

NEWS TODAY

Study reveals that 99.999% of Earth's Deep Seafloor is yet to be explored

97% of recorded deep-sea dives had been performed by **only five countries: the U.S., Japan, New Zealand, France, and Germany.**

➤ **Observation Means:** Visual Imaging from manned submersibles, Remotely Operated Vehicles (ROVs), Autonomous Underwater Vehicles (AUVs), Tow Cameras tethered to Ships etc.

⊕ **Geomorphological features like ridges and canyons** saw a disproportionate amount of exploration, compared to abyssal plains, which dominate the seafloor.

About Deep Ocean

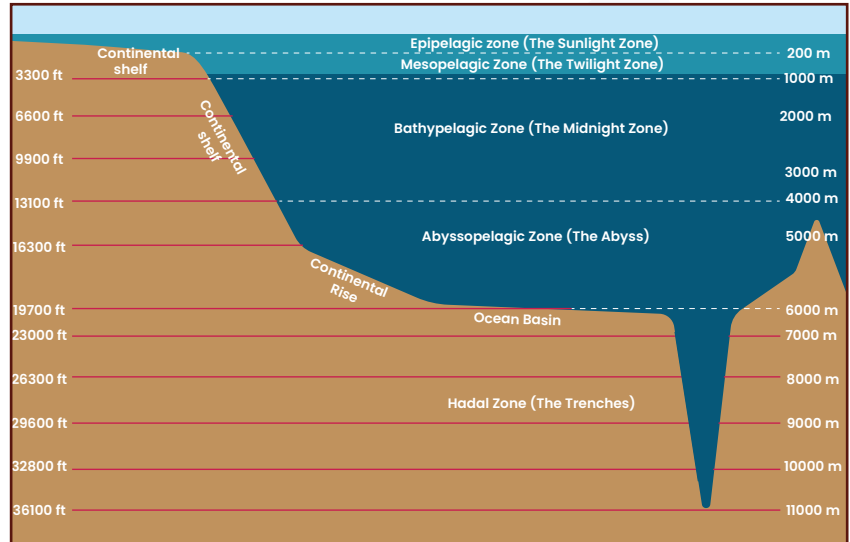
➤ **Deep Ocean** is generally defined as sea and seabed below the depth at which **light starts to decrease rapidly**, typically around **200 meters** (where **Twilight Zone** starts).

➤ **Conditions:** Deep ocean is **cold** – with an **average temperature of only 4°C** and is subject to **extreme pressure**, from about 40 to over 110 times the pressure of Earth's atmosphere.

➤ **Biodiversity:** Squid, krill, jellies, and fish are super abundant in **Mesopelagic Zone (200m-1000m)** with about 90% of world's fish (by weight).

➤ **Hydrothermal Vents:** Openings in the Earth's Crust on the ocean floor, which releases **geothermally heated mineral-rich water**, that is used by microorganisms to provide energy and nutrients through **chemosynthesis**.

➤ **Significance of Exploration:** Sources of energy (oil, gas, methane hydrate, ocean currents), promising source for new antibiotic and anti-cancer drugs, presence of polymetallic nodules, understanding, predicting and mitigating climate change etc.



Supreme Court strikes down retrospective Environmental Clearances

In **Vanashakti v. Union of India (2025)**, the SC **restrained** the Centre from granting **ex-post facto environmental clearance (EC)** to **mining projects** or regularising actions that **contravene the 2006 EIA notification**.

➤ The **EIA Notification, 2006**, clearly requires '**prior environmental clearance**' before a project can start.

➤ The court also held that such notification issued by the Centre (MoEFCC) were illegal, arbitrary, and **violative of Articles 14 (equality before law) and 21 (protection of life and personal liberty)** of the Constitution.

➤ Previously, in **Common Cause v. UoI & Ors. (2017)**, Supreme Court held that the concept of ex post facto or retrospective environmental clearance is **completely alien to environmental jurisprudence**.

Environmental Impact Assessment (EIA)

➤ **EIA notification 2006** was designed to ensure that developmental projects are **assessed** for their potential environmental impacts **before approval**.

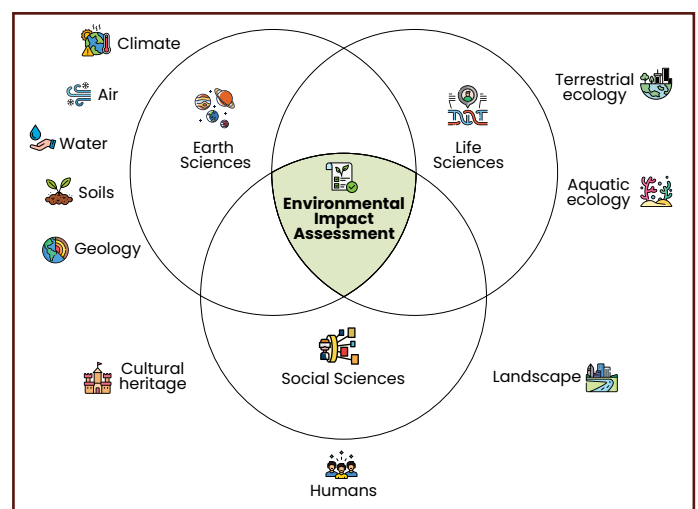
➤ It categorised the projects in **2 categories**:

⊕ **Category A:** National Level Appraisal

- ◆ Require prior EC from the **Central Government** in the MoEFCC.
- ◆ Decision based on recommendations of an **Expert Appraisal Committee (EAC)**.

⊕ **Category B:** State Level Appraisal

- ◆ Require prior EC from the **State/UT Environment Impact Assessment Authority (SEIAA)**.
- ◆ Decision based on recommendations of a **State or UT level Expert Appraisal Committee (SEAC)**.



Access to Obesity Management not available to most Indian Patients: World Heart report

“The World Heart 2025: Obesity and Cardiovascular Disease report” published by World Heart Federation highlighted the rising prevalence of obesity and gaps in access to treatment worldwide.

Key Observations

- » **Obesity in adults globally has quadrupled since 1990:** In 2022, 878 million adults lived with obesity, compared with 194 million in 1990 due to various factors (refer image).
- » **Future threat:** As per current trends, nearly **2/3rd adults (over 25 years)** could be overweight/obese by 2050.

About Obesity

- » Obesity is defined as an **abnormal or excessive fat accumulation that presents a risk to health**. The commonly used metric to classify obesity is **Body Mass Index (BMI)**, where a BMI of **25 or above** is considered overweight, and a BMI of **30 or above** is classified as obese. (WHO)
 - ⊕ BMI is calculated by dividing a person's weight in kilograms by their height in meters squared (kg/m^2).
- » Overall, **24% of Indian women and 23% of Indian men** are obese. (NFHS-5)

Key recommendations

- » **System-level interventions:** Policies that regulate food marketing, tax sugary drinks, subsidise healthy food options, etc.
- » **Medication:** Governments should increase efforts to expand the availability and affordability of obesity medications, such as GLP-1RAs.
- » **Other:** Lifestyle intervention, dietary modifications, Cardiovascular guidelines should incorporate obesity-specific recommendations, etc.

KEY FACTORS

Driving the rise of Obesity In India



High-Calorie, Low-Nutrient Diets

Increased consumption of refined carbohydrates and saturated fats.



Use of Genetically Modified Crops

Altered food composition impacting metabolism and weight gain



Easy Access to Processed Foods

Widespread availability of packaged, ready-to-eat meals



Physical Inactivity

Declining engagement in sports, exercise, and outdoor activities



Growing Culture of Eating Out

Frequent dining at restaurants where food is often cooked in unhealthy oils



Sedentary Lifestyles

Long hours of sitting, excessive screen time, and minimal movement in daily routines

Microsoft announces to lay off about 6000 Employees

Global Tech-giant, Microsoft, recently, announced to lay off **3% of its global workforce** (estimated around 6000 people) that would **affect employees across all levels, teams, and geographies**.

- » The reasons behind these layoffs include **slashing unnecessary layers of management** and seizing the **benefits of new technology including Artificial Intelligence (AI)**.

How AI is poised to change the Workplace structure?

- » **Traditional pyramidal structure:** Traditionally, organizations have been modeled with **broad base of lower-level employees**, a **mid-sized managerial layer**, and a **narrow top leadership tier**.
 - ⊕ It reflects a **hierarchy, clear chain of command**, with **layers of supervision and control**.

- » **Hourglass structure:** In this setup, **AI is gradually taking over the role of coordination, management, and decision-making**, with a **wider top layer** of strategic leaders and a growing **top tier of knowledge workers** while the **bottom diversifies into a mix of people and tools**.

Conclusion

The **shift from a pyramidal to hourglass structure** reflects a **broader transformation** in how organizations create value in the AI age. **Efficiency replaces supervision, insight replaces oversight**, and **strategic agility** becomes more important than **traditional control mechanisms**.

Potential implications on the Workforce



Layer

Implications



Lower

AI and RPA (Robotic Process Automation) can **eliminate repetitive clerical and administrative tasks**.



Middle

AI-based analytics and decision-support systems reduce the need for multiple layers of middle management.
E.g., AI dashboards can directly present insights to top executives, bypassing several levels of reporting managers.



Top

Increased demand for AI specialists, data scientists, and **Strategic thinkers** who can align AI capabilities with business goals.

India makes significant pledges at UN Peacekeeping Ministerial in Berlin

At a high-level ministerial summit in Berlin, 74 UN Member States made specific pledges including **airlift and rapid deployment capabilities, specialized training, technological enhancements, and advancing Women, Peace and Security Agenda.**

- India has pledged one **Quick Reaction Force (QRF) Company**, one women-led Police Unit, a SWAT Police Unit and peacekeeping training, capacity building and partnerships.
- Meeting coincided with the 10-year anniversary of the **2015 New York Summit on Peacekeeping.**
 - ⊕ The summit emphasized the need to **modernize peacekeeping operations**, improve **performance**, **ensure rapid deployment** and highlighted **shared responsibility** and **stronger regional partnership** to boost peacekeeping effectiveness.

India's Contribution to UN Peacekeeping

- **Highest Troops Contribution:** India has been a key contributor with over **2,90,000 peacekeepers serving** in more than **50 UN missions.**
 - ⊕ India is currently the **fourth largest troop-contributing nation with 5,375 personnel** after Nepal, Rwanda and Bangladesh.
- **Contributions in Historic Missions:** India played a key role in the Korean War armistice, peace missions in Cyprus, Congo etc.
- **Role Model for Women:** India became the **first country to deploy an all-women Formed Police Unit** (2007, Liberia).
- **Peacekeeping Honour:** In **2023**, India received the **UN's highest peacekeeping honour**, the **Dag Hammarskjöld Medal**, posthumously awarded to Indian peacekeepers.

About United Nations Peacekeeping

- **Genesis: Began in 1948** with the establishment of the **United Nations Truce Supervision Organization (UNTSO) in the Middle East.**
- **Deployment:** UN Peacekeeping Missions are deployed, by UN Security Council, to support ceasefires and peace agreements.
 - ⊕ **UN Peacekeepers** are also known as **Blue Helmets**, get their name from light blue (symbolizing peace) of the UN Flag.
- **Principles:** Guided by **Consent of the parties, Impartiality, Non-use of force except in self-defence and defence of the mandate.**

ISRO's 101st mission fails as PSLV rocket suffers malfunction

ISRO's 63rd PSLV mission (PSLV-C61/EOS-09) failed due to a **technical malfunction during the third stage** of the **PSLV rocket.**

- Since its first flight, Polar Satellite Launch Vehicle (PSLV) has **failed only twice** - inaugural flight in 1993 and again in 2017.

About PSLV-C61/EOS-09 Mission

- PSLV-C61 was meant to **carry the EOS-09** (Earth Observation Satellite-09) into a **Sun-Synchronous Polar Orbit (SSPO).**
 - ⊕ It was launched from the First Launch Pad at Satish Dhawan Space Centre in **Sriharikota.**
- **EOS-09 is an advanced Earth observation satellite**, equipped with **C-band Synthetic Aperture Radar (SAR)** technology.
- **Objective:** To provide **continuous and reliable remote sensing data** for operational applications across various sectors.
 - ⊕ This satellite can capture **high-resolution images of the Earth's surface in any weather, day or night.**

About PSLV

- It is **India's third-generation launch vehicle**, developed by ISRO.
- It is a **four-stage vehicle** and **first Indian launch vehicle** to be equipped with **liquid stages.**
- Achieved **first successful launch** in October 1994 and earned the title **"the workhorse of ISRO"** for its consistent performance.
- Capable of launching satellites into **LEO, Geosynchronous, and Geostationary orbits**, like satellites from the **IRNSS Constellation.**
 - ⊕ Successfully launched major missions like **Chandrayaan-1 (2008)** and **Mars Orbiter Spacecraft (2013).**

Also in News



Folk art forms of Andhra Pradesh

Many **traditional folk art** forms like **Tholu Bommalata, Jamukula Pata, and Tappeta Gullu** are vanishing due to loss of patronage.

Key Folk Arts of Andhra Pradesh

- **Tholu Bommalata:** 3rd-century shadow puppetry art, depicting Hindu epics through music, storytelling, and acrobatics by wandering performers.
- **Jamukula Pata:** It is performed by three artistes: one **patakudu (singer)** with a chorus given by **two persons** in villages and entertained people from **downtrodden communities.**
- **Tappeta gullu:** Traditional devotional **dance form performed by shepherds** to appease the rain god and Gangamma. The artistes, wearing ankle bells, play a small drum tied to their chest as they dance to devotional songs.
- **Puli Veshalu:** Performed by a group of **artists painted like tigers** moving their bodies rhythmically in this art form. It is a **famous folk art form of Vizianagaram.**



Global EV Outlook, 2025

The **Global EV Outlook 2025**, released by the **International Energy Agency (IEA).**

Key Findings

- **EV Share: Over 1 in 4 cars sold globally in 2024 was electric.**
 - ⊕ **China**, leads with **nearly 50% of global EV car sales.**
- **Asia and Latin America** (notably **Thailand, Vietnam, and Brazil**) are emerging as **new EV growth hubs.**
- **Projection:** Despite uncertainties, EVs are expected to reach **over 40% share** of global car sales.
- **Manufacturing: China remains the global EV production leader**, contributing **> 70% of total output.**
- **2 & 3-Wheelers:** Most **electrified transport segment** in 2024.
 - ⊕ **India**, leads global growth in **electric three-wheelers (~20% YoY growth in 2024)**, aided by **PM E-DRIVE.**



Mosura Fentoni

Scientists have discovered a small three-eyed predator called **Mosura fentoni**, nicknamed as “**sea moth**”, which lived in the ocean about 506 million years ago.

About Mosura fentoni

- It belonged to an ancient group of sea creatures called **radiodonts**, which are related to today's insects, spiders and crabs.
- It had **jointed claws** like insects or crabs.
- Fossils show it had a unique body part with **16 segments and gills**, helping it breathe better.
- **Size**: Only about the size of a human finger.
- **Significance**: Scientists can understand how these sea animals evolved from simple, worm-like bodies to more complex forms.



Non B-DNA

Researchers have predicted **where DNA sequences might form alternative structures beyond the traditional double helix**. These alternative conformations, known as **non-B DNA**.

- It refers to any DNA structure that deviates from the standard right-handed double helix (B-DNA) and include **structures** such as **cruciforms, slipped structures, triplexes, G-quadruplexes, Z-DNA** etc.
- Non-B DNA have been linked to the **regulation of cellular processes and genome evolution** and has been associated with **genetic diseases and cancer**.
- It has higher **mutation rates** and **instability**, potentially causing **DNA breakpoints and chromosomal rearrangements** linked to **evolution and genetic disorders**.



Protein based Vaccines

US FDA approves Novavax's **protein-based COVID vaccine** called Nu-vaxovid.

About Protein-based vaccines

- These are a type of **subunit vaccines** that also includes polysaccharide vaccines and conjugate vaccines.
- They contain **carefully identified protein fragments** of a virus, chosen for their ability to stimulate human immune system.
 - ⊕ These are often combined with another substance that helps to increase the immune system response to the protein fragments, called an **adjuvant**.
- Protein fragments by themselves are **harmless and incapable of causing disease**; they have no function on their own.



Tulare Lake

California's Tulare Lake, which disappeared earlier, reemerged after **130 Years** as a result of 2023's atmospheric rivers over California.

About Tulare Lake

- **Location**: San Joaquin Valley, California, USA.
- It was once the **largest freshwater lake west of the Mississippi River**.
- **Kern River**, fed by snowmelt from the **southern Sierra** replenishes Tulare Lake.
- It disappeared due to **man-made irrigation**.
- **Tachi Yokut tribe** relied on the lake as rainfall is scarce in the region.



Land Port

In exercise of powers under Foreign Trade (Development & Regulation) Act, 1992, Central Government **restricted import of readymade garments** from Bangladesh to India through **Land Ports**.

About Land port

- Land port means an area on the international borders of India with facilities for clearance and transport of passengers and goods.
- Established as a statutory body under the Ministry of Home Affairs, the **Land Ports Authority of India** is entrusted with the task of building land ports.
- There are currently **Fifteen Land ports** in India at Attari, Agartala, Darranga, Petrapole etc.



Pseudomonas aeruginosa

A new study reveals that **Pseudomonas aeruginosa**, a **common hospital bacterium** in India, **can degrade medical-grade plastic, materials used in sutures and implants**.

- Scientists isolated the **enzyme Pap1** from a strain of **Pseudomonas aeruginosa** and the enzyme degraded 78% of a plastic sample in just seven days.

About Pseudomonas aeruginosa

- **Pseudomonas aeruginosa**, a bacteria known for **causing 10%-30% of hospital-acquired infections** in India.
- These bacteria are commonly found in the environment, like in **soil and water**.
- It **can cause infections** in the blood, lungs (pneumonia), urinary tract or other parts of the body after surgery.
- It uses **plastic** as its **only food source**.



New Caledonia

New Caledonia, a French Pacific territory under the **1998 Nouméa Accord**, faces renewed unrest after **May 2024 riots** over electoral roll changes and the **collapse of political talks**.

- Despite the **rejection of independence** in all three referendums (2018, 2020, and 2021), pro-independence demands by **indigenous Kanak people** remain strong.

About New Caledonia

- It is a French collectivity in the **southwestern Pacific Ocean**, east of Australia.
- It includes the island of **New Caledonia**, where the **capital, Noumea** is located; the Loyalty Islands; the Bélep Islands; and the Île des Pins.
- New Caledonia's lagoons, with their **diverse reefs and associated ecosystems**, were designated a **UNESCO World Heritage site** in 2008.



AHMEDABAD



BHOPAL



CHANDIGARH



DELHI



JAIPUR



JODHPUR



GUWAHATI



HYDERABAD



LUCKNOW



PRAYAGRAJ



PUNE



RANCHI



SIKAR