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1. Digital Sovereignty: India's Strategic Imperative (GS-3, GS-2, Essay, IR, Internal Security, Science & Technology)

Context:

Recent security breaches, including the compromise of Indian CCTV networks via Chinese software (April 2026) and Microsoft's unilateral suspension of cloud services to Nayara Energy (July 2025), have highlighted India's critical vulnerabilities and the urgent need for absolute digital and technological sovereignty.

I. Core Vulnerabilities Exposed

- **Foreign Monopolies:** Critical authentication, productivity suites, and cloud systems are overwhelmingly owned by overseas tech giants.
- **Extraterritorial Jurisdictions:** Foreign cloud providers can be compelled by their home governments to surrender data stored within India.
- **Loss of Strategic Control:** Ultimate operational control shifts from domestic entities to foreign corporations and external sovereigns.

II. National Security & Strategic Risks

- **Weaponization of Code:** Contemporary software-defined hardware (fighter jets, missiles) can be remotely degraded or redirected by manufacturers.
- **Systemic Operational Paralysis:** Sudden tech denials can instantly freeze governance, collapse commerce, halt manufacturing, and weaken defense.
- **Kargil Precedent:** The denial of precise GPS support by the US during the 1999 conflict underscores the reality of strategic technology denial.

III. India's Unique Geopolitical Challenge

- **Power Transition Pressures:** As a rising power approaches parity with hegemony, the latter invariably act to contain its strategic autonomy.
- **Global Sovereignty Trend:** Advanced nations (France, Germany, Netherlands) are actively migrating to domestic alternatives to bypass US software.

IV. Way Forward & Mitigation Strategies

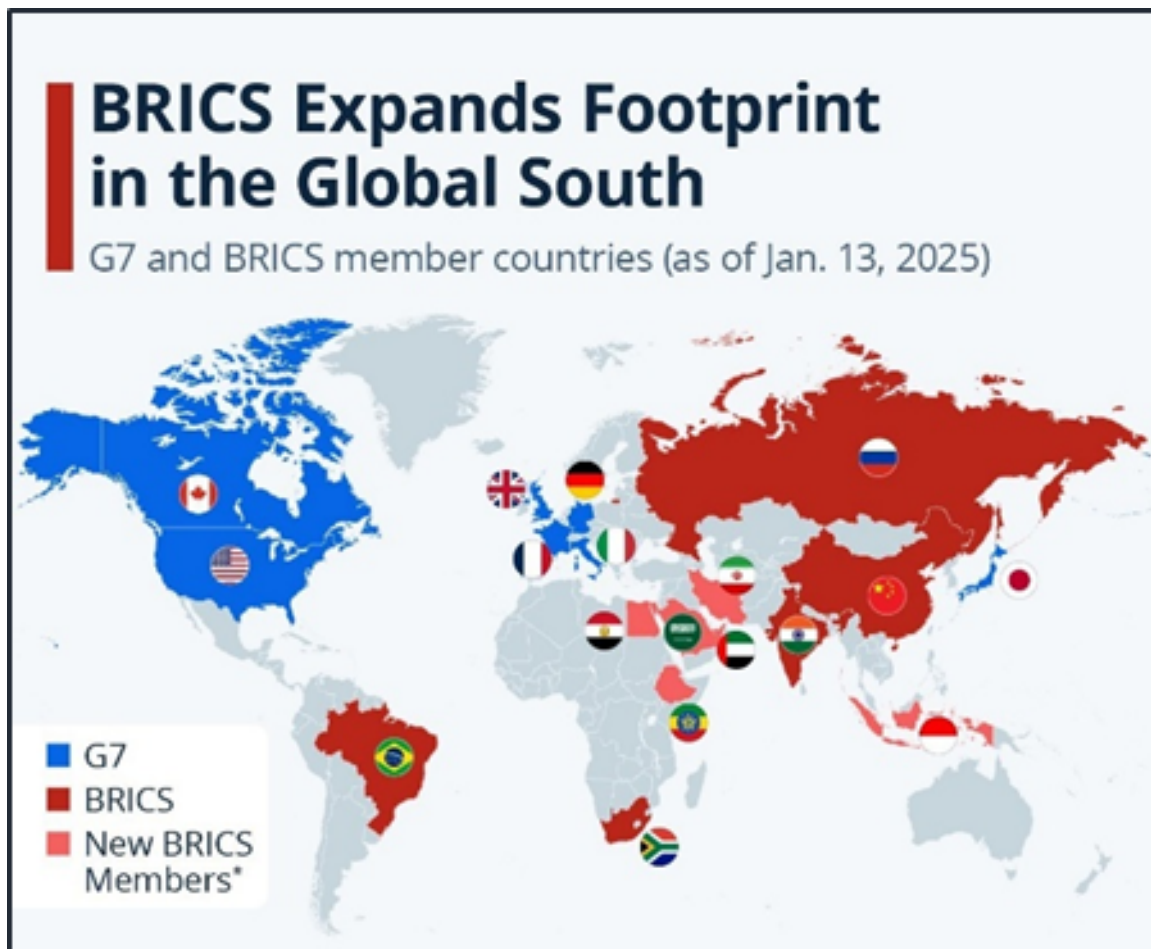
- **Scale Indigenous Models:** Replicate the domestic success of UPI, RuPay, and NavIC across cloud infrastructure and e-commerce platforms.
- **Leverage Private Defense R&D:** Emulate the US model by funding private sector innovation and assured procurement, as seen in the AMCA project.
- **Foster Mutual Dependence:** Build trusted international partnerships (e.g., BrahMos, US-India Micron semiconductor plant, and Pax Silica initiative).
- **Bridge the R&D Funding Gap:** Aggressively raise domestic R&D spending from a low 0.74% of GDP toward the global average of 2.07%.



2. Strategic Dialogue in New Delhi: BRICS Security Chiefs Address Global Architectures (GS 2: IR)

Context:

National Security Adviser Ajit Doval hosted the BRICS NSAs meeting in New Delhi against the backdrop of escalating tensions in West Asia. The dialogue focused on surveying global security architectures, addressing non-traditional threats, and advancing key bilateral relations.



I. Key Bilateral Engagements

- **India-China:** Discussions focused on the gradual normalization of ties, emphasizing that predictable and constructive relations build mutual trust.
- **India-Iran:** Engagements centered on reviewing the volatile West Asia situation, enhancing bilateral ties, and cooperation within the BRICS framework.
- **Iran-China (Sidelines):** China reaffirmed support for Iran's territorial integrity, while Iran expressed readiness to counter potential regional threats.
- **Broader Participation:** The summit also included key representatives like Brazil's Secretary of Multilateral and Political Affairs to ensure comprehensive dialogue.

II. Core Agenda and Strategic Focus

- **Non-Traditional Security:** The primary agenda aimed at addressing contemporary non-traditional security challenges confronting the evolving global order.
- **Counter-Terrorism:** Participating nations comprehensively reviewed the outcomes and progress of the BRICS Joint Working Groups on Counter-Terrorism.
- **Regional Stability:** Consensus was built on maintaining close diplomatic consultations to promote de-escalation and strategic stability in West Asia.

About BRICS:

- Originally an acronym coined in 2001, BRICS is an intergovernmental grouping of major emerging economies: Brazil, Russia, India, China, and South Africa.
- The alliance was formed to champion a multipolar world order and amplify the geopolitical and economic influence of the Global South.
- Following its expansion in 2024, the expanded BRICS represents nearly half of the global population and a substantial portion of the world's GDP.
- Its most significant institutional achievements include the establishment of the New Development Bank (NDB) and the Contingent Reserve Arrangement (CRA).
- The grouping operates without a formal secretariat, functioning instead through annual summits and specialized working groups across various sectors.

3. From Buyer–Seller to Co-Creators: India–Israel Defence Synergy (GS 2: IR)

Context:

The recent India visit of Israel's Defence Ministry Director-General, Maj. Gen. Amir Baram, underscores the deepening India-Israel Special Strategic Partnership. Discussions with India's Defence Minister focused on advancing joint defence manufacturing, military technology cooperation, and strategic R&D initiatives.



Key Highlights of the Visit

- **Strategic Commitment:** Both nations reaffirmed their dedication to expanding bilateral cooperation under the Special Strategic Partnership framework.
- **Core Focus Areas:** Engagements prioritised scaling up joint military technology development, defence equipment manufacturing, and R&D.
- **Deepening Bonds:** The alliance is uniquely strengthened by mutual trust, shared democratic values, and deep cultural appreciation.
- **Broader Strategy:** The outreach aligns with Israel's broader foreign policy initiative to widen its circle of eastward strategic alliances.
- **Dimensions of Defence Cooperation**
- **Co-development Push:** Ties are evolving from traditional buyer-seller dynamics toward co-development and co-production of advanced systems.
- **Technological Synergy:** The partnership increasingly integrates cutting-edge Israeli innovation with India's robust "Make in India" manufacturing capabilities.



- **New Frontiers:** Expanding beyond traditional hardware, both countries are exploring cooperation in artificial intelligence and cybersecurity.
- **Mutual Security:** Shared vulnerabilities to non-traditional security threats continue to drive deeper collaboration in counter-terrorism mechanisms.
- **Historical Evolution of India-Israel Relations**
- **1950:** India officially recognised the State of Israel, though formal diplomatic engagements remained highly limited for decades.
- **1992:** Full diplomatic relations were established, unlocking robust cooperation across trade, agriculture, and security domains.
- **1999:** Israel solidified its role as a reliable ally by providing critical defence equipment and UAV imagery during the Kargil conflict.
- **2017:** The bilateral relationship was formally elevated to a "Special Strategic Partnership" during the Indian Prime Minister's historic visit to Israel.
- **Present:** The alliance has matured into a deeply integrated industrial partnership, highlighted by joint projects like the Barak-8 missile system.

4. Blue Economy or Biodiversity Loss? The Great Nicobar Test (GS Paper 3: Environment & Biodiversity Conservation)

Context:

Recent concerns regarding the Galathea Bay International Container Transshipment Port (ICTP) under the Great Nicobar Project have intensified, highlighting the profound friction between strategic maritime expansion, governance transparency, and the potential for irreversible ecological devastation.



About the Project and ICTP

Mega Infrastructure: The ₹72,000-crore project includes a greenfield airport, power plant, and a major township.

Massive Capacity: Being developed in phases to handle an eventual 16 million TEUs of cargo annually.

PPP Execution: Operates on a "landlord port" model where the government owns the infrastructure while private entities handle operations.





Strategic and Economic Significance

- **Geostrategic Proximity:** Situated just 40 nautical miles from the vital Malacca Strait, bolstering India's Indo-Pacific strategy.
- **Maritime Sovereignty:** Significantly reduces reliance on foreign transshipment hubs like Colombo, Singapore, and Port Klang.
- **Economic Impetus:** Attracts foreign direct investment, generates massive regional employment, and facilitates critical currency savings.
- **Logistics Efficiency:** Secures domestic supply chains, lowering risks to India's export competitiveness.

Ecological and Social Concerns

- **Habitat Destruction:** Large-scale land clearing threatens pristine tropical rainforests and complex coastal mangrove ecosystems.
- **Critical Species:** Poses an existential threat to the nesting grounds of vulnerable Leatherback Sea Turtles and delicate coral colonies.
- **Indigenous Communities:** Threatens the survival, land rights, and unique culture of the Particularly Vulnerable Tribal Groups (Shompen and Nicobarese).
- **Disaster Vulnerability:** Heavy infrastructure development in a highly seismic, tsunami-prone archipelago multiplies systemic risks.

Governance and Implementation Issues

- **Clearance Deficits:** Critics allege the Environmental Impact Assessment (EIA) process was hastily executed and bypassed crucial scientific guidelines.
- **Financial Viability:** The Public Private Partnership Appraisal Committee (PPPAC) reportedly declined crucial Viability Gap Funding for the project.
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- **Ownership Monopolies:** Clarifications are sought on whether the mandated 55% Indian ownership will allow unchecked private monopolization.
- **Mitigation Feasibility:** Proposed ecological mitigation plans, such as massive coral relocation, are criticized by experts as scientifically unfeasible.

Development-Environment Trade-off

- **Strategic Imperative:** India's economic ascent and maritime security genuinely demand robust, domestically controlled port infrastructure.
- **Irreplaceable Loss:** The project inevitably targets one of India's most pristine, biodiversity-rich, and culturally sensitive ecological reserves.
- **Sustainability Challenge:** Balancing aggressive, capital-intensive infrastructure with the survival of a fragile island ecosystem remains a critical governance test.

Way Forward

- **Scientific Reassessment:** Mandate a comprehensive, independent carrying-capacity assessment before initiating subsequent phases.
- **Strict Safeguards:** Enforce rigorous ecological safeguards, ensuring all six-monthly compliance reports are strictly public and peer-reviewed.
- **Inclusive Consultation:** Ensure meaningful participation of environmental scientists and Indigenous representatives in continuous project evaluations.
- **Climate Resilience:** Design strictly disaster-resilient infrastructure considering the high seismic and climatic vulnerability of the region.

5. Rakhigarhi Remains: Unlocking Harappan Genetic Secrets

Context:

The Archaeological Survey of India (ASI) recently transferred human skeletal remains from Rakhigarhi to the Anthropological Survey of India (AnSI) for advanced multidisciplinary research.

ASI transfers Rakhigarhi skeletons to AnSI for a scientific investigation

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NEW DELHI

Human skeletal remains excavated from the archaeological site of Rakhigarhi in Haryana have been formally handed over by the Archaeological Survey of India (ASI) to the Anthropological Survey of India (AnSI), a national research institute under the Union Culture Ministry, for a detailed scientific investigation.

The transfer, carried out under a memorandum of understanding (MoU) between the two institutions, is expected to significantly advance multidisciplinary research into one of the most important urban centres of the Indus-Saraswati Civilisation, B.V. Sharma, Director of AnSI, said.

Rakhigarhi, spread across approximately 550 hectares in Haryana, is widely recognised as the largest known settlement



Ancient remains: The skeleton of a woman, excavated in a trench on Mound 7 at Rakhigarhi in Haryana, in April 2022. FILE PHOTO

of the Harappan Civilisation. Archaeological excavations have revealed evidence of continuous habitation, from the Early Harappan to the Mature Harappan periods.

Mound 7 at the excavation site has been identified as a burial plot where 56 skeletons were recovered, including that of a woman, roughly 4,600 years old, which created a buzz in the fields of history, anthropology, genomics, and even linguistics.

DNA analysis of the skeleton revealed that the Rakhigarhi woman did not possess the steppe pastoral gene, fanning the debate on Aryan migration to India. The word "Aryan" has been interchangeably used for the steppe pastoralists, though to avoid racial connotations, many scholars now prefer to use the term Indo-Aryan.

Three complete human skeletons among those recovered from Mound 7, along with skeletal frag-

ments recovered from other burials, have now been transferred to the AnSI's ancient human skeletal repository and laboratory in Kolkata for a detailed examination. The remaining skeletal materials obtained at these sites are also expected to be transferred in a few days, the Culture Ministry said in a statement on Monday.

Researchers believe the remains present a rare opportunity to apply modern scientific techniques, including ancient DNA (aDNA) analysis, stable isotope studies, osteological assessments, palaeopathological investigations, and environmental reconstruction, the statement added.

The research will be conducted in collaboration with leading scientific institutions, including the Birbal Sahni Institute of Palaeosciences, University College London, and the Banaras Hindu University.

Rakhigarhi & Key Discoveries

- **Largest Settlement:** Spread across 550 hectares in Haryana, it is the largest known Harappan site.
- **Continuous Habitation:** Exhibits unbroken occupation from the Early to Mature Harappan periods.
- **Crucial Discoveries:** Excavations at Mound 7 revealed ancient burials, notably a 4,600-year-old female skeleton.



Significance of Scientific Analysis

- **Advanced Techniques:** Employs ancient DNA (aDNA) analysis, stable isotope studies, osteology, and palaeopathology.
- **Decoding Society:** Provides vital insights into Harappan health, diet, population history, and environmental adaptation.
- **Migration Debates:** DNA findings, such as the absence of steppe pastoralist genes, help resolve debates on ancient human migrations.
- **Fusing archaeology, anthropology, and genetics** represents a progressive shift toward accurately reconstructing the complex biological and cultural evolution of India's ancient civilizations.



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