



**TABLE OF CONTENTS**

<a href="#"><u>A. GS 1 Related</u></a>
<a href="#"><u>B. GS 2 Related</u></a>
<a href="#"><u>C. GS 3 Related</u></a>
<b>SCIENCE AND TECHNOLOGY</b>
<a href="#"><u>1. The microbiome link to autism disorders</u></a>
<a href="#"><u>2. Can we use moon dust to slow down global warming?</u></a>
<a href="#"><u>D. GS 4 Related</u></a>
<a href="#"><u>E. Editorials</u></a>
<b>SOCIAL JUSTICE</b>
<a href="#"><u>1. Slow progress to creating a safe workplace for women</u></a>
<a href="#"><u>2. Law to raise marital age is not enough as enforcement is poor</u></a>
<b>GOVERNANCE</b>
<a href="#"><u>1. The problems with the Data Protection Bill</u></a>
<a href="#"><u>F. Prelims Facts</u></a>
<a href="#"><u>G. Tidbits</u></a>
<a href="#"><u>1. India and Italy eye defence pact during Meloni visit</u></a>
<a href="#"><u>2. Only Parliament can amend the law to provide a uniform marriage age</u></a>
<a href="#"><u>H. UPSC Prelims Practice Questions</u></a>
<a href="#"><u>I. UPSC Mains Practice Questions</u></a>

A. GS 1 Related

*Nothing here for today!!!*

**B. GS 2 Related**

*Nothing here for today!!!*

**C. GS 3 Related**

**Category: SCIENCE AND TECHNOLOGY**

**1. The microbiome link to autism disorders**

*Syllabus: Awareness of various diseases*

*Prelims: Autism spectrum disorder*

*Mains: Scientific advancements in understanding the link between human health, diseases, and microbiomes.*

**Context**

This article tries to establish the link between gut microbiome composition and Autism spectrum disorder.

**Autism spectrum disorder (ASD)**

- Autism spectrum disorder (ASD) is a neurodevelopmental disability caused by differences in the brain.
- ASD is a complicated developmental disorder characterised by difficulty in social interaction, verbal and nonverbal communication, repetitive behaviour, and a narrow focus of interest.
- ASD is referred to as a “developmental disorder” because symptoms usually appear in the first 2 years of the child.
- Autism is also termed a “spectrum” disorder because there is wide variation in the type and severity of symptoms people experience.
- Currently, there is no cure or therapy available to treat or reverse ASD.

**Link between gut microbiome and Autism**

- Although the researchers have still not established the aetiology of ASD completely, there have been reports which say that the gut-brain axis could have a prominent role in causing ASD.

- Aetiology is the study of factors that cause a disorder or disability or disease.
- In recent times, extensive studies on the human microbiome have been undertaken by researchers which have been supported by advances in gene-sequencing technologies and high-end bioinformatic analysis.
- The gut microbiome is found to have a big impact on immune modulation and metabolic activities in humans and differences in gut microbiome composition have been seen with respect to various diseases such as Crohn's disease, celiac disease and autism.
  - Immune modulation refers to the actions undertaken by the immune system of the body to ensure its response is proportionate to a threat.
- Studies on the dynamic cross-talk between the gut microbiome and the host environment have found potential connections to ASD symptoms.
  - Example: abnormal antigens which are trafficked through an impaired intestinal barrier allow such antigens to pass through the barrier surrounding the brain which could cause a chain of reactions that worsen ASD symptoms.
- Reports from research have indicated that even if the gut microbiome doesn't play a direct role, abnormalities in the gut microbiome can induce toxic metabolites and prevent the person from synthesising the metabolites required to produce neurotransmitters that are involved in cognition, behaviour, mood, and sleep.
- For instance, research that involved the study of children with and without ASD:
  - Dysbiosis (imbalance) was seen in the gut microbiome of children with ASD.
  - The fraction of bacteria of the phylum firmicutes was seen to be higher in the guts of children with ASD.
  - Bacteria such as lactobacillaceae, bifidobacteriaceae, and veillonellaceae were also abundantly present in the gut microbiome in children with ASD.
  - Further, bacteria such faecalibacterium and roseburia that produce short-chain fatty acids (SCFA) were underrepresented in children with ASD which suggests that lower levels of SCFAs could lead to an imbalance in brain function and behaviour.

### Path ahead

- Recent findings suggest that fixing the gut in ASD-affected children can reduce the toxic burden and help complete the required neurotransmitter synthesis pathways.
- Furthermore, bringing about a balance in the gut microbiome (reversing gut dysbiosis) among children with ASD has the potential to address various problems associated with the disease.
- Faecal microbial transplantation (FMT) is regarded as one of the most promising approaches to reverse gut dysbiosis.
  - Under FMT, stool samples from healthy individuals are transplanted into the large intestines of affected children.
  - A study conducted by Ohio State University in 2017 on FMT reported that the intervention improved both gastrointestinal and ASD-related symptoms.

- FMT is also a cost-effective approach with minimal risk. However, there is a need to build consensus among all stakeholders in order to adopt it.

**Read about - [World Autism Awareness Day](#)**

*Nut graf:* As per the WHO, ASD affects one in 100 children and has a significant negative impact on the cognitive abilities and quality of life of these children. Advance studies have revealed that balancing the gut microbiome through approaches such as FMT can alleviate several problems associated with ASD. However, there is a need to build consensus among the scientific community as well as all the stakeholders before any such actions are undertaken.

**2. Can we use moon dust to slow down global warming?**

*Syllabus:* Awareness in the fields of Space

*Prelims:* About Moon dust coolers and solar radiation management (SRM)

*Mains:* Critical evaluation of solar radiation management (SRM) proposals

**Context**

- It is said that a summerless year followed the volcanic eruption of Mt. Tambora in 1816 which released sulphates and other aerosols into the stratosphere that cooled the atmosphere.
- This has encouraged people to examine the possibility of using similar methods artificially to slow down global warming.

**Moon dust coolers**

- In a recent paper published in the PLoS Climate journal, researchers from the U.S. have proposed the idea of launching tonnes of dust from the moon to a point in space where the gravitational forces of the earth and the Sun cancel each other out.
- Launching the dust to such a point will ensure that the dust will be stationed there which helps cast a shadow on earth and reduce sunlight to offset carbon emissions.
- Aerosols in the stratosphere, particularly those which are radiation-scattering such as sulphates, have a cooling effect.
- It is to be noted that the summerless year which followed the 1816 eruption significantly affected crop yields worldwide causing disease and starvation.
  - Additionally, various climate models also have confirmed that dimming the amount of incoming sunlight with stratospheric aerosols will have similar implications on crop yield.

- A few studies however have argued that such droughts would not be as harmful and that the GDPs of the countries will be positively affected by such solar radiation management (SRM).

## Solar Radiation Management (SRM)

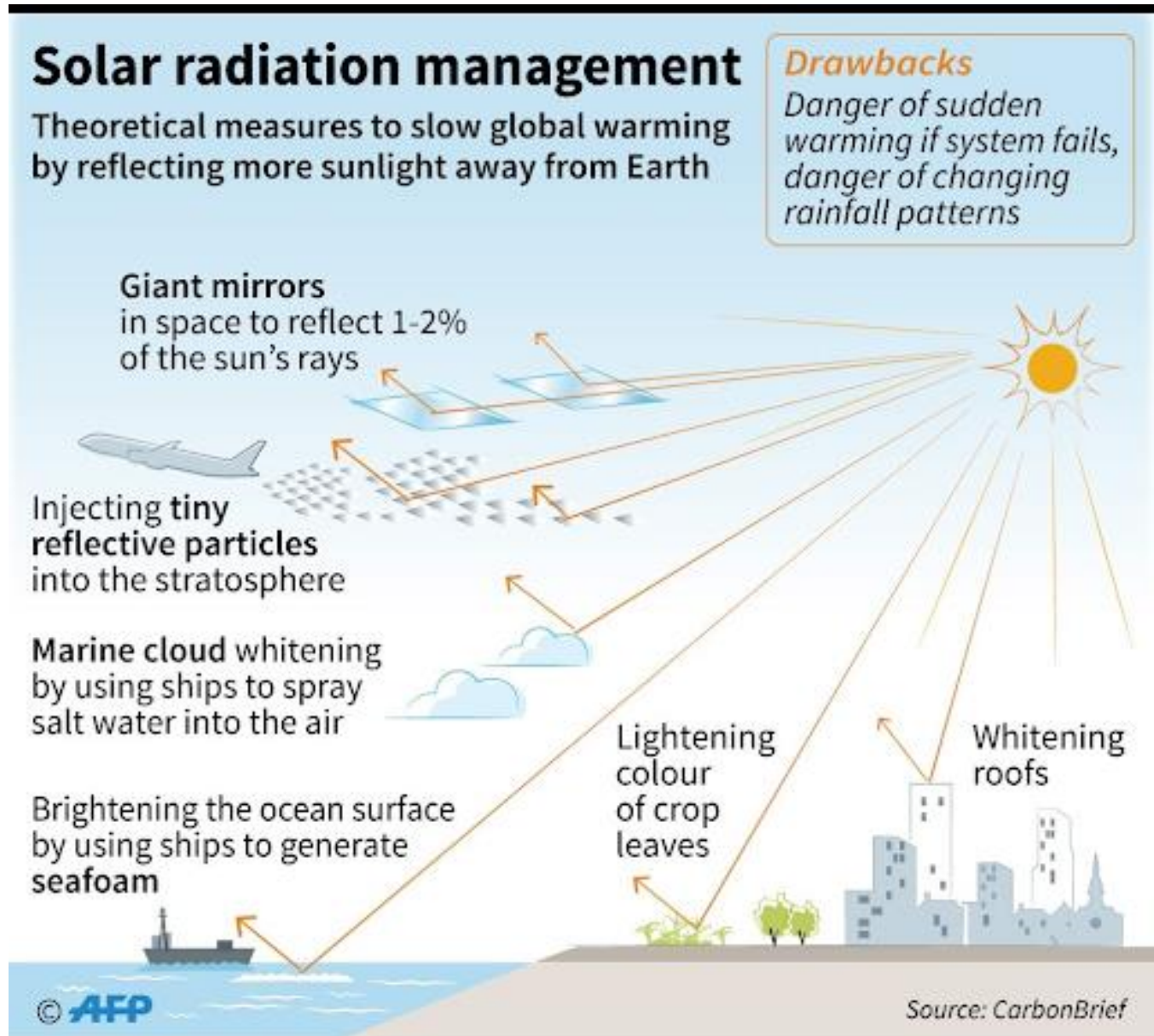


Image Source: phys.org

- Solar radiation management (SRM) is a type of climate engineering that aims to reduce or slow down global warming by reflecting sunlight.
- The proposed methods of SRM include increasing the planetary [albedo](#) by:
  - Placing reflective balloons, sunshades, or mirrors in space.

- Injecting heat-deflecting aerosols directly into Earth's stratosphere to bounce more of the Sun's heat back into space.
- Marine Cloud Brightening involves introducing saltwater particles from the ocean up into the cloud layer to increase the reflectivity of clouds.
- Adopting surface-based approaches like whitening roofs, growing more reflective crops, etc.
- Adopting restorative methods such as protecting natural heat reflectors like sea ice, snow and [glaciers](#) with engineering projects.
- SRM is said to be a fast and inexpensive approach to slowing down global warming.

### Concerns associated with SRM

- These methods are best when adopted at the continental scale and not at the regional scale. Thus these measures cannot offset the adverse effects of heatwaves and droughts regionally.
- Despite the availability of state-of-the-art climate models, they are only skilled at simulating the temperature response to changes in solar radiation and are inadequate at estimating the precipitation response to solar radiation.
  - Hence there is still uncertainty about the potential changes in rainfall patterns as a result of blocking sunlight which can have unintended consequences in the form of drought and crop losses.
- Various natural and social scientists have raised concerns about SRM techniques and governance.
- There are also concerns regarding the aerosol-loading approach that there will be a rebound effect once spraying stops and the aerosols are washed out of the atmosphere.
- Further, there have been questions regarding
  - Who would decide when, where and how aerosols are deployed?
  - Who would monitor unintended consequences?
  - Will a country bear liability if it conducts an experiment that affects rainfall in another country?
  - What can be the compensation for the damages caused?

### Learn more about - [Solar radiation management \(SRM\)](#)

***Nut graf:** At a time when countries across the world are looking at various innovative measures to arrest global warming, SRM is seen to be an effective and relatively inexpensive method to offset the rising temperatures. However, there have been fears about the unintended consequences and their potential to destabilise global weather patterns which can undermine global food security associated with various solar geoengineering methods.*

*Nothing here for today!!!*

## E. Editorials

**Category: SOCIAL JUSTICE**

### 1. Slow progress to creating a safe workplace for women

*Syllabus: Issues related to women.*

*Mains: Violence against women at the workplace.*

*Prelims: Vishakha Guidelines.*

**Context:** Allegation of sexual harassment by Indian sportswomen (wrestlers).

#### **Details:**

- The allegation of sexual harassment by some female wrestlers has shocked the nation. Those affected sat in a protest in Delhi.
- This shows that wrestlers were either not aware of the internal complaints committee or it was not functional.
- According to the Vishaka guidelines, reporting cases of harassment should be followed equally both in government and private institutions.
- An 'oversight committee' headed by a female Olympic medal holder has been constituted to investigate the matter.
- In a similar case, a leading woman journalist faced accusations of defamation levelled by the accused. However, she was acquitted in February 2021.
- Some provisions against [sexual harassment of a woman](#):
  - Section 509 of the Indian Penal Code (IPC) against insulting the modesty of a woman.
  - Section 354-A of the IPC for offences related to 'sexual harassment' was inserted in 2013.
  - Vishakha Guidelines were framed by the Supreme Court of India in 1997.

**For more information on the Vishakha case, read here: [Vishakha Case Summary \(1997\)](#)**

#### **Some statistical details about sexual violence:**

- The reporting of direct violence cases has shown improvement due to enabling environment.

- However, indirect violence still remains poorly addressed as it is embedded deep in our social and economic structures. It is more visible in workplaces like employment imbalance between men and women and fewer women in higher positions.
  - It should be noted that the number of women employees is important as one musters courage to voice grievance when there are sufficient numbers of supporters.
  - Moreover, if there are not enough women in leadership positions it would not generate confidence in subordinate women. They would also feel reluctant to air their grievances.
- According to the [Periodic Labour Force Survey \(PLFS\)](#) 2020-21, the Female Labour Force Participation Rate (LFPR) increased from 17.5% in 2017-18 to 25.1% in 2020-21.
  - LFPR refers to the percentage of persons in the labour force among the persons in the population (employed and unemployed or seeking employment).
- The Worker Population Ratio (WPR) has also risen from 16.5% in 2017-18 to 24.2% in 2020-21.
  - WPR implies the percentage of persons employed among the persons in the population.
- However, it is still much less than the Male LFPR. Furthermore, the LFPR and WPR of women shown in the Quarterly Bulletin of April-June 2022 are not encouraging.

Also read: [Women in Workforce: RSTV – Big Picture](#)

#### Associated concerns:

- One of the major factors for the low participation of women in the workforce is the absence of an enabling and safe working environment.
- The grievance redressal mechanism is either non-existent or ineffective.
- Women are more vulnerable to exploitation as they can be easily threatened with their job continuity for indecent favours.
- It is observed that whenever allegations are levelled against superior authorities, the accused tries to stall the due process or brings disrepute to the victim on flimsy grounds.

#### Way Ahead:

- It is important to develop the mindset of treating men and women as equals at an early stage of character formation during childhood.
- According to the theory of criminology called 'nature versus nurture', social conditioning, the environment of the family, and early schooling are crucial during the growth of children. For instance,
  - If both parents do not respect each other or treat their girl and boy children differently, children would learn inequality as a normal phenomenon.
  - It would further lead to the development of criminal tendencies in men.
- It is the responsibility of the employer to ensure a safe and women-friendly working environment.



- Internal Complaints Committee should be constituted and awareness about the law and procedure of grievance redress should be spread.
- In the medium term, the following measures should be taken:
  - Improving female LFPR
  - Increasing the number of women in leadership positions
  - Providing incentives like maternity leave to prevent drop-outs
- In the long run, it is important to bring changes in the existing socio-cultural and economic structures to eliminate indirect violence.

**Also read:** [List of Women Empowerment Schemes in India](#)

***Nut Graf:** Despite various provisions in place to prevent sexual harassment of women in the workplace, there is slow progress in creating a safe working environment for women. Society should work as a whole to address the deep-rooted structural and cultural violence against women.*

## 2. Law to raise marital age is not enough as enforcement is poor

***Syllabus:** Issues related to women and children.*

***Mains:** Raising the marital age of women.*

**Context:** Supreme court decision on a petition seeking to raise the marital age of women.

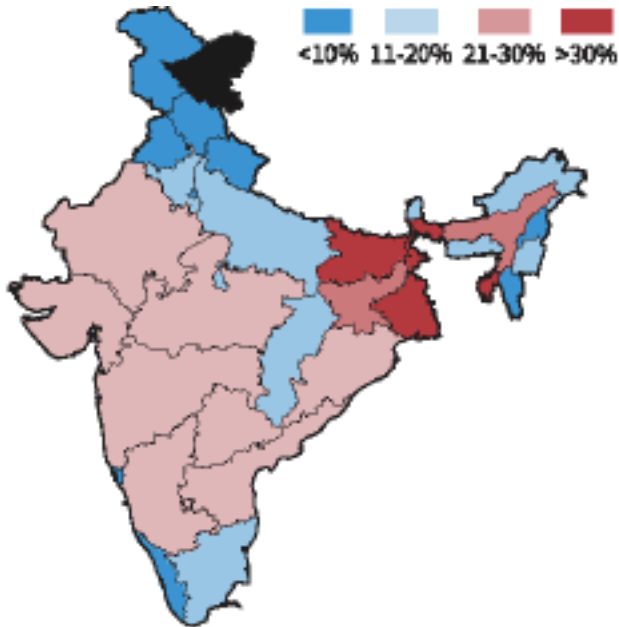
### Details:

- The Supreme Court (SC) dismissed a petition that sought to raise the minimum age of marriage of women in India from 18 years to 21 years. The Chief Justice of India further stated that the power to amend the law lies with Parliament.
- The [Prohibition of Child Marriage \(Amendment\) Bill](#) was introduced in the Lok Sabha in December 2021. It proposes to raise the age of marriage for women from 18 to 21 years.
- The bill is referred to the Parliamentary Standing Committee.
- The purpose of increasing the marital age of women is to attack the poor labour force participation of young women.

### Related Statistics:

- Around 23% of women who were in the age bracket of 20-24 years in 2019-21 were married before their 18 years (despite 18 years being the legal age of marriage).
  - This share was more than 40% in Bihar and West Bengal.
  - It is below 10% in Kerala, Himachal Pradesh, Punjab, and Uttarakhand.

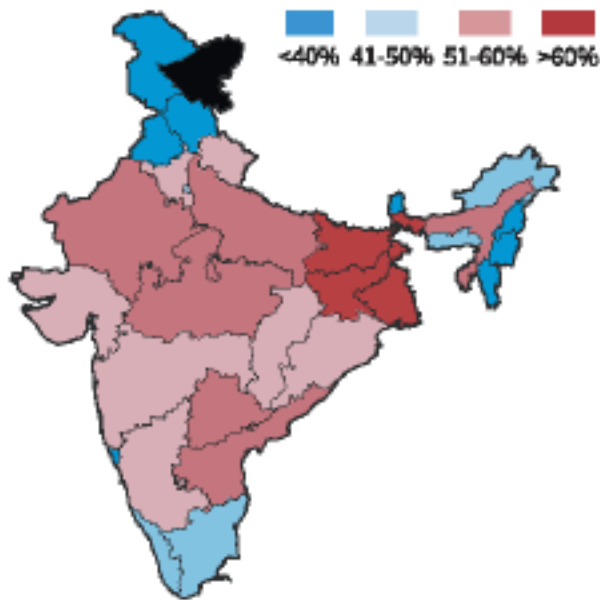
Figure 1: Share of women aged between 20 and 24 who were married before their 18th birthday



Source: The Hindu

- However, according to the [National Crime Records Bureau \(NCRB\)](#), only 1050 cases were registered under the Prohibition of Child Marriage Act in 2021.
- Moreover, above 60% of women aged between 25 to 29 in 2019-21 were married before turning 21. This share is more than 70% in the eastern States of Bihar and West Bengal.
  - It was more than 65% in the states of Andhra Pradesh, Madhya Pradesh, Rajasthan, Telangana, and Tripura.
  - In fact in Goa (the state with the lowest share of such women), one in five women was married before their 21st birthday.

Figure 2: Share of women aged between 25 and 29 who were married before their 21st birthday



Source: The Hindu

The article has been covered in detail in the link: [15 Feb 2023: UPSC Exam Comprehensive News Analysis](#)

#### Conclusion:

It is suggested that despite changing the laws, enforcement might remain weak. Increasing the power of negotiation aided by better education levels among women is a necessary step.

Also read: [11 Feb 2023: UPSC Exam Comprehensive News Analysis](#)

**Nut Graf:** It is found that despite the legal age of marriage of women being 18, even now a considerable share of women are married before their 18th birthday. It is recommended that apart from the legal measures, young women should be empowered through education and livelihood opportunities to raise the marital age of women.

Category: GOVERNANCE

### 1. The problems with the Data Protection Bill

*Syllabus: Government policies and interventions.*

***Mains: Personal Data Protection Bill.***

***Prelims: Data Protection Bill.***

**Details:**

- Digital Personal Data Protection (DPDP) bill has been drafted by the Ministry of Electronics and Information Technology to safeguard and balance peoples' right to privacy and right to information (both are Fundamental Rights).

**For more information on the bill, read here: [Digital Data Protection Bill, 2022](#)**

**Issues with the DPDP Bill:**

- Concerns related to the Right to Information (RTI) Act:
  - It is argued that the bill seeks to dilute the RTI Act. For obtaining the benefits of welfare programmes and scrutiny/social audits, people must have access to relevant and granular information.
  - DPDP bill attempts to amend Section 8(1)(j) of the RTI Act and exempt all personal information from the ambit of the RTI Act.
    - Currently, Section 8(1)(j) can be invoked to deny personal information if the information sought is not associated with any public activity or public interest or has the potential to cause an unwarranted invasion of privacy and the Public Information Officer is satisfied that there is no larger public interest that justifies disclosure.
  - It is also argued that there is a misinterpretation of the proviso of Section 8(1) which states that “information which cannot be denied to the Parliament or a State Legislature shall not be denied to any person.” It is considered to be applicable to only the privacy exemption of the RTI law.
  - It is suggested that DPDP Bill should be harmonized with the provisions and objectives of the RTI Act. Moreover, it should be in line with Justice A.P. Shah's Report on privacy.
- The bill empowers the executive to draft rules on several issues, thereby creating wide discretionary powers for the Central government. For example, Section 18 empowers the Central government to exempt any government or private sector entities through a notification.
- It is also observed that the bill does not guarantee the autonomy of the Data Protection Board. The central government would determine the strength, composition, selection, and removal of the chairman and other members of the board.
  - Data Protection Board is the institution responsible for the enforcement of provisions of the law.
  - It has the power of a civil court and can impose fines of up to ₹500 crores.

- According to the bill, the Data Protection Board shall be ‘digital by design’. This means that its functioning (receipt and disposal of complaints) would be majorly digital.
  - However, it was highlighted in the [National Family Health Survey \(NFHS\)](#) that only 33% of women in India have ever used the Internet.
  - A large share of the population in India does not have access to the Internet.

**Also read:** [Digital Personal Data Protection Bill: Sansad TV Perspective](#)

***Nut Graf:** The Draft Digital Personal Data Protection bill has various issues related to privacy and the right to information. It is suggested that it should go through a rigorous pre-legislative consultation process and required changes should be made for making it a robust and effective data protection law of the country.*

## F. Prelims Facts

*Nothing here for today!!!*

## G. Tidbits

### 1. India and Italy eye defence pact during Meloni visit

- During Italian Prime Minister Georgia Meloni’s visit to India, both countries are expected to put behind various tensions between the countries over the arrest of Italian marines and other issues and discuss the prospects of bilateral defence cooperation.
  - The bilateral relations between India and Italy witnessed a downturn during 2012-2015 due to the arrest of two Italian marines for the killing of Kerala fishermen off the Indian coast.
  - In 2015, Italy also vetoed India’s application to join the [Missile Technology Control Regime \(MTCR\)](#) and had worked towards designating India as a human rights violator at the European Parliament.
  - Later, the Indian government decided to send back the marines to Italy, and the case was resolved mutually at the [Permanent Court of Arbitration \(PCA\)](#).
- Georgia Meloni will be the third Italian Prime Minister to visit India in the last decade after Paolo Gentiloni in 2017 and Giuseppe Conte in 2018.
- As per the reports, a general agreement on bilateral cooperation in the defence sector is being discussed between the two countries and this agreement is in line with Italy’s Indo-Pacific strategy.

- Despite the controversy surrounding the Agusta Westland VVIP helicopter deal that affected the bilateral relations and defence cooperation between the countries, Italy has remained involved in India's defence industry in some ways.
  - Fincantieri of Italy is the know-how provider for technology upgrades and capability enhancement for [INS Vikrant](#) which is India's first indigenous aircraft carrier.
  - In November 2021, the Union Defence Ministry of India lifted the ban on the Italian defence company Leonardo which was involved in the VVIP helicopter deal.
  - India and Italy are also engaged in multilateral fora in the Indian Ocean Region and Indo-Pacific.

**For more information on Enrica Lexie Case, refer to the following article:**

**[UPSC Exam Comprehensive News Analysis dated 04 Jul 2020](#)**

## **2. Only Parliament can amend the law to provide a uniform marriage age**

- The Supreme Court while dismissing a petition seeking to increase the minimum age of marriage of women from 18 to 21 has said that only Parliament can amend the law to provide a uniform marriage age as it is left to the ultimate wisdom of the Parliament.
- The Chief Justice of India D.Y. Chandrachud has held that it should not be perceived that the judiciary is the exclusive custodian of the Constitution as the Parliament is equally the custodian of the Constitution.
- The petitioner sought a legislative amendment to increase the minimum age of marriage to 21 years saying that the prescription of 18 years was arbitrary.
- However, according to the apex court, it is trite law that the court in its exercise of [Article 32 of the Constitution](#) cannot issue a mandamus to the Parliament to legislate a matter entrusted to the Parliament or the State Legislatures to exercise power.

## **H. UPSC Prelims Practice Questions**

**Q1. Which of the following are correct statements? (Level – Easy)**

1. SCO was established in the year 2001.
2. The 2023 SCO Summit will be held in Samarkand, Uzbekistan.
3. India and Pakistan, both are members of SCO.

**Options:**

- a. 1 and 2

- b. 2 and 3
- c. 1 and 3
- d. 1, 2 and 3

**Answer: c**

**Explanation:**

- **Statement 1 is correct**, The Shanghai Cooperation Organization (SCO) is an intergovernmental organization founded in Shanghai on 15 June 2001.
- **Statement 2 is not correct**, The SCO 2023 summit will be held in **Goa, India**.
  - The SCO summit 2022 was held in Samarkand, Uzbekistan.
- **Statement 3 is correct**, Both India and Pakistan joined SCO in 2017.
  - SCO Members: China, India, Kazakhstan, Kyrgyzstan, Russia, Pakistan, Tajikistan and Uzbekistan.

**Q2. How many of the following are correct statements? (Level – Difficult)**

1. The NDRF was established in 2006.
2. It is comprised of personnel from the Central Armed Police Forces.
3. NDRF is responsible for response and relief work only during natural disasters, while Indian Army tackles man-made disasters.
4. The NDRF has 16 battalions.
5. It has an air wing as well.

**Options:**

- a. Only 2 statements
- b. Only 3 statements
- c. Only 4 statements
- d. All 5 statements

**Answer: b**

**Explanation:**

- **Statement 1 is correct**, NDRF was raised on 19th January 2006 as a multi-skilled stand-alone Disaster Response Force.
- **Statement 2 is correct**, NDRF consists of personnel on deputation from Central Armed Police Forces (CAPF) such as Central Reserve Police Force (CRPF), Indo-Tibetan Border Police

(ITBP), Border Security Force (BSF), Central Industrial Security Force (CISF), and Sashastra Seema Bal (SSB).

- **Statement 3 is not correct**, NDRF is a multi-skilled stand-alone Disaster Response Force to respond to **both natural as well as man-made disasters**.
- **Statement 4 is correct**, At present, NDRF consists of **16 battalions** from the BSF, CISF, CRPF, ITBP, SSB and Assam Rifle.
- **Statement 5 is not correct**, **NDRF does not have its own Air Wing**.

**Q3. Identify the number of correct statements: (Level – Moderate)**

1. February 21 has been declared International Mother Language Day.
2. The 8th Schedule of India recognizes 22 languages.
3. Article 350A of the Indian Constitution directs the state to provide facilities for instruction in Mother Tongue in primary education.

**Options:**

- a. Only 1 statement
- b. Only 2 statements
- c. All 3 statements
- d. None of the statements

**Answer: c**

**Explanation:**

- **Statement 1 is correct**, UNESCO in 1999 announced that February 21 would be observed worldwide as International Mother Language Day.
- **Statement 2 is correct**, There are 22 official languages in India and they are covered under the 8th Schedule of the Indian Constitution.
- **Statement 3 is correct**, As per Article 350A of the Indian Constitution,
  - It shall be the endeavour of every State and of every local authority within the State to provide adequate facilities for instruction in the mother tongue at the primary stage of education to children belonging to linguistic minority groups.
  - The President may issue such directions to any State as he/she considers necessary or proper for securing the provision of such facilities.

**Q4. Identify the correct statements: (Level – Easy)**

1. Just like the European Union, India has an emission trading scheme for its various sectors.
2. India aims to reduce the emission intensity of our GDP by 45% by 2030.



**Options:**

- a. 1 only
- b. 2 only
- c. Both 1 and 2
- d. Neither 1 nor 2

**Answer: b**

**Explanation:**

- **Statement 1 is not correct**, After introducing the Energy Conservation (Amendment) Bill, the Union Government is now in the final stages of notifying an Emissions Trading Scheme (ETS) that would require polluting industries to achieve certain standards of energy efficiency and permit them to 'trade' these improvements.
- **Statement 2 is correct**, India has committed to reducing the emissions intensity (emissions per unit of GDP) of our GDP by 45% (of 2005 levels) by 2030.

**Q5. "If rainforests and tropical forests are the lungs of the Earth, then surely wetlands function as its kidneys." Which one of the following functions of wetlands best reflects the above statement? (Level – Moderate) PYQ 2022**

- a. The water cycle in wetlands involves surface runoff, subsoil percolation and evaporation.
- b. Algae form the nutrient base upon which fish, crustaceans, molluscs, birds, reptiles and mammals thrive.
- c. Wetlands play a vital role in maintaining sedimentation balance and soil stabilization.
- d. Aquatic plants absorb heavy metals and excess nutrients.

**Answer: d**

**Explanation:**

- Wetlands are called the 'kidneys of the earth' because of the ability of aquatic plants to absorb heavy metals and nutrients.
- The plants use these nutrients to grow and support the whole of the ecosystem.

**I. UPSC Mains Practice Questions**

1. Discuss the factors that impede female labour force participation rate and suggest the measures that can be taken to overcome the same. (250 words; 15 marks) (GS II - Social Justice)

2. Rather than increasing the minimum age of marriage for girls, the problem of child marriage can be more effectively handled by focusing on their education and other social indicators. Do you agree? Elaborate. (250 words; 15 marks) (GS II - Social Justice)

