



DAILY CURRENT AFFAIRS 22-06-2026

Mapping Perspective

1. United Arab Emirates (UAE)

Prelims Perspective

2. Mimosia
3. Etalin Hydroelectric Project

Mains Perspective

4. Indian Seafarers: How Indian Seafarers Became a Global Maritime Workforce Power
5. Uranium Downblending

United Arab Emirates (UAE)

Syllabus: GS-1; World Geography, GS-2; International Relations

Context

The **United Arab Emirates (UAE)** has approved a regulation fixing **15 years** as the **minimum age for social media use**, aimed at strengthening child protection in the digital space.

About UAE

- Located in the **northeastern part of the Arabian Peninsula**.
- Capital: **Abu Dhabi**
- Comprises seven emirates.

Boundaries

- **Saudi Arabia** – South and West
- **Oman** – East
- **Persian Gulf** – North
- **Gulf of Oman** – East



Geographical Features

- Terrain includes deserts, coastal plains, wetlands, and mountains.
- Climate is generally hot and arid.
- Highest Peak: **Jabal Bil Ays (1,905 m)**.
- The **Tropic of Cancer** passes through the country.
- Major natural resources:
 - Petroleum
 - Natural gas

Important Ports

- Port Rashid
- Jebel Ali Port

Mimeusemia kali

Syllabus: GS-3; Environment & Biodiversity

Context

Scientists have discovered a new species of forester moth named **Mimeusemia kali** in Karnataka's **Kali Tiger Reserve**, located in the Western Ghats biodiversity hotspot.



About Mimeusemia kali

- It is a newly discovered species of **forester moth**.

- Found in **Kali Tiger Reserve**, Karnataka.
- Represents the first addition to the genus **Mimeusemia** in nearly three decades.
- Belongs to the **Noctuidae** family.
- Distinguished from related species through unique morphological, reproductive, and genetic characteristics.
- Forester moths are generally active during the daytime, though some species are active at dusk.

Key Facts about Moths

- Moths belong to the order **Lepidoptera**, which also includes butterflies.
- Approximately **1.6 lakh species** of moths are known worldwide.
- Found in almost all habitats except polar regions.
- Possess stouter bodies and generally duller coloration compared to butterflies.
- Antennae are usually feathery, unlike the club-shaped antennae of butterflies.
- Important pollinators and integral components of food chains and ecosystems.

Kali Tiger Reserve

- Located in **Uttara Kannada district, Karnataka**.
- Formerly known as **Dandeli-Anshi Tiger Reserve**.
- Comprises:
 - Dandeli Wildlife Sanctuary
 - Anshi National Park
- The **Kali River** flows through the reserve.
- Vegetation includes moist deciduous, semi-evergreen, and evergreen forests.
- Home to tigers, elephants, leopards, black panthers, great Indian hornbills, sloth bears, and wild dogs.

Etalin Hydroelectric Project

Syllabus: GS-3; Infrastructure, Energy

Context

NHPC Limited has signed a Memorandum of Agreement with the Government of Arunachal Pradesh for the development of the **3,097 MW Etalin Hydroelectric Project**.



About the Project

- Proposed in **Dibang Valley district, Arunachal Pradesh.**
- Planned on the **Dri and Talo Rivers**, tributaries of the **Dibang River.**
- Installed Capacity: **3,097 MW.**
- One of India's largest proposed hydropower projects.

Key Features

- Developed as two run-of-the-river schemes.
- Involves construction of concrete gravity dams.
- Underground powerhouse proposed near **Etalin village.**
- Expected annual generation:
 - **12,752 GWh of electricity**

Ecological Significance

- Located within a globally significant biodiversity-rich Himalayan landscape.
- Falls in a recognized biodiversity hotspot region.
- Habitat of numerous endemic and threatened species.

Social Aspect

- Area predominantly inhabited by the **Idu-Mishmi tribe**.

Implementation

- Executed by **NHPC Limited**.
- Implemented under the **BOOT (Build, Own, Operate and Transfer)** model.
- NHPC will operate the project for **40 years** from the Commercial Operation Date (COD).

Indian Seafarers: How Indian Seafarers Became a Global Maritime Workforce Power

Syllabus: GS-2: International Relations – Geopolitics and Diaspora

Context:

- The US-Iran conflict and the effective closure of the **Strait of Hormuz** since early March 2026 has put thousands of Indian seafarers at risk in the Gulf region.
- The crisis has drawn attention to India's massive and rapidly growing maritime workforce and its changing composition.



India's Maritime Workforce: The Big Picture

- India has emerged as one of the world's top three suppliers of seafarers, alongside **Philippines** and **China**.
- Indian seafarers:
 - 2010 – 62,267
 - 2024 – 3,07,901
 - Growth – More than fivefold in 14 years
- Share of global workforce – ~17% (around 1 in 5 seafarers globally is Indian).
- Global seafaring workforce – 1.89 million.

Shift in Workforce Composition

Reversal of Officer-to-Rating Ratio

- Most significant structural change is the reversal of the officer-to-rating ratio:
 - 2010 – 60 : 40
 - 2024 – 35 : 65
 - Global average (2024) – 45 : 55
- India's ratio has moved well below the global average, indicating a workforce increasingly dominated by lower-ranked, non-officer crew (ratings).

Engineering vs Nautical Crew Growth

- Both engineering and nautical (non-engineering) crew have grown substantially, but nautical crew has grown faster:
 - Engineering crew – 25,844 (2010) → 1,00,792 (2024) (~4× growth)
 - Nautical crew – 36,423 (2010) → 2,07,109 (2024) (~5.7× growth)

Nature of Employment at Sea

Growth of Lower-Skilled Roles

- In 2024, nearly half of the non-engineering Indian crew worked as cooks, hospitality staff, salon ratings, cruise vessel staff, wipers, cleaners, painters and lookout staff.
- In 2010, less than 37% were employed in such roles.
- Indicates a downward shift in the skill profile of India's maritime workforce.

Expansion of Mid-Level Non-Officer Positions

- Bosuns (senior-most non-officer deckhands): 0 (2010) → 4,324 (2024).

- Able Seamen: 708 (2010) → 16,568 (2024).

Decline in Officer Representation

- In 2010, nearly 46% of non-engineering Indian crew held the rank of Third Officer or above.
- By 2024, this declined to below 20%.
- Reflects increasing participation of Indians in non-officer capacities.

Indian Seafarers on Foreign Ships

Dominance of Foreign Flags

- Majority of Indian seafarers work on foreign-flagged vessels:
 - 2016 – 1,23,729 out of 1,43,940 (86%)
 - 2024 – 2,78,466 out of 3,07,901 (90%)
- Growing dependence on foreign-flagged ships increases exposure to risks in hostile maritime environments.
- Protection and diplomatic intervention by the Indian state become more constrained.

Hormuz Crisis and Indian Seafarers

Impact of the US-Iran Conflict

- Mid-March 2026:
 - Around 23,000 Indian seafarers faced uncertainty in the Gulf region.
 - 753 personnel were aboard 27 Indian-flagged vessels.
- June 11, 2026:
 - Around 18,000 remained under uncertainty.
 - 562 personnel aboard 13 Indian-flagged vessels:
 - 329 in the **Persian Gulf** (west of Hormuz)
 - 233 in the **Gulf of Oman** (east of Hormuz)
- The 13 Indian-flagged vessels included crude oil tankers, container ships, bulk carriers, LPG tankers, chemical tankers and a dredger.
- At least one tanker safely exited the Strait on June 15 following the peace deal announcement.

- **S. Jaishankar** formally protested attacks on ships carrying Indian sailors; the US responded that violations would not be tolerated.

Key Concerns

1. Skill Downgrade Risk

- India is supplying a growing share of low-skill, non-officer crew.
- Without sustained skilling efforts, India may lose competitiveness in higher officer ranks to countries such as the Philippines and China.

2. Dependence on Foreign Flags

- Around 90% of Indian seafarers work on foreign-flagged ships.
- Limits India's ability to protect and assist them diplomatically during maritime conflicts.

3. Geopolitical Vulnerability

- As a major supplier of global maritime labour, disruptions in strategic chokepoints such as the Strait of Hormuz have a disproportionate impact on Indian workers and their families.

4. Remittance and Economic Stakes

- Indian seafarers are significant contributors to remittance inflows.
- Their safety and employment conditions directly affect household incomes, particularly in coastal states such as **Kerala, Goa, Maharashtra** and **Andhra Pradesh**.

Conclusion

- India's rise as a global maritime labour power is remarkable, but the foundation of this growth is changing.
- Rapid expansion at the lower end of the skill ladder, overwhelming dependence on foreign-flagged vessels, and exposure to geopolitical flashpoints such as the Strait of Hormuz necessitate:
 - Strong maritime skilling initiatives,
 - Greater officer-level workforce development,
 - Enhanced diplomatic protection mechanisms,
 - A comprehensive national maritime workforce strategy.

Uranium Downblending

Syllabus: GS-3: Science and Technology – Nuclear Technology

Context:

- Recently signed US–Iran MoU commits Iran to never develop a nuclear weapon in exchange for sanctions relief and a \$300 billion development fund.
- A key technical commitment in the MoU is the **downblending of Iran’s highly enriched uranium stockpile** under IAEA supervision.
- Paragraph 8 of the MoU states that both sides agreed to resolve the disposition of Iran’s enriched uranium stockpile through downblending, conducted on-site under IAEA supervision.

Nuclear Context: Why Iran’s Uranium Stockpile Matters

- Iran currently possesses hundreds of kilograms of highly enriched uranium and retains the technical capacity to produce more.
- US strikes on Natanz, Fordow, Arak and Isfahan (June 2025) reduced Iran’s enrichment infrastructure but did not eliminate its stockpile.
- Therefore, managing the existing enriched uranium stockpile remains central to nuclear non-proliferation efforts.

Understanding Uranium: Basics

Natural Uranium Composition

Isotope	Share in Natural Uranium	Property
Uranium-238 (U-238)	99.28%	Non-fissile
Uranium-235 (U-235)	0.72%	Fissile — can sustain a nuclear chain reaction

Key Points

- Only **U-235** can sustain a nuclear chain reaction.
- **Enrichment** is the process of increasing the concentration of U-235 beyond its natural level of 0.72%.
- **90%+ enriched U-235** is required for nuclear weapons-grade material.
- **3–5% enriched U-235** is used as nuclear reactor fuel for electricity generation.

- **20% enriched U-235** is used by research reactors.
- Iran had enriched uranium to **60% purity**, well above reactor-grade and close to weapons-grade.

What is Downblending?

- Downblending is the reverse of enrichment.
- It is the process of reducing uranium purity by mixing enriched uranium with depleted or natural uranium to lower U-235 concentration to below 5%.
- It directly affects **breakout time** — the time required for a country to convert civilian nuclear material into sufficient weapons-grade uranium for a bomb.
- By reducing available U-235, downblending increases breakout time.
- **Longer breakout time = More warning time for the international community to act.**
- The **2015 JCPOA** permitted Iran to enrich uranium only up to **3.67%**, sufficient for reactor use but insufficient for weapons.

Downblending Process: Step-by-Step

Step 1: Preparing the Feedstock

- Enriched uranium is stored as **uranium hexafluoride (UF₆)**, a solid at room temperature.
- UF₆ cylinders are heated in an industrial oven called an **autoclave** at **80–110°C**, converting the solid into gas.
- Gases are easier to mix uniformly than solids.

Step 2: Preparing the Blendstock

- A less-enriched uranium source is prepared, such as:
 - Natural uranium (0.7% U-235)
 - Depleted uranium (0.2–0.3%)
 - Slightly enriched uranium (~1%)
- Blendstock selection depends on the target enrichment level.
- Downblending from **90% to 5%** requires more depleted uranium than downblending from **20% to 5%**.

Step 3: Mixing at the Blending Tee

- Both gases are pumped into a junction called a **blending tee**.

- Critical requirement: precise **mass flow control**.
- Thermal mass flow meters measure heat-transfer characteristics to determine gas mass.
- Automated valves regulate flow in real time.
- Internal mixers (**baffles**) create turbulence to ensure uniform mixing.

Step 4: Online Enrichment Monitoring (OLEM)

- Mixed gas passes through an **Online Enrichment Monitor (OLEM)**.
- OLEM uses sodium iodide detectors to measure gamma rays emitted by the gas.
- U-235 exhibits a characteristic gamma-ray signature at **186 keV**.
- If gamma-ray intensity exceeds prescribed limits, fail-safe valves automatically stop the flow.
- Tamper-proof cameras record operations continuously (24×7).

Step 5: Solidification

- Verified mixed gas is cooled in a product cylinder.
- The gas solidifies back into **UF₆**.

Step 6: Reconversion to Uranium Dioxide (UO₂)

- UF₆ remains a feedstock for uranium enrichment.
- To further reduce bomb-making potential, UF₆ is sent to a reconversion plant.
- UF₆ reacts with steam and hydrogen, replacing fluorine with oxygen.
- This produces **uranium dioxide (UO₂)**, a dark powder.
- UO₂ cannot be directly enriched.
- Reconversion back to UF₆ requires a conversion plant, whose emissions are detectable through satellite monitoring and inspections.

Step 7: IAEA Verification – Final and Most Critical Step

- IAEA inspectors collect physical samples of UO₂ powder.
- Samples are sent to the IAEA laboratory in **Seibersdorf, Austria**.
- **Thermal ionisation mass spectrometry** verifies U-235 concentration up to four decimal places.
- IAEA applies tamper-evident seals on cylinders.

- Any breach leaves detectable signs.

Why Downblending Alone Is Not Enough

Verification Challenges

- Iran has withdrawn from several IAEA monitoring protocols since 2018.
- By late 2025, the IAEA reported a **“loss of continuity of knowledge”** regarding Iran’s nuclear programme.
- Iran retains the technical expertise and centrifuge capability required for future re-enrichment.
- The MoU does not mandate transfer of enriched uranium to a third country; the material remains in Iran under supervision.
- If Iran withdraws from the MoU, as occurred with JCPOA commitments following the 2018 US withdrawal, re-enrichment remains possible.
- The MoU itself acknowledges that international trust in Iran’s nuclear commitments will depend not only on technical implementation but also on diplomatic assurances.

Significance

- Downblending is a critical non-proliferation tool that reduces immediate weapons risk by lowering uranium enrichment levels.
- However, long-term effectiveness depends on continuous monitoring, verification, transparency, and sustained diplomatic engagement.