

# NEXT IAS

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## HELP TO DIE: FRANCE'S MACRON BACKS BILL ALLOWING MEDICALLY ASSISTED DEATH

### Context

- French President Emmanuel Macron recently announced **legislation, 'Help to Die'/End of life' bill, to allow eligible patients to administer a lethal substance** under 'precise conditions'.

### About

- It is a move that is aimed at **alleviating patients suffering from incurable diseases**, thereby allowing people to 'die at will'.
- This bill **could add France to the list of European countries that legally allow euthanasia** for the terminally ill.
  - Belgium, **the Netherlands and Luxembourg, Germany and Spain** also permitted assisted dying.

### 'Active assistance dying' legislation of France

- Under 'active-assistance dying', **a lethal substance will be prescribed to the patient**, who can administer it themselves or with the help of a third party if they are physically unable to do so.
- The third party can be a **volunteer, the doctor, or the nurse** treating the patient, according to the text. The substance can be administered at the patient's home, in care homes for the elderly or in care centres.
- The medical team will have 15 days to respond** to a patient's request, and only after the approval will 'help to die' be valid for three months, during which the patient can retract at any moment.
- Minors and patients suffering from Alzheimer's disease** and other psychiatric or neurodegenerative conditions **will not be eligible** under the right-to-die bill as the condition may hamper their decision-making abilities.

### What is Euthanasia?

- Euthanasia is the **act of deliberately ending a person's life** to eliminate pain or suffering. Ethicists differentiate between **active and passive euthanasia**.

Active euthanasia	Passive euthanasia
<ul style="list-style-type: none"> <li>Also known as assisted suicide, it is the act of <b>deliberately and actively doing something to end a person's life</b>.</li> <li>It is done through steps such as <b>administering a lethal injection or overdose of medication</b>.</li> <li>Active euthanasia <b>involves directly causing the patient's death</b>.</li> <li>This type of euthanasia is <b>illegal in most countries, including India</b>.</li> </ul>	<ul style="list-style-type: none"> <li>It is defined as <b>intentionally letting a patient die by withholding artificial life support</b> such as a ventilator or a feeding tube</li> <li>This can include <b>removing a patient from life support or not providing treatment</b> for a terminal illness.</li> <li>Passive euthanasia is <b>legal in some countries, including India</b>, under certain circumstances and with proper consent.</li> </ul>

### Status of euthanasia in India

It differs between active and passive forms.

- Passive Euthanasia (withdrawing life support):** This is legal in limited circumstances. The 2018 Supreme Court judgement in the **Common Cause (A Regd. Society) vs. Union of India and Anr**, allowed passive euthanasia for terminally ill or permanently vegetative patients with a valid living will.
  - The court further eased norms for this process in January 2023.

- Active Euthanasia (administering lethal medication):** This remains illegal in India. The Indian Penal Code criminalizes both causing death (murder) and aiding suicide.

### Arguments in favour of euthanasia

- End of Pain:** Euthanasia provides a way to relieve the intolerably extreme pain and suffering of an individual. It relieves the terminally ill people from a lingering death.
- Respecting Person's Choice:** The essence of human life is to live a dignified life and to force the person to live in an undignified way is against the person's choice. Thus, it expresses the choice of a person which is a fundamental principle.
- Treatment for others:** In many developing and underdeveloped countries like India, there is a lack of funds. There is a shortage of hospital space. So, the energy of doctors and hospital beds can be used for those people whose life can be saved instead of continuing the life of those who want to die.
- Dignified Death:** Article 21 of the Indian Constitution clearly provides for living with dignity. A person has a right to live a life with at least minimum dignity and if that standard is falling below that minimum level then a person should be given a right to end his life.



- **Addressing Mental Agony:** The motive behind this is to help rather than harm. It not only relieves the unbearable pain of a patient but also relieves the relatives of a patient from the mental agony.

### Arguments against

- **Medical Ethics:** Medical ethics call for nursing, caregiving and healing and not ending the life of the patient.
  - ♦ In the present time, medical science is advancing at a great pace making even the most incurable diseases curable today.
- **Moral Wrong:** Taking a life is morally and ethically wrong. The value of life can never be undermined.
- **Vulnerable people will become more prone to it:** Vulnerable people would feel obliged to opt for euthanasia as they may see themselves as a burden to society.
- **Suicide v/s Euthanasia:** When suicide is not allowed then euthanasia should also not be allowed. A person commits suicide when he goes into a state of depression and has no hope from the life. Similar is the situation when a person asks for euthanasia.

### Legal Provisions in India and related court judgements

- **Section 306 of the I.P.C.:** Every act of aiding and abetting the commission of suicide are punished under the section 306 of the Indian Penal Code.
- **State of Maharashtra v. Maruti Shripati Dubal, 1987:** It was held in this case by the Bombay High Court that 'right to life' also includes 'right to die' and Section 309 (punishes attempt to commit suicide) was struck down.
  - ♦ The court clearly said in this case that the **right to die is not unnatural** and also mentioned many instances in which a person may want to end his life.
- **Gian Kaur v. State of Punjab, 1996:** It was held by the five-judge bench of the Supreme Court that the "right to life" guaranteed by Article 21 of the Constitution **does not include the "right to die"**.
  - ♦ The court mentioned in this case that **Article 21 only guarantees right to life and personal liberty and in no case can the right to die be included in it.** In India, like almost in other countries, euthanasia has no legal aspect.
- **Naresh Marotrao Sakhre And Another vs Union Of India And Others, 1994:** Distinguishing euthanasia from suicide, court observed that, "suicide by its nature is an act of self-killing or self-destruction, an act of terminating one's own

act and without the aid or assistance of any other human agency.

- ♦ **Mercy killing is nothing but homicide**, whatever the circumstances in which it is affected. Unless it is specifically accepted it cannot be an offense. Indian Penal Code further punishes not only abetment of homicide, but also abetment of suicide.

### Way Forward

- Euthanasia challenges traditional views on death and medicine. **Public discourse that considers religious, ethical, and cultural perspectives is crucial.**
- If euthanasia or PAS is legalized, **strict guidelines and safeguards are needed to prevent abuse or coercion.**
- **Ensuring access to quality palliative care**, which focuses on comfort and symptom relief, should be a priority alongside any discussion of euthanasia.

Source: Firstpost

## SAMUDRAYAAN MISSION

### Context

- The minister of Earth Sciences confirmed that the **Samudrayaan mission** is scheduled to explore the bed of the ocean by 2025 end.

**DEEP OCEAN MISSION**  
EXPLORING THE DEEP OCEAN - THE FINAL FRONTIER ON PLANET EARTH

Oceans are the key to sustenance of life on our planet. They are the driving force for monsoons, flywheel of climate, vital source of natural resources and act as a trigger for ocean hazards. Oceans contribute immensely to "Blue Economy" through sectors such as Fisheries, Renewable Energy, Oil & Gas, Minerals, Shipping, Tourism, etc. The lives and livelihoods of about 380 million population living along the 7800 km long coastline of India are intricately linked to the Oceans. Climate change and anthropogenic impacts are threatening ocean health and biodiversity. Yet, 95% of the deep ocean remains unexplored.

India's Deep Ocean Mission will contribute to our understanding of the oceans, realising our "Blue Economy" vision and managing our Oceans sustainably. Being undertaken at a cost of ₹4077 Crore over the next 5 years, the Mission will be spearheaded by the Ministry of Earth Sciences in synergy with other Central Ministries, National Institutions, Universities and Industry.

**Technologies for Autonomous Underwater Vehicles and Deep Sea Mining**  
Manned submersible capable of diving up to 6000 m to the bottom of the ocean.  
Mining tools to explore 300 MMT of valuable metal deposits in a 75,000 square kilometre area in the Indian Ocean sea bed.

**Deep Ocean Survey and Exploration**  
Construction of a state-of-the-art research vessel to explore hydrothermal deposits in mid-ocean ridges for precious metals like Copper, Zinc, Aluminum, Silver, and Platinum, etc.

**Ocean Climate Change Advisory Services**  
Accurate future projection of sea level change and extreme events like cyclones, storm surges and waves to safeguard our coastal population, economy and infrastructure.  
A suite of state-of-the-art ocean models and an improved network of ocean observations based on deep sea gliders, deep Argos, etc.

**Advanced marine station for Ocean Biology**  
Translate research in ocean biology and engineering into industrial application and product development through establishment of on-site business incubator facilities.

**Energy and freshwater from the Ocean**  
Engineering capabilities to scale up offshore Ocean Thermal Energy Conversion (OTEC) powered energy generation and desalination plant for clean energy and fresh water.

**Exploration and Conservation of Deep Sea Biodiversity**  
Inventory of deep sea fauna and flora including microbes.  
Products of industrial importance from the deep-sea microbes.

- ♦ India is on a path to send its scientists to **study the deep ocean 6 km under the sea surface** under the mission.

### India's Deep Ocean Mission (DOM)

- DOM is implemented by the **Ministry Of Earth Sciences (MoES)** and was approved in 2021 at a cost of nearly **Rs 4,077 crore** over a five-year period in a phased manner.

### Samudrayaan Mission

- As a part of DOM, India's flagship deep ocean mission, 'Samudrayaan', was initiated in 2021 by the **Ministry of Earth Sciences**.



- With 'Samudrayaan', India is embarking on a **crewed expedition to reach a depth of 6,000 m** to the ocean bed in the central Indian Ocean.
- This journey will be accomplished by **Matsya6000, a deep-ocean submersible**.

### Matsya6000

- The Matsya6000 is **India's flagship deep-ocean human submersible** that aims to reach the ocean bed at a depth of 6,000 m.
- Accompanied by **three crew members, called "aquanauts"**, the submersible carries a suite of scientific tools and equipment designed to facilitate observations, sample collection, basic video and audio recording, and experimentation.
- The submersible will be equipped with a **suite of scientific sensors and tools**, and have an operational endurance of **12 hours**, which is expandable up to 96 hours in the event of an emergency.
- Constructed from a **titanium alloy**, the sphere is engineered to withstand pressures of up to **6,000 bar**.
- It can move at a speed of about **5.5 km/hr** using underwater thrusters.

### Significance

- So far, countries such as the **U.S., Russia, China, France and Japan** have carried out successful deep-ocean crewed missions. **India is poised to join the ranks of these nations** by demonstrating expertise of and capability for such missions.
- The '**New India 2030**' document outlines the blue economy as the sixth core objective for India's growth. The years 2021-2030 have been designated by the United Nations as the '**Decade of Ocean Science**'.
- DOM is one of nine missions under the **Prime Minister's Science, Technology, and Innovation Advisory Council (PMSTIAC)**.
- The mission is significant for the **sustainable extraction of valuable resources, including polymetallic nodules and polymetallic sulfides**.

Source: TH

## RISING GLOBAL SEA SURFACE TEMPERATURE

### Context

- The **average global sea surface temperature (SST)** for February 2024 stood at **21.06 degree Celsius**, the **highest ever** in a dataset that goes back to **1979**.
  - ♦ Sea surface temperature is the **temperature of the water at the ocean surface**.

### Reasons for Rising SST

- **Human Activities:** Since the **Industrial Revolution** kicked off in the 19th Century, human activities such as burning fossil fuels have released high levels of **greenhouse gases (GHGs)** in the atmosphere.
  - ♦ Carbon dioxide, methane, ozone, and nitrous oxide are some of the notable GHGs, which trap heat in the atmosphere and contribute to global warming.
  - ♦ As a result, the average global temperature has risen at least **1.2 degree Celsius above pre-industrial times**.
- **Absorption by Oceans:** **Almost 90 percent** of the extra heat trapped by GHGs has been **absorbed by the oceans**, making them steadily warmer over the decades.
- **El Niño:** A weather pattern that refers to an abnormal warming of surface waters in the equatorial Pacific Ocean — has contributed to both **ocean warming and rising global surface temperatures**.

- **Weaker Winds:** There is also **less dust blowing off the Sahara Desert** recently due to **weaker-than-average winds**.
  - ♦ Typically, the dust forms a “**giant umbrella that shades**” the Atlantic water and reduces ocean temperatures.
  - ♦ But now, the umbrella has partially folded and more of the Sun is beating down on the ocean.

### Impact of Rising SST

- **Ocean Stratification:** Warmer oceans lead to an **increase in ocean stratification** — the **natural separation of an ocean’s water into horizontal layers** by density, with warmer, lighter, less salty, and nutrient-poor water layering on top of heavier, colder, saltier, nutrient-rich water.
  - ♦ Usually, **ocean ecosystems, currents, wind, and tides mix these layers**.
  - ♦ The rise in temperatures, however, has made it **harder for water layers to mix with each other**.
  - ♦ Due to this, oceans are able to absorb less carbon dioxide from the atmosphere and the oxygen absorbed isn’t able to mix properly with cooler ocean waters below, **threatening the survival of marine life**.
- **Threat to Phytoplanktons:** Nutrients are not able to travel up to the surface of the oceans from below. This could **threaten the population of phytoplankton** — single-celled plants that thrive on the ocean surface and are the base of several marine food webs.
  - ♦ Phytoplankton are **eaten by zooplankton**, which are consumed by other marine animals such as crabs, fish, and sea stars.
  - ♦ Therefore, if the phytoplankton population plummets, there could be a **collapse of marine ecosystems**.
- **Marine Heat Waves:** Warmer oceans cause marine heat waves (MHWs), which occur when the surface temperature of a particular region of the sea **rises to 3 or 4 degree Celsius** above the average temperature for **at least five days**.
  - ♦ Between **1982 and 2016**, such heatwaves have **doubled in frequency** and have become **longer and more intense**, according to the UN’s Intergovernmental Panel on Climate Change (IPCC).
  - ♦ MHWs are devastating for marine ecosystems as they contribute to **coral bleaching**, and also impact the **migration pattern of aquatic animals**.

- **Increase in Intensity of Cyclones:** Warmer temperatures lead to a **higher rate of evaporation** as well as the **transfer of heat from the oceans to the air**.
  - ♦ That’s why, when storms travel across hot oceans, they gather **more water vapour and heat**.
  - ♦ This results in **more powerful winds, heavier rainfall, and more flooding** when storms reach the land — meaning heightened devastation for humans.

### Conclusion

- In 2023, **the concentration of GHG the highest levels ever recorded in the atmosphere**.
- The only way to avoid or blunt the aforementioned consequences is to **reduce GHG emissions**.

Source: IE

## BOOSTING EXPORTS FROM MSMEs

### Context

- **NITI Ayog** has released a report named ‘**Boosting Exports from MSMEs**’ which includes measures for boosting e-commerce exports.

### About MSMEs

- **Contribution in Economy:** MSMEs are often called the powerhouse of the Indian economy; they account for more than 11 crore jobs and contribute around **27% of India’s GDP**.
- **Employment Generation:** The sector consists of around 6.4 crore MSMEs, with 1.5 crore of them registered on the Udyam portal and employs around **23% of the Indian labor force**, making it the **second-largest employer in India after agriculture**.
- **Output and Exports:** They account for **38.4% of the total manufacturing** output and contribute **45.03% of the country’s total exports**.

### Under-utilized Potential of Exports of MSMEs

- Exports represent an **enormous and under-utilized opportunity** for the MSME sector.
- **Sectors where Indian MSMEs can participate and compete in export markets include handicrafts, handloom textiles, ayurveda and herbal supplements, leather goods, imitation jewellery and wooden products.**



- ◆ Globally, these sectors constitute substantial markets exceeding USD 340 billion, whereas their **domestic market is considerably smaller.**
- **Challenges:**
  - ◆ It proves more challenging for small enterprises to **enter foreign markets, adhere to compliance requirements, achieve cost-effective production, and efficiently manage logistics for clients.**
  - ◆ However, the emergence of both broad and niche **e-commerce marketplaces** addresses many of these barriers.
- ◆ On the other hand, a process must be created for time bound disbursement of incentives so that working capital is not blocked for MSMEs.

### Recommendations to Boost MSME Exports:

- **Create One Stop Information Channel for Exporters:** India has several portals that help exporters access information, most of which offer **incomplete or outdated information.**
  - ◆ Therefore, **creating a one stop information data** intelligence portal using AI based interface will be essential to impart information to MSMEs.
- **Create National Trade Network (NTN) as Comprehensive Trade Portal:** Currently an exporter needs to navigate multiple portals to get necessary approvals.
  - ◆ This difficulty can be eliminated by creating an end-to-end national trade portal (NTN) which will provide seamless experience to exporters including answering queries and resolution of any gaps in paperwork.
- **Promote E-commerce Exports:** Access to the market consistently emerges as a significant obstacle hindering MSME exports.
  - ◆ According to Global Trade Research Initiative's (GTRI) report, in 2022 MSMEs in China are already exporting goods worth over \$200 bn through E-commerce platforms while India's e-commerce export is barely \$2 bn.
  - ◆ One key reason for this gap is the cumbersome compliance process associated with exports, especially when it comes to payment reconciliation, which is particularly challenging for a new or small exporter.
- **Promote Ease of Merchandise Exports:** Ease of Doing Business should be particularly targeted at MSME exporters.
  - ◆ For example, MSMEs can be offered relaxation from certain compliance requirements for a period and forgiven on errors as they begin to learn requirements of export markets.
- **Improve Access to Export Finance:** Access to finance is regularly seen as a key bottleneck for MSMEs.
  - ◆ The current uptake of ECGC schemes is only 10% and the government must create an incentive package to increase it to 50% or more.
  - ◆ Finally, a single marketplace can be created, like in the case of higher education loans, where all providers of export credit can compete for business and help reduce the cost to MSMEs.
- **Ensure Accurate Measurement:** Currently, a dependable single data source for MSME exports is lacking.
  - ◆ Establishing a reliable depiction of MSME exports involves integrating DGFT trade data with GST and income tax data.
  - ◆ This fusion of datasets, utilizing PAN numbers as the common identifier, will provide an accurate portrayal of MSME exports.

### Conclusion

- Overall, the potential of MSMEs to grow exports is enormous.
- This potential can be realized through some pragmatic measures which reduce the cost and friction of doing business for these firms.

Source: TH

## NEWS IN SHORT

### ATMOSPHERIC RESEARCH TESTBED IN CENTRAL INDIA

#### Context

- **The Minister of Earth Sciences** inaugurated the **first phase of the Atmospheric Research Testbed in Central India (ART-CI)** in Sehore district of Madhya Pradesh.

#### About

- It will help **better understand** the cloud systems, land-atmospheric systems and tracking of the low pressure systems and depressions.
- Data obtained from the testbed facility will be **assimilated and used to improve the forecasts.**

- Nearly **25 high-end instruments** like the aethalometer for aerosol studies, cloud condensation nuclei counter, laser ceilometer to measure cloud sizes, micro rain radar to calculate raindrop size and its distribution have been installed.

Source: IE

## POBITORA WILDLIFE SANCTUARY

### Context

- The **Supreme Court** froze the Assam government's move to **de-notify Pobitora wildlife sanctuary**.

### About

- Pobitora wildlife sanctuary is located in the capital city of Guwahati.
- It is referred as **'Mini Kaziranga'** owing to the similarity of landscape, floral, and faunal distribution.
- It has a **dense population of the Great Indian one-horned rhinoceros**.
- Pobitora was **declared a reserved forest in 1971** and **a wildlife sanctuary in 1987**.

### Great Indian one-horned rhinoceros

- Habitat:** It is confined to the tall grasslands and forests in the foothills of the Himalayas.
- Distribution:** The Great one horned rhino is commonly found in Nepal, Bhutan, Pakistan and in Assam, India.



- Indian Habitat:** The Kaziranga National Park and Manas National Park in Assam, Pobitora reserve forest in Assam (having the highest Indian rhino density in the world), Orang National park of Assam, Laokhowa reserve forest of Assam having a very small population and Royal Chitwan National Park in Nepal are homes for this endangered animal.

### Conservation Status:

- IUCN Status: vulnerable
- CITES: Appendix I (I includes species threatened with extinction. Trade in specimens of these species is permitted only in exceptional circumstances).

Source: TH

## HYDERABAD LIBERATION DAY

### Context:

- Recently, the Union Ministry of Home Affairs (MHA) issued gazette notification to celebrate 17th September as Hyderabad Liberation Day annually.

### About the Hyderabad Liberation Day

- It commemorates the integration of the princely State of Hyderabad, encompassing **Telangana, Marathwada, and Hyderabad-Karnataka** into the Indian Union on September 17, 1948.
- The region was under the **rule of the Nizam** and did not gain independence for 13 months after India's Independence.

### The Role of Freedom Fighters:

- The liberation of Hyderabad was possible **due to the swift and timely action** by the first Minister of Home Affairs of India, Shri Sardar Vallabhbhai Patel, under **Operation Polo**.
  - It was the **codename for the police action** against the Princely State of Hyderabad.
  - Mir Osman Ali Khan** was the ruler of Hyderabad during the operation.
- The struggle is replete with illustrations of struggles in the entire freedom movement, including the **fight of Ramji Gond against the British**, the fight of **Komaram Bheem**, and the valour of **Turrebaz Khan in 1857**.

### The People's Movement

- The liberation of Hyderabad transformed into a massive people's movement with the spontaneous participation of people chanting **'Vande Matram'** and demanding the merger of the samsthan into the Indian Union.
  - The struggle became vociferous after Indian independence.

Source: TH

## ASTRONOMICAL GRAND CYCLES

### Context:

- Recently, a study found geologic evidence that the earth is warming in a cycle that runs millions of years.

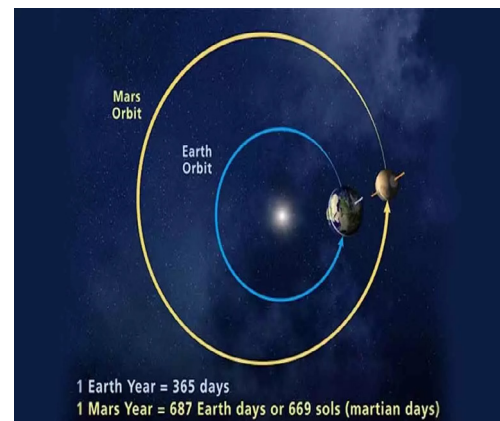
### About Astronomical Grand Cycles:

- It refers to the long-term cycles of celestial bodies that have profound impacts on Earth's climate.
- These cycles, particularly the **2.4 Million-Year Cycle**, are **driven by the gravitational interactions** between **Earth and other planets, particularly Mars**.
- The cycle is characterised by **'giant whirlpools or eddies'** (periods of stronger or weaker deep-sea currents) that can reach the **abyss** (seafloor at the deepest parts of the ocean).
  - During periods of **stronger currents**, these powerful eddies erode away at the large pieces of sediment that accumulate during calmer periods in the cycle.
- It is believed **to influence Earth's climate**, causing periods of **global warming or cooling**.

### The Role of Mars:

- The **2.4 million-year cycle** coincides with the timing of known **gravitational interactions between Earth and Mars** as the two planets orbit the sun.

- Mars' gravitational pull on Earth** may cause our planet to be **pulled slightly closer to the sun**, resulting in **more solar radiation** and hence a **warmer climate**.
- It leads to periods of higher incoming solar radiation and warmer climates in cycles of 2.4 million years on Earth.



### Impact on Earth's Climate:

- The increase in solar radiation during the peak of these cycles can lead to **warmer oceans**, which in turn leads to **vigorous deep ocean circulation**.
- It could potentially **keep the ocean from becoming stagnant** even if the Atlantic Meridional Overturning Circulation (AMOC), system of ocean currents, slows or stops functioning.

Source: DTE

