Today's Prelims Topics

France discovered world's largest white hydrogen deposits

Context

France has discovered **46 million tons** of **natural hydrogen** beneath the soil of **Folschviller, Moselle region**.

What is White Hydrogen?

- **White hydrogen** (also called **natural hydrogen**) is a **naturally occurring form** of hydrogen found in the **Earth's crust**.
- Unlike **grey, blue, brown or green hydrogen**, it does not require **industrial production** or **carbon-emitting processes**.
- It is considered the **most environmentally friendly** form of hydrogen.
- **Advantages:**
    - **Naturally occurring:** Unlike other forms of Hydrogen, it **does not require industrial production.**
    - **Zero Emissions:** It does not emit Carbon.

Different types of Hydrogen

Type	Description
Green Hydrogen	• Produced by splitting water into hydrogen and oxygen using renewable energy sources like solar or wind power. • It is **climate neutral** and a clean energy source.
Grey Hydrogen	• Produced from fossil fuels (natural gas, coal, etc.), **releasing carbon dioxide** into the atmosphere. • It accounts for about **95%** of the world's hydrogen supply.
Blue Hydrogen	• Produced using fossil fuels, but carbon emissions are captured and stored, making it more environmentally friendly **than grey hydrogen.**
Pink Hydrogen	• Produced by splitting water into hydrogen and oxygen using nuclear energy-powered electrolysis. • It is also known as **purple or crimson hydrogen.**
Turquoise Hydrogen	• Produced from natural gas through **methane pyrolysis**, generating solid carbon instead of CO_2, making it a **cleaner alternative to grey hydrogen.**

Source:

- Times Now - White Hydrogen

Audible Enclaves: A New Era in Sound Control

Context

Recent research has introduced a groundbreaking technology that enables sound to be heard only in specific locations, creating "audible enclaves."

About Audible Enclaves

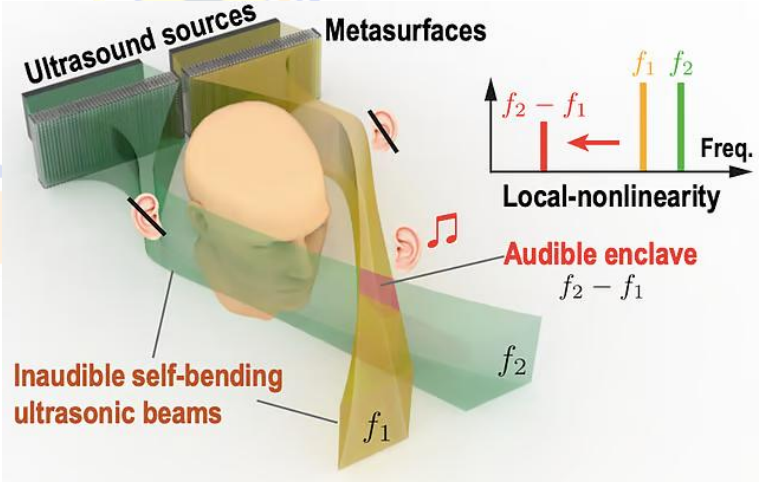
- **Audible enclaves** are **localized pockets of sound** that can be heard **only in a specific area**, while remaining completely silent elsewhere.
- This means sound can be directed to a single person or location without disturbing others nearby.

What is Sound?

- Sound is a **vibration that moves through air as a wave**.
- The **frequency** of sound waves determines **pitch**:
  - **Low frequency → Deep sounds** (e.g., bass drum).
  - **High frequency → Sharp sounds** (e.g., whistle).
- Sound waves **spread out** as they travel due to **diffraction**, making it difficult to **confine sound to a specific area**.

How Audible Enclaves Work?

- **Using Ultrasound as a Carrier:**
  - Ultrasound waves (above 20 kHz) are **inaudible to humans** but can carry normal sound through the air.
  - These ultrasound waves can be **shaped and controlled** to deliver sound only where needed.



- **Nonlinear Acoustics – Creating Sound at a Specific Spot:**
  - Normally, sound waves **mix linearly** (just adding together).
  - However, at high intensities, sound waves **interact nonlinearly**, producing **new frequencies** that weren't there before.
  - Scientists use **two ultrasound beams at different frequencies** that are **silent on their own** but generate **audible sound only where they intersect**.
- **Bending Ultrasound Waves:**
  - Normally, sound waves travel **in straight lines**.
  - By using **acoustic metasurfaces** (specialized materials that shape sound waves), scientists can **bend ultrasound beams** to meet at a specific target, creating an **audible enclave** in that location.
- **Difference Frequency Generation:**
  - When two ultrasound beams of **slightly different frequencies** overlap, they create a new sound at the difference between their frequencies.
  - **Example:**

    - One beam at **40 kHz**
    - Another beam at **39.5 kHz**
    - Difference = **0.5 kHz (500 Hz), which humans can hear**
  - **This means sound only exists at the point where the waves meet, and nowhere else.**

Potential applications of Audible Enclaves

- **Private Audio:** Listen to music, podcasts, or calls without headphones, and without disturbing others.
- **Personalized Audio in Public Places:** Museums, libraries, and offices can provide location-based audio without speakers.
- **Noise Control:** Can be used to create **silent zones** by canceling unwanted noise.
- **Confidential Conversations:** Military, corporate, and security settings can ensure **private discussions in open spaces**.
- **Car Audio:** Passengers can listen to music without distracting the driver.

Source:

- Down to Earth
- The Hindu

Availability of water ice on Moon

Context

A new study based on data collected by the Chandrayaan-3 mission has suggested that water ice could be present at more locations beneath the Moon's surface at the poles than previously thought.

Key Findings from Chandrayaan-3 Data

- **In-Situ Temperature Measurements by ChaSTE:**
  - The **ChaSTE (Chandra's Surface Thermophysical Experiment) probe** onboard the **Vikram lander** measured temperature at different depths (up to **10 cm**) beneath the lunar surface.
  - The lander **touched down at 69° South latitude**, near the Moon's **south pole** at **Shiv Shakti Point** on **August 23, 2023**.
- **Key Temperature Observations:**
  - The **peak surface temperature** at the **landing site (Sun-facing slope, 6° angle)** was **82°C** during the day and dropped to **-170°C** at night.
  - Just **one meter away**, on a **flat surface**, temperatures were significantly lower, **peaking at 60°C**.
  - This difference suggests that **even slight variations in slope impact surface temperatures**, which in turn affect where ice can form and remain stable.

Importance of Water Ice on the Moon:

- **Vital Resource for Future Missions** → Ice can be used for **drinking water, oxygen production, and rocket fuel**.
  - Lunar ice can be used to produce rocket fuel by splitting the water molecules into hydrogen and oxygen through **electrolysis**, which can then be liquefied and used as propellant.
- **Understanding the Moon's History** → Studying ice deposits can reveal how **water accumulated and moved** over time, providing clues about the Moon's **geological past**.
- **Exploration & Settlement** → Finding easily accessible ice makes it easier for **humans to live and work on the Moon**.

How Slopes Affect Ice Formation

- Researchers developed a **temperature model** to understand how **the angle of a slope influences surface temperature**.
- **Findings from the Model:**
  - **Slopes facing the Sun** → Absorb more heat, making them **less likely to contain ice**.
  - **Slopes facing away from the Sun** (toward the lunar poles) → Remain **cooler**, allowing ice to **accumulate closer to the surface**.
  - A **slope with an angle greater than 14°** could maintain **temperatures low enough for ice to remain stable**.
- **Comparison with NASA's Artemis Mission:**
  - The temperature conditions found in this study **match the landing sites proposed for NASA's Artemis program**, which aims to explore the Moon's **south pole**.
  - This suggests that **ice may be accessible in more locations than previously thought**, making future lunar exploration **easier and more resource-efficient**.

Why Liquid Water Cannot Exist on the Moon

- The **Moon has no atmosphere**, so **liquid water cannot form**.
- Instead, ice **sublimates directly into vapor** when exposed to heat.
- This confirms that **the Moon likely never had habitable conditions in the past.**

Source:

- **The Hindu - water ice easier to find on moon than believed**

Offshore Mining and the Protests in Kerala

Context

The Kerala government and **fishing communities** are **strongly opposing** the Centre's offshore mining plan due to its **potential environmental and economic impacts**.

What is Offshore Mining?

- Offshore mining refers to the extraction of minerals and resources from underwater areas such as the **continental shelf, exclusive economic zone (EEZ), and other maritime zones**. These resources include:
  - **Polymetallic nodules** (rich in manganese, nickel, cobalt and copper).
  - **Lime-mud & Construction-grade sand.**
- **Offshore Areas Mineral (Development and Regulation) Act, 2002 (OAMDR Act):**
  - Regulates **mining activities in India's maritime zones**.
  - Earlier, offshore excavation was controlled by **government bodies** like: **Geological Survey of India (GSI), Indian Bureau of Mining & Atomic Minerals Directorate**
  - **2023 Amendment:**
    - Allowed **private sector participation** through **competitive auction**.
    - Opened offshore mining for minerals like **polymetallic nodules, lime-mud and sand**.

Legal Framework and Jurisdiction Issues

- **The OMDR Act defines "offshore areas"** as territorial waters, continental shelf, EEZ and other maritime zones.
- **Mining rights in offshore areas belong to the Union Government**.
- **Fishing rights up to 12 nautical miles** are under **state jurisdiction** (as per the **Seventh Schedule of the Indian Constitution**).
- **Union Mining Ministry's Stand:**
  - The **3 proposed blocks** off the **Kollam coast are beyond 12 nautical miles**, meaning they fall under **Central jurisdiction** and not under Kerala's control.

Key Offshore Mining Blocks and Reserves

- **First tranche of e-auction (November 2023)** → 13 offshore blocks for mining:
  - 3 off the Kerala coast
  - 3 off Gujarat
  - 7 in Andaman & Nicobar Islands
- **Mining lease:** 50 years
- **Kerala Offshore Sand Deposits:**
  - **Study by GSI:** Kerala offshore has **745 million tonnes of construction-grade sand**.
  - **Kollam Coast Blocks:**
    - **300 million tonnes of sand** deposits found in 3 proposed blocks.
    - Located at a depth of **48 meters to 62 meters** in the sea.

Concerns Raised by the Fishing Community & Environmentalists

- **Impact on Marine Ecosystem and Fisheries:**
  - **Kollam Parappu (Quilon Bank)**: One of the **most productive fishing grounds** on the **south-west coast of India**. Mining here could lead to a **decline in marine fish catch**.
- **Effects of seabed mining:**
  - **Clouding of water** → **Reduces light penetration**, shrinking the **euphotic zone** (area with enough light for photosynthesis).

  - **Sediment plumes** → Can travel **thousands of square kilometers**, affecting marine life.
  - **Release of toxic substances** → Could poison fish and disrupt aquatic ecosystems.
- **Impact on Fishermen's Livelihoods:**
  - **Fishing is the main livelihood** for **11 lakh fishermen** in **222 fishing villages** across Kerala.
  - **Mining operations can** reduce fish stocks & Introduce **large mining vessels**, which could **disrupt fishing activities and pose safety risks**.
- **Economic Concerns:** All mining royalties will go to the **Central government**, leaving **no direct benefit for Kerala**.

Source:

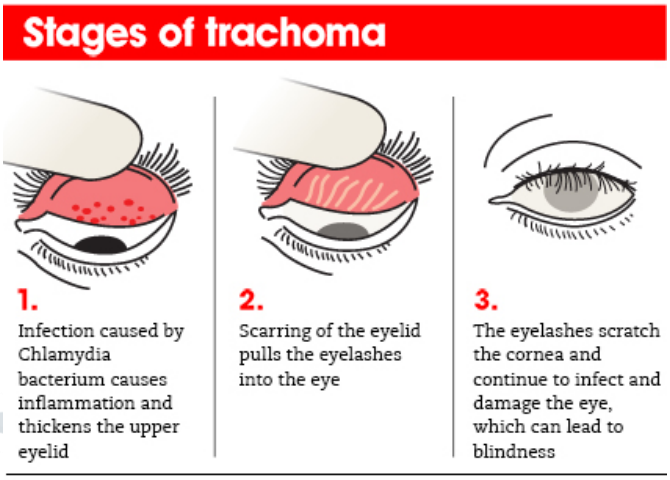
- Indian Express- Offshore Mining

Trachoma Disease

Context

The **World Health Organization (WHO)** has officially declared **Trachoma eliminated** as a public health problem in **India**. India became the **third country in the WHO Southeast Asia Region** to achieve this milestone. (After Nepal & Myanmar).

About Trachoma Disease



- It is an infectious eye disease caused by the **bacterium Chlamydia trachomatis.**
- It is the leading infectious cause of blindness worldwide and primarily affects people in impoverished regions with limited access to clean water and sanitation.
- WHO has termed Trachoma as a **Neglected tropical disease (NTD).**
- **Transmission**
    - Through direct contact with eye or nose secretions from infected individuals.
    - It can also spread via contaminated objects (like towels) and through flies that carry the bacteria.
- **At-Risk Populations:**
    - Preschool-age children are the main reservoir for the infection, but anyone in crowded living conditions without proper hygiene can be affected.
    - **Blindness from trachoma is irreversible.**

Prevention and Treatment

- **Presently No trachoma vaccine is available,** but prevention is possible.
- The World Health Organization (WHO) recommends the **SAFE strategy,** which includes:
    - **S**urgery: To correct trichiasis (inward-turning eyelashes).
    - **A**ntibiotics: Mass treatment with azithromycin to clear infections.
    - **F**acial Cleanliness: Promoting hygiene to reduce transmission.
    - **E**nvironmental Improvements: Enhancing access to clean water and sanitation facilities.

Targets set by India for elimination of various disease:

- Malaria - 2030
- Tuberculosis - 2025
- Sickle Cell Anaemia - 2047

Source:

- PIB - Trachoma

Vigyan Dhara Scheme

Context

The **Government of India** has significantly increased the allocation for the **Vigyan Dhara** scheme from **₹330.75 crore (2024-25) to ₹1425.00 crore (2025-26)**.

About Vigyan Dhara Scheme

- It is a **central sector** scheme unifying three umbrella schemes of the **Department of Science and Technology (DST).**
- **It has 3 major components:**
    - **Science and Technology (S&T) Institutional and Human Capacity Building**
        - Establishment of **advanced research laboratories** in academic institutions.
        - Faculty development and student research support.
        - Promotion of **international scientific collaborations**.
    - **Research and Development:**
        - **Encouragement of basic research** with access to **international mega facilities**.
        - Support for **translational research** in key areas like **sustainable energy and water**.
        - Strengthening India's **Full-Time Equivalent (FTE) researcher count** to enhance R&D output.
    - **Innovation, Technology Development and Deployment.**
        - **Support for startups and entrepreneurs** in science and technology.
        - Facilitation of **technology transfer and commercialization**.
        - Development of **indigenous technologies** to reduce reliance on imports.
        - Promotion of innovation **from schools to higher education and industries**.
- **Other Components:**
    - **Promoting Gender Parity in Science & Technology:**
        - Special programs to **increase women's participation in science and technology (S&T)**.
        - Ensuring **gender equality in Science, Technology, and Innovation (STI)** through targeted interventions.
- The **R&D component** of the scheme will be aligned in line with the **Anusandhan National Research Foundation (ANRF).**

Source:

- PIB - Vigyan Dhara

India's Exit from the High Burden to High Impact (HBHI) Group for Malaria

Context

India has made significant progress in malaria control, enabling its exit from the HBHI category.

Key Strategies for Malaria Reduction

- **Disease Management:**
  - **Early Case Detection:**
    - Active, passive and sentinel surveillance for rapid identification of malaria cases.
    - Effective treatment and strengthened referral services.
  - **Epidemic Preparedness & Rapid Response:** Ensuring quick interventions to control outbreaks.
- **Integrated Vector Management:**
  - **Indoor Residual Spraying (IRS)**: Used in selected high-risk areas.
  - **Long-Lasting Insecticidal Nets (LLINs)**: Distributed in **high malaria-endemic areas**.
  - **Larval Control Measures**:
    - **Use of larvivorous fish** to control mosquito larvae.
    - **Anti-larval interventions** using bio-larvicides.
    - **Environmental engineering** to **prevent mosquito breeding** in urban areas.
- **Supportive Interventions:**
  - **Behavior Change Communication (BCC)**: Educating communities about malaria prevention.
  - **Inter-Sectoral Convergence**: Coordination between different government departments for effective malaria control.
  - **Human Resource Development**: Training and **capacity building** of healthcare professionals to improve malaria management

Source:

- PIB - Malaria

News in Shorts

Grameen Credit Score (GCS)

- **GCS is a financial framework** to assess and improve the creditworthiness of **Self-Help Groups (SHGs) and rural individuals**.
- It was introduced by **Union Finance Minister Nirmala Sitharaman** in the **Union Budget 2025-26**.

Key Benefits of the Grameen Credit Score

- **Enhanced Financial Access:**
  - Helps **rural women entrepreneurs access loans** to expand their businesses.
  - **Promotes financial literacy**, introducing rural citizens to concepts such as: Creditworthiness, Loan EMIs and repayment, Credit scores and credit cards.
- **Customized Financial Products:**
  - **New credit cards** designed for **micro-enterprises** with a **limit of up to ₹5 lakh**.
- **Improved Credit Assessment:**
  - **Digital framework** for **assessing creditworthiness** of SHG members.
  - Helps **bridge gaps in the current credit bureau system**, which often **overlooks SHG members**.
  - **Allows rural women to track**: Their credit score &Loan limits and repayment options.
- **Economic Stability and Growth:**
  - **Increased access to loans** ▶ **more financial independence** for SHG women.
  - Encourages **entrepreneurship** in **rural India**, leading to **sustainable economic growth**.

Source:

- PIB - GCS, Mint

Varuna - 2025

- It is an **annual Bilateral Naval Exercise** between **India and France.**
- Varuna started in **2001**, this one is the **23rd** edition.
- The exercise will witness the participation of **major naval assets** from both countries, including: **INS Vikrant** (India), **Charles de Gaulle** (France), **Rafale-M** & **MiG-29K**.
- **Other Bilateral Exercise:** Garuda (Air Force), Shakti (Army).

Source:

- PIB - Varuna 2025

Caracal

- Recently Rajasthan's Forest Minister shared the first photographic record of a caracal in **Mukundra Hills Tiger Reserve (MHTR).**

About Caracals

- Caracals are **medium-sized wild cats** native to **Africa, the Middle East, Central Asia, and South Asia**.
- They are primarily **nocturnal** and known for their **distinct, pointed black ears**.
- Its name is derived from the **Turkish word 'karakulak'**, meaning **black ears**.
- Caracals are mentioned in medieval Indian texts like: **Khamsa-e-Nizami, Shahnameh & Tutinama.**
  - They were used by Indian royalty for **hunting birds**.

- **Conservation Status:**
  - **WPA -** Schedule I.
  - **IUCN -** Least Concern.
  - It is listed in **Critically Endangered** category by the **National Board for**
  - **Wildlife in India.**
- **Sharp Population Decline:**
  - Historically caracals were found in **13 Indian states**.
  - By **2000** → Population reduced **by 50%**.
  - From **2001 to 2020** → Further **95% decline**.
  - Now restricted to an area of **16,709 sq km** (less than **5%** of its historical range).
  - Currently, only **50 caracals** remain in India, found in only 2 states- **Rajasthan and Gujarat.**

Threats to Caracals

- **Loss of habitat** due to urbanization and infrastructure development.
- **Reduced prey availability** (small ungulates, rodents, birds).
- **Encroachment into natural habitats**, particularly the **Chambal ravines**, which are classified as **wastelands** instead of **ecologically significant areas**.
- **Illegal wildlife trade**: Caracals have been **captured and sold as exotic pets**.

Source:

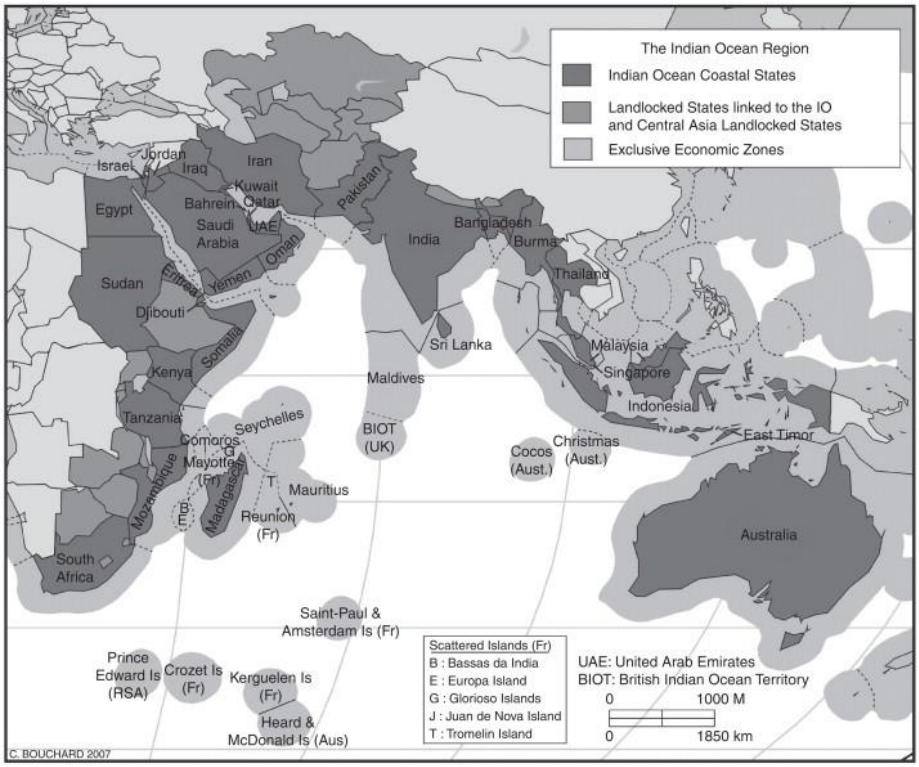
- Indian Express - Caracal

Editorial Summary

India must act as unifier in the IOR

Context

India must act as a unifier in the Indian Ocean Region (IOR) to ensure maritime security, counter China's influence, safeguard trade routes, and promote regional stability through strategic leadership.



Why India Must Act as a Unifier in the IOR

- **Trade Importance:** Approximately **70% of India's oil imports** are channelled through the Indian Ocean region, utilising various ports.
    - The vast majority of India's international trade, around 90% by volume, heavily relies on maritime routes.
- **Geostrategic Importance**: India's central location in the IOR provides a strategic advantage to influence regional security and trade.
- **Counterbalance to China's Expanding Presence:** China's growing influence through projects like the **String of Pearls** and **military bases** in the IOR threatens regional stability.
    - India must lead regional cooperation to counter China's strategic dominance.
- **Ensuring Maritime Security:** Piracy, smuggling, and maritime terrorism pose direct threats to India's trade and security (**e.g., Golden Crescent and the Golden Triangle)**.
    - A unified regional framework can strengthen maritime surveillance and collective response mechanisms.

What is the Golden Crescent?

- The Golden Crescent comprises Afghanistan, Iran, and Pakistan
- The region is infamous for organised crime activities like the flow of illegal drugs, which aids other illicit activities.
- India's proximity to the golden crescent has made it vulnerable to the trafficking of drugs and narcotics.
- **Comprises Of 2 Routes**:
  - **Northern Route**: Opium and heroin are trafficked to the Russian Federation by way of Tajikistan and Kyrgyzstan.
  - **Southern Route:** Heroin travels from Afghanistan through Pakistan and Iran by sea to South Asia, Africa and Oceania region.

Golden Triangle

- The area where the borders of **Thailand, Laos, and Myanmar** meet at the confluence of the **Ruak and Mekong rivers**.

Facts:

The United Nations Office on Drugs and Crime (UNODC) estimates that 80 percent of the world's opium and heroin supplies are trafficked from Afghanistan.

Myanmar is the world's second-largest illicit supplier of morphine and heroin.

- **Leveraging SAGAR for Regional Leadership:** India's SAGAR (Security and Growth for All in the Region) doctrine positions India as a security provider and development partner.
  - Leading initiatives on maritime security, trade, and disaster relief can enhance India's influence and credibility.
- **Economic and Energy Security:** IOR nations are key trade and energy partners for India, especially in oil and gas imports.
  - Ensuring secure and stable sea lanes is critical for India's economic growth and energy security.

- **Diplomatic and Strategic Autonomy:** Acting as a unifier will position India as a reliable and independent power in the region.
    - A balanced and cooperative approach will allow India to engage with both regional and extra-regional powers without compromising its strategic interest.

How India Can Act as a Unifier in the IOR

- **Strengthening Institutional Frameworks:** Revitalize regional groupings like **IORA** and **BIMSTEC** to improve dialogue and cooperation.
    - Expand the scope and influence of the **Indian Ocean Naval Symposium (IONS)** for greater security coordination.
- **Enhancing Maritime Security and Surveillance:** Develop a stronger **Maritime Domain Awareness (MDA)** network with real-time intelligence sharing.
    - Increase joint naval exercises and patrols with IOR nations to improve maritime security.
- **Leading Disaster Response and Humanitarian Assistance:** Establish a dedicated **HADR (Humanitarian Assistance and Disaster Relief)** fund and response team.
    - Deploy **hospital ships** and amphibious heavy-lift capability for rapid response to natural disasters.
- **Economic and Infrastructure Cooperation:** Invest in port development and maritime connectivity projects in IOR countries.
    - Leverage platforms like **SAGAR (Security and Growth for All in the Region)** to foster inclusive development.
- **Soft Power and Diplomatic Engagement:** Use India's historical and cultural ties to foster goodwill and unity in the IOR.
    - Promote educational, technological, and cultural exchanges with IOR nations.
- **Strategic Autonomy and Balanced Engagement:** Maintain strategic independence while balancing partnerships with regional and extra-regional powers.
    - Position India as a credible mediator and stabilizer in regional disputes.

Source: Indian Express: The Ocean Front

Detailed Coverage

What factors influence women's political participation?

Context

Although India has produced several influential women leaders, overall political participation among women remains low.

Importance of Women's Political Participation

- **Advancement of Gender Equality:** Women's participation in politics is fundamental to achieving gender equality and genuine democracy.
    - It facilitates women's direct engagement in public decision-making and ensures better accountability to women.
- **Improved Policy Outcomes:** Women in political positions often prioritize issues such as healthcare, education, and social welfare.
    - Their presence leads to more comprehensive and balanced policy decisions that address diverse societal needs.
- **Enhanced Democratic Processes:** Increased women's representation strengthens democratic values by ensuring that political institutions reflect the diversity of the populations they serve.
    - This inclusivity enhances the legitimacy of democratic processes and fosters greater public trust.
- **Economic Growth and Development:** A higher rate of women political representation is closely linked to legal equality and economic opportunity.
    - This correlation suggests that women's political participation can contribute to economic growth and development.
- **Role Modeling and Inspiration:** Women in leadership positions serve as role models, inspiring other women and girls to pursue careers in politics and leadership, thereby gradually reducing gender disparities in various sectors.

Challenges Associated with Women's Participation in Politics

- **Time Use and Care Work:** Women spend up to **four times more** time on unpaid care work than men, limiting their ability to engage in politics.
    - Social norms favor women candidates with traditional household profiles (e.g., married with children), creating additional barriers.
- **Leadership Seen as a Male Domain:** Patriarchal norms and rigid gender roles exclude women from formal decision-making spaces.
    - Traditional contexts reinforce the idea that leadership is inherently masculine.
- **Backlash, Harassment, and Violence:** Smear campaigns, blackmail, and media bias undermine women politicians' credibility and influence.
- **Institutional Barriers and Political Structures:** Political party structures often favor male candidates for leadership positions.
    - Lack of internal party support and absence of gender quotas reduce opportunities for women.
    - Electoral financing and political networking remain male-dominated, making it harder for women to access resources.
- **Societal and Cultural Norms:** Deep-rooted patriarchal values discourage women from assuming leadership roles.
    - Family and societal expectations often pressure women to prioritize domestic responsibilities over public life.

  - Stereotypes about women's "emotional nature" are used to undermine their political competence.
- **Legal and Policy Gaps:** Lack of strong legal frameworks to protect women from political violence and discrimination.
  - Inadequate implementation of gender quotas and reservation policies.
  - Weak political will to ensure equal representation and accountability.

Facts

- India's women's representation in the Parliament **remains well below the global average of 25%.**
  - Women's representation has increased from 5-10% until 2004 to **13.6% in the current 18th Lok Sabha.**
  - Women constitute **13% of the members in the Rajya Sabha**.
- India ranks **143 out of 185 countries** for women's representation in the lower house of Parliament.
- **Women's Representation in State Legislatures:** The national average of women legislators in State Assemblies stands at only 9%.
  - No state has more than 20% women MLAs.
  - Chhattisgarh has the highest representation among states, with 18% women MLAs.
- Globally, only 25% of national parliamentarians are women, and only 22 countries have women in the highest positions of political power.

How to Strengthen the Political Participation of Women

- **Fund Incentivized Party Quotas:** Provide **financial incentives** to political parties that nominate and elect women candidates.
  - **Example**: In **Georgia**, political parties receive **30% more funding** if at least **30% of the top 10 names** on their party list are women.
  - Reward parties that successfully elect women to encourage long-term change.
- **Create an Enabling Environment for Voluntary Party Quotas:** Encourage political parties to adopt internal gender quotas voluntarily.
  - **Example**: In **Kazakhstan**, the Central Election Commission and the National Commission for **Women's** Affairs endorsed recommendations for gender quotas in party charters.
  - Promote government support through public statements and official guidelines.
- **Enact Legislated Candidate Quotas and Reserved Seats**
  - Introduce **legally mandated quotas** or reserved seats to ensure women's representation in political institutions.
  - **Example**: Countries with quotas (e.g., Afghanistan, Nepal, Indonesia) have seen increased women's representation in national and local governance.
- **Support Women's Leadership Development Programs:** Implement leadership training, mentorship, and skills development programs.
  - Focus on **public speaking, decision-making, campaigning, and self-assertion**.
  - **Example**: Out of 41 countries in the Asia-Pacific, **20 countries** reported offering such programs, including targeting **minority and young women**.
  - Best practices include **local ownership**, **collective approaches**, and **international partnerships**.
- **Create a Gender-Responsive Policy Environment:** Monitor and revise policies to prevent gender-based discrimination and exclusion.
  - **Example**: **South Korea** created a platform for citizens to report **gender-discriminatory media** content to tackle bias.
- **Ensure Financial and Structural Support:** Provide financial assistance, campaign funding, and logistical support for women candidates.

- Establish support systems like **childcare**, **maternity and paternity leave**, and **networking opportunities**.
- **Example**: In Nepal, after introducing quotas, women faced financial and management challenges, highlighting the need for ongoing training and support.

Source: **The Hindu: What factors influence women's political participation?**