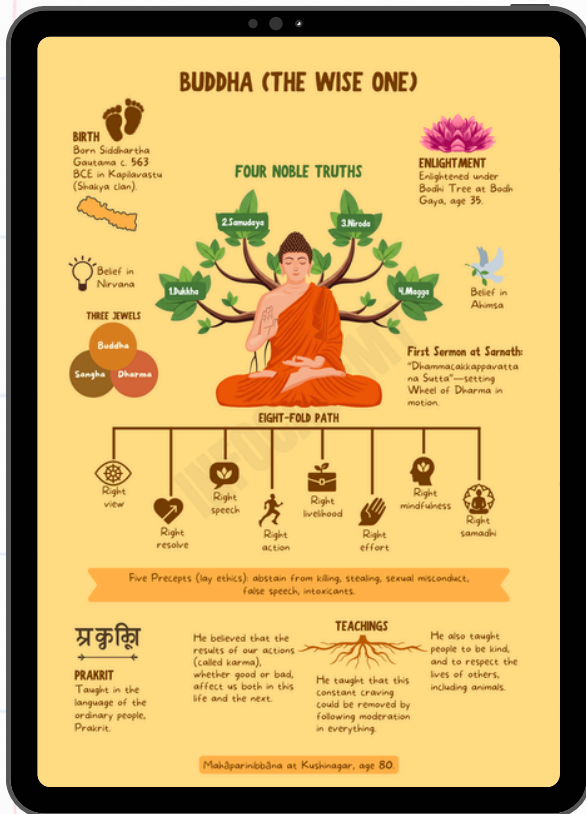
- ✗ Rare-earth element
- ✓ Critical mineral

- ✗ Ferrous metal
- ✓ Non-ferrous metal

Silver conducts electricity better than Copper.

- Brass = Copper + Zinc
- Bronze = Copper + Tin

INFO-NOTES



90% of the Static portion is covered.



History, Polity, Economy, Geography and Environment.



All topics will be covered in Infographic Format.



1000+ Slides

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Let's make this journey
a little easier!