

**France Became the First Country to Enshrine Abortion In Constitution****Why in News?**

Recently, France has become the only country to explicitly guarantee abortion as a constitutional right.

**About Abortion**

- It refers to a procedure to end a pregnancy.
- It can be done two different ways:
  - Medication Abortion: It uses medicines to end the pregnancy. It is sometimes called a “medical abortion” or “abortion with pills”.
  - Procedural Abortion: It is a procedure to remove the pregnancy from the uterus. It is sometimes called a “surgical abortion”

**About Amendment of the French Abortion Law**

- Decriminalization in 1975:
  - France decriminalized abortion in 1975, aligning with its commitment to reproductive rights.
- Constitutional Right in 2024:
  - By amending the Article 34 of the French Constitution.
  - It specifies the law determining the conditions by which the freedom of women to have recourse to an abortion is guaranteed.
- Amendment to the Article 34 of the French Constitution:
  - To specify the law determining the conditions by which the freedom of women to have recourse to an abortion, which is guaranteed.
- Article 34 of the French Constitution:
  - It grants the French Parliament the authority to legislate on matters related to abortion, defining the conditions under which abortion is permitted, and regulating healthcare facilities that provide abortion services.

**Global Abortion Laws:**

- Countries Banned Abortions:
  - Abortions are illegal in 24 countries, where about 90 million or 5% of women of reproductive age reside.
  - These include:
    - In Africa: Senegal, Mauritania, and Egypt
    - In Asia: Laos and the Philippines
    - In Central America: El Salvador and Honduras
    - In Europe: Poland and Malta
- Countries with Significant Restrictions:
  - Around 50 Countries, including Libya, Indonesia, Nigeria, Iran, and Venezuela- permit abortions if a woman's health is at risk.
  - Several others allow it in cases of rape, incest or foetal abnormality.
- Countries with Accessible Abortion Laws:
  - In Canada, Australia and much of Europe there are few restrictions other than gestational limits.
  - New Zealand decriminalised abortions in 2020, extending the legal period to 20 weeks of pregnancy.
- Countries with Stringent Laws:
  - Some countries with hardline laws imprison women for getting an abortion, such as El Salvador where several women undergone abortions have been found guilty of “aggravated homicide”, including in cases of miscarriage.

**Concerning Abortion Statistics by World Health Organization (WHO):**

- High Number of Induced Abortions:
  - Around 73 million induced abortions (means, a pregnancy ended intentionally) take place worldwide each year.
  - 6 out of 10 (61%) of all unintended pregnancies, and 3 out of 10 (29%) of all pregnancies, end in induced abortion.
- Unsafe Abortions:
  - Around 45% of all abortions are unsafe, of which 97% take place in developing countries.

**Status of Abortion in India: Data by United Nations Population Fund (UNFPA)'s State of the World Population Report 2022:**

- Unsafe abortions:
  - These are the third leading cause of maternal mortality in India, and close to 8 women die from causes related to unsafe abortions each day.
  - Between 2007-2011, 67% of abortions in India were classified as unsafe.
- Unintended Pregnancies:

- It has found that 121 million unintended pregnancies occur every year globally, an average of 331,000 a day. One in seven unintended pregnancies in the world take place in India.

**Arguments in Favour of Abortion:**

- Avoiding Unsafe Abortions: Legalizing abortion helps to prevent unsafe abortions, which can pose serious risks to women's health and may lead to fatalities.
- According to the UN Population Fund: Close to eight women die every day in the country from causes related to unsafe abortions.
- According to a report published by the Center for Reproductive Rights: Legal and practical barriers are a serious impediment with unsafe abortions in India accounting for 20% of all maternal deaths.
- Bodily Autonomy: Abortion upholds a woman's right to bodily autonomy, enabling her to make decisions about her own body and reproductive choices.
- In *Suchita Srivastava and Anr Vs Chandigarh administration* (2009) the Supreme Court asserted that a woman's right to make reproductive choices is also a dimension of 'personal liberty', as understood under Article 21 of the Constitution of India.

**Arguments against Abortion:**

- Religious Views: In many religions, it is believed that a child is created with god's permission and abortion would result in disobeying god's command.
- Against Human Rights: In the era of universal human rights, there can be no 'right' to take a human life.
- Foetal Pain: A foetus beyond 20 weeks of gestation may experience pain during abortion.

**SCIENCE AND TECH**

**India's Nuclear Programme**

**Why in News?**

Recently, the Prime Minister witnessed the start of core loading for India's indigenous 500 Mwe Prototype Fast Breeder Reactor (PFBR) in the nuclear plant at Kalpakkam, Chennai.

**What is India's 3 Stage Nuclear Program:**

- The goal of the three-stage nuclear programme is to use India's enormous Thorium deposits, which make up around 25% of the global total.
- In addition, India only possesses 2% of the world's uranium deposits, making them scarce.

**Stage I: Pressurized Heavy Water Reactors (PHWRs):**

- Pressurized heavy water reactors (PHWRs) are used in the first phase of India's three-stage nuclear power development.
- These reactors create plutonium-239 as a byproduct in addition to power.
- PHWRs were selected for the first phase because of their effective reactor design, which maximizes the use of uranium.
- Utilization and Operation of Uranium:
  - Use of Natural Uranium: PHWRs burn natural uranium, which is primarily composed of uranium-238.
  - Production of Plutonium: In a reactor, uranium-238 can be transformed into plutonium-239.
  - Heavy Water Usage: In PHWRs, heavy water, or deuterium oxide, or D<sub>2</sub>O, is used as a coolant and moderator.

**Stage II: Fast Breeder Reactor (FBR):**

- Fast breeder reactors (FBRs) are used in the second phase of India's three-stage nuclear power development.
- Type of Fuel: FBRs use a mixed oxide (MOX) fuel composed of plutonium-239 recovered from spent fuel from the first stage and natural uranium.
- Fission Process: In order to produce energy in FBRs, plutonium-239 undergoes fission.
- Breeding Fuel: FBRs are able to "breed" more fuel than they consume because uranium-238 in the mixed oxide fuel transmutes to more plutonium-239.
- Change to Thorium: When there is enough plutonium-239 in stock, thorium can be added to the reactor as a blanket material.

**Stage III: Thorium-Based Reactors:**

- In the third stage of India's three-phase nuclear power programme, self-sustaining reactors powered by uranium-233 and thorium-232 will be deployed.
- Features of Reactors:
  - Refueling: Reactors classified as thermal breeder reactors are able to be refuelled with naturally occurring thorium following the initial fuel charge.
  - Fuel Composition: The main fuel used in the reactor is thorium-232, which is converted to uranium-233 to provide energy.

**Implementation Plan:**

- Capacity Growth:
  - By using PHWRs and FBRs, the third stage is expected to help India's nuclear energy sector grow beyond 10 GW.

- Timeline:
  - It is anticipated that full thorium reserve exploitation in India would take place three to four decades after fast breeder reactors begin commercial operations.

**Availability of Thorium Reserves:**

- Thorium availability makes nuclear energy a promising solution for India's energy needs.
- It is considered the fuel of the future, and India is a leading country in Thorium resources.
- This could help India achieve its goal of being a fossil fuel-free nation.

**Note :-**

- According to the UN nuclear agency IAEA (International Atomic Energy Agency), there are many benefits with Thorium compared to Uranium, which is currently used in nuclear reactors.
- Thorium is four times more abundant in nature than Uranium, and is widely distributed throughout the Earth's crust.
- Thorium fuel generates less harmful waste compared to natural Uranium and most importantly, no new weapon-grade material is present in the waste profile; the waste consists of the radioisotope Uranium-233, or U233, which is virtually impossible to weaponise.

**Prototype Fast Breeder Reactor**

**About: Beginning of Stage II:**

- The country's three-stage nuclear power programme begins with PFBR, the second stage, where the spent fuel from the first stage will be "reprocessed and used as fuel."

**Feature:**

- This sodium-cooled PFBR's ability to create more fuel than it consumes makes it special and contributes to future fast reactors' ability to become self-sufficient in their fuel supply.
- Design and Construction: The nation's first fast breeder reactor, the PFBR was created by the Indira Gandhi Centre for Atomic Research (IGCAR).
- Responsibility: The Department of Atomic Energy's (DAE) public sector enterprise Bharatiya Nabhikiya Vidyut Nigam Ltd (Bhavini) is in charge of constructing fast breeder reactors in India.

**Status of Nuclear Power in India**

- Fifth Largest source:
  - After gas, coal, hydroelectricity, and wind power, nuclear power is the fifth-largest source of electricity in India.
- Capacity:
  - With a total installed capacity of 7,380 MW, India operates 22 nuclear reactors spread over 8 nuclear power stations as of November 2020.
  - 3.11% of India's total power generation in the fiscal year 2020–21 came from nuclear power, which produced 43 TWh out of 1,382 TWh.

**How many Nuclear Power Plants does India have?**

- Presently, India has 22 operating nuclear power reactors, with an installed capacity of 6780 MegaWatt electric (MWe). Some major power plants are:
  - Tarapur Atomic Power Station (TAPS), in Maharashtra
  - Rajasthan Atomic Power Station (RAPS), in Rajasthan
  - Madras Atomic Power Station (MAPS), in Tamil Nadu
  - Kaiga Generating Station (KGS), in Karnataka
  - Kudankulam Nuclear Power Station (KKNPS), in Tamil Nadu
  - Narora Atomic Power Station (NAPS), in Uttar Pradesh
  - Kakrapar Atomic Power Station (KAPS), in Gujarat
- Among these, 18 reactors are Pressurised Heavy Water Reactors (PHWRs) and 4 are Light Water Reactors (LWRs).

**Background of India's Nuclear Energy Programme**

- Atomic Energy Commission: The Atomic Energy Commission (AEC), set up in 1948 under the leadership of Homi J. Bhabha, marked the beginning of India's nuclear program.
- Atomic Energy Establishment: In 1954, the Atomic Energy Establishment, Trombay (AEET), was founded, which later became the Bhabha Atomic Research Centre (BARC).
- Nuclear Power: India's first nuclear power plant was commissioned in 1969 at Tarapur, Maharashtra, which marked a significant step in the country's nuclear power generation.
- Pokhran Tests: India demonstrated its nuclear capabilities to the world with the peaceful nuclear explosion at Pokhran in 1974, and later in 1998.

**PRELIM FACTS**

**1. MethaneSAT**

Recently a satellite (MethaneSAT) which will track and measure methane emissions at a global scale — was launched aboard a SpaceX Falcon9 rocket from California

About MethaneSAT:

- Objective: To track and measure methane emissions at a global scale. To identify how much methane is coming from where, who's responsible, and are those emissions going up or down over time.
- Developing partners: Harvard University, the Smithsonian Astrophysical Observatory, and the New Zealand Space Agency.
- Mission Partner: Google
- Features of MethaneSAT
  - High Resolution Sensor: The satellite, equipped with a high-resolution infrared sensor and a spectrometer, which will help fill important data gaps.
  - Detection: It can detect changes in methane levels as small as three parts per billion in the atmosphere, allowing it to identify smaller sources of emissions compared to previous satellites.
  - Super Emitters: MethaneSAT also boasts a broad camera perspective, covering approximately 200 km by 200 km, enabling it to detect larger emitters known as "super emitters".

## **2. Sangeet Natak Akademi Awards (Akademi Puraskar)**

Recently, the President of India conferred Sangeet Natak Akademi Awards for the years 2022 and 2023 to 94 eminent artists (two joint awards) in the field of performing arts.

About :

- It is the apex body in the field of performing arts in the country for the preservation and promotion of the vast intangible heritage of India's diverse culture expressed in forms of music, dance and drama.
- Established in 1953, it is an autonomous body under the Ministry of Culture.
- The Sangeet Natak Akademi confers classical status on nine Indian dance forms:
  - Bharatanatyam: Tamil Nadu,
  - Kathak: Northern India,
  - Kathakali: Kerala,
  - Kuchipudi: Andhra Pradesh,
  - Manipuri: Manipur,
  - Mohiniyattam: Kerala,
  - Odissi: Odisha,
  - Sattriya: Assam,
- Chhau: Mayurbhanj Chhau of Odisha (Two other Forms of Chhau: Purulia Chhau of West Bengal, the Seraikella Chhau of Jharkhand).
- The Chairman of the Akademi is appointed by the President of India for a term of five years.
- The management of the Akademi vests in its General Council.

Sangeet Natak Akademi Awards:

- The Akademi Awards have been conferred since 1952.
- It is given to the artist in performing arts expressed in music, dance, drama, folk & tribal arts, puppetry and allied theatre art forms.
- Akademi Award carries award money of Rs 1,00,000, besides a Tamrapatra and Angavastram.
- Sangeet Natak Akademi Fellowship (Akademi Ratna)
- It is conferred regardless of nationality, race, caste, religion, creed, or sex.
- It is a most prestigious and rare honour, to an eminent performing artist for his/her exceptional contribution to his/her performing art form.
- Akademi Award carries award money of Rs 3, 00, 000, besides a Tamrapatra and Angavastram..

## **3. Ice free Arctic by 2030**

According to the paper published in the journal Nature Reviews Earth & Environment the Arctic could go without ice for the first time by 2030 under all emission scenarios.

Key findings:

- Variation in Frequency:
  - The frequency at which ice-free conditions occur could vary depending on future warming levels.
  - For instance, if ice-free conditions occur for warming of 1.5 degrees Celsius, they are unlikely to reoccur for several decades.
- Resilient Arctic: The paper also said the Arctic is resilient and can return to normalcy if the atmosphere cools down.
- Projections: Model projections show a decline in the probability of the Arctic facing ice-free conditions when temperatures go down by 2050 by removing carbon dioxide from the atmosphere.
- Declining of Ice cover: Arctic sea ice cover, which includes the sea ice area, extent, and thickness has declined since the beginning of satellite observations in 1978.
  - Reasons: Rapid Arctic sea ice cover decline is linked to growing carbon emissions and global warming.
- Reasons for Fast rate of Ice melting in the Arctic



- Albedo Feedback Loop: When the amount of global ice decreases, Earth's reflectivity rises, absorbing more solar radiation and causing the surface to warm.
- Darker Ocean Surface: As dark ice replaces bright Arctic ice, less incoming solar energy is reflected, which increases heat and ice loss.
- Climate Change: The ice is broken up and distributed by wind, ocean currents, and an extreme heat wave, accelerating the melting process.

#### **4. International Monetary Fund**

Recently, India stressed on the need of stringent monitoring of the IMF's Rs 3 Bn loan to Pak.

About:

- The IMF was set up along with the World Bank after the Second World War to assist in the reconstruction of war-ravaged countries.
- The two organizations agreed to be set up at a conference in Bretton Woods in the US. Hence, they are known as the Bretton Woods twins.
- The IMF is governed by and accountable to the 190 countries that make up its near-global membership.
- India joined on 27th December 1945.
- Purpose:
  - The IMF's primary purpose is to ensure the stability of the international monetary system — the system of exchange rates and international payments that enables countries (and their citizens) to transact with each other.
- Reports by IMF:
  - Global Financial Stability Report.
  - World Economic Outlook.

#### **5. Tribes of Odisha's Keonjhar:**

Recently, the President of India inaugurated a National seminar on 'Tribes of Keonjhar: People, culture and Heritage'.

About Keonjhar:

- According to the 2011 Census Report, Keonjhar is home to 45 percent of the Scheduled Tribes (ST) population from the district.
- The district is also known as a mining hub due to massive high-quality deposits of minerals like iron ore and chromite.
- Prevalence of Major Tribes including PVTGs : Munda, Kolh, Bhuiyan, Juang, Saanti, Bathudi, Gond, Santhal, Orang and Kondh.
- Major Festivals of Keonjhar: Celebrating Festivals and Expressing Traditions through Dance.
- Sarhul (festival of flowers) & Sohrai (Festival for Cattle Prosperity ) of the Mundas.
- Other Festivals of Keonjhar : Karmapuja, Bodam, Chaitra parab OR Uda parab, Nukhai, Raja Parab, Baruni Jatra, Rath Jatra etc.
- Major Dances of Keonjhar : Changu Dance, Chhau Dance, Juang Dance, Ho Dance.

#### **ANSWER WRITING**

**Q. Highlighting the achievements of the Montreal Protocol on Substances that Deplete the Ozone Layer, discuss the reasons behind its success.**

The Montreal Protocol, is an international treaty, adopted in Montreal in 1987, that aimed to regulate the production and use of substances that contribute to ozone depletion.

#### **Achievements of the Montreal Protocol**

- **Truly global participation:** In 2009, the Montreal Protocol became the first UN treaty to achieve universal ratification, demonstrating the world's commitment to ozone protection, and global environmental protection.
- **Healing the ozone layer:** Global observations have verified that atmospheric levels of key Ozone Depleting Substances (ODS) are going down and it is believed that with implementation of the Protocol's provisions, the ozone layer should return to pre-1980 levels by the middle of this century.
- **Supporting developing countries:** With the assistance of the Multilateral Fund for the Implementation of the Montreal Protocol, developing countries had, by mid 2010, permanently phased out over 270,000 tonnes of Ozone Depleting Substances (ODS) that had been used to produce various products and have eliminated virtually all of their production of CFCs and halons.
- **High rates of compliance:** Taking into account all the Parties and all their phase-out commitments, the Parties to the Montreal Protocol have achieved a compliance rate of over 98%. Further, in the process of phasing-out, many countries, both developed and developing, have met their phase-out targets well ahead of the schedule.
- **2010 phase-out milestone:** 1 January 2010 was the date by which all the Parties phased-out the consumption and production of chlorofluorocarbons, halons, carbon tetrachloride and other fully hydrogenated Ozone Depleting Substances (ODS).

Thus, the Montreal Protocol has indeed been successful in protecting the ozone layer. The reasons behind the success of the Montreal Protocol can be attributed to following factors which are generally absent in other environmental treaties:

- **Cooperative approach:** Much negotiation was held in small, informal groups leading to a genuine exchange of views amongst credible people.
- **Principles based:** The “precautionary principle” and the concept of common, but differentiated, responsibility (CBDR) took root in the Montreal Protocol when developing countries were given longer time to phase-out ODS.
- **Flexibility to accommodate newer information:** The protocol could be amended to include stricter controls i.e. more Ozone Depleting Substances (ODS) were added to the control list and ensure total phase out, rather than partial phase-out.
- **Trade Provisions and restrictions:** These limited the supplies of CFCs and other Ozone Depleting Substances (ODS) to non-signatories which forced them to ratify the Protocol.
- **Clear List of Targeted Sectors:** Clear articulation of chemicals and sectors allowed governments to prioritise the main sectors early.
- **Institutional Support:** An expert and independent Technology and Economic Assessment Panel (and its predecessors) helped signatories reach solid and timely decisions on often complex matters.
- **Compliance Procedure:** It prioritised helping wayward countries back into compliance. If necessary, resources from the Multilateral Fund are available for some short-term projects.

Thus, the flexible and agile approach to the Montreal Protocol helped it become successful, which is also evident from the Kigali Agreement, which amended the Montreal Protocol to also include phasing out Hydrofluorocarbons (HFCs) as one of aims of the Protocol.

**MCQs**

- In the context of which of the following do you sometimes find the terms ‘amber box, blue box and green box’ in the news?  
(a) WTO (b) SAARC  
(c) UNFCCC (d) WB
- Global Financial Stability Report is prepared by  
(a) IMF (b) WTO  
(c) WB (d) ADB
- Consider the following statements Academi Ratna Awards:  
1. The age limit has been fixed from 35 till 50.  
2. A deceased person cannot be considered for Akademi Ratna or Puraskar defence ecosystem.  
3. The Akademi Awards have been conferred since 1952.  
How many of the above statements are correct?  
(a) Only one (b) Only two  
(c) All three (d) None
- Consider the following statements about Sangeet Natak Akademi  
1. It is an autonomous body under Ministry of Culture.  
2. It has given classical status to Odissi dance.  
Which of the statements given above is/are not correct?  
(a) 1 only (b) 2 only  
(c) Both 1 and 2 (d) Neither 1 nor 2
- MethaneSAT, a satellite to track methane emissions has been launched by?  
(a) SpaceX (b) ISRO  
(c) NASA (d) Blue Origin
- Which country has recently constitutionalised abortion?  
(a) India (b) Russia  
(c) France (d) Germany
- Consider the following statements with respect to Prototype Fast Breeder Reactor:  
1. It is a machine that produces more nuclear fuel than it consumes and will initially use the Uranium-Plutonium Mixed Oxide (MOX) fuel.  
2. India will only be the third country to have commercial operating Fast Breeder Reactor.  
Which of the statements given above is/are not correct?  
(a) 1 only (b) 2 only  
(c) Both 1 and 2 (d) Neither 1 nor 2
- Consider the following statements with respect to ADITI Scheme:  
1. It aims to develop deep-tech critical and strategic technologies in the proposed timeframe  
2. Start-ups are eligible to receive grant-in-aid of up to Rs 100 crore for their research under this scheme  
3. It has been constituted under the Ministry of Science and Technology  
How many of the above statements are correct?  
(a) Only one (b) Only two  
(c) All three (d) None
- Consider the following statements about Women, Business and Law Index  
1. The index measures how laws and regulations affect women’s economic opportunity on a scale from 0 to 100  
2. It has been published by World Economic Forum and UN Women  
Which of the statements given above is/are not correct?  
(a) 1 only  
(b) 2 only  
(c) Both 1 and 2  
(d) Neither 1 nor 2
- ‘Risa Textile’ which got Geographical Indication tag recently originates from  
(a) Tripura (b) Manipur  
(c) Assam (d) Mizoram