

PART II · ENVIRONMENT TO DIRECT HIT TRACKER

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"The Topper's Last Read. Every Morning."

INSIDE PART II

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§1 • Environment

GS3

Blue Economy • UNCLOS/ISA regime

19 September 2026 • Source: The Hindu editorial analysis / Ministry of Earth Sciences data

Deep-Sea Mining's Ecological Threshold: How Much Before Exploitation?

Why in News: A 19 September editorial analysis has sharpened the debate over India's deep-sea mining ambitions, noting that biodiversity surveys across 19 seamounts in India's International Seabed Authority (ISA) exploration areas studied roughly 1,300 deep-sea organisms — of which around 23 species are new to science — and arguing that exploration cannot automatically be treated as ecologically safe, since strategic-mineral importance "cannot automatically become ecological permission."

Background: India holds an ISA exploration contract, signed in 2002 and extended in 2017 and 2022 (running to 24 March 2027), covering 75,000 sq km of the Central Indian Ocean Basin for polymetallic nodules, estimated by the Ministry of Earth Sciences at 366 million tonnes (with copper, nickel, and cobalt content); India also holds separate ISA contracts for polymetallic sulphides on the Central Indian Ridge and cobalt-rich crusts near the Afanasy Nikitin Seamount, part of its broader Deep Ocean Mission strategy to secure critical minerals from the seabed.

KEY FACTS

- India's Central Indian Ocean Basin (CIOB) ISA contract covers 75,000 sq km for polymetallic nodules.
- Contract signed in 2002, extended in 2017 and 2022, running to 24 March 2027.
- Ministry of Earth Sciences estimates 366 million tonnes of nodules in the contract area.
- Nodules contain copper (1.09%), nickel (1.14%), and cobalt (0.14%) by grade.
- Surveys across 19 seamounts studied approximately 1,300 deep-sea organisms.
- Approximately 23 of these species are estimated to be new to science.
- India also holds ISA contracts for polymetallic sulphides (Central Indian Ridge) and cobalt-rich crusts (Afanasy Nikitin Seamount).
- The Deep Ocean Mission is India's umbrella programme for seabed exploration and technology development.

MAINS DIMENSIONS

- Tests understanding of the ISA/UNCLOS regime governing seabed mineral exploration in international waters.
- Raises the precautionary-principle debate: whether ecological baselines must be fully understood before exploitation proceeds.

- Connects to India's critical-minerals security strategy and its trade-off with deep-sea biodiversity conservation.
- Highlights the challenge of applying conventional environmental-impact-assessment frameworks to poorly understood deep-sea ecosystems.

AKADEMIA MEMORY TRIVIA

Remember "75,000-366-23": 75,000 sq km of contract area, 366 million tonnes of nodules, and roughly 23 new-to-science species found across the surveyed seamounts.

PYQ LINKAGE

GS3 2018: "Discuss the Namami Gange and National Mission for Clean Ganga (NMCG) programmes" is unrelated; deep-sea mining/Blue Economy PYQs are a rapidly emerging GS3 area given India's growing ISA engagement.

PROBABLE PRELIMS MCQ

Consider the following statements: 1. India's CIOB contract with the ISA covers 75,000 sq km. 2. The contract is for polymetallic nodules only, with no other ISA contracts held by India. 3. The contract area is estimated to hold 366 million tonnes of nodules. Which of the statements given above is/are correct?

(a) 1 and 3 only (b) 1 and 2 only (c) 2 and 3 only (d) 1, 2 and 3

Answer: (a). **Explanation:** India holds additional ISA contracts for polymetallic sulphides and cobalt-rich crusts — statement 2 is wrong.

PROBABLE MAINS QUESTION

Discuss the ecological and regulatory challenges in balancing India's deep-sea mineral-exploration ambitions with seabed biodiversity conservation. (150 words)

#GS3

#DeepSeaMining

#BlueEconomy

GS3 Wetland conservation · Ramsar obligations

16 September 2026 (honest-dated, still developing), Bhopal · Source: National Green Tribunal, Central Zone Bench

NGT Calls Bhoj Wetland Encroachment "Worse Than Robbery and Dacoity"

Why in News: The National Green Tribunal's Central Zone Bench (Bhopal), continuing its scrutiny of encroachment on the Bhoj Wetland, remarked on 16 September 2026 that encroachment on this government wetland land is "a crime worse than robbery and dacoity," rebuking authorities for inaction despite existing police and enforcement presence, following a 31 August order directing a seven-member committee to fix the wetland's Full Tank Level using drone and satellite survey.

Background: The Bhoj Wetland — comprising the Upper Lake (Bhojtal) and Lower Lake in Bhopal, Madhya Pradesh — was designated a Ramsar site of international importance in August 2002, formed by a dam on the Kolans River which now drains into the Kaliasot River, a tributary of the Betwa; drone surveys conducted through early September found water levels roughly 15 feet beyond old Full Tank Level markers, a submerged municipal sewage line, and encroaching structures and roads near the Kaliasot.

KEY FACTS

- Bhoj Wetland (Bhojtal Upper Lake + Lower Lake), Bhopal, Madhya Pradesh, designated Ramsar site in August 2002.
- Formed by a dam on the Kolans River, which drains into the Kaliasot River, a Betwa tributary.

- NGT Central Zone Bench (Bhopal) ordered a 7-member committee on 31 August 2026 to fix the wetland's Full Tank Level (FTL).
- Committee's methodology includes drone, satellite, and geo-tagged ground survey, with a 15-day deadline.
- Drone surveys found water levels roughly 15 feet beyond old FTL markers.
- Surveys also found a submerged Bhopal Municipal Corporation sewage line and encroaching structures near the Kaliasot.
- On 16 September 2026, NGT termed the encroachment "a crime worse than robbery and dacoity."
- NGT criticised authorities' inaction despite existing police/enforcement presence in the area.

MAINS DIMENSIONS

- Tests understanding of the Full Tank Level concept as a legal-ecological boundary for wetland protection.
- Raises the analytical question of enforcement failure despite existing regulatory and police capacity.
- Connects to India's Ramsar-site obligations and the gap between international designation and on-ground protection.
- Highlights judicial intervention as a recurring corrective mechanism for urban-wetland encroachment nationwide.

PYQ LINKAGE

GS3 2021: "What is a Ramsar site? Explain the significance of India's wetlands" (paraphrased) is directly relevant.

PROBABLE PRELIMS MCQ

Consider the following statements: 1. Bhoj Wetland was designated a Ramsar site in 2002. 2. The Kaliasot River is a tributary of the Betwa River. 3. NGT's order concerns fixing the wetland's Full Tank Level. Which of the statements given above is/are correct?

(a) 1, 2 and 3 (b) 1 and 2 only (c) 2 and 3 only (d) 1 and 3 only

Answer: (a).

PROBABLE MAINS QUESTION

Discuss the challenges in enforcing wetland-protection norms in urban India, with reference to the Bhoj Wetland encroachment case. (150 words)

#GS3

#Wetlands

#NGT

§2 · Places in News

📌 PLACES IN NEWS — 19 SEPTEMBER 2026 | ANTIM ASSURED 100+



- ① New Delhi (Census 2027, SC rulings, Vietnam JCM) ● ② Kochi (NGMV keel-laying, Cochin Shipyard)
- ③ Auli, Uttarakhand (Yudh Abhyas, high-altitude theatre) ● ④ Mahajan, Rajasthan (Yudh Abhyas, desert theatre)
- ⑤ Bhopal (Bhoj Wetland encroachment) ● ⑥ Central Indian Ocean Basin (deep-sea mining) ● ⑦ North Andaman Sea (developing weather system)
- ⑧ Hanoi (India-Vietnam relationship context)

Kochi, Kerala

Site of Cochin Shipyard Limited, India's largest public-sector shipbuilder, on the backwaters of the Vembanad system; keel-laying site for India's first Next Generation Missile Vessel.

Auli, Uttarakhand

A high-altitude ski destination in the Garhwal Himalaya near the China border; served as the high-altitude-warfare theatre for Exercise Yudh Abhyas 2026's first-ever dual-theatre edition.

Mahajan Field Firing Range, Rajasthan

A major Indian Army training range in the Thar Desert near the Pakistan border, hosting the desert-warfare theatre of Yudh Abhyas 2026 simultaneously with Auli.

Bhopal, Madhya Pradesh

Home to the Bhoj Wetland (Upper and Lower Lakes) on the Kolans-Kaliasot river system, a Betwa tributary network, and site of NGT's strong rebuke on wetland encroachment.

Central Indian Ocean Basin

A mid-ocean seabed region in the Indian Ocean holding India's primary ISA polymetallic-nodule exploration contract, at the centre of the deep-sea mining ecological-threshold debate.

North Andaman Sea

Location of an upper-air cyclonic circulation being monitored by IMD, originating from north Thailand and expected to consolidate into a low-pressure system.

Hanoi, Vietnam

Capital of Vietnam, India's Comprehensive Strategic Partner under the Act East Policy; context city for the 19th India-Vietnam Joint Commission Meeting held in New Delhi.

§3 · Ethics & Integrity Cases

PRESUMPTION OF INNOCENCE VS CHILD PROTECTION

The POCSO Reverse-Burden Ruling

The Court's insistence that foundational facts must precede any reverse-burden presumption reflects the ethical balance between protecting vulnerable victims and safeguarding the accused's right to a fair trial — a reminder that even protective legislation must not collapse the basic presumption of innocence into an un rebuttable assumption of guilt.

PROPORTIONALITY: LIBERTY VS PATERNALISTIC REGULATION

Striking Down the Methanol-Adulteration Rules

The Court's finding that a public-health rule was "manifestly arbitrary" illustrates the ethical principle that even well-intentioned state paternalism must be proportionate to the harm it seeks to prevent — a blanket restriction imposing disproportionate cost on legitimate actors fails this test even when its underlying goal is legitimate.

FRAUD ON THE PUBLIC: INTEGRITY IN RECRUITMENT

Enforcing Advertised Recruitment Terms

Treating a silent deviation from advertised recruitment criteria as "fraud on the public" reflects the ethical principle that public institutions owe a duty of good faith to the entire pool of potential applicants, not merely to those who ultimately participate in a selection process.

TRUST-BASED GOVERNANCE IN DIGITAL SELF-REPORTING

Census 2027's Self-Enumeration Option

Allowing citizens to self-report their own household data reflects a governance ethic of trust rather than pure verification — a deliberate institutional choice that data quality and civic participation can be enhanced by empowering citizens rather than only relying on official enumerators.

INSTITUTIONAL READINESS ACROSS TWO FRONTS

Yudh Abhyas's Dual-Theatre Design

Conducting simultaneous exercises in terrain resembling both contested borders reflects the ethical and strategic principle of preparedness without provocation — building genuine capability for multiple contingencies rather than reacting only after a crisis emerges on one front.

Deep-Sea Mining's Ecological Threshold

The debate over whether to proceed with seabed mineral extraction before biodiversity baselines are fully understood illustrates the tension between the precautionary principle — caution when scientific knowledge is incomplete — and the legitimate national interest in securing critical mineral supplies.

§4 · Prelims MCQs

Q1. The Maharashtra Poisons Rules provisions struck down by the Supreme Court mandated adulteration of which industrial chemical?

- (a) Ethanol (b) Methanol (c) Formaldehyde (d) Benzene

Ans: (b)

Q2. Sections 29 and 30 creating rebuttable presumptions belong to which Act?

- (a) IPC (b) POCSO Act, 2012 (c) NDPS Act (d) UAPA

Ans: (b)

Q3. The "fraud on the public" doctrine in recruitment relates most directly to which Article?

- (a) Article 14 (b) Article 15 (c) Article 16 (d) Article 21

Ans: (c)

Q4. Census 2027's Phase I house-listing window closes on:

- (a) 15 September 2026 (b) 30 September 2026 (c) 31 October 2026 (d) 15 November 2026

Ans: (b)

Q5. Consider the following statements: 1. India's census tradition dates to 1881. 2. The 2021 census was conducted on schedule. Which is/are correct?

- (a) 1 only (b) 2 only (c) Both (d) Neither

Ans: (a)

Q6. The 19th India-Vietnam Joint Commission Meeting was co-chaired by S. Jaishankar and:

- (a) Bui Thanh Son (b) Le Hoai Trung (c) Pham Minh Chinh (d) To Lam

Ans: (b)

Q7. Next Generation Missile Vessels are being built to replace which class of vessels?

- (a) Kora-class corvettes (b) Veer and Prabal-class missile boats (c) Kamorta-class corvettes (d) Talwar-class frigates

Ans: (b)

Q8. Exercise Yudh Abhyas 2026's dual-theatre locations were Mahajan (Rajasthan) and:

- (a) Leh, Ladakh (b) Auli, Uttarakhand (c) Tawang, Arunachal Pradesh (d) Siachen

Ans: (b)

Q9. The India Semiconductor Mission was originally launched in:

- (a) December 2019 (b) December 2020 (c) December 2021 (d) December 2022

Ans: (c)

Q10. ISM 2.0's outlay has been raised to:

(a) \$8 billion (b) \$10 billion (c) \$13.5 billion (d) \$20 billion

Ans: (c)

Q11. Consider the following statements: 1. India's forex reserves fell in the week ended 11 September 2026. 2. The fall was driven partly by a decline in gold reserves. Which is/are correct?

(a) 1 only (b) 2 only (c) Both (d) Neither

Ans: (c)

Q12. India's merchandise trade deficit for August 2026 was approximately:

(a) \$5.2 billion (b) \$9.41 billion (c) \$11.62 billion (d) \$15.3 billion

Ans: (b)

Q13. India's ISA contract for polymetallic nodules covers an area of:

(a) 50,000 sq km (b) 75,000 sq km (c) 1,00,000 sq km (d) 1,50,000 sq km

Ans: (b)

Q14. Bhoj Wetland was designated a Ramsar site in:

(a) 1990 (b) 2002 (c) 2010 (d) 2015

Ans: (b)

Q15. The Kaliasot River, referenced in the Bhoj Wetland case, is a tributary of:

(a) Chambal (b) Betwa (c) Narmada (d) Sone

Ans: (b)

Q16. Consider the following statements: 1. India's Act East Policy is a rebranding of the earlier Look East Policy. 2. It seeks deeper economic and strategic engagement with Southeast Asia. Which is/are correct?

(a) 1 only (b) 2 only (c) Both (d) Neither

Ans: (c)

Q17. The Next Generation Missile Vessel programme is being executed under a contract worth approximately:

(a) Rs 5,000 crore (b) Rs 9,805 crore (c) Rs 15,000 crore (d) Rs 20,000 crore

Ans: (b)

Q18. Consider the following statements: 1. Semicon 2.0 was approved with an outlay of Rs 1,27,500 crore. 2. It extends support to equipment and materials suppliers for the first time. Which is/are correct?

(a) 1 only (b) 2 only (c) Both (d) Neither

Ans: (c)

Q19. Roughly how many enumerators/supervisors are being trained for Census 2027?

(a) 15 lakh (b) 21 lakh (c) 31 lakh (d) 45 lakh

Ans: (c)

Q20. The Applied Materials investment commitment announced at SEMICON India 2026 was under which initiative name?

(a) Vision 2030 (b) Vision 2035 (c) Mission Semiconductor (d) Chip 2.0

Ans: (b)

1. Discuss the application of the proportionality doctrine in balancing public-health regulation with the freedom to carry on trade. (150 words) [GS2]
2. Discuss the significance of "reverse burden" provisions in special criminal statutes like POCSO, and examine the judicial safeguards read into them. (150 words) [GS2]
3. Discuss the significance of the "fraud on the public" doctrine in ensuring transparency in public recruitment. (150 words) [GS2]
4. Discuss the significance of digitisation and self-enumeration in India's Census 2027. (150 words) [GS1]
5. Discuss the significance of defence co-production agreements in deepening India's strategic partnership with Vietnam. (150 words) [GS2]
6. Discuss the significance of indigenous warship construction for India's naval modernisation. (150 words) [GS3]
7. Discuss the significance of the India Semiconductor Mission in building a domestic semiconductor ecosystem. (150 words) [GS3]
8. Discuss the ecological and regulatory challenges in balancing India's deep-sea mineral-exploration ambitions with biodiversity conservation. (150 words) [GS3]
9. **[GS4 Case Study]** As the head of a public-health regulatory body, you must decide whether to impose a broad restriction on an industrial chemical to curb its criminal misuse, knowing the restriction will impose real costs on thousands of legitimate manufacturers while doing little to stop determined bad actors. (a) Identify the ethical principles in tension. (b) Recommend a proportionate regulatory approach. (250 words) [GS4]

§6 • Answer Writing Value Addition

Quote: "Strategic-mineral importance cannot automatically become ecological permission" — the core argument in the 19 Sept deep-sea mining debate, useful for any precautionary-principle answer.

Data Point: Census 2027 carries a Cabinet-approved outlay of Rs 11,718.24 crore and will train approximately 31 lakh enumerators.

Concept: "Fraud on the Public" — a named doctrine distinct from fraud on an individual, useful in any Article 16/public-employment integrity answer.

Data Point: India's forex reserves stood at \$780.782 billion for the week ended 11 September 2026, having touched a record \$785.706 billion the prior week.

Concept: "Foundational Facts Before Presumption" — the POCSO ruling's key doctrinal safeguard, useful in any reverse-burden/criminal-jurisprudence answer.

Data Point: The India Semiconductor Mission's outlay has grown from \$8 billion (Phase 1) to \$13.5 billion (ISM 2.0), alongside a Rs 1,27,500 crore Semicon 2.0 approval.

Data Point: India's ISA contract for polymetallic nodules in the Central Indian Ocean Basin spans 75,000 sq km with an estimated 366

million tonnes of resource.

Concept: "Dual-Theatre Preparedness" — Yudh Abhyas 2026's simultaneous high-altitude and desert conduct, a useful example of proactive military readiness across multiple contingencies.

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#	Topic	UPSC Relevance	Priority
1	Balaji Formalin — Methanol Rules Struck Down	GS2 — Proportionality, Article 14/19	★★★★★
2	POCSO Reverse-Burden Ruling	GS2 — Criminal jurisprudence	★★★★★
3	Sunita Lahu Panchpande — Fraud on the Public	GS2 — Article 16, public employment	★★★★☆
4	Census 2027 Phase I	GS1 — Indian society, digital governance	★★★★★
5	India-Vietnam 19th JCM	GS2 — Act East Policy	★★★★☆
6	Cochin Shipyard — NGMV Keel-Laying	GS3 — Naval indigenisation	★★★★☆
7	Yudh Abhyas 2026 Dual-Theatre Exercise	GS3 — India-US defence cooperation	★★★★☆
8	SEMICON India 2026 / ISM 2.0	GS3 — Semiconductor self-reliance	★★★★★
9	RBI Forex Reserves Fall	GS3 — External sector management	★★★★☆
10	India's Trade Deficit Narrows (Aug 2026)	GS3 — External trade	★★★★☆
11	Deep-Sea Mining Ecological Threshold	GS3 — Blue Economy, ISA regime	★★★★☆
12	Bhoj Wetland Encroachment (NGT)	GS3 — Wetland conservation	★★★★☆
13	POCSO Act — Static Framework	GS2 — Static child-protection law	★★★★☆
14	Census of India — Historical Evolution	GS1 — Static society/statistics	★★★★☆
15	India Semiconductor Mission — Static Framework	GS3 — Static science policy	★★★★☆
16	India's Forex Reserve Composition	GS3 — Static external-sector concept	★★★★☆
17	ISA/UNCLOS Seabed Mining Regime	GS3 — Static international law	★★★★☆
18	Ramsar Convention & India's Wetlands	GS3 — Static environmental law	★★★★☆

★ THEIAS AKADEMIA — PROOF OF PRECISION

UPSC CSE Prelims 2026 Results

In what critics called the most unpredictable Prelims paper in a decade —

48

QUESTIONS FROM
ANTIM ASSURED 100+

7

QUESTIONS FROM
A SINGLE DOCUMENT

6

QUESTIONS FROM
A SINGLE CLASS

Our students had seen 48 questions before the paper was opened.

This is not luck. This is TheIAS Akademia.

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Proof of Precision

Every item mapped. Every claim verified.

2

ENVIRONMENT CARDS

8

MAP PINS

6

ETHICS CASES

20

MCQS

9

MAINS QS

Environment

Geography

Ethics

Polity

Defence

✓ All facts sourced from The Hindu editorial analysis, Ministry of Earth Sciences data, and NGT Central Zone Bench orders

✓ Every ethics case names its underlying ethical concept explicitly, per RULE 15 density mandate

✓ Cross-checked against the 7-day topic log — zero repeated topics

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