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**DAILY NEWS
ANALYSIS**



MARCH 24



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PERSIAN CULTURE Steady, luminous, impossible to forget



Remains of Persepolis, a symbol of Persia's ancient glory, in the ruins of the city of Shiraz, Iran.

You can say this for almost any country in the world — its culture will delight you, its politics will depress you. Iran exemplifies this more than most countries. Don't look at Iran, and just think, foreign powers' wars, and bloody domestic upheavals. It is home to a civilisational symphony, celebrated as Persian culture. Let's take a step back from grim headlines, and recount its many gifts to the world

How Many Perfumes

Persian culture doesn't just exist in history — it lives. Iran's perfume is the most famous, the most beloved, the most cherished. It's not just a perfume, it's a way of life. It's a way of life that has been passed down for centuries. It's a way of life that is still alive and well in Iran today.



A garden in Shiraz, Iran, showing the traditional garden design, with a central fountain and a long walkway.

Such like ancient Persia, Persians are not just a people, they are a way of life. They are a way of life that is still alive and well in Iran today. They are a way of life that is still alive and well in Iran today.

Imperial, but with a Moral Spine

Persia's moral spine was not just a moral spine, it was a moral spine that was still alive and well in Iran today. It was a moral spine that was still alive and well in Iran today.

Persian culture is not just a culture, it is a way of life. It is a way of life that is still alive and well in Iran today. It is a way of life that is still alive and well in Iran today.

ink That Breathed

Persian ink is not just ink, it is a way of life. It is a way of life that is still alive and well in Iran today. It is a way of life that is still alive and well in Iran today.



A woman in traditional Persian dress, possibly a dancer or a woman in a specific cultural role.

Persian ink is not just ink, it is a way of life. It is a way of life that is still alive and well in Iran today. It is a way of life that is still alive and well in Iran today.

Persian ink is not just ink, it is a way of life. It is a way of life that is still alive and well in Iran today. It is a way of life that is still alive and well in Iran today.

Geometry That Dreams

Persian geometry is not just geometry, it is a way of life. It is a way of life that is still alive and well in Iran today. It is a way of life that is still alive and well in Iran today.

Persian geometry is not just geometry, it is a way of life. It is a way of life that is still alive and well in Iran today. It is a way of life that is still alive and well in Iran today.

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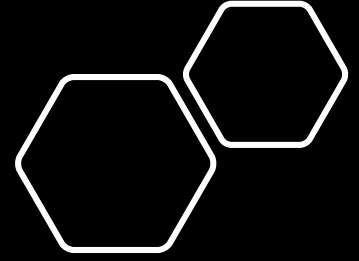
Conversations With The Infinite

Persian conversations are not just conversations, they are a way of life. They are a way of life that is still alive and well in Iran today. They are a way of life that is still alive and well in Iran today.



A woman in a white chador, possibly a woman in a specific cultural role.

Persian conversations are not just conversations, they are a way of life. They are a way of life that is still alive and well in Iran today. They are a way of life that is still alive and well in Iran today.



- **Key Terms and Explanations**

- **Asha:** A Zoroastrian concept representing the decisive cosmic order, truth, and righteousness. It is the spiritual equivalent of the laws of nature.
- **Dharma:** In the Indian context, it refers to the eternal and moral duty that maintains worldly order.
- **Ta'arof:** A complex Persian system of etiquette and social deference. It involves a "ritualized politeness" where individuals navigate social hierarchies through humility and hospitality.
- **Shahnameh:** The "Book of Kings," an epic poem by Ferdowsi that preserved Persian history, language, and mythology after the Islamic conquest.
- **Sufism:** A mystical dimension of Islam that emphasizes an inner, spiritual journey toward the Divine, often expressed through poetry and music.
- **Atithi Devo Bhava:** The Indian philosophical tenet from the *Taittiriya Upanishad*, meaning "The guest is equivalent to God."
- **Charbagh:** A Persian-style garden layout (quadrilateral garden) divided by walkways or flowing water into four smaller parts.

- **Main Arguments and Substantive Parts**

- **The Non-Linearity of Culture:** The narrative argues that Persian culture is not a chronological list of events but a "woven carpet" where poetry, art, and conquest coexist.
- **Governance with Moral Spine:** It posits that early Persian empires (Achaemenids) succeeded because they balanced raw power with administrative principles and respect for diversity—a direct parallel to the Mauryan administration in India.
- **Language as an Emotional Architect:** Farsi is presented not just as a medium of communication but as a vehicle for spiritual "technology." The poets (Rumi, Hafez) bridged the gap between the human and the divine.
- **The "Intellectual Jazz" of Fusion:** The convergence of Persian Sufism and Indian spirituality (Vedanta/Bhakti) created a unique, improvised cultural layer rather than a mere blending.
- **Aesthetic Necessity:** The argument suggests that for these civilizations, beauty (in geometry, gardens, and calligraphy) is a fundamental human need, not a luxury of the elite.

- **Historical Evolution of the Issue**
 - **Ancient Period (Achaemenid-Mauryan Linkages):** Interaction between the Achaemenid Empire and the Mahajanapadas. Influence on Ashokan edicts and stone architecture (Persian influence on Mauryan pillars).
 - **Medieval Period (Sultanate and Mughal Era):** Introduction of Farsi as the court language. The arrival of the *Charbagh* pattern and the dome structure. The synthesis of Indo-Persian music and literature (Amir Khusrau).
 - **Colonial Period:** The decline of Farsi as the official language of India (replaced by English in 1835), though its cultural influence persisted in Urdu and local dialects.
 - **Post-Independence:** Diplomatic relations between modern Iran and India, focusing on "Civilizational Dialogue" and energy security, while navigating modern geopolitical shifts.
-
- **Previous Years' Questions (PYQs)**
 - **GS I (2022):** "The soft power of India is deeply rooted in its ancient cultural heritage." Discuss.
 - **GS I (2014):** "Gandhara art owes as much to the Romans as to the Greeks." (Related to external influences on Indian art).
 - **GS II (2017):** "India's relations with Iran are a classic example of a partnership constrained by third-party interests."

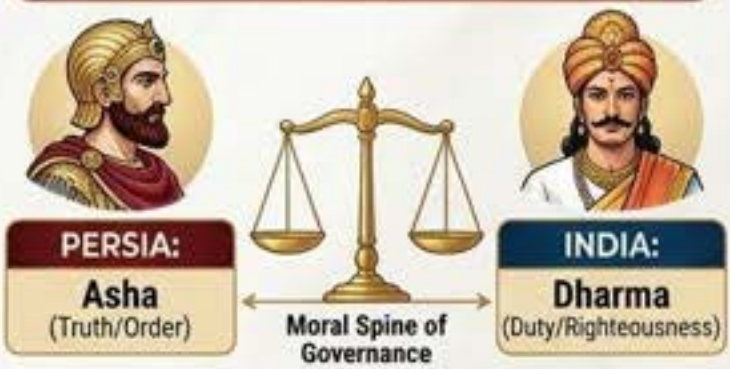




INTRODUCTION: TIME WEARS PERFUME



MORAL ANCHORS: IMPERIAL BUT ETHICAL



POETRY AS TECHNOLOGY: INK THAT BREATHED



CULTURAL FRAGRANCE: THE TIMELESS CONVERSATION BETWEEN PERSIA & INDIA

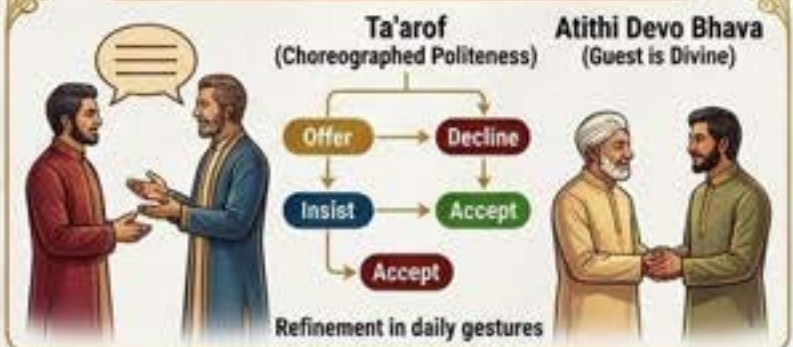
GEOMETRY THAT DREAMS: ART & GARDENS



CONVERSATIONS WITH THE INFINITE



ART OF BEING HUMAN & TA'AROF



HIGH CULTURE & THE ROAD AHEAD



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Parl seats may be increased to 816 for 1/3rd women's quota

Govt Set To Introduce At Least Two Bills

Kumar Rakesh and Bharti Jain

New Delhi: Govt is looking to introduce at least two bills — including constitutional amendments — in the current session of Parliament to roll out reservation for women of one-third seats in the next Lok Sabha poll and assembly elections to be held after it. The move promises to change the country's political landscape and put an authoritative stamp on PM Modi's much-touted agenda of women's empowerment as the campaign for four state assemblies gathers pace.

If govt has its way, then the number of seats in LS will rise by 50% to 816 from the existing 543, with the 273-

TO BE BASED ON 2011 CENSUS

> Centre wants to delink provision for implementing women's quota after delimitation following new Census and is instead launching fresh delimitation based on 2011 Census

> States like UP and Bihar will see their LS constituencies go up to **120 and 60 from current 80 and 40**, respectively, and those in Kerala will rise to **30 from 20**

> Current LS has 84 seats for SCs and no. is expected

seat increase set aside for women, ensuring that the existing political dynamics and incumbent parliamentarians, overwhelmingly male, are not cut loose as a reshaped order takes hold. The majority mark will, accordingly, move to 409.

The strength of LS will increase for the first time in

to go up to **136**, while constituencies reserved for STs may rise to **70 from 47**

> Some states/UTs with 1 or 2 seats will have their constituency reserved for women every 3rd election

> While governing NDA enjoys a majority in LS and RS, it will **require support from other parties** to reach the 2/3rds mark

> Some oppn parties want an all-party meeting. **TMC skipped the meeting** with Shah

over five decades. The strength of the Rajya Sabha and legislative councils in states will not be affected.

At least two bills, one on delimitation and another for an amendment in the Constitution, which needs two-thirds support in both Houses, will be brought.

Although the governing

NDA does not have the strength to secure the passage of the bill on its own, govt seems keen to push for its passage during the budget session concluding on April 4. Failing that, it is open to the idea of convening a short session specifically for women's quota.

Home minister Amit Shah is leading the effort to get support for the two bills and held two meetings on Monday, one with regional parties from the non-NDA bloc, including opposition parties and those unaligned to either formation (NDA or INDIA blocs), and another with BJP's allies.

The women's quota law, piloted by the Modi govt in 2023, had linked the implementation in legislatures to delimitation that is to be conducted after the completion of the Census, which is about to get under way.

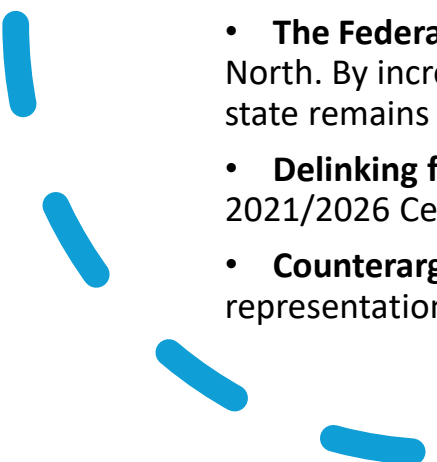
► Likely to see 50% rise, P 22



- **Key Terms and Explanations**

- **Delimitation:** The act of redrawing boundaries of Lok Sabha and State Assembly seats to represent changes in population. It ensures "One Vote, One Value."
- **Constitutional Amendment (Article 368):** A process to change the Constitution. To pass the women's quota, a "Special Majority" is required (2/3rds of members present and voting, plus a majority of the total strength of the House).
- **Women's Reservation Bill (Nari Shakti Vandan Adhiniyam):** Formally the 106th Amendment Act, which mandates 33% reservation for women in the Lok Sabha and State Assemblies.
- **Census:** The official enumeration of the population. The 2011 Census is currently the base, as the 2021 Census was delayed.
- **Lame Duck/Incumbent Dynamics:** The article refers to "incumbent parliamentarians not being cut loose." This refers to political survival—increasing the total number of seats so that men don't have to lose their current seats to accommodate the 33% women's quota.

- **Main Arguments and Substantive Parts**

- The core thesis is a **dual-track strategy** to increase the size of the Lok Sabha by 50% while simultaneously implementing women's reservation.
 - **The "Win-Win" Expansion:** By increasing seats from 543 to 816, the government aims to add 273 seats specifically for women. This prevents the "displacement" of existing male MPs, reducing internal party resistance.
 - **The Federal Compromise:** Southern states fear losing political clout because their population growth has slowed compared to the North. By increasing seats proportionally across all states (e.g., UP from 80 to 120; Kerala from 20 to 30), the *relative* power of each state remains stable.
 - **Delinking from the Future Census:** A major shift is the proposal to use **2011 Census data** instead of waiting for the delayed 2021/2026 Census. This accelerates the timeline to the 2029 elections.
 - **Counterarguments:** Opposition parties (Congress, SP) argue for a "quota within a quota" for OBC women to ensure intersectional representation. Some argue that using 2011 data for a 2029 rollout is demographically outdated.
- 

- **Historical Evolution of the Issue**
 - **Pre-Independence:** Early feminist movements (Sarojini Naidu) initially opposed reservations, favoring "equal status" instead.
 - **1993 (73rd & 74th Amendments):** Groundbreaking 33% reservation for women in Panchayats and Municipalities. This served as the "laboratory" for the current national proposal.
 - **1996–2008:** Various versions of the Women's Reservation Bill were introduced (Deve Gowda, Gujral, and Vajpayee eras) but lapsed due to lack of consensus.
 - **2010:** The Rajya Sabha passed the bill under the UPA government, but it lapsed as it was never taken up in the Lok Sabha.
 - **2023:** The *Nari Shakti Vandan Adhiniyam* was passed in a Special Session, linking implementation to a future census and delimitation.
 - **2026 (Contextualized):** The move to delink the quota from the upcoming census to ensure a 2029 rollout.
-
- **Previous Years' Questions (PYQs)**
 - **UPSC Mains (2023, GS2):** "The Nari Shakti Vandan Adhiniyam is a long-awaited reform. Discuss its potential impact on the political landscape of India."
 - **UPSC Mains (2013, GS2):** "The reservation of seats for women in the institutions of local self-government has had a limited impact on the patriarchal character of the Indian political process. Critically examine."
 - **UPSC Prelims (2017):** Question on the Delimitation Commission's powers.



COMPREHENSIVE ANALYSIS: THE 816-SEAT LOK SABHA & WOMEN'S RESERVATION BILL

KEY TERMS & DEMOGRAPHICS

1) **DELIMITATION:**
Redrawing
Constituencies



2) **LOK SABHA:**
Proposed increase
from 543 to 816 seats



3) **WOMEN'S RESERVATION:**
Mandatory 33% representation

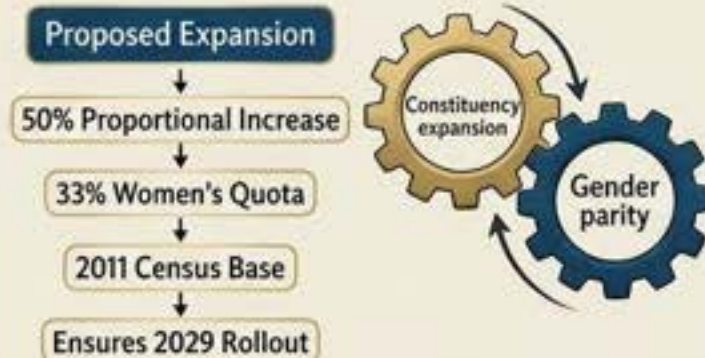


MAIN PROPOSALS & EVOLUTION

1) **TIMELINE:**

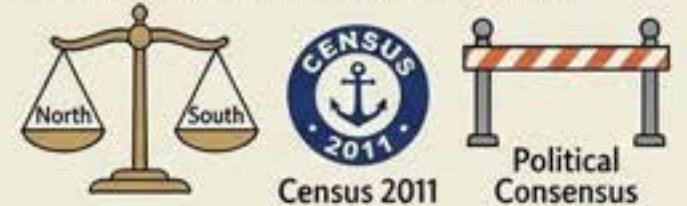


2) **PRAGMATIC STRATEGY:**



CHALLENGES, SUSTAINABILITY & MULTIDIMENSIONAL IMPACT

1) **CHALLENGES:** OBC Sub-quota
consensus; North-South disparities



2) **MULTIDIMENSIONAL ANALYSIS:**



RISE ABOVE THE REST WITH AXIA IAS ACADEMY

Impact of West Asia war likely to be felt for long time, PM tells Lok Sabha

Country should be prepared and united, says Modi as he condemns attacks on commercial ships and obstruction of Strait of Hormuz; India has 5.3 million tonnes of petrol reserves, and govt. is working towards increasing this to 6.5 million tonnes

Sandeep Phukan
NEW DELHI

The situation in West Asia is "deeply concerning", and the impact of the war is likely to be felt for a long time, Prime Minister Narendra Modi said on Monday, while briefing the Lok Sabha on the steps taken by his government to secure India's energy needs.

The country should be prepared and united, Mr. Modi said, urging all members to ensure the Indian Parliament sends out a "united and unanimous voice on the issue".

The government should hold a proper discussion so that other members can put forth their views, Congress MP Priyanka Gandhi Vadra said after the Prime Minister's speech.

Earlier, making a statement in the Lok Sabha, Mr. Modi said he had spoken to the heads of most West



Every Indian in the war-affected region is being given every possible help, Narendra Modi informed in Parliament on Monday. SANSAD TV

Asian countries, all of whom had assured the safety of Indians.

"India has always raised its voice for peace in the interest of humanity. Dialogue and diplomacy are the solutions to this problem. Our efforts are aimed at reducing tensions and ending this conflict," Mr. Modi said, amid the thumping of desks by ruling party members.

"I myself have spoken with all relevant leaders in West Asia. I have urged

them to reduce tensions and end the conflict. India has opposed attacks on civilians, energy, and transport-related infrastructure. Attacks on commercial ships and obstruction in international waterways like the Strait of Hormuz are unacceptable. Through diplomacy, India is continuously working to ensure safe passage for Indian ships even in this war environment," he added.

The government was in constant touch with sup-

pliers from various countries to ensure that oil and gas supplies continued from wherever possible, he said, addressing apprehensions of fuel shortages. All power plants in the country have adequate stocks of coal, he added.

India has 5.3 million tonnes of strategic petroleum reserves, and the government was working towards increasing this to 6.5 million tonnes, he told the House. "The reserves maintained by our oil companies are separate. In the past 11 years, our refining capacity has also increased significantly," Mr. Modi added.

The country's farmers had filled the food grain reserves, so India is well prepared in terms of food security, he said, speaking on the war's impact on agriculture.

"We are also making efforts to ensure that kharif sowing takes place proper-

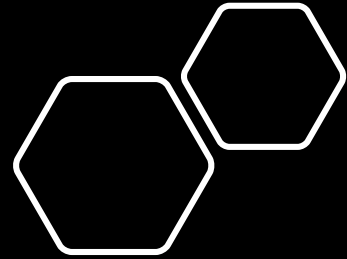
ly. For this, the government has made adequate arrangements for fertilizers to deal with any emergency...," he said.

As summer has begun in India, the demand for electricity has increased, but all power plants in the country have adequate stocks of coal, he said.

West Asia is important to India as nearly one crore Indians live and work in the Gulf countries, the Prime Minister added.

Every Indian in the war-affected region was being given every possible help, and more than 3.75 lakh Indians, including 1,000 people from war-torn Iran, had been safely evacuated, Mr. Modi said.

However, several lives had been lost, and some people had been injured during the conflict, the Prime Minister said, adding that their families were being given the necessary help.





- **Key Terms and Explanations**

- **Strategic Petroleum Reserves (SPR):** Huge stockpiles of crude oil maintained by a country to guard against supply disruptions.


- *Example:* India's current capacity is 5.3 MMT (Million Metric Tonnes) located in underground rock caverns in Visakhapatnam, Mangaluru, and Padur.

- **Strait of Hormuz:** A narrow waterway between the Persian Gulf and the Gulf of Oman. It is the world's most important oil chokepoint because a huge portion of global oil consumption passes through it.

- **Kharif Sowing:** The planting of crops (like rice and maize) at the beginning of the monsoon season (June–July). The conflict impacts this via fertilizer supply chains.

- **Dialogue and Diplomacy:** A cornerstone of India's foreign policy emphasizing peaceful negotiation over military intervention.

- **Refining Capacity:** The ability of a country to process raw crude oil into usable products like petrol, diesel, and aviation fuel. India is currently a global hub for refining.



- **Main Arguments and Substantive Parts**

- The core thesis of the current discourse is that **geographic distance no longer insulates India from West Asian instability.** * **Energy and Infrastructure Security:** The government emphasizes that attacks on commercial shipping and the obstruction of international waterways are "unacceptable." This highlights India's transition from a passive observer to an active stakeholder in maritime security.

- **Internal Preparedness:** The Prime Minister argues for a "united and unanimous voice," suggesting that domestic political stability is a prerequisite for effective foreign policy during a global crisis.

- **Resource Buffer:** The government points to its SPR and coal stocks as proof of resilience. Increasing SPR from 5.3 to 6.5 MMT is presented as a necessary strategic expansion.

- **Humanitarian Commitment:** The evacuation of over 3.75 lakh Indians underscores the "Diaspora First" approach, where the safety of nearly 10 million NRIs in the Gulf is a primary national interest.



- **Historical Evolution of the Issue**
- **Post-Independence (1947–1990s):** India's policy was largely pro-Arab and ideological, driven by the need for oil and a desire to counter Pakistan's influence in the Islamic world.
- **The 1991 Crisis:** The Gulf War led to a massive Balance of Payments (BoP) crisis in India, highlighting the extreme vulnerability of the Indian economy to West Asian shocks. This led to the creation of the SPR concept.
- **The "Link West" Policy (2014–Present):** Shifted from a purely transactional relationship (oil-for-labor) to a strategic partnership. India now engages deeply with both Israel and the Arab world (de-hyphenation).
- **Modern Maritime Shift:** The recent focus on the "Indo-Abrahamic" blocks and the IMEC (India-Middle East-Europe Economic Corridor) marks the latest evolution, now threatened by the current war.



WEST ASIA WAR'S IMPACT ON INDIA: A COMPREHENSIVE ANALYSIS ON BEHALF OF AXIA IAS ACADEMY

MARITIME SECURITY & CHOKEPOINTS

CRITICAL CHOKEPOINT

- UNACCEPTABLE obstruction of Strait of Hormuz
- Impact on global oil shipping
- Increased risk to Indian commercial vessels

ECONOMIC & ENERGY VULNERABILITIES

ENERGY SECURITY:

- Major source of crude oil
- Risk of supply chain disruption

ECONOMIC VULNERABILITY:

- Import inflation
- Fiscal balance pressure

HUMANITARIAN CHALLENGES

INDIA DIASPORA:

- Nearly 1 crore in Gulf

REMITTANCES:

- Over \$40 billion annually (CRITICAL)

EVACUATION:

- Operation Ajay/equivalent logistics
- Family safety and legal issues

INDIA'S RESPONSE (I): RESOURCE BUFFER

- ▶ **STRATEGIC PETROLEUM RESERVES (SPR):**
 - Increase from 5.3 to 6.5 MMT
 - Oil company reserves separate
- ▶ **FOOD SECURITY:**
 - Kharif sowing preparation
 - Fertilizer arrangements for emergency

INDIA'S RESPONSE (II): PARLIAMENTARY UNITY

- ▶ **UNITED & UNANIMOUS VOICE:** PM Modi's appeal to Parliament
 - Domestic political consensus (Critical)
 - Support from opposition for a coordinated approach

DIPLOMATIC ENGAGEMENT

- **HIGH-LEVEL DIALOGUE:** PM calling West Asian leaders
- **SAFE PASSAGE** for Indian ships
- **DIALOGUE & DIPLOMACY** are solutions
- Multipolar balancing

Centre launches AI skilling drive with Google, YouTube

Part of initiatives unveiled by Ashwini Vaishnaw to boost creative economy; a citizen creator platform, and in-built satellite tuners in television sets for access to DD Free Dish launched

The Hindu Bureau
NEW DELHI

Union Minister Ashwini Vaishnaw on Monday unveiled three new initiatives aimed at strengthening India's media, broadcasting, and digital sector and promoting the "orange economy", or the creative economy.

The creative economy includes industries where economic value is generated primarily from creativity, culture, technology, and intellectual property.

The three initiatives are named the National AI Skilling Initiative in partnership with Google and YouTube through the Indian Institute of Creative Technologies (IICT); MyWAVES, a citizen creator platform on WAVES OTT; and the rollout of advanced Electronic Programme Guide and in-built satellite tuners in television sets for enhancing access to DD Free Dish services.

Key media and entertainment industry representatives, the head of YouTube India along with senior Ministry officials took part in the event.

Underscoring Prime Minister Narendra Modi's vision of democratising tech-



Union Minister Ashwini Vaishnaw says the initiatives will make technology more affordable and accessible. SUSHIL KUMAR VERMA

nology, Mr. Vaishnaw said the initiatives will make technology more affordable and accessible. He said that with in-built satellite tuners and an advanced programme guide, citizens can now access content easily without additional equipment.

He described MyWAVES as a powerful platform for content creators, enabling them to create, upload, and share content.

Referring to the Union Budget announcements, he underlined the government's commitment to promoting the "orange economy" and supporting the creative sector.

dynamic creative economy. Through our collaboration with the Ministry of Information & Broadcasting and IICT, we aim to equip creators and professionals with the skills required to master the tools of the future, leverage AI to tell more compelling stories... expand their reach to new audiences, and play a role in shaping the future of media."

The AI skilling programme will be conducted in two phases - Phase I from March 23 to June 30 2026, and Phase II from July to December 2026.

The first phase will focus on foundational AI learning at scale through Google Career Certificates and Google Cloud Generative AI learning paths. Participants will undergo courses such as AI Essentials, Prompting Essentials, Introduction to Generative AI, and Generative AI Leader Path.

The second phase will involve advanced, project-based specialisation for the creative industry. The curriculum will include modules on the art of storytelling, YouTube best practices, and advanced training using AI tools such as Gemini 3 and Vertex AI.

The Union Minister said under the National AI Skilling Initiative, being implemented with the support of YouTube, about 15,000 youth will be trained without levying any fee.

He spoke about the "Creators' Corner" scheme and urged content creators to actively use Doordarshan and platforms such as MyWAVES to showcase India's rich culture and regional diversity.

Speaking about the partnership's impact, YouTube India managing director Gunjan Soni said: "We believe that AI has the potential to open up remarkable opportunities for India's

- **Key Terms and Explanations**
- **Orange Economy (Creative Economy):** An evolving concept that includes sectors whose value is based on intellectual property, culture, and creativity. Examples include advertising, architecture, arts and crafts, design, fashion, film, and software.
- **Generative AI:** A type of Artificial Intelligence capable of creating new content, such as text, images, or music, based on patterns learned from existing data. *Example: Using Gemini to draft a script or Vertex AI to generate digital art.*
- **WAVES OTT:** A government-backed Over-the-Top (OTT) platform designed to provide a space for citizen-led content, moving beyond traditional broadcasting.
- **DD Free Dish:** A multi-channel Free-to-Air (FTA) direct-to-home (DTH) service owned by Prasar Bharati.
- **Electronic Programme Guide (EPG):** An on-screen menu that provides users with continuously updated menus displaying scheduling information for current and upcoming broadcast programming.
- **In-built Satellite Tuners:** Hardware integrated directly into television sets that allows them to receive satellite signals (like DD Free Dish) without needing an external set-top box.

- **Main Arguments and Substantive Parts**
- The core thesis of these initiatives is the **democratization of technology** to empower the grassroots creator.
- **Skill-Based Empowerment:** The National AI Skilling Initiative aims to bridge the digital divide by training 15,000 youth for free. The argument is that providing high-end technical skills (GenAI) to the youth will future-proof the Indian labor market.
- **Infrastructure Accessibility:** By integrating satellite tuners into TVs, the government argues it is reducing the "entry barrier" for rural and marginalized populations to access information and entertainment.
- **Platform Neutrality and Opportunity:** The "MyWAVES" platform and "Creators' Corner" aim to provide a state-backed alternative to private platforms, focusing on regional diversity and cultural preservation.



- **Historical Evolution of the Issue**

- **Pre-Independence to 1990s:** State-controlled broadcasting (All India Radio and Doordarshan) focused purely on nation-building and public service.
- **1991 Liberalization:** The entry of private satellite channels (Zia, Star) transformed the "viewer" into a "consumer."
- **2004 - Launch of DD Free Dish:** A milestone in providing free digital entertainment to the masses, particularly in "shadow zones" where private cable didn't reach.
- **2015 - Digital India Mission:** Shifted focus toward internet connectivity and digital literacy.
- **Present Day:** Transition from "Consumption" to "Creation." The focus is no longer just on providing content but on enabling citizens to become creators using AI and OTT platforms.

- **Previous Years' Questions (PYQs)**

- **UPSC Mains 2020 (GS 3):** "Introduce the concept of Artificial Intelligence (AI). How does AI help clinical diagnosis? Do you perceive any threat to privacy of the individual in the use of AI in healthcare?"
- **UPSC Mains 2019 (GS 3):** "What are the challenges of the 'digital divide' in India? How can the government leverage technology to ensure inclusive growth?"
- **UPSC Prelims 2022:** Questions regarding "Web 3.0" and "Non-Fungible Tokens (NFTs)" – related to the digital/creative economy.

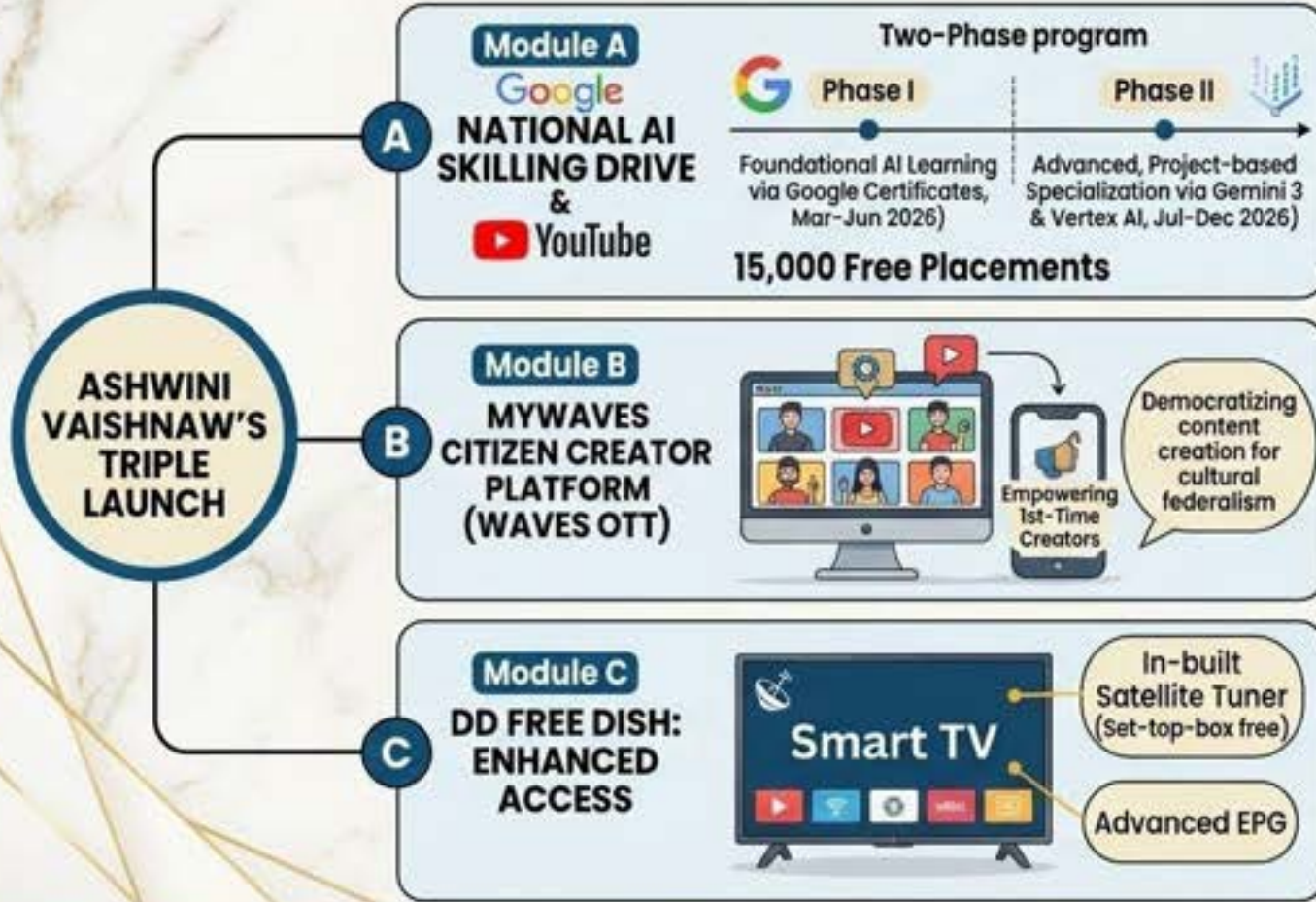


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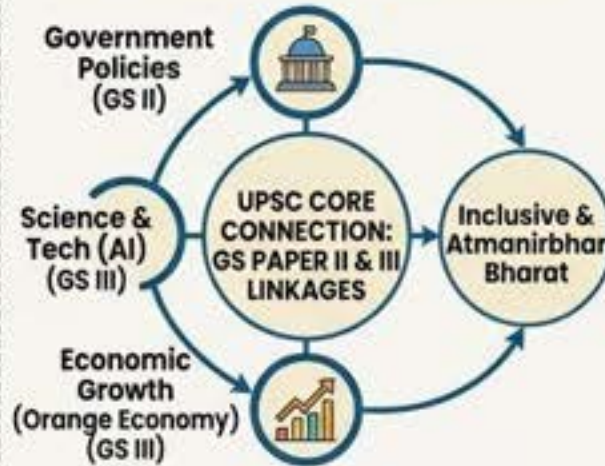
AXIA COMPETITIVE EXAM CENTRE

COMPREHENSIVE UPSC ANALYSIS: Centre's Multi-Faceted Creative Economy & Tech Initiatives (Google, YouTube Partnership).

THE GOVERNANCE & CREATIVE ECONOMY ECOSYSTEM



UPSC CORE CONNECTION: GS PAPER II & III LINKAGES



KEY STRATEGIC TAKEAWAYS

- Democratizing Technology for grassroots,
- Boosting Orange Economy with specialized skills,
- Enhanced Public Service Broadcasting accessibility,
- Nurturing Intellectual Property (IPR) creation.

EXPERT IAS ACADEMY INSIGHTS

WAY FORWARD FOR UPSC ASPIRANTS

1. Monitor skill-drive implementation,
2. Track regional content growth,
3. Analyze regulatory framework for AI content,
4. Connect with Rawls' Distributive Justice.

PYQ CONNECT

- Analyze the ethical challenges of Generative AI (GS IV).
- Analyze technology of challenges of Geneance of generative AI (GS IV).
- Role of technology in inclusive growth (GS III).

UPSC Standards Content

Centre to amend the Foreign Contribution (Regulation) Act

Vijaita Singh
NEW DELHI

The Union government is likely to amend the Foreign Contribution (Regulation) Act in the ongoing session of Parliament session. One of the key changes proposed is the appointment of a "designated authority" to take over, manage or dispose of assets created out of foreign funds by an NGO or association, which has had its FCRA registration suspended, cancelled, or not renewed.

Another proposed amendment is expanding the definition of "key functionary" of an NGO beyond an "office bearer/director" to include directors; partners; trustees; the *karta* (head) of a Hindu Undivided Family; office-bearers or members of the governing body or managing committee of a society, trust, trade union or association; and any other person who has control over or responsibility for the management or affairs of such an organisation.

The amendment also proposes to make key functionaries liable for offences under the FCRA.

Registration under the FCRA is mandatory for an NGO to receive foreign funds. Till now, the 2010 parent Act only had the

The Bill proposes to reduce the maximum imprisonment for FCRA offences from five years to one year

provision to regulate the flow of foreign funds, and not the statutory framework to manage the assets created out of such funds.

The Foreign Contribution (Regulation) Amendment Bill, 2026 also proposes to amend Section 43 of the parent Act, which will require any law enforcement agency or State government to seek prior approval of the Central government for initiation of investigation into FCRA-related complaints.

The Statement of Objects and Reasons of the Bill circulated by Home Minister Amit Shah said that, at present, around 16,000 associations are registered under the FCRA and they receive around ₹22,000 crore annually.

The Bill proposes to reduce the maximum imprisonment for FCRA offences from five years to one year. It also proposes fixed timelines for the utilisation of foreign funds received under the "prior permission" category, unlike the open-ended provision under the 2010 Act.

- **Key Terms and Explanations**

- **FCRA (Foreign Contribution Regulation Act):** A law enacted to regulate the acceptance and utilization of foreign funds by individuals or associations to ensure such contributions do not adversely affect internal security.
- **Foreign Contribution:** Any donation, delivery, or transfer made by a foreign source (currency, security, or articles beyond a certain value).
- **Key Functionary:** A new, broader classification including anyone with "control or responsibility" over an NGO (e.g., Trustees, Partners, or the *Karta* of a Hindu Undivided Family).
- **Designated Authority:** A government-appointed official empowered to manage or dispose of assets (like buildings or equipment) bought with foreign funds if an NGO's license is cancelled.
- **Prior Permission:** A category where an NGO, not yet permanently registered, seeks permission from the Ministry of Home Affairs (MHA) for a specific project/amount from a specific donor.

- **Main Arguments and Substantive Parts**

- The core thesis of the 2026 Bill is to **close regulatory gaps regarding physical assets** and **expand individual accountability**.
- **Asset Management:** Unlike the 2010 Act, which focused on the *flow* of money, the 2026 Bill addresses the *residue* of that money—the assets. The government argues that if a license is revoked for anti-national activities, the assets created from that money should not remain in private hands.
- **Accountability of Leadership:** By expanding the definition of "key functionary," the Bill prevents individuals from hiding behind corporate or trust shells.
- **Centralized Oversight:** Requiring State governments to seek Central approval before investigating FCRA complaints aims to prevent fragmented or politically motivated probes, ensuring a uniform national policy.
- **Rationalization of Punishment:** Interestingly, the Bill proposes reducing maximum imprisonment (from 5 years to 1 year), suggesting a shift toward civil compliance and monetary penalties rather than heavy criminalization for all infractions.

- **Historical Evolution of the Issue**

- **1976 (Emergency Era):** The original FCRA was enacted during the Emergency to prevent foreign interference in Indian politics through "proxy" individuals or associations.
- **2010 (The Overhaul):** The 1976 Act was repealed and replaced to tighten the net around NGOs, introducing a 5-year renewal cycle for registrations.
- **2020 (The Tightening):** Significant amendments banned the sub-granting of funds (NGO-to-NGO transfers), capped administrative expenses at 20%, and made Aadhaar mandatory for office bearers.
- **2026 (The Current Proposal):** Moves from regulating the *transaction* to regulating the *entity's infrastructure and leadership* responsibility.

- **Previous Years' Questions (PYQs)**

- **Mains (2021, GS2):** "Can Civil Society and NGOs present an alternative model of public service delivery to benefit the common man? Discuss the challenges of this model."
- **Mains (2015, GS2):** "Examine the role of foreign funded NGOs in obstructing the development activities in India."
- **Prelims (2015):** Questions regarding the ministry that monitors FCRA (Ministry of Home Affairs).





KEY CHANGES (2026 Proposal)



ASSET MANAGEMENT

Appointment of "Designated Authority" to oversee assets (buildings, equipment) created out of foreign funds for suspended/cancelled licenses.



BROADER ACCOUNTABILITY

"Key Functionary" defined beyond "Office Bearer". Includes Trustees, Partners, Karta (HUF), anyone with control.



INVESTIGATION OVERSIGHT

State govts./agencies must seek Central govt. prior approval before initiating FCRA investigations.



UTILIZATION TIMELINES

Fixed timelines for utilizing foreign funds under "prior permission" category.



PUNISHMENT

Reduction of max. imprisonment from 5 years to 1 year.

DECODING FCRA AMENDMENTS 2026: CSE ANALYSIS



WAY FORWARD

Balanced regulation; graduated oversight; digital integration for transparency; independent review mechanisms.

UPSC CSE DIMENSION ANALYSIS



INTERNAL SECURITY (GS Paper 3)

Prevents misuse of foreign funds for destabilizing activities; manages long-term influence of created assets.



GOVERNANCE (GS Paper 2)

Enhances transparency in NGO funding and management; standardizes regulatory processes.



SOCIETAL IMPACT

Ensures foreign-funded services align with national interest; potentially impacts grassroots development if not balanced.



LEGAL & ETHICAL

Checks & balances vs. potential overreach; liability and due process; ethical questions on asset takeover.



A Hudsonian godwit in the Monomoy National Wildlife Refuge, Massachusetts, U.S. [APF](#)

Hope builds for nations to save bird that flies 30,000 km

Agence France-Press

Chasing an endless summer, one shorebird species undertakes a gruelling annual journey from the Arctic to the tip of South America and back -- a feat increasingly fraught with peril.

The Hudsonian godwit (*Limosa haemastlica*) is one of the world's most remarkable travellers, but its population has plunged 95% in four decades due to a complex mix of environmental changes across multiple countries.

It is one of 42 species proposed for international protection at a meeting of parties to the UN Convention on the Conservation of Migratory Species (CMS) that starts in Brazil on March 23.

Iconic creatures like the snowy owl -- of *Harry Potter* fame -- striped hyena and hammerhead shark are also on the list deemed in danger of extinction and needing conservation by the countries they pass through.

The Hudsonian godwit (*Limosa haemastlica*) is one of the world's most remarkable travellers, but its population has plunged 95% in four decades due to a complex mix of environmental changes

Migratory birds are facing "rapid and dramatic declines," said Nathan Serner, an ecologist and ornithology professor at the University of Massachusetts Amherst who has studied the Hudsonian godwit for 20 years.

Scientists are still unravelling the mysteries of the shorebird, which can fly up to 11,000 km in one stretch without stopping to eat, drink or sleep.

And it is only part of the 30,000 km that the godwit travels every year from their breeding grounds in the Arctic to Patagonia where they spend the southern summer.

In order to do this "epic flight," they need "really predictable, abundant food resources" at every step of the journey, Serner told *AFP*.

That predictability is crumbling. In the Arctic, shifting spring timing attributed to climate change has created a mismatch between when chicks hatch and the peak availability of insects they feed on.

One of the puzzles Serner is currently working on is why Hudsonian godwits have begun migrating later by six days than they did a decade ago.

Something "has either disrupted the cues that they use to time their migrations or their ability to successfully and rapidly prepare for the migration," he said.

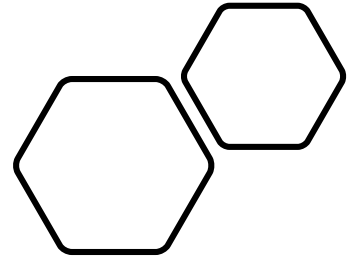
In southern Chile, a boom in salmon and oyster farming has led to a build-up of infrastructure and the presence of people in the intertidal zones where they feed. And in the United States, changes in farming practices are making the shallow water wetlands that the godwits rely on rarer and less predictable -- meaning they spend more time looking for a place to stop and feed.

"I think that is emblematic of lots of species, that most species can respond to one kind of change, but not a whole bunch of them all at the same time," said Serner.

"Climate change is taking a heavy toll on species that rely on a 'geological clock' for their survival; many are disappearing," Rodrigo Agostinho, president of Brazil's environmental agency (IBAMA) said.

These are some of the issues CMS parties will tackle at their meeting in Brazil's biodiversity-rich Pantanal, one of the world's most important global meetings for wildlife conservation.

These countries are legally obliged to protect species listed as at risk of extinction, conserve and restore their habitats, prevent obstacles to migration and cooperate with other range states.



- **Key Terms and Explanations**

- **Hudsonian Godwit (*Limosa haemastica*):** A large shorebird known for extreme endurance. It performs "trans-hemispheric" migration, traveling approximately 30,000 km annually.
- **UN Convention on the Conservation of Migratory Species (CMS):** Also known as the **Bonn Convention**, it is an intergovernmental treaty under the UNEP. It provides a global platform for the conservation and sustainable use of migratory animals and their habitats.
- **Trophic Mismatch:** An ecological phenomenon where the timing of a consumer's breeding (e.g., godwit chicks hatching) no longer aligns with the peak availability of their food source (e.g., Arctic insects) due to climate-induced shifts.
- **Intertidal Zones:** The area where the ocean meets the land between high and low tides. These are crucial "refueling stations" for shorebirds but are under pressure from aquaculture and human encroachment.
- **Geological Clock:** A metaphorical term referring to the innate, evolutionary timing migratory species use to navigate and breed, which is now being disrupted by rapid anthropogenic climate change.

- **Main Arguments and Substantive Parts**

- **The Crisis of Decline:** The godwit population has plummeted by 95% in 40 years. This suggests that the species is at a "tipping point" where natural resilience is exhausted.
- **The Multi-Stressor Hypothesis:** The article argues that while species can often adapt to one environmental change, the cumulative impact of climate change in the Arctic, habitat loss in the US, and industrialization in South America is insurmountable.
- **The Connectivity of Ecosystems:** The survival of the godwit is not a national issue but a "flyway" issue. A failure to protect a single wetland in the US or a flat in Chile breaks the entire 30,000 km chain.
- **Predictability vs. Chaos:** Migration relies on "predictable abundance." Human activity is replacing ecological reliability with environmental volatility.

- **Historical Evolution of the Issue**

- **Pre-1970s:** Migratory birds were largely managed through bilateral treaties (e.g., the 1916 Migratory Bird Treaty between the US and Canada). Global coordination was minimal.
- **1979 (The Bonn Convention):** The CMS was adopted, recognizing that migratory species are a shared resource and require multilateral cooperation.
- **1980s-2000s:** Focus shifted from overhunting to habitat loss. The "flyway" concept gained traction in conservation circles.
- **2010s-Present:** The emergence of "Climate-Induced Phenological Shifts" (timing mismatches) became the dominant threat, moving the crisis from local land-use issues to a global atmospheric challenge.

- **All Previous Years' UPSC Questions**

- **Prelims (2023):** Questions on the CMS (Bonn Convention) and specific migratory species.
- **Mains (2018, GS III):** "What is wetland? Explain the Ramsar concept of 'wise use' in the context of wetland conservation."
- **Mains (2020, GS III):** "How will the decline in biodiversity potentially affect the ecosystem services?"



HOPE BUILDS: THE 30,000 KM JOURNEY OF THE HUDSONIAN GODWIT – A UPSC ANALYSIS BY AXIA IAS ACADEMY

KEY TERMS

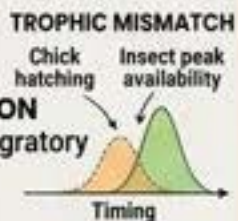


Marathon traveler

HUDSONIAN GODWIT
Marathon traveler

CMS / BONN CONVENTION
International treaty for migratory species conservation

TROPIC MISMATCH
Marathon traveler Climate-induced disconnect



MAIN ARGUMENTS & EVIDENCE

- POPULATION PLUNGE:** 95% decline over 40 years.
- CUMULATIVE STRESSORS:** Multiple changes simultaneously.
- ECOSYSTEM CONNECTIVITY:** Survival depends on the entire flyway chain.

HISTORICAL EVOLUTION



GLOBAL FLYWAY: 30,000 KM ANNUAL JOURNEY



CHALLENGES (MULTIDIMENSIONAL)



INTERNATIONAL
Development needs vs. conservation



ECONOMIC
High-value agriculture conflicts



SOCIAL
Local community resource use



LEGAL
Enforcement and compliance issues

UPSC CSE SYLLABUS LINKAGES

GS III:
Environment Ecology (Biodiversity Conservation)

GS II: International Institutions (CMS/Bonn)

GS IV:
Environmental Ethics

ESSAY:
Interdisciplinary themes

WAY FORWARD

- FLYWAY PLANNING:** Protect entire migration corridors.
- COMMUNITY-LED:** Incentivize bird-friendly practices.
- DATA-DRIVEN:** Invest in better scientific monitoring.

Path ahead for Nepal's new leadership

After securing a historic mandate in Nepal's polls, Balendra Shah and the RSP face the task of navigating the West Asia conflict and managing ties with India, China and the U.S. While capitalising on old-guard fatigue proved an effective electoral strategy, the new leadership now faces a test in international relations

WORLD INSIGHT

Bibek Raj Kandel

In the noisy, crowded landscape of Nepali politics, the rise of Prime Minister-designate Balendra Shah and his party, the Rastriya Swatantra Party (RSP), represents a rare political anomaly. While veterans of the 2008 republic traded barbs, the rapper-engineer-turned-mayor bypassed traditional campaigning for a "monastic" silence. His victory in Nepal's post-Gen Z parliamentary election on March 5 secured a historic mandate for an alternative force he joined a mere six weeks before the polls. Throughout the campaign, Shah spoke for barely thirty minutes, avoided media interviews and notably never once asked for a vote.

His unapologetic critiques of the political establishment during his tenure as Kathmandu's mayor, mirrored a generation exhausted by stale ideological party politics. In a nation with a median age of twenty-five, Shah's reputation as a disciplined, clean reformist promising better governance became a viral mandate. His calculated silence mirrored these frustrations, positioning him as the ultimate outsider for an electorate eager for results.

Beyond domestic politics

While capitalising on domestic old-guard fatigue served Shah as a winning electoral strategy, Nepal's hard geopolitical reality remains stubbornly unchanged. In Nepal, political shifts rarely remain purely domestic, often prompting debates about foreign influence given its geography wedged between the rivalries of India and China.

Yet, Shah, however has sought to counter this by projecting an image of a staunch nationalist. As mayor, his symbolism was deliberate: hanging a "Greater Nepal" man in his office as a



Balendra Shah with children and supporters during a door-to-door election campaign in Nepal. AFP

briefly banning Indian films. Simultaneously, he signaled caution toward Beijing by dropping a China-backed industrial park from his election manifesto. By distancing himself from large-scale geopolitical projects, Shah reframed the narrative, asserting a sovereignty that felt local, visible, and unapologetically independent.

Balancing ties with India and China

Historically, Nepal's politics followed rigid ideological scripts. The Nepali Congress, the country's oldest liberal force, leaned toward Delhi, while communist factions like CPN-UML maintained proactive affinities with Beijing. And at times, the ideological rhetoric from Kathmandu stretched far beyond the Himalayas, from debates over Venezuela's regime change to contentious political statements on the Ukraine war, issues largely peripheral to Nepal's own priorities. Under Shah, this era of predictable ideological signaling may finally be fading. His minimalist approach and by speaking less about the world's ideological battles, Shah's personality itself can be potent strategic

explicitly hinting at "shared security goals."

But the first "baptism by fire" for the Shah administration may well lie in the volatile West Asia. With millions of Nepalese migrants' lives and critical energy lifelines tied to the Persian Gulf caught in an escalating US-Israel-Iran War, India's logistical depth as a regional first responder offers an indispensable synergy for contingency planning to Kathmandu. This is where Balen's nationalist doctrine must meet the hard reality of strategic pragmatism. The new leadership remains untested in conventional diplomacy.

An opportunity for India

This moment offers a rare opening for New Delhi to recalibrate. India must move past the coercive shadow of the 2015 blockade and what is widely perceived in Kathmandu as outdated impulse for political micromanagement. New Delhi must recognise this transition as a new opening for modern partnership that respects the domestic rise of 'Nepal First' politics. Shah's mandate mirrors India's own tectonic shift in 2014; in Shah, Nepal has found its "strongman" archetype, a leader whose personal charisma and promise of technocratic reform have dismantled a decades-old establishment.

In the end, Nepal's geopolitical reality remains unchanged even as its politics transform at home. India's proximity will always matter most. China's influence will remain structural reality, and world powers like the U.S. will continue to pursue its strategic interests with renewed rigor. Ultimately, Nepal's voters were not adjudicating between global strategies, but seeking domestic renewal. For Balendra Shah and the RSP, bashing the "old guard" is a potent domestic strategy, but it carries zero currency in the cold-eyed theater of international relations.

(Bibek Raj Kandel is an analyst and AsiaGlobal Fellow at the University of Hong

THE GIST

▼ In the landscape of Nepali politics, the rise of Prime Minister-designate Balendra Shah and the RSP, represents a rare political anomaly. His reputation as a disciplined, clean reformist promising better governance became a viral mandate

▼ Shah's personality itself can be potent strategic asset to Nepal, but it is immediately replaced by a different kind of geopolitical pressure that needs sustained diplomatic communique

- **Key Terms and Explanations**
- **Rastriya Swatantra Party (RSP):** A relatively new political entity in Nepal that positions itself as an alternative to traditional ideological parties (like the Nepali Congress or Maoists). It emphasizes transparency and technocratic governance.
- **"Monastic" Silence:** A metaphorical term used to describe a campaign strategy where a candidate avoids traditional media bickering and aggressive rhetoric, letting their past actions (like municipal work) speak for them.
- **Akhand Bharat vs. Greater Nepal:** "Akhand Bharat" (Undivided India) refers to a cultural/historical map displayed in India's Parliament. In response, some Nepali nationalists use the "Greater Nepal" map, which includes territories ceded to the British after the 1816 Sugauli Treaty.
- **White Elephant:** An asset that cost a lot of money to build and maintain but provides little to no economic profit (e.g., the Pokhara International Airport).
- **Roti-Beti Sambandh:** Literally "Bread and Daughter relationship." It signifies the deep-rooted socio-cultural and economic ties between India and Nepal, characterized by cross-border marriages and shared livelihoods.
- **Strategic Pragmatism:** A foreign policy approach where decisions are made based on practical national interests and ground realities rather than rigid ideology or emotions.

- **Main Arguments and Substantive Parts**
- **The Rise of the "Outsider":** The core thesis is that Nepal has undergone a "Gen Z" political revolution. Voters have rejected the "old guard"—leaders who fought for the republic in 2008 but failed to deliver governance. Balendra Shah represents a shift from **ideology to delivery**
- **Sovereignty as Local Symbolism:** The new leadership uses "performative nationalism" (e.g., banning Indian films or maps) to signal independence to the domestic audience, creating a "Nepal First" identity that isn't beholden to Delhi or Beijing
- **The Infrastructure Trap:** Nepal is caught between Chinese-funded infrastructure (which India is hesitant to support via air routes or trade) and the need for economic viability. The underutilization of projects like the Pokhara Airport serves as a case study for this friction
- **The India-Nepal Recalibration:** The article argues that India has a "rare opening" to move away from its historical role as a "micro-manager" of Nepali politics and instead engage with Nepal as a modern, sovereign partner

- **Historical Evolution of the Issue**
- **Treaty of Sugauli (1816):** Established the current boundaries of Nepal and defined its relationship with British India.
- **1950 Treaty of Peace and Friendship:** The foundational (though often contested) document governing India-Nepal relations, allowing for open borders and national treatment of citizens.
- **2008 Abolition of Monarchy:** Nepal transitioned from a Hindu Kingdom to a Secular Federal Republic, led by the "old guard" parties (Maoists, UML, Congress).
- **2015 Constitutional Crisis and Blockade:** A major turning point where Nepal's new constitution led to protests in the Terai and a subsequent border blockade, severely straining ties with India and pushing Nepal toward China.
- **2023-2026 The Rise of the RSP:** The emergence of Balendra Shah and the RSP marks the third phase of Nepali politics—moving from Monarchy to Ideological Republic to **Technocratic Nationalism**.

- **Previous Years' UPSC Questions**
- **2021 (GS II):** "India's 'Neighbourhood First' policy has been a successful attempt to re-engage with its neighbours, but it faces stiff challenges from China." Discuss in the context of Nepal.
- **2017 (GS II):** "The question of India's energy security is very much linked with its hydropower cooperation with Nepal." Elaborate.
- **2014 (GS II):** "With respect to the South Asian region, is the 'Gujral Doctrine' still relevant today?"



AXIA IAS ACADEMY: COMPREHENSIVE ANALYSIS - NEPAL'S NEW LEADERSHIP & GEOPOLITICAL PATH

NAVIGATING THE INDIA-CHINA CRUCIBLE

NEPAL'S 'TECHNOCRATIC NATIONALISM' (The Rise of Balendra Shah)



Anti-Establishment Mandate

- Anti-Establishment mandate, endorsement to Nepals



Focus on Governance over Ideology

- Rescusion policies in advoning Governance over Ideology



Youth Demographic Demand

- Government. on youthern ratime developepents
- "Monastic" silence



"Monastic" Silence Strategy

- Mayor, fan and Balendra Shh. and + mayor



FOREIGN POLICY: THE 'PERFORMATIVE' STANCE



Indian Film Ban

- Greater Mepal Map: dos



Canceling China-backed Industrial Park

THE GEOPOLITICAL SQUEEZE: INDIA & CHINA



WAY FORWARD: The strategic pragmatism

From Symbols to Statesmanship

- Detailed alizing Statesmanship and enhancez more multivpelief and attendment to to conortantar relations

Operationalizing White Elephants

- Multimizr a. nndertromentig White Elephants to operatozing focal hydropower nexus

India-Nepal Hydropower Nexus

- India-Nepal hydropower nexus, comnpetasts and reamends of project

Trilateral Cooperation Potential

- Trilateral cooperation in strategic pragmatism



New way helps superconductor break temperature record

While superconductivity is easy to achieve at extremely low temperatures, bringing it to room temperature is a holy grail of physics researchers. Here, scientists have achieved much higher temperatures in recent years, again 50 K, but only by applying pressure equivalent to that near the center of a

Topicalize Pressure

For more than a century, physicists have treated the phenomenon of superconductivity as a mystery. They've known that it occurs at very low temperatures, but they've struggled to understand how the world's greatest and most energy-efficient conductor, the superconductor, works. The highest temperature at which a material becomes superconducting is a crucial parameter: For a long time, that record was 138 K, then other materials became superconducting at even lower temperatures, but only under conditions of extreme pressure.

In a study published in *Proceedings of the National Academy of Sciences*, researchers at the University of Toronto, Canada, reported using the technique of high-pressure cells, and under very low temperatures, they used a technique called pressure-annealing to achieve this.

The study first looked at a material that had about 10% of the same material as the material that the researchers used. They found that the material's superconductivity at 138 K, which is the highest temperature at which a material has been shown to superconduct.

Superconductivity Superconductors that work at room temperature and normal pressure could use, for example, to store energy more efficiently, or to create a more efficient power grid. They could also be used to create more efficient power grids, more efficient power grids, more efficient power grids, and other technologies. The study was led by physicist Cheng-Li Chang and Chang-Ping Liu at the University of Toronto.

The study was made possible by the use of a high-pressure cell, which is a device that can create pressures up to 100 GPa, or 100 billion times the atmospheric pressure. The study was led by physicist Cheng-Li Chang and Chang-Ping Liu at the University of Toronto.

The authors carefully studied high-pressure superconductors and reported that the material's superconductivity was 10% higher than that of the material that the researchers used. They also reported that the material's superconductivity was 10% higher than that of the material that the researchers used.

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Cheng-Li Chang and Chang-Ping Liu at the University of Toronto.

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Pressure

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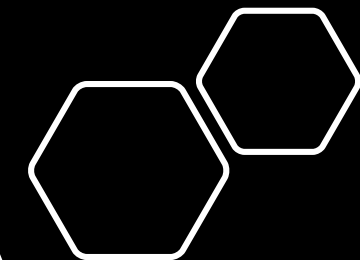
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- **Key Terms and Explanations**

- **Superconductivity:** A physical property where a material allows electricity to flow with **zero resistance**. Below a certain "critical temperature" (T_c), the material also expels magnetic fields (Meissner Effect).
- **Ambient Pressure:** The standard atmospheric pressure we experience on Earth's surface. Most high-temperature superconductors currently require pressures similar to those at the Earth's core to function.
- **Pressure-Quench Protocol (PQP):** A process where a material is subjected to extreme pressure, cooled to near absolute zero, and then the pressure is rapidly released. This "locks" the high-pressure molecular structure in place.
- **Diamond Anvil Cell (DAC):** A high-pressure device used to compress small samples of materials between two diamonds to simulate extreme environments.
- **Hg1223 (Mercury Barium Calcium Copper Oxide):** A complex "cuprate" (copper-oxide) ceramic known for having one of the highest transition temperatures at room pressure.
- **Filamentary vs. Bulk Superconductivity:**
 - **Filamentary:** Superconductivity occurs only in tiny "threads" or paths; it cannot carry heavy loads.
 - **Bulk:** The entire volume of the material superconducts, allowing for industrial-scale power transmission.

- **Main Arguments and Substantive Parts**

- The core thesis of the recent breakthrough is that **structural memory** can be used to bypass the need for constant extreme pressure.
- **The Record Break:** Researchers raised the superconducting temperature of Hg1223 by 18°C at ambient pressure, reaching approximately -122°C. While still cold, it breaks a plateau held since 1993.
- **The Technique:** Instead of seeking a new "miracle" chemical compound, the team focused on "trapping" a high-pressure state using PQP. By cooling the material to -269°C before releasing pressure, they prevented the atoms from "relaxing" back to their low-pressure state.
- **Internal Strain as a Proxy:** X-ray diffraction showed that the "quenched" material contained internal defects and strain. These defects mimic the effect of external pressure, acting like internal springs that keep the lattice compressed.
- **Evidence of Bulk Property:** Tests confirmed that 78% of the material was superconducting, proving it is a "bulk" effect capable of carrying high currents, rather than a superficial one.

- **Historical Evolution of the Issue**

- **1911 (Discovery):** Heike Kamerlingh Onnes discovers superconductivity in mercury at -269°C (using liquid helium).
- **1986-1987 (The High-Tc Revolution):** Bednorz and Müller discover lanthanum-based cuprates. Shortly after, **Ching-Wu Chu** synthesizes YBCO, which superconducts above the boiling point of liquid nitrogen (-196°C). This was the "**Woodstock of Physics.**"
- **1993:** The material Hg1223 sets a record of -140°C at ambient pressure.
- **2015-2023 (The Hydride Era):** Scientists achieve superconductivity near room temperature (e.g., -13°C) but only under pressures of millions of atmospheres.
- **Recent Controversies (2020-2023):** Claims by Ranga Dias (Retracted) and the LK-99 (Lead-apatite) saga lead to skepticism in the field regarding data integrity.
- **Present:** The PQP method offers a credible, reproducible pathway to "stabilize" high-pressure states for ambient use.

- **Previous Years' Questions (PYQs)**

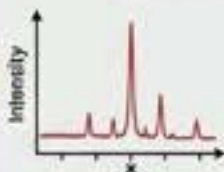
- **UPSC Mains (2017):** "Give an account of the growth and development of nuclear science and technology in India. What is the advantage of fast breeder reactor programme in India?" (Theme: Frontier S&T).
- **UPSC Prelims (2013/2018):** Questions on the properties of Graphene/Superconductors and their applications.
- **UPSC Mains (Essay):** "Science and technology is the panacea for all growth, but it must be tempered with ethics."



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UPSC CSE PREPARATION - S&T EXCELLENCE

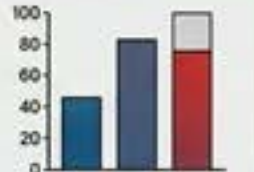
SCIENTIFIC VERIFICATION



X-RAY DIFFRACTION



MEISSNER EFFECT



BULK SUPERCONDUCTIVITY (78%)

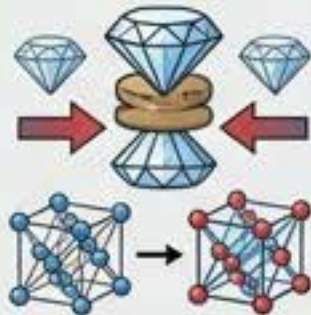
Syllabus Linkages: GS Paper 3: Science & Tech (S&T), Energy, Infrastructure

Key Themes: S&T in Everyday Life, Energy Efficiency, Ethical Data

NEW SUPERCONDUCTIVITY BREAKTHROUGH: BREAKING THE TEMPERATURE PLATEAU

PRESSURE-QUENCH PROTOCOL (PQP) for Hg1223

1. APPLY EXTREME PRESSURE (up to 30 GPa)



1. APPLY EXTREME PRESSURE

2. COOL TO CRYOGENIC



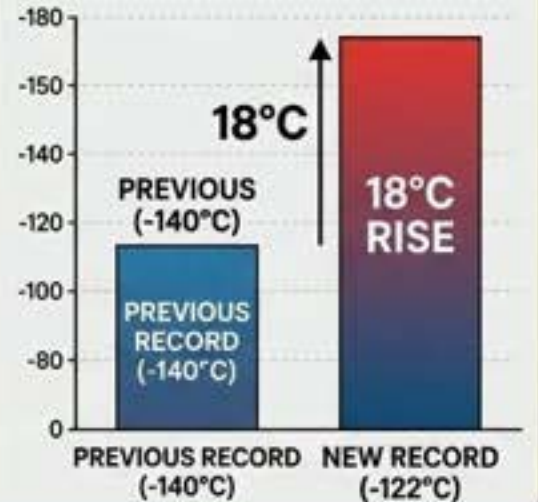
2. COOL TO CRYOGENIC (near absolute zero -269°C)

3. RAPID PRESSURE RELEASE



TRAPPED METASTABLE STRUCTURES

AMBIENT PRESSURE T_c COMPARISON



MULTIDIMENSIONAL ANALYSIS



ECONOMIC

- Trillion-dollar opportunity for India
- Eliminating T&D Losses
- Maglev & MRI potential



INTERNATIONAL SOCIAL

- Global S&T Race
- Energy Security patents
- Cheaper Healthcare
- Portability



GEOPOLITICAL

- Energy Independence
- Resource Strategy (Mercury/Oxides)



ETHICAL

- Scientific Integrity
- Reproducibility (Dias/LK-99)



LEGAL

- IP & Patent Battles over Quenching

MODEL ANSWERS FOR PYQs

Q: Potential transformation of room-temp superconductors for shampling messourer techniqy. (250-words)

Ans: Energy revolution, frictionless transport, cheaper MRI. In maintainnce pressurion, temperature suctors...

Challenges: Stability, toxicity, scale-up, and nconectivity and alation rates.

Nepal's political shift opens a strategic window for India

The new government in Nepal extends an opportunity to fashion a forward-looking bilateral relationship

K.V. Rajan
Atul K. Thakur

The election results in Nepal have been described as a political earthquake. There has been an emphatic and comprehensive rejection of old leaders and established parties. A younger generation of professionals and tech savvy figures, enjoying the support of Gen Z activists is set to take over.

Challenges ahead

By giving the Rastriya Swatantra Party (RSP) a two thirds majority, Nepali voters have granted Balendra Shah and his government, a powerful mandate for Nepal's complete transformation. It now has a huge responsibility to answer wide-ranging expectations—enough jobs for the youth, reversing the migration for

work abroad, stimulate economic growth, and ensure good governance. It needs to be noted, however, that while voters have demonstrated their impatience with the old order and its decades- old insensitivity to their aspirations, this is not a positive vote for a clear-cut new agenda for reform, political or economic, since it was never spelt out and placed before them.

There is a real possibility of frustration and disillusionment that the new government will have to deal with as it settles down. The first warning shots were fired by the caretaker Prime Minister Sushil Karki even before the election, when she reminded the political class that the agitations of September 2025 had erupted because of the frustrations of people insisting on good governance, and a recurrence was inevitable if the situation lapsed into the same old pattern.

Hopefully the people of Nepal will give

the new leaders enough time to address the country's problems.

Restructuring India-Nepal ties

For now, Nepal deserves every encouragement possible. India has been quick to extend it, without being loud or patronising. India has not been an issue during the election campaign. Its relationship with Nepal in recent years has focused on the right priorities – development, infrastructure, digital connectivity, energy. It has played its cards well and can continue to capitalise on the existing goodwill as the new leaders in Nepal seek to respond to development needs of the people.

Restructuring of the India-Nepal relationship has been long overdue. For far too long it has been trapped in the shadows of the legacy of British India days. Hopefully India and Nepal will seize

every opportunity to fashion a forward-looking relationship based on today's realities and the immense potential for expanding cooperation. For this it will be necessary for policy makers on both sides to discard old mindsets, address long standing irritants with fresh approaches, and prioritise people-centric policies which can be delivered to keep pace with people's expectations and needs.

India also needs to look at the recent developments in Nepal as part of a wider regional phenomenon since happenings in Bangladesh, Sri Lanka and elsewhere also fall into the same pattern—agitations led by frustrated youth incidentally toppling pro-India political figures, demanding faster development and better governance. Labeling new political leaders being thrown up everywhere as anti-India just because of the legacies of the past does not seem justified, as seen from the pragmatic readiness shown in Bangladesh and Sri Lanka to cooperate with India, by parties and leaders once seen as unfriendly. Nepal could be a good partner for India in the evolving geopolitical scenario, if both countries try seriously to fashion a clear cut sub-regional strategy for rapid growth.

(K.V. Rajan is former Indian Ambassador to Nepal and Atul K. Thakur is a policy professional. They are the authors of 'Kathmandu Chronicle: Reclaiming India-Nepal Relations'. Views are personal.)

THE GIST

▼
The people of Nepal have granted Balendra Shah and the RSP a powerful mandate for Nepal's complete transformation. The government now faces the challenge of addressing the issues of unemployment and providing good governance

▼
India has been quick to extend encouragement to the new leadership. Hopefully India and Nepal will seize every opportunity to fashion a forward-looking relationship based on today's realities

- **Key Terms and Explanations**

- **Rastriya Swatantra Party (RSP):** A relatively new political entity in Nepal that rose to prominence by positioning itself against the traditional "syndicate" of older parties. It draws its strength from urban professionals and the youth.
- **Gen Z Activism:** Referring to the demographic born between the late 1990s and early 2010s. In Nepal, this group is driving a shift away from ideological "isms" toward performance-based politics.
- **Forward-Looking Bilateralism:** A diplomatic approach that moves away from historical grievances and colonial-era treaties to focus on modern needs like digital economy, clean energy, and climate resilience.
- **Sub-regional Strategy:** Cooperation involving a smaller group of neighboring countries (like BBIN—Bangladesh, Bhutan, India, Nepal) to enhance connectivity and trade, bypassing the stagnation of larger blocs like SAARC.
- **Legacy of British India:** Refers to the 1950 Treaty of Peace and Friendship and other arrangements that some in Nepal view as unequal or reflective of an era when India acted as a "big brother" or successor to British colonial interests.

- **Main Arguments and Substantive Parts**

- **The Democratic "Earthquake"**

- The core thesis is that Nepal has undergone a fundamental structural shift. The 2025-26 electoral cycle represents a "comprehensive rejection" of the old guard. The mandate for the RSP is not just for a change in personnel, but a demand for a **state transformation**.

- **The Burden of Expectations**

- The new government faces a "strategic window" that is also a "danger zone."

- **The Mandate:** Two-thirds majority for Balendra Shah's government.

- **The Risk:** The vote was more an "anti-establishment" outcry than a "pro-reform" endorsement. Without a clearly articulated policy roadmap, the initial euphoria could quickly turn into frustration if jobs aren't created and migration isn't curbed.

- **India's Strategic Quietude**

- A significant shift in India's diplomacy is noted: India remained neutral and non-interfering during the elections. By focusing on **infrastructure (hydroelectric power, petroleum pipelines)** and **digital connectivity**, India has built a reservoir of goodwill that transcends partisan politics in Kathmandu.



- **Historical Evolution of the Issue**
- **1950 Treaty of Peace and Friendship:** The foundational (yet controversial) document governing ties; often criticized by Nepali nationalists as infringing on sovereignty.
- **1990s - 2006:** Nepal's transition from Absolute Monarchy to Constitutional Monarchy, and the subsequent Maoist insurgency.
- **2015 Constitutional Crisis:** The promulgation of Nepal's new constitution led to the "Madhesi Protests" and a subsequent "blockade." This was a low point in ties, pushing Nepal closer to China.
- **2020 Map Dispute:** Tensions peaked over the Kalapani-Limpiyadhura-Lipulekh territories.
- **2023-2026:** A pivot toward "Connectivity and Energy." India began importing Nepali power, and the "Neighborhood First" policy became more delivery-oriented than rhetoric-heavy.

- **Previous Years' Questions (PYQs)**
- **UPSC Mains 2021:** "India's 'Neighborhood First' policy... seems to have come under cloud. Discuss with examples."
- **UPSC Mains 2016:** "The protests in Nepal regarding the new Constitution... have created a rift in India-Nepal relations. Discuss."
- **UPSC Prelims 2020:** Questions regarding the Lipulekh pass and Kalapani territory.



DEBUNKING CLIMATE SKEPTICISM: A UPSC PERSPECTIVE

1. SKEPTICAL CLAIM vs. SCIENTIFIC REALITY

Claim ?

Temperature is Intensive

Argo Gaps

Circular Calibration



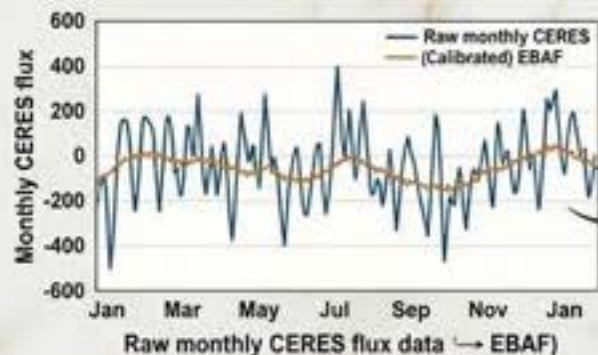
Reality ✓

OHC is Extensive

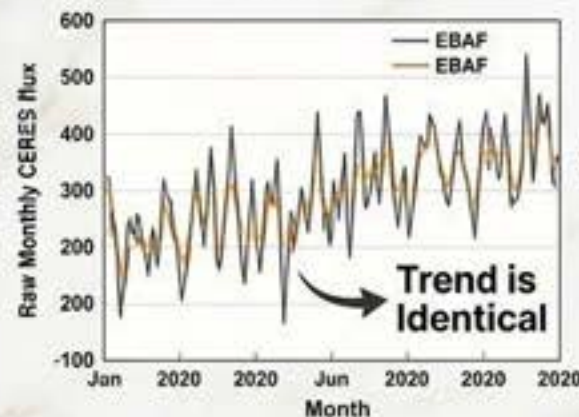
Redundancy & Verification

Raw Trend Unchanged

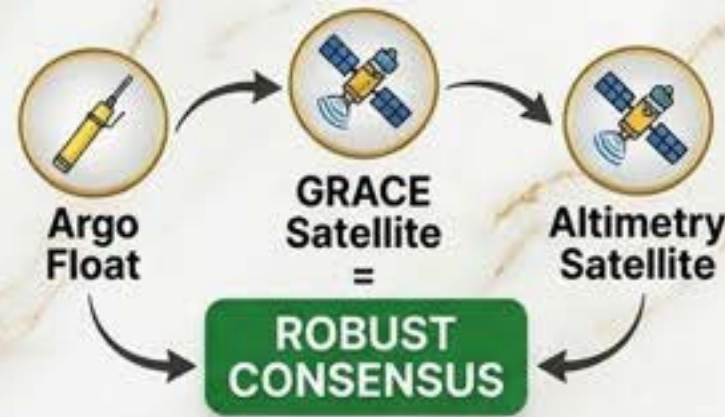
3. CERES CALIBRATION & TRENDS



3. CERES CALIBRATION & TRENDS



2. POWEY (TRIANGULATION)



Argo (Expansion) + GRACE (Added Mass) = Altimetry (Sea Level Rise)



4. UPSC STRATEGY & CREDIBILITY

- Consilience of Evidence
- Falsifiability
- Precautionary Principle

UPSC RELEVANCE

- GS1** **GS3** **GS4** **Essay**

ABSTRACT

How do we know climate science is credible?

On what aspects did a recent paper in the *Science of Climate Change* journal question the Foundations of climate change, and how robust are its arguments?

Vaniderson Nakamb

In March 08, a journal called *Science of Climate Change* published a paper calling into question the foundations of climate change. The paper concluded that after accounting for some sources of uncertainty in the climate data, the correct changes in the ocean's heat content and Earth's energy imbalance are practically zero. In other words, the oceans are not warming, Earth's surface is not accumulating heat, and global warming is not happening.

The paper is more sophisticated than it seems at first sight and makes strong claims with different levels of merit.

There is value in addressing them in detail because doing so reveals how we know that climate science is credible.

How are changes in ocean heat measured?

The paper's foremost claim is that temperature is an extensive property - meaning its value does not depend on the mass of the material - and that scientists cannot average it in a meaningful way when estimating the amount of heat oceans hold.

Scientists have already addressed this claim. First, by the same logic, we cannot measure average air temperature, average atmospheric pressure, average sea level rise, and so on.

Second, and more importantly, scientists do not just measure and average the temperatures of different water bodies to determine the heat content. They also calculate the thermal energy. Temperature is nothing but the average kinetic energy of the atoms or molecules in a body. And thermal energy is the total kinetic energy of the water molecules. This is an extensive quantity - it depends on the number of molecules - and can be averaged. Its value has been increasing over time as well, and it also clarifies that the way scientists are handling the temperature data is correct.

Next, the paper takes issue with the Argo floats data. According to the U.S. National Oceanic and Atmospheric Administration, Argo is an international program that collects information from inside the ocean using free drifting floats called profiling floats. These floats drift with the ocean currents and move up and down between the surface and the total water level. The floats are distributed over the global ocean to measure temperature and salinity in the upper 2,000m.

According to the paper, the data the floats collect have some gaps, which has created uncertainties in the final processed data that have gone unacknowledged. To the paper's credit, scientists have already noted and addressed the numbers it has cited on phenomena called meniscus slanting and deep ocean upwelling in the research literature. However, the paper's authors refuse these uncertainties and add them up in invisible ways. For instance, some of the errors they add up have the same underlying cause, so adding them as if they were separate errors ends up overcounting the same causes more than once.

To avoid this pitfall, oceanographers



Warming has a penguin stand on a melting in Yellow National, Antarctica in 2014. www.fox.com

run the whole calculation in different ways and check whether they keep getting roughly the same answer. They check whether the calculation predicts temperatures at locations where they actually have measurements to compare with - and whether the overall estimate holds up when they remove data from the calculations. This way, they make sure their methods are robust and do not over-count uncertainties.

Finally, if scientists have an independent estimate of total sea level rise from altimetry satellites that use radar, and an independent estimate of how much new water has been added from the GRACE satellites that use gravity, they can estimate how much the ocean has expanded. Then they compare this figure with Argo data about the ocean's heat content. If the two match - as they do - it would mean Argo arrived at the same result as altimetry and GRACE directly. Recovery and Climate Experiment satellites but from completely different starting points.

What is 'balancing' and 'filling'?

Finally, the paper says the CERES Argo error correction is 'circular'. This is probably the most rhetorically effective

piece for 'climate doubters' because it gradually erodes damning. However, that is really because it misrepresents what a particular adjustment does.

CERES is a suite of scientific instruments in Earth orbit operated by NASA. Its name stands for 'Climate and the Earth's Radiation Energy System'. The instruments measure incoming solar radiation and outgoing shortwave radiation (which includes visible light) and longwave radiation (mostly heat) at the top of the atmosphere. By subtracting the incoming rate of energy from the outgoing rate, scientists can see how much heat is being 'left behind' in the planet's atmosphere and on the surface.

Now, the CERES instruments have been calibrated such that they are accurate to 0.002%, for shortwave radiation and 0.7% for longwave. This implies an absolute uncertainty of roughly 2 W/m² in the net energy flux. The paper says the rate CERES uncertainty is around 1.4 W/m², which is slightly inflated in favor of the paper's claims.

To address this, a process called ERAF - short for 'Energy Balanced And Filled' - makes a one-time change to shortwave and longwave fluxes at the top of the

atmosphere to ensure the global mean net flux for July 2000 to June 2001 is consistent with the value measured by Argo. 6.75 W/m².

'Balancing' and 'filling' are separate adjustments. CERES measurements come in through clouds, so 'filling' patches gaps in the map where data is missing. However, the paper treats the whole ERAF product as if it is just the adjustment for calibration, i.e. 'balancing'.

Nevertheless, as things stand, the paper's circularity argument is partly correct. CERES data is 'corrected' using Argo data while Argo-derived estimates of the ocean's heat content are validated using CERES data.

What does CERES do?

But then the paper goes wrong. The 'balance' of ERAF only adjust the mean energy flux. It does not interact in any way with the increases and drops in the temperature data over time. That comes from the CERES instruments' raw data and is what contains evidence of the warming trend.

Specifically, the CERES instruments continuously measure the radiation coming from the sun into the atmosphere and the outgoing longwave and shortwave radiation at the top of the atmosphere. Then computers produce a monthly global mean net flux value for every month from March 2000 to the present. These raw monthly data are off from the 0.7 W/m² measured by Argo, so ERAF adds or 'balances' some flux from every monthly value in the record to bring the long period mean in line with the Argo estimate.

The monthly values after this adjustment are then higher or lower than the raw values by exactly the same amount in every single month. This means the difference between any two months - March 2000 and March 2001, say - is unaffected by ERAF. For example, if ERAF adds 1.6 W/m² to the measured value, the difference between 4 and 3 in the raw data is the same as the difference between 1.6 and 0.6 in the processed data, which is 1 W/m².

The idea that Earth's energy imbalance has been increasing over the satellite record is based on these differences, which Argo data is associated with. As a result, the circularity objection proves less than what the paper has claimed it does.

What remains credible?

For added measure, scientists have also estimated Earth's energy imbalance using ocean temperature, deep ocean temperature records from oceanic moorings, and glacial ice models informed by observed surface warming - all of which have been consistent with the CERES Argo figures. If the imbalance were actually zero, the independent estimates would all have to be wrong for independent reasons, and the odds of that are extremely low.

In fact, the answer to whether the paper could be right is not that one of its authors is a 'climate doubter' (which he was at the time he worked on the paper), but its rhetoric is often obnoxious, that some of its other authors have done questionable things in the past or even that it has not passed peer review by a 'prestigious' journal. It is that the paper does not perform any independent tests of the data the way credible studies do.

That is in fact the bedrock of the credibility of climate science as a whole. And any efforts that claim to overturn that must also convincingly explain how independent checks arrived at the same result while being biased in independent ways.

- **Key Terms and Explanations**

- **Earth's Energy Imbalance (EEI):** The difference between the amount of solar energy absorbed by Earth and the amount of energy radiated back to space as heat. If the imbalance is positive (more energy coming in than going out), the planet warms.
- **Argo Floats:** A global array of nearly 4,000 drifting robotic sensors that measure the temperature and salinity of the upper 2,000 meters of the ocean.
- **Intensive vs. Extensive Properties:** * *Intensive:* Properties independent of the amount of matter (e.g., Temperature, Density).
 - *Extensive:* Properties that depend on the amount of matter (e.g., Thermal Energy, Mass).
- **CERES (Clouds and the Earth's Radiant Energy System):** A NASA satellite mission that monitors the Earth's radiation budget, measuring both reflected sunlight and emitted thermal energy.
- **Mesoscale Aliasing:** A statistical error occurring when small-scale fluctuations (like ocean eddies) are incorrectly represented in data due to sparse sampling.
- **Altimetry & Gravimetry:** Using radar to measure sea-level height (Altimetry) and gravity-sensing satellites (like GRACE) to measure the mass of water added to oceans from melting ice.

- **Main Arguments and Substantive Parts**

- The core debate revolves around whether the observed warming of the Earth is a result of flawed data processing or a physical reality.
- **The Skeptical Thesis:** A recent paper argued that because temperature is an "intensive" property, it cannot be averaged to find a global trend. It further claimed that data gaps in ocean sensors (Argo) and "circular" calibrations between satellites and ocean floats render the conclusion of global warming invalid.
- **The Scientific Rebuttal:** * **Thermodynamics:** While temperature is intensive, **Heat Content** (Thermal Energy) is extensive and can be summed and averaged.
 - **Data Redundancy:** Scientists don't rely on one source. They use "triangulation." If satellite altimetry (sea level rise) matches Argo data (ocean expansion due to heat), the findings are independently verified.
 - **Trend vs. Mean:** Even if the *absolute* value of energy flux is adjusted (calibrated), the *trend* (the increase over time) remains unchanged in the raw satellite data.

- **Historical Evolution of the Issue**

- **Pre-1900s:** Early hypotheses by Joseph Fourier (greenhouse effect) and Svante Arrhenius (CO2 warming).
- **1950s-70s:** The Keeling Curve begins measuring atmospheric CO2; early climate models emerge.
- **1988:** Formation of the **IPCC (Intergovernmental Panel on Climate Change)**, marking the shift from academic curiosity to global policy.
- **1997-2015:** From the Kyoto Protocol to the Paris Agreement; the focus shifts from "is it happening?" to "how do we stop it?"
- **Present Day:** The era of "Attribution Science," where specific extreme weather events are linked to human-induced warming with high statistical confidence.

- **Previous Years' Questions (PYQs)**

- **Mains 2021 (GS3):** "Describe the key outcomes of the 26th session of the COP to the UNFCCC. What are the commitments made by India?"
- **Mains 2017 (GS1):** "How does the melting of the Arctic ice and glaciers of the Antarctic differently affect the weather patterns and human activities on the Earth?"
- **Prelims 2022:** Questions on the "Greenhouse Gas Protocol" and "Climate Action Tracker."





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STRATEGIC ANALYSIS: NEPAL'S POLITICAL SHIFT & INDIA'S OPPORTUNITY

NEPAL'S "POLITICAL EARTHQUAKE"



- **Emphatic rejection of old guard**
- **Mandate to RSP: Two-thirds majority for transformation**
- **Challenges: Job creation, curbing migration**



RESTRUCTURING INDIA-NEPAL TIES



Past mindsets
Future Realities

- Discarding colonial legacy (1950 Treaty)
- People-centric policies
- Addressing long-standing irritants



KEY COOPERATION PRIORITIES



Energy
(Hydropower)

Infrastructure
(Pipelines, Rails)

Digital Connectivity
(UPI/NPI)

Trade

WIDER REGIONAL PHENOMENON



Labeling new leaders as "anti-India" is unjustified.
Evidence: Pragmatic readiness for cooperation in BD & SL.

WAY FORWARD: SUB-REGIONAL STRATEGY



Clear a clear sub-regional strategy for rapid growth



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