

India's Leadership Role in the Sustainable Indian Ocean Blue Economy

India envisages the Indian Ocean as a shared and inclusive maritime space, not a theatre of competition, underpinned by the vision of *"From the Indian Ocean, for the World."*

Growing Challenges in the Indian Ocean

- **Climate Change Impacts:** The seas are being heated and acidified, and sea levels are rising.
- **Ecological Degradation:** The ocean is stressed by Illegal, Unreported, and Unregulated (IUU) fishing.
- **Socio-economic Instability:** Erosion of livelihoods and undermining of social stability with intensifying storm surges and coral reef degradation due to climate disruptions.

What should be India's Blue Ocean Strategy?

- **Cooperative Management:** India should prioritize biodiversity protection, sustainable fisheries, ecosystem restoration, common security as a shared space, rather than one subjected to competitive exploitation.
 - ⊕ E.g. Leveraging MAHASAGAR Doctrine.
- **Climate Resilience:** Focusing on preparedness and adaptation, India can lead by establishing a Regional Resilience and Ocean Innovation hub to enhance early warning systems, strengthen ocean observation networks, etc. for all in the region.
- **Inclusive Growth:** In sectors like Green shipping, offshore renewable energy, sustainable aquaculture & marine biotechnology for all in the region.
- **Leveraging Financial Momentum:** Through initiatives like Blue Economy and Finance Forum (BEFF) 2025; One Ocean Partnership (Launched at COP30, to mobilize \$20 billion for ocean action by 2030), etc.
 - ⊕ Indian Ocean Blue Fund can be created to channel this global financing into regional priorities.

Significance of Indian Ocean for India

- **Economic:** 95% of India's trade by volume and 68% of trade by value comes via the Indian Ocean.
 - ⊕ Also, nearly 80% of India's crude oil requirement is imported by sea.
- **Resource Dependency:** With 2.02 million square Km of EEZ and a coastline of around 11,000 Km, the captured fisheries reached 44.95 lakh tonnes in 2023-24.
 - ⊕ India holds exclusive rights to explore the Central Indian Ocean, with mining sites for minerals like manganese, cobalt, nickel, and copper.
- **Security Linkage:** Including non-traditional threats such as smuggling, illegal fishing, human trafficking, and the proliferation of weapons of mass destruction. E.g. the 2008 Mumbai terrorist attacks.

Fourth National Lok Adalat of 2025 successfully resolved 2.59 crore disputes

From 2022-23 to 2024-25, more than 23.5 crore cases have been resolved in various Lok Adalats across India.

Lok Adalat Framework

- **Established:** Under the Legal Services Authorities Act, 1987 to provide speedy and cost-effective justice as an Alternative Dispute Resolution (ADR) mechanism.
- **Objective:** Reduce pendency (e.g. more than 4.7 crore pendency as per NJDG), promote consensual settlements, and strengthen access to justice.
- **Authority:** Organised by the NALSA with the CJI as Patron-in-Chief.
- **Enforcement:** Awards are final, binding, equivalent to a civil court decree, with no appeal provision.
- **Scope:** Covers pre-litigation and pending cases, excluding non-compoundable offences and divorce matters.
- **Types of Lok Adalats:**
 - ⊕ **National Lok Adalat (NLA):** Involve simultaneous, nationwide sittings on a single day at all levels of the judiciary, from the Supreme Court down to the Taluk Levels, aiming to clear a large volume of cases.
 - ⊕ **Permanent Lok Adalat (PLA):** Organized for cases related to Public Utility Services (e.g., transport, postal, telegraph, electricity, water supply) up to ₹ 1 Crore.
 - ⊕ **E-Lok Adalats and Mobile Lok Adalats:**
 - E-Lok Adalats allow for remote participation and bring justice through digital platforms.
 - Mobile Lok Adalats are organized to travel from one location to another to resolve disputes.

4-Tiered Organisational Structure



National Legal Services Authority (NALSA)
under Chief Justice of India: Policy direction, regulations, etc.



State Legal Services Authority (SLSA) under Chief Justice of HC & Executive Chairman: Implement NALSA policy, organise Lok Adalats, legal aid delivery, etc.



District Legal Services Authority (DLSA) under District & Sessions Judge: organise district-level Lok Adalats, manage legal aid and local implementation.



Taluk Legal Services Committee under Senior-most Judicial Officer: Conduct Lok Adalats in taluka/mandal, grassroots legal aid, first-point citizen access.

Methane management can result in waste free cities in India

India is the third largest emitter of Methane in the world contributing 9% of total global emission and around 15% of India's methane emissions are from the waste sector.

- **Other major sources of methane emissions** include agriculture sector (enteric fermentation in livestock, manure management and rice production) and energy sector (use of fossil fuels, coal mines, and leakages from natural gas and oil production systems).
- Unlike agriculture or energy, which need complex long-term reforms, waste management allows **quick emission reductions through targeted interventions**.

Suggested interventions for managing methane emissions from waste

- **Monitoring:** Satellite monitoring uses **regional-scale data** to track broad methane trends and **high-resolution data** to pinpoint exact hotspots.
 - ⊕ In 2023, an ISRO satellite study identified major methane emitters at **Pirana (Gujarat)** and **Deonar and Kanjurmarg (Maharashtra), Ghazipur (Delhi) etc.**
- **Strengthen Source Segregation (SBM–Urban & Gramin):** Enforce segregation of wet, dry and hazardous waste at source to cut methane generation.
- **Promote Waste-to-Energy & Bio-CNG (GOBARdhan):** Expand biogas and Bio-CNG plants using wet waste to productively capture methane.
- **Expand Scientific Landfills (Solid Waste Management Rules, 2016):** Replace open dumps with engineered landfills having gas collection and leachate management systems.
- **Identify Actions through Nationally Determined Contribution (NDCs):** Align Waste Policy with Climate Goals under India's NDCs.

About Methane

- Methane is 84 times more potent than carbon dioxide over a 20-year period and is second **most significant contributor to anthropogenic warming after carbon dioxide**.
 - ⊕ Maximum possible reductions in methane emissions are essential to limiting atmospheric warming to 1.5°C.
- It is also a **short-lived climate pollutant (SLCP)** with an atmospheric lifespan of around 12 years and is a major Precursor to Ground-level Ozone.

India added two more wetland into Ramsar List increasing total number to 96

India added **Siliserh Lake in Rajasthan** and **Kopra reservoir in Chhattisgarh** to the **List of Wetlands of International Importance (the "Ramsar List")**.

Siliserh Lake

- **Location:** Paitpur, Alwar District, **Rajasthan**.
 - ⊕ It is in semi-arid zone and falls in the **buffer region of Sariska tiger reserve**.
- It is a **human-made wetland**, created in 1845 AD by Maharaja Vinay Singh by creating a bund across the tributary of **River Ruparel**.
- **Biodiversity:** Egyptian Vulture, Black Stork, Tiger, Indian Pangolin, Leopard and Sambar.

Kopra Jalashay

- **Location:** Bilaspur District, **Chhattisgarh**.
- It is a reservoir located in the upper catchments of the **River Mahanadi**.
- Its extensive open water area features **shallow nutrient-rich backwaters**.
- **Biodiversity:** Bar-headed goose, Egyptian vulture, River tern, Greater Spotted Eagle.
- **Threats:** Siltation, invasive non-native species, and intensive agriculture in the surrounding landscape.

About Ramsar List

- **Genesis:** Established under the **Convention on Wetlands** (adopted in Ramsar, Iran, in 1971), it is the **world's largest network of protected areas**.
 - ⊕ Almost **90% of UN member states including India have acceded** to become "Contracting Parties" to the Convention.
- **About:** Wetlands included in the List acquire a new status at the national level and are recognized by the international community as being of significant value for humanity.
- **Criteria:** To be designated a "**wetland of international importance**," a wetland must meet at least one of **nine criteria** established by the Ramsar Convention.

Report 'India's Employment Prospects: Pathways to Jobs' Released by National Council of Applied Economic Research (NCAER)

The report underlines the role of skilling and small enterprises as key drivers of job creation in the country.

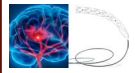
Key Trends in Employment

- Increase in employment is primarily due to the **rise in self-employment**, while **transition to a skilled labour force has been slow**.
 - ⊕ India's self-employment dominance is due to **economic necessity** rather than entrepreneurial dynamism and most of the small enterprises function at **subsistence level** with low capital, productivity and technology adoption.
- **Medium-skilled jobs dominate employment growth**, especially in services, whereas **manufacturing remains low-skill intensive**.
- **India's Vocational Education and Training (VET) system** continues to face **deep structural challenges**, including under-utilised seats, poor placement rates, vacant instructor posts, weak industry linkages, and a persistent perception of vocational education as a fall-back option.

Recommendations for Generating Meaningful Employment

- **Demand Side:** Reforms should aim to boost domestic consumption, redirect Production Linked Incentives (PLI) toward labour-intensive sectors (like textiles, footwear etc.), improve access to credit and, simplify labour regulations.
 - ⊕ Even 1% **increase in access to credit** increases expected number of hired workers by 45%.
- **Supply Side:** Integrating VET into early schooling, aligning curricula with industry demands, strengthening public-private partnerships, and, increasing public investment to match global standards.
 - ⊕ Increasing the share of skilled work force by 12 percentage points through investment in formal skilling could lead to more than a 13% increase in employment in the labour-intensive sectors by 2030.

Also In News



Supernova Stent

AIIMS, New Delhi, conducted **India's first clinical trial** of a new and advanced **stroke treatment device** named the Supernova Stent.

- **Stroke** occurs when something **blocks blood supply to part of the brain or when a blood vessel in the brain bursts**.
- A stroke can cause lasting brain damage, long-term disability, or even death.

About Supernova Stent

- It works by physically capturing and removing the blood clot from a blocked cerebral artery (**reperfusion**).
- Its safety and high efficacy were proven in the **GRASSROOT** (The Gravity Stent-Retriever System for Reperfusion of Large Vessel Occlusion Stroke) **Trial**.



Emperor Perumbidugu Mutharaiyar II (Suvaran Maran)

Vice President of India releases stamp honouring Emperor Perumbidugu Mutharaiyar II.

About Emperor Perumbidugu Mutharaiyar II

- Also known as **Shatrubhayankar**.
- **Dynasty:** Belong to the Mutharaiyar dynasty, feudatories of the Pallavas.
- **Region:** Ruled parts of central Tamil Nadu.
- **Period:** Ruled during 705 to 745 AD.
- **Capital:** Governed from Tiruchirappalli.
- **Administration:** Known for stable governance and territorial consolidation.
- **Cultural Patronage:** Supported temple construction, endowments, patronized Shaivya and other scholars and Tamil culture.



Meteor

Geminid meteor shower was seen across the world.

- The Geminids are **bright and fast meteors** and tend to be **yellow** in color.
- Geminid meteor shower **peaks during mid-December** each year and during its peak, 120 Geminid meteors can be seen per hour.

About Meteor

- A **meteor**, commonly called a "**shooting star**", is formed when a **meteoroid enters Earth's atmosphere** and burns due to friction.
 - ⊕ **Meteoroids** are space rocks that range in size from dust grains to small asteroids.
- Most meteors **burn up completely** before reaching the ground.
- If a meteor **survives atmospheric entry** and reaches the ground, it is called a **meteorite**.



Operation Thunder 2025

30,000 live animals were seized under **Operation Thunder 2025**.

About Operation Thunder

- It was coordinated by **INTERPOL** and the **World Customs Organization (WCO)**, with the support of the **International Consortium on Combating Wildlife and Forestry Crime (ICWC)**.
- It sought to **intercept and seize illegally traded wildlife and forestry commodities across the global supply chain** and identify, disrupt and dismantle criminal networks involved in these types of environmental crime.

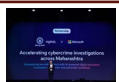


Tamil Nadu's CbMRV System

Tamil Nadu has launched a **Community-based Measurement, Reporting, and Verification (CbMRV)** system to build a **people-led climate intelligence movement**.

About CbMRV system

- Introduced:** As a pilot in **2023** under the **UK PACT programme**.
- Concept:** It **empowers local communities** to collect, validate, and report **climate and environmental data**.
- Focus:** It primarily targets **Blue Carbon** resources like mangroves, measuring factors like pH and carbon content.
- Significance:** Strengthens **bottom-up climate planning, climate resilience, emission tracking** under Paris Agreement, etc.



MahaCrimeOS AI

Maharashtra launched **MahaCrimeOS AI** to strengthen its response to **rising cybercrime using artificial intelligence**.

About MahaCrimeOS AI

- Platform:** It is an **advanced AI co-pilot system**, in collaboration with **Microsoft**, utilizing **Azure OpenAI Service**.
- Objective:** To **streamline the workflow** by analyzing **vast, unstructured and multilingual data** (e.g., FIRs, bank statements) and reducing **investigation turnaround time by up to 80%**.
- Function:** It **automates data extraction, guides investigators through protocols, and identifies complex crime linkages**.



Ponduru Khadi

Ponduru Khadi From **Srikakulam, Andhra Pradesh** gets **GI tag**.

About Ponduru Khadi

- It is produced mainly from **short staple hill variety pest resistant cotton**.
- Significance:** It allows for **chemical free farming**.

About GI tag

- A **GI** is a sign used on products that have a **specific geographical origin and possess qualities or a reputation** that are due to that origin.
- In India, it is given under the **Geographical Indications (GI) of Goods Act, 1999**.

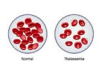


Lunarcete

Scientists are looking to develop **Lunarcete (concrete made on the moon)** for long-term lunar settlements.

About Lunarcete

- It is a **hypothetical material made from lunar regolith** for construction on the moon that would be **similar to concrete**.
- Objective:** To **reduce construction costs of building on the Moon**, suitable to its **low gravity and no atmosphere environment**.
- Basic ingredients for Lunarcete:** Same as regular concrete, i.e. **aggregate, water, and cement**.
 - However, getting ample water on the moon remains a challenge.



Thalassemia

Thalassemia patients have welcomed the introduction of the **National Blood Transfusion Bill, 2025**, in Parliament.

- It is a **private member Bill** that aims to **enact a dedicated legal framework** for regulating the **collection, testing, processing, storage**, etc. of human blood and blood components.

About Thalassemia

- An **inherited blood disorder** caused by insufficient production of **hemoglobin**.
- Leads to **fewer and short-lived red blood cells (RBCs)**.
- Results in **anemia** and reduced oxygen delivery to body tissues.
- Most people with thalassemia require **regular blood transfusions to treat anaemia**.



AHMEDABAD



BENGALURU



BHOPAL



CHANDIGARH



DELHI



GUWAHATI



HYDERABAD



JAIPUR



JODHPUR



LUCKNOW



PRAYAGRAJ



PUNE



RANCHI