

CURRENT AFFAIRS

WEEKLY

WEEK: 2

FEBRUARY
2022

MAINS

- GS-I**
- Symbolism of Inter Caste Marriages
 - Policy blindspot: Issues of Women Migrants.

- GS-II**
- India and Nepal: moving beyond the hurdles of Past
 - Blue Opportunities for Green Development of Pacific Island Countries
 - I&B Ministry's powers to regulate content on TV, other platforms
 - Human Trafficking, the neglected issue in India
 - 'One Nation, One Election', assessing the idea

- GS-III**
- Freedom of religion & 'attire'
 - Artificial Intelligence and its Climate Cost
 - The need to Boost Labour Income and Consumption Expenditure
 - Budget and Agriculture
 - Union Budget falls short in addressing gaps to build disaster resilience
 - Guiding peri-urban transformation

- GS-IV**
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ART & CULTURE ■ BHIMSEN JOSHI: A HUNDRED YEARS OF THE EXTRAORDINARY

HISTORY ■ BIRTH ANNIVERSARY OF TRIBAL LEADER TILKA MANJHI

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ENVIRONMENT ■ FROZEN BY UNCERTAINTY: ON RBI AND ITS MANDATE TO ENSURE PRICE STABILITY

■ PHASI WOOD FOR JAGANNATH CHARIOT

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■ SANCTUARY TAG FOR 'GOLDEN LANGUR' HABITAT OPPOSED BY ASSAM VILLAGERS

SCIENCE & TECHNOLOGY ■ SPACEX SATELLITES FALLING OUT OF ORBIT AFTER SOLAR STORM

■ SCIENTISTS SET NEW RECORD IN CREATING ENERGY FROM NUCLEAR FUSION

■ ISRO DEMONSTRATES HACK-PROOF QUANTUM COMMUNICATION

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The current affairs articles are segregated from prelims and mains perspective, such separation is maintained in terms of structure of articles. Mains articles have more focus on analysis and prelims articles have more focus on facts.

However, this doesn't mean that Mains articles don't cover facts and PT articles can't have analysis. You are suggested to read all of them for all stages of examination.

CURRENT AFFAIRS ANALYST

WEEK- 2 (FEBRUARY, 2022)

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SECTION: A
(MAINS)

CURRENT AFFAIRS

SYMBOLISM OF INTER CASTE MARRIAGES

CONTEXT:

Surrounding the anti-caste movement, a topic remains hotly contested. It is about inter-caste marriages as a way towards the annihilation of caste. Activists, thinkers and leaders are divided over this.

Dr Ambedkar's famous quote from *Annihilation of Caste*, wherein he stated that inter-caste marriages were "the real remedy for breaking caste", is often cited. Ambedkar thought "fusion of blood" would create the feeling of kith and kin.

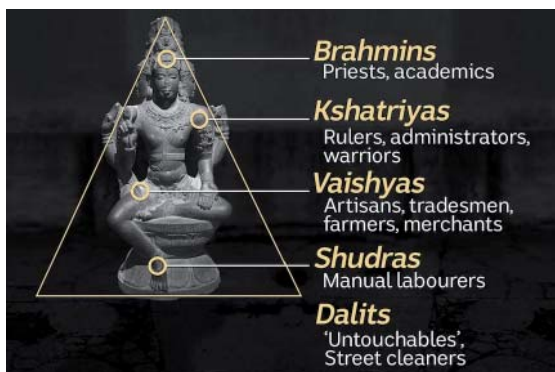
◎ BACKGROUND

- The concept of caste system and religious discrimination are like a bane on the path of India's progress.
- For centuries Indian society especially Hindu society has been divided on the basis of caste system and religion.
- The problem of caste system was so deep rooted that it took years for the Indians to come out of that idea.
- Even today also India is struggling to come out of this social menace.
- And when we talk about Indian marriages, which are inter-caste and interreligious, it seems like a taboo to most of the people.

The brief aims to analyse the extent and pattern of inter-caste marriages in India.

◎ ANALYSIS:

Understanding the Caste system in India



- Caste has for long been viewed as a distinctive feature of the Indian society.
- Dating back more than 3,000 years, the caste system divides Hindus into four main categories –
 - ▶ Brahmins
 - ▶ Kshatriyas
 - ▶ Vaishyas
 - ▶ Shudras

- It is not merely an institution that characterizes the structure of social stratification in India. 'Caste' has often been seen to represent the core of India.
- It has been viewed both as an institution as well as an ideology.
- Institutionally, 'caste' provided a framework for arranging and organizing social groups in terms of their statuses and positions in the social and economic system.
- It fixed individuals into the structure of social hierarchy on the basis of their birth.
- As an ideology, caste was a system of values and ideas that legitimized and reinforced the existing structure of social inequality.
- It also provided a worldview around which a typical Hindu organized his/her life.

Features of caste system

- **Segmental division of society:** Castes were groups with well-developed life-styles of their own. The membership of the groups was determined by birth and not by choice. The status of a person depended not on the amount of wealth he possessed but on the rank that his caste enjoyed in the Hindu society.
- **Hierarchy:** There was definite scheme of social precedence amongst castes. Each group was given a specific status in the overall framework of hierarchy.
- **Restrictions on feeding and social intercourse:** There were minute rules as to what sort of food or drink could be accepted by a person and from what caste.
- **Civil and religious disabilities and privileges of different sections:** Segregation of individual castes or groups of castes in the village was the most obvious mark of civil privileges and disabilities. Certain sacraments could not be performed by any caste other than the Brahmins. Similarly, shudras and other lower castes were not allowed to read or learn the sacred scriptures.

- **Lack of unrestricted choice of occupation:** Generally each caste considered a particular occupation as its legitimate calling. To abandon the hereditary occupation in was not considered right.
- **Restrictions on marriage:** Caste groups observed strict endogamy. Members of a caste group married only within their castes.

Diminishing relevance of caste in understanding the multi-cultural Indian society

- Due to various factors such as **modern education, industrialization, urbanization, Indian Constitution** etc. Indian multi-cultural society has started giving less consideration to the 'caste'.
- **Growing dissociation between caste and hereditary occupation:** No longer one can deduce a person's caste by looking at his occupation. A person who is working in a salon may not be a barber.
- All castes have given importance in the socio-political field: There is improvement in the socio-economic conditions of lower caste people. They are protected by the different policies of the government. They get equal power with other caste categories in expressing their decision in nation building.
- **Change in the caste identity:** People are no more identified according to their caste identity or ascriptive status; rather they are identified according to achieved status. Educational qualification, occupational position, income etc. are the bases of identification of the individual.
- Now Indian society is **more tolerant of inter-caste marriage:** The number of inter-caste marriages is increasing day by day, particularly among the urbanized and educated group of each caste.

Status of Inter caste marriages:

- The **Indian Human Development Survey** reported that 95% of Indians still find partners within their sub castes.
- Many a time second or third-generation educated Dalits who have managed to access quality education, and landed respectable elite jobs, find the prospects of marriage outside caste available to them.

What then happens to their inter-caste marriages?

- Their union is unlike any other marriage. It is a political act — an achievement of love over caste.

- The Dalit person marrying outside caste, say to an upper caste, finds himself or herself duelling between the struggle of their community, and the culture of their spouses and in-laws.
- The children of mixed-caste parents also grow up amidst profound misunderstanding of their complicated backgrounds.
- They are brought up in a caste-neutral or a-caste environment, which essentially means being subjected to the dominant caste parent's identity.
- The closest they come to caste is while availing caste reservations or visiting their Dalit family.
- The notion of inter-caste marriage has become a passport for those who have lived the life of oppressing Dalits directly or by virtue of their participation in anti-Dalit prejudices, to now suddenly assume the position of misrepresenting Dalits.

Government Scheme

The 'Dr Ambedkar scheme for social Integration through inter caste marriage' was started in 2013 to encourage inter-caste marriages:

- It offers Rs 2.5 lakh if one of the partners is a Dalit.
- One of the requirements is a recommendation from a sitting MLA / MP and government officer concerned.
- The scheme wants to appreciate and promote the "socially bold step" of the couple.
- When countries worldwide are now integrating rapidly across color, racial, ethnic boundaries, the Indian government has to offer incentives for couples to marry outside rigid boundaries.

◎ CONCLUSION:

- Coming back to Ambedkar's speech quoted above, he further suggested that to break the caste system, it was pertinent to destroy religious notions, the sanctity of the Shastras on which caste was founded and not occasionally bring about "inter-caste dinner and inter-caste marriages, which were futile methods of achieving their ends".
- What Ambedkar is arguing is not against inter-caste marriage, but he is inviting us to go deeper, beyond social sanctions. He wants us to be participants in movements that would upend and eventually change mindsets.

POLICY BLINDSPOT: ISSUES OF WOMEN MIGRANTS.

CONTEXT:

We have to remember that women are the original migrants. Apart from adjusting in the new family after marriage, they also have to adjust in a new place workwise, where they have no identity and no social support.

In this context we need policy intervention where policies are made keeping in mind the gender issues related to migration.

ANALYSIS:

Understanding the link between gender and migration

- Migration is implicitly related to gender, since it impacts women and men differently, as well as different groups of women and men during the displacement process.
- However, neither a gender-based approach nor the particularities relating to women migrants are usually present in migration studies and analyses.
- Migration is entrenching a new globalized sexual division of labour, in which there is a demand for female and migrant labour in receiving countries, specifically in domestic and care work.
- Migration may also reinforce gender stereotypes that limit women's autonomy, as well as their lack of power in decision-making processes, and their vulnerability to the systematic violation of their human rights.

On invisibility, vulnerability of women migrants

- There is also the larger context of invisibility of women and children, not just migrants. And when they are migrants, they become even more vulnerable.
- Our statistics really undercount women migrants which makes them invisible to the policymakers.
- Of the 45 crore migrants that the 2011 Census records, 31 crore are women; which means 67 per cent of the migrants are women.
- There are about 21 crore marriage migrants.
- Solo women work migrants are about three percent or 73 lakh.
- But the biggest group for which we have virtually no statistics are those whose husbands migrate for work.
- Our Human Development survey in 2004 found that 3% of women whose husbands migrated were left in the place of origin. That number increased to 8% in 2011.

- There is no one representative migrant woman. It's a hugely heterogeneous group, there are women who are migrating from one village to another because of marriage or for work with family.
- We need to specially design programmes and ensure that migrant women are included in the design and the way to solve this would not probably be the same for every migrant format.

What issues are faced by women migrants?

- When work stopped (during Covid-19), **problems of food emerged**. Many did not have ration cards or the ration cards were in their villages. They were not transferable, and so they could not get access to the food later on.
- Some governments did do **universal food distribution**, but a lot of that was through online registration, and many of them didn't have mobile phones, or their accounts were not linked to their phone numbers.
- Women migrants in cities also have an additional burden of **unpaid work** because of poor public infrastructure, Access to toilets, drinking water and safety of children.
- Even though as a citizen of this country, a woman migrant is entitled to **government schemes**, she is being left out because of the fact that she is a migrant.
 - For instance, when a woman is married out of her village, but goes back to her natal village to deliver for five or six months, often for those months, which are the most important, she doesn't get these services because her residence seems to be somewhere else;
- All of our schemes are still linked to the **place of residence**. This keeps women out particularly from anganwadi services and PDS.
- So the **universality of the services** lose meaning if there is **no portability** attached to them.
- As they are denied those rights just because they have shifted location for whatever reason, we can work out **decentralized policies**.
- Women migrants have **no identity as workers**, which means that they do not have

- ▶ Access to healthcare or work during the lockdowns.
- ▶ There's also an issue of bank accounts which happens to be in native place.
- ▶ Perhaps the greatest burden was rent.
- **Marriage migration in north India**, where a girl cannot be married in her own village, has led to a cultural tradition of **devaluing daughters**.
 - ▶ These are the areas in which we see very unfavourable sex ratios.
 - ▶ This marrying of daughters outside of the village devalues the importance of daughters to parents.
 - ▶ The feminist movement has fought very hard for land right and inheritance rights for women.
 - ▶ But the daughters who are married somewhere else have found it very difficult to exercise those rights and retain control of the land.
- Migrant workers **live and work in very unhygienic conditions**.
 - ▶ In brick kilns, we saw that the living area is badly made.
 - ▶ Just to save money, the contractors make very makeshift shelters for them.
 - ▶ Women migrants are vulnerable to sexual assault at these sites.
 - ▶ We need to have an understanding of how they work and how we can ensure people do not take advantage of these vulnerable communities.
- There is a **Sexual Harassment at Workplace Act** and it does include informal workers. But those

systems for informal workers have not been set up. And they can be set up also with the help of civil society, especially in places where women work at the worksite.

On Awareness about Schemes:

- There is a severe lack of awareness about what kind of programmes are available for them (women migrants) when they're migrating.
- There are certain schemes, specially for mother and child health such as **Integrated Child Development Services** or even the **Janani Suraksha Yojana**.
- Another important aspect is that the financial inclusion of migrant women is needed on a really large scale, especially related to bank account opening, which is linked with various social protection programmes.

◎ CONCLUSION:

- Recognizing that women migrants have a right to equal access to employment, adequate income and social protection is primarily needed. There should be better data collection to capture the complex dynamics of gender-specific migration to help the state respond better to their needs.
- We need to enhance vocational training programs to improve employability of women migrants and their access to support services. The political inclusion of migrants would also democratize urban governance and ensure the building of cities on the basis of gender equality.

INDIA AND NEPAL: MOVING BEYOND THE HURDLES OF PAST

CONTEXT:

The latest statement made by the Indian Embassy in Nepal on the issue of border dispute between the two countries.

◎ BACKGROUND:

- India and Nepal share the history of cordial relations since the establishment of diplomatic relations between the two countries.
- The warmth between the two seems to have been lost in last few years and one of the main reason of the same is the border disputes, with respect to territories of **Limpiadhura, Lipulek and Kalapani**, between the two countries.
- The Indian Embassy on 16th January, 2022 reiterated the view of the Indian Government stating that all the above-mentioned territories are part of India.

◎ ANALYSIS

Turning point in India-Nepal relationship:

- India and Nepal experienced friendly and cordial bond with each other since the establishment of diplomatic relations between the two.
- The prime example of the good relations that were shared by the countries of India and Nepal is the **India-Nepal Treaty of Peace and Friendship, 1950** and its provisions.

- The **1950 India-Nepal Treaty of Peace and Friendship**, officially called as **Treaty of Peace and Friendship Between the Government of India and Government of Nepal**, is a bilateral treaty between Nepal and India establishing a close strategic relationship the two South Asian neighbours. The treaty was signed in Kathmandu on 31 July 1950.
- This treaty allows free movement of people and goods between the two nations and a close relationship and collaboration between the two countries on matters of defense and foreign policy.

- The relationship between the two countries though began to change after a political understanding between the Nepali Government and the Maoist fighters in the country was reached.

- A 12-point understanding among Nepal's eight political parties including Maoists, signed in November 2005 in Delhi.
- The above understanding ended monarchy in Nepal and converted it into a republic.
- Till this point India was for long a factor — and to a large extent the sole external actor — in Nepal's internal politics. But when India openly took the lead role in transforming the internal polity of Nepal it set off events leading to India losing its clout and allies in Nepal.
- It is important to note that the EU and US had begun to emerge as India's allies in Nepal's transition after 2005-06.
- China, worried about the combined presence of India, US and EU in Nepal and their influence on internal politics, began increasing its presence and investment in Nepal, targeting tourism, post-earthquake reconstruction, trade and energy, with a message that its interest in Nepal is no less than India's or its allies put together.

The current state of relationship

- The bilateral relations between India and Nepal have hit the rock-bottom though the two are far to be termed as adversaries of each other.
- Drop in cordiality between the two can be attributed to factors such as- blockage of 2015, territorial disputes, condition of Nepali immigrants in India, growing influence of China in Nepal etc.

What measures are required?

- Mutual understanding:** India and Nepal both need to understand the requirement of using bilateral mechanisms, that have been set resolve disputes between the two countries, to their fullest potential.
- Focus on resolving issues:** The border dispute between the two countries look minor, but allowing it to fester is likely to sow the seeds of immense competition and intense rivalry in the sensitive Himalayan frontier with far-reaching geopolitical implications. Both the countries therefore have to focus their energies towards resolving these amicably.

- **Government-to-Government bonding:** It is true that Nepal-India relations are largely governed by people-to-people relations, but the importance of government-to-government relations can no longer be underestimated.

Sandeep Lamichhane, 18-year-old Nepali leg-spinner, made history on January 28, 2018 when he became the first cricketer from Nepal to sign for an IPL team. Lamichhane was bought by Delhi Daredevils (now Delhi Capitals).

- **Increasing trade and economic ties:** Since Nepal's dependence on India is more than India's dependence on Nepal, it is all the more necessary to balance such relations. To increase India's dependence on Nepal, it is necessary to increase trade and economic activities at the forefront. Interdependence between Nepal and India is the secret to reset the relations between the neighbours.

- **Easy movement:** Towards this end, the two countries could also build an international corridor along the 1,753 kilometre Nepal-India border region to facilitate greater movement of commercial vehicles between the two countries.
- **Multilateral forums:** The focus should also be given to more air, road, train, and waterways connectivity, apart from playing an active role in several important multilateral forums such as BBIN (Bangladesh, Bhutan, India and Nepal), BIMSTEC, NAM, and SAARC to serve their common interests.

◎ WAY FORWARD

Nepal-India relations are deep, wide-ranging, and unique, but also fraught with complexities. It is important for both the countries to understand that bilateral relations are dynamic in nature and reviewing them constantly in the wake of changing economic, strategic, political and global realities is necessary.

BLUE OPPORTUNITIES FOR GREEN DEVELOPMENT OF PACIFIC ISLAND COUNTRIES

CONTEXT:

Lack of economic opportunities due to the impact of COVID-19 have forced countries all over the world including the small island countries of Pacific to explore new ways in which growth can be brought back on track.

One of this is to explore the Blue Opportunities that will pave the way for sustainable development of these countries

◎ BACKGROUND:

- The small island countries of Pacific have been facing economic hindrances due to their size and location.
- Their size and location inhibited the growth of industries in this region.
- The occurrence of COVID-19 further complicated the matter by hurting the most prosperous industry in these island nations i.e. tourism.
- A rethinking therefore is required to stimulate economic growth and at the same time conserve the environment.

- What it simply means is economic development that is conducted without depletion of natural resources.

What are the environmental challenges faced by the Pacific island countries?

- Rising sea level
- Ocean acidification
- Salt water intrusion

What economic issues are faced by Pacific island countries due to above environmental challenges?

- Reduction in residential, industrial and agricultural land.
- Adverse impact on the health of people residing on Pacific island countries due to environmental pollution.
- Harmful impact on ocean health and overexploitation leading to deteriorate condition of fishing industry.

How Blue Opportunities can be adopted by Pacific Ocean countries?

- The Pacific Island countries today need to work towards practical, achievable, and concrete measures for achieving economic growth whilst taking into account the environmental and social implications of this development.
- Coastal conservation now is being done by the indigenous communities on this islands through constructing sea walls and dykes.
- This will not only provide employment to people involved in the construction activity but also safeguard the land resource of these countries for various economic activities.
- Conservation of coastal areas is also been taken up by planting mangroves on the shores which would not only help the community against storm surges but will also help in carbon sequestration and promote bio-diversity.

◎ ANALYSIS

What are Blue Opportunities?

- Blue Opportunities are considered to be the way forward for sustainable development of the Pacific Island countries.
- These opportunities tend to adhere to adopting those practices that help in preservation of ocean ecosystem and build "Blue Economy".

- **Blue Economy** is regarded as the decoupling of socio-economic activities and development from environmental degradation and optimizing the benefits which may be derived from marine resources.
- The attitude of achieving long-term prosperity by a country or a region befitting the wellbeing of all citizens and the mankind preserving the environment, especially the sea is the basis of the Blue Economy.
- **Sustainable Development-** Sustainable development is the overarching paradigm of the United Nations. The concept of sustainable development was described by the **1987 Bruntland Commission Report** as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs."

- Designating marine protected areas or taboo areas where fishing activities are not permitted have been found to be effective in getting the ecosystem to bounce back and flourish. This will lead to ample opportunities in near and far future for the fishing industry.
- Crops that are drought and salinity resistant need to be engineered thus ensuring food security and viability of agriculture as economic activity in the region.
- Financing and engineering of resilient infrastructure is required, which can withstand the wrath of climate change.
- Insurance industry in these countries can grow creating an opportunity in Climate insurance for infrastructure, agriculture, and other investments. Adopting this step would help the countries to rebound if disaster ever strikes.
- Climate loss and damage compensation has been another tool that could potentially assist the Pacific island countries in achieving their developmental goals.
- Under this mechanism, the affected countries can claim compensation from the high emitting nations. Compensation so received will help in financing the growth of Pacific islands countries.
- Key focus of Pacific island countries should also be on decarbonising the maritime shipping sector by using green energy powered vehicles for transportation. This strategy will also insulate these countries from volatile prices of fossil fuels.

What role can be played by other countries for protection of global environment and hence the Pacific Island countries?

- It is important to remember that the Pacific Island countries are very small and thus do not in a big way contribute to deterioration of the global environment.
- The onus therefore falls on major economies and emitter of the world.
- The major contribution from these countries can come in the form of them adhering to the Nationally Determined Contributions accepted under the Paris Peace Agreement.

Nationally Determined Contribution (NDC) or Intended Nationally Determined Contribution (INDC) is a non-binding national plan highlighting climate change mitigation, including climate related targets for **Greenhouse Gas emission reductions**, policies and measures governments aim to implement in response to climate change and as a contribution to achieve the global targets set out in the Paris Agreement.

- It also important to note that the advanced economies can help the pacific islands countries by providing funding and technology for mitigating the environmental damages.

I&B MINISTRY'S POWERS TO REGULATE CONTENT ON TV, OTHER PLATFORMS

CONTEXT:

Order issued by the Information and Broadcasting Ministry on 31st January, 2022, stated that it had barred transmission of a Malayali News Channel..

◎ BACKGROUND:

- Malayali news channel named **Media One** was ordered to stop its transmission by **Information and Broadcasting Ministry**.
- By an order dated **31st January, 2022**, the **Union I&B Ministry** cancelled the broadcasting rights of Media One.
- Union I&B Ministry said that the above order was passed by it because the Union Home Ministry had denied security clearance to the news channel.

Reasonable opportunity has to be given to the media organisation before termination of security clearance by the Ministry of Home Affairs.

- The Union I&B Ministry, under the guidelines of the New Rules, can use its emergency powers to block certain YouTube channels and social media accounts based on inputs from intelligence agencies.

◎ ANALYSIS

I&B Ministry can regulate the content of which all sectors? and how?

- Originally the Union I&B Ministry had the power to regulate contents of TV channels, newspapers, magazines, radio and movies in theatres and TV.
- After the implementation of Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules, the regulatory powers of I&B Ministry was extended to internet content also, especially on digital news platforms and Over The Top (OTT) platforms such as Netflix, Amazon Prime etc.

- In January 2021, Tandav on Amazon Prime became the first show on an OTT platform to edit out scenes after direct intervention of I&B Ministry.
- This was done after complaints that certain scenes hurt religious and caste sentiments were received.

- The Union Ministry of I&B in the case of Media One barred its transmission after the security clearance of the media house was withdrawn by the Union Ministry of Home Affairs.

According to the guidelines of the new Rules mentioned above- once a channel is granted security clearance by Union Ministry of Home Affairs, it will be valid for 10 years. But it adds that this can be terminated by the Union Home Ministry at any time within the period.

In December 2021 and January 2022, the I&B Ministry issued orders to YouTube, Facebook, Instagram, twitter etc., to ban over 60 channels and social media accounts, based on inputs from intelligence agencies.

Apurva Chandra, I&B Secretary, had said in January, 2022 that these Pakistan-based channels were banned for their anti-India content.

- These IT rules also allow the I&B Ministry to ban websites based on their content.
- The Union I&B Ministry also consists of the Electronic Media Monitoring Cell which keeps tracks on channels for any violations of the programming and advertising codes mentioned in the Cable TV Network Rules, 1994.

What kind of content is not allowed?

- There are no specific laws on content allowed or prohibited in print and electronic media, radio, films or OTT platforms.
- The content on any of these platforms has to follow the free speech rules of the country.

Article 19(1) of the Constitution, while protecting the freedom of speech, also lists certain "reasonable restrictions" on this right.

Reasonable restrictions under **Article 19 (2) of the Indian Constitution** can be imposed on Freedom of Expression to protect -

- Sovereignty and integrity of India
- Security of the State
- India's friendly relations with foreign states

- Public order
- Decency and Morality

The restrictions under Article 19 (2) of the Indian Constitution can also be imposed on Freedom of Expression for –

- Punishing contempt of court or avoiding it
- Avoiding the instances of defamation or incitement to an offence or punishing the same.

What Next?

The owner of the news channel i.e. Madhyamam Broadcasting Limited, has petitioned the Kerala Order for injunction against the above order of I&B Ministry. The High Court of Kerala has granted stay on the order of Union I&B Ministry and allowed the news channel to continue till further decree.

HUMAN TRAFFICKING, THE NEGLECTED ISSUE IN INDIA

CONTEXT:

Operation AAHT has been launched by the Railway Protection Force to curb human trafficking happening through trains.

◎ BACKGROUND:

- Human Trafficking is a distressing problem faced by many countries of the world including India.
- Mostly the people that are trafficked are pushed into commercial sex work or forced/bonded labour.
- The implementation of Operation Aaht by the Railway Protection Force (RPF) is aimed at eliminating the trafficking through network of trains in India that are used for transportation of victims.

◎ ANALYSIS

Operation Aaht:

- Trains are considered to be the most reliable mode transportation for the traffickers for human trafficking.
- Thus, Operation Aaht has been launched to eradicate the use of trains in this heironous crime.
- As part of it, the infrastructure and intelligence network of the **Railway Protection Force** will be used to collect, collate and analyse clues on victims, source, route, destination, popular trains used by suspects, identity of carriers/agents, kingpins etc. and shared with other law-enforcing agencies.
- The Railway Protection Force would act as a bridge cutting across states to assist the local police in the mission to curb the menace of human trafficking.

Railway Protection Force

- It is a security force and a statutory body, established by the Railway Protection Force Act, 1957.
- It has the power to search, arrest, investigate, and prosecute offenses committed under Railway Property (Unlawful Possession) Act 1966.

What is Human Trafficking?

- According to United Nations Office on Drugs and Crime, Human Trafficking is "the recruitment, transportation, transfer, harbouring or receipt of people through force, fraud or deception, with the aim of exploiting them for profit".

United Nations Office on Drugs and Crime is an agency of United Nations with headquarters in **Vienna, Austria**.

It works in preventing the abuse of drugs, organized crime, corruption and terrorism.

- The traffickers often use violence or fraudulent employment agencies and fake promises of education and job opportunities to trick and coerce their victims.

It is important to note that in majority of the cases of human trafficking, the traffickers are known to the victims.

Reasons for Human Trafficking to exist?

- Poverty** is the most important reason for human trafficking to be in existence. Traffickers offer money to parents or other family members of victims and thus push them into slavery.
- Lack of education** can lead to decreased opportunities for work at a living wage, and it can also lead to a decreased knowledge in rights. Both outcomes can cause people to be at greater vulnerability for human trafficking.
- The **demands for cheap labour and for commercialized sex** leads to opportunities for traffickers to exploit people. Traffickers use these demands conditions to earn profit which is the prime motivation for them to lure victim into been taken away.
- Social factors and cultural practices** also give impetus to the curse of human trafficking. In some parts of India, bonded labour is seen as an acceptable way to pay off debt. In these cases being bonded

labourers or trafficking victims is considered to a norm and hence they usually do not speak about the same even to the human rights groups.

- **Conflict and natural disasters** can lead to economic instability and lack of human rights, giving traffickers an advantage and making people more vulnerable to human trafficking situations.

Human Trafficking as crime in India:

- It is considered as the **second largest organised crime** in India. Human trafficking is a major issue in India, despite the fact that it is banned under the Indian law.
- As per the **National Crime Records Bureau's** 2016 crime statistics, there were 1,100 cases of trafficking. These numbers stood at 2278 in 2018. There were 2208 cases in 2019 and 1714 in 2020.
- It is important to note that taming Traffickers in India is difficult due to a lack of legal help for survivors and a lengthy trial.
- As per a survey conducted by the Kailash Satyarthi Foundation - It was found that 21% of the households are potentially ready to send their children into child labour due to their increased economic vulnerability.
 - ▶ About 1/3rd of victims in the cases of human trafficking are women of different age groups.
- Majority of the victims of human trafficking in India are pushed into either forced labour (many of these cases fall under the category of child labour), prostitution, organ transplant, drug peddling and /or begging.

- The States Department of US ranks each country in the Trafficking in Person (TIP) report on one of four tiers, as mandated by the TVPA (Victims of trafficking and Violence Protection Act, 2000). This ranking is based on efforts taken by governments around the world for elimination of human trafficking in their individual country. As per this ranking, India is placed amongst the Tier 2 countries.
- The above finding essentially means that the Indian Government has not been taking enough efforts to put brakes on the practise of human trafficking.

Section 370 of the **Indian Penal Code (IPC)** criminalized trafficking offenses that involved exploitation that included any act of physical exploitation or any form of sexual exploitation, slavery or practices similar to slavery, and servitude.

◎ CONCLUSION

The estimated number of victims of severe forms of trafficking is very significant or is significantly increasing and the country is not taking proportional concrete actions. There is a failure to provide evidence of increasing efforts to combat severe forms of trafficking in persons from the previous year. In spite of many laws present in India human trafficking remains an unspoken problem in the country.

ONE NATION, ONE ELECTION', ASSESSING THE IDEA

CONTEXT:

Elections in 5 states of India in February-March 2022 has once again put the question of One Nation, One Election, i.e. holding simultaneous elections to Lok Sabha and all state assemblies, at the centre-stage.

◎ BACKGROUND:

- Simultaneous elections are not new to India. They were the norm until 1967.
- The idea of reverting to simultaneous polls was mooted in the annual report of the Election Commission in 1983.
- The Law Commission's Report also referred to it in 1999.
- The recent push came ahead of the 2014 Lok Sabha polls in the BJP manifesto. After Mr. Modi floated the idea once again in 2016, the Niti Aayog prepared a working paper on the subject in January 2017.
- In the working paper that the Law Commission brought out in April 2018, it said that at least "five Constitutional recommendations" would be required to get this off the ground.
- The final decision on holding simultaneous elections is yet to be taken.

◎ ANALYSIS

What are simultaneous polls?

- Currently, elections to the state assemblies and the Lok Sabha are held separately — that is whenever the incumbent government's five-year term ends or whenever it is dissolved due to various reasons.
- This applies to both the state legislatures and the Lok Sabha.
- The terms of Legislative Assemblies and the Lok Sabha may not synchronise with one another.
- For instance, Rajasthan faced elections in late 2018, whereas Tamil Nadu will go to elections only in 2021.
- But the idea of "One Nation, One Election" envisages a system where elections to all states and the Lok Sabha will have to be held simultaneously.
- This will involve the restructuring of the Indian election cycle in a manner that elections to the states and the centre synchronise.
- This would mean that the voters will cast their vote for electing members of the LS and the state assemblies on a single day, at the same time (or in a phased manner as the case may be).

What are the pros & cons of the idea?

● Arguments in favour

- Cost reduction:** One Nation, One Election would reduce the cost of holding elections, and **limit all elections to a single event.**
- Public welfare:** The occurrence of elections somewhere or the other almost all the time, according to some, leads to the Model Code of Conduct getting in the way of the government announcing projects or policy plans for the benefit of the people.
- The **Model Code of Conduct** comes into force immediately on the announcement of the election schedule by the commission for the need of ensuring free and fair elections
- Its main purpose is to ensure that ruling parties, at the Centre and in the States, do not misuse their position of advantage to gain an unfair edge. Model Code of Conduct prohibit launching of scheme or project by Central or state government after the announcement of election schedule.

● Arguments against

- Complex process:** It is argued that holding just one mega election (for Lok Sabha and all state assemblies) would be too complex an exercise to be tackled in a country as large and as complex as India.
- Logistics issue:** Holding of simultaneous elections could be a logistic nightmare — requiring, for example, about twice as many electronic voting machines and Voter Verifiable Paper Audit Trail machines as are used now.
- Favouring one player:** There is also the view that simultaneous elections would benefit the party that is nationally dominant at the cost of smaller regional players.
- Going against the basic objective:** The idea of **One Nation, One Election** could also lead to a situation where a particular government, either of the Centre or of any state, may lose confidence of the legislature. In such a case, allowing the government to function would mean going against the basic tenets of parliamentary democracy.

Brief history of simultaneous elections in India-

- India did start-off with simultaneous elections. Lok Sabha and state legislatures went to polls together in 1952 and 1957.
- The cycle was first broken in Kerala, in July 1959, when the Union Government of Jawaharlal Nehru used Article 356 of the Constitution to dismiss the state government of the **E. M. S. Namboodiripad (Communist Party of India)**.

Under **Article 356** of the **Constitution of India**, if a state government is unable to function according to Constitutional provisions, the Union government can take direct control of the state machinery.

- E. M. S. Namboodiripad had become Chief Minister after the elections of April 1957 and the above occurrence resulted in Kerala voting for a new five-year Assembly again in February 1960.
- In the 1967 elections, the Congress suffered setbacks in Bihar, UP, Rajasthan, Punjab, West Bengal, Orissa, Madras and Kerala and governments of the Samyukta Vidhayak Dal, comprising the Bharatiya Kranti Dal, Samyukta Socialist Party, Praja Socialist Party, Swatantra Party, Bharatiya Jana Sangh and defectors from the Congress were formed.
- These governments were unstable, there were rampant defections, and many of these Assemblies were dissolved before their terms were over, resulting in the separation of the election cycles of many states from that of the Lok Sabha.
- At present, Assembly elections in only Andhra Pradesh, Odisha, Arunachal Pradesh and Sikkim are held together with the Lok Sabha elections.

Early explorations of the idea:

- In 1983, the Election Commission had suggested simultaneous elections.
- The Law Commission headed by Justice B P Jeevan Reddy, in its 170th Report in May 1999, had stated: "We must go back to the situation where the elections to Lok Sabha and all the Legislative Assemblies are held at once".

In 2003, Prime Minister Atal Bihari Vajpayee took up the matter with Congress president Sonia Gandhi who was receptive to begin with, but the idea could not be ultimately pursued.

In 2010, L K Advani discussed the matter with former Prime Minister Manmohan Singh but no result came out of the same.

What Next?

- The Opposition parties, especially the regional ones, are likely to remain wary of an idea that has the potential to take away the local element of state elections, and allow national leaders to overshadow the regional ones.
- The 2019 Lok Sabha elections demonstrated the unmatched appeal of Prime Minister Modi, and a single campaign and election for all state Assemblies and the Lok Sabha might, according to the opposition parties, give the BJP an overwhelming advantage across the country.
- On the other hand, the Prime Minister's clear commitment to the idea suggests that the current national government will push the envelope as much as it can.

FREEDOM OF RELIGION & 'ATTIRE'

CONTEXT:

Owing to entry ban of students who were wearing hijab, the debated over the hijab and issues of freedom of religion and attire has risen in the southern Indian state of Karnataka.

◎ BACKGROUND:

- After 6 female students from Udupi were not allowed to enter their college campus, because they were wearing the hijab, the question on freedom of religion and its profession has aroused.
- Right to profess religion may include the right to dress according to religious injunctions and hence protection of this right is constitutionally mandated.
- Karnataka government has argued that it has not made uniforms compulsory in pre-university colleges but it is also not against the imposition of ban on hijabs in educational institutions and banning them is not against right to practice and profess religion.

◎ ANALYSIS

What does the latest order of Karnataka Government say?

- Uniforms prescribed by the local college development council should be followed by students of government Pre-University colleges.
- Where no uniform is prescribed for Pre-University students, the order mandates that unity amongst students must be ensured.
- All public schools have to strictly abide by the uniform policy mandated by the government and the private schools can have uniforms as decided by their councils.

Where does the state government get its power to mandate uniform?

- According to **Section 7 (2) (g) (v)** of the **Karnataka Education Act, 1983**, the state government can prescribe rules for curricula to promote harmony and the spirit of common brotherhood amongst all the people of India transcending religious, linguistic and regional or sectional diversities to renounce practices derogatory to the dignity of women.
- State government has powers under **Section 133 (2) of the Education Act, 2002** to issue directions to educational institutions for implementing provisions of the law according to needs of the state.

What does the Indian Constitution say about freedom of religion?

- Article 25 guarantees the freedom of conscience, the freedom to profess, practice and propagate religion to all citizens.

What is the reason given by the Government of Karnataka to support ban on Hizab?

- Wearing hizab, according to the Department of Education, Government of Karnataka- is affecting equality and uniformity amongst students in the education institutions.

Judiciary's stand on the issue-

- The Supreme Court of India has put forward the **Doctrine of Essentiality in Shirur Matt case of 1954**.
- The SC in the above case stated that the term religion in the Constitution of India included all those rituals and practices that are integral to a particular religion. Such rituals and practises are to be considered essential for the religion.
- The SC in the above case decreed that protection of such essential rituals and practices is the duty of Supreme Court of India.
- Supreme Court in this case did not define what all are the essential practices and rituals but reserved with judiciary the right to decide about the same as per the facts and circumstances of each case.
- In **Amna Bint Basheer vs Central Board of Secondary Education**, the Kerala High Court held that wearing Hizab is an essential religious custom in Islam. But it also refrained from striking down the dress code prescribed by the CSBE for students.
- In 2018, in the **Kerala High Court in Fathima Tasneem vs State of Kerala** held that the collective right of institution will have precedence over the individual right of the petitioner.
- In the above case two girls had filed petition after their school declined to allow them to wear headscarf.

What Next?

The Karnataka High Court would hear the petition on whether girls have the right to wear Hizab in the educational institutions.

ARTIFICIAL INTELLIGENCE AND ITS CLIMATE COST

CONTEXT:

The techno-optimism towards future of AI can be seen in budget speech, where AI was described as a sunrise technology that would “assist sustainable development at scale and modernize the country.”

While there is an allure to national dreams of economic prosperity and global competitiveness, underwritten by AI, there is an environmental cost.

● ANALYSIS:

The “race” for dominance in AI is far from fair:

- Not only do a few developed economies possess certain material advantages right from the start, they also set the rules.
- They have an advantage in research and development, and possess a skilled workforce as well as wealth to invest in AI.
- North America and East Asia alone account for three-fourths of global private investment in AI, patents and publications.

Inequity in AI in terms of governance:

- How “tech fluent” policymakers are in developing and underdeveloped countries?
- What barriers do they face in crafting regulations and industrial policy?
- Are they sufficiently represented and empowered at the international bodies that set rules and standards on AI?
- There is an emerging challenge at the nexus of AI and climate change that could deepen this inequity.

The climate impact of AI comes in a few forms:

- The energy use of training and operating large AI models is one.
- In 2020, digital technologies accounted for between 1.8 per cent and 6.3 per cent of global emissions.
- AI development and adoption across sectors has skyrocketed, as has the demand for processing power associated with larger and larger AI models.
- Paired with the fact that governments of developing countries see AI as a silver bullet for solving complex socio-economic problems, we could see a growing share of AI in technology-linked emissions in the coming decades.

Entering mainstream debates:

- The idea of sustainability is rapidly entering mainstream debates on AI ethics and sustainable development.
- In November 2021, UNESCO adopted the Recommendation on the Ethics of Artificial Intelligence, calling on actors to “reduce the environmental impact of AI systems, including but not limited to its carbon footprint.”
- Technology giants like Amazon, Microsoft, Alphabet and Facebook have announced “net zero” policies and initiatives. These initiatives are a good sign, but they only scratch the surface.
- Both global AI governance and climate change policy are contentious, being rooted in inequitable access to resources.

Developing and underdeveloped countries face a challenge on two fronts:

- AI’s social and economic benefits are accruing to a few countries.
- Most of the current efforts and narratives on the relationship between AI and climate impact are being driven by the developed West.

What then is the way ahead?

- Like most nexus issues, the relationship between climate change and AI is still a whisper in the wind.
- It is understudied, because the largest companies working in this space are neither transparent nor meaningfully committed to studying, let alone acting.

● CONCLUSION:

- Governments of developing countries, India included, should also assess their technology-led growth priorities in the context of AI’s climate costs. It is argued that as developing nations are not plagued by legacy infrastructure it would be easier for them to “build up better”. These countries don’t have to follow the same AI-led growth paradigm as their Western counterparts.
- It may be worth thinking through what “solutions” would truly work for the unique social and economic contexts of the communities in our global village.

THE NEED TO BOOST LABOUR INCOME AND CONSUMPTION EXPENDITURE

CONTEXT:

The Union Budget 2022-23 has projected a fiscal deficit of 6.4% of nominal GDP, a narrowing from the 6.9% assumed in the revised estimates for the current fiscal year ending on 31st March 2022.

According to Finance Minister, India is on the path of fiscal consolidation to reach a fiscal deficit level below 4.5% by 2025-26 and has recognised the need to nurture growth through public investments. But the present economic context seems to forbid the same at the ground level.

ANALYSIS:

Importance of Fiscal Consolidation:

- It is referred to ways of **narrowing the Fiscal deficit** in an economy. A fiscal deficit is an amount that any government spends beyond its income and is measured as a percentage of the GDP.
- The **government resort to borrowings to bridge the deficit** and has to allocate a part of its earnings to service the debt. **The interest burden increases, as the debt increases.**
- In the Budget for FY22, of the total government expenditure of over ₹34.83 lakh crore, more than 8.09 lakh crore (around 20 per cent) went towards interest payment.
- Debt is one liability that is difficult to defer and, at the end of the day, the government struggles to find more resources not just for **capital expenditure** but also **revenue expenditure**. Inevitably, in the long run, an uncontrolled fiscal deficit can hit the economic growth in a hard way.

Seeds of Fiscal Consolidation:

- In the budget speech for the **Fiscal year 1995**, then Finance Minister Manmohan Singh **highlighted the need for fiscal discipline** and **pronounced a policy to end monetising the deficit.**
- Earlier the government used to finance its deficit by creating money**, through issuing ad hoc treasury bills. **It weakened the Reserve Bank's ability to frame an effective monetary policy.** Manmohan Singh announced phasing out ad hoc treasury bills, after which the government would **fund its deficit through market borrowings.**
- Gradually as the open market borrowings piled up to fund the deficit, in the budget speech for the **Fiscal year 2001**, then finance minister Yashwant Sinha called for string **institutional framework to ensure fiscal responsibility**, resulting in **'Fiscal Responsibility and Budget Management (FRBM) Act, 2003** which mandated **limiting the deficit to 3 per cent of GDP.**

- Unfortunately, that never happened. A fiscal deficit of 3 per cent now appears to be a distant possibility. To ensure it was within the law, the government periodically amended the FRBM Act to reset the fiscal deficit target.

Trade-off between fiscal consolidation and growth:

- Many economists have said that faster economic growth depends on **limiting the fiscal deficit** and that is because of the following two reasons:
 - A high fiscal deficit will increase borrowing and the interest burden would curtail the government ability to spend productively.
 - Increased government borrowing will crowd out the private sector in the debt market, leading to higher interest rates, which will hurt growth.

A rather balanced approach suggests that **fiscal consolidation is an expenditure switching mechanism**, as **shifting the expenditure from revenue to capital** lays the foundation for higher growth.

Economic context for this year's Budget:

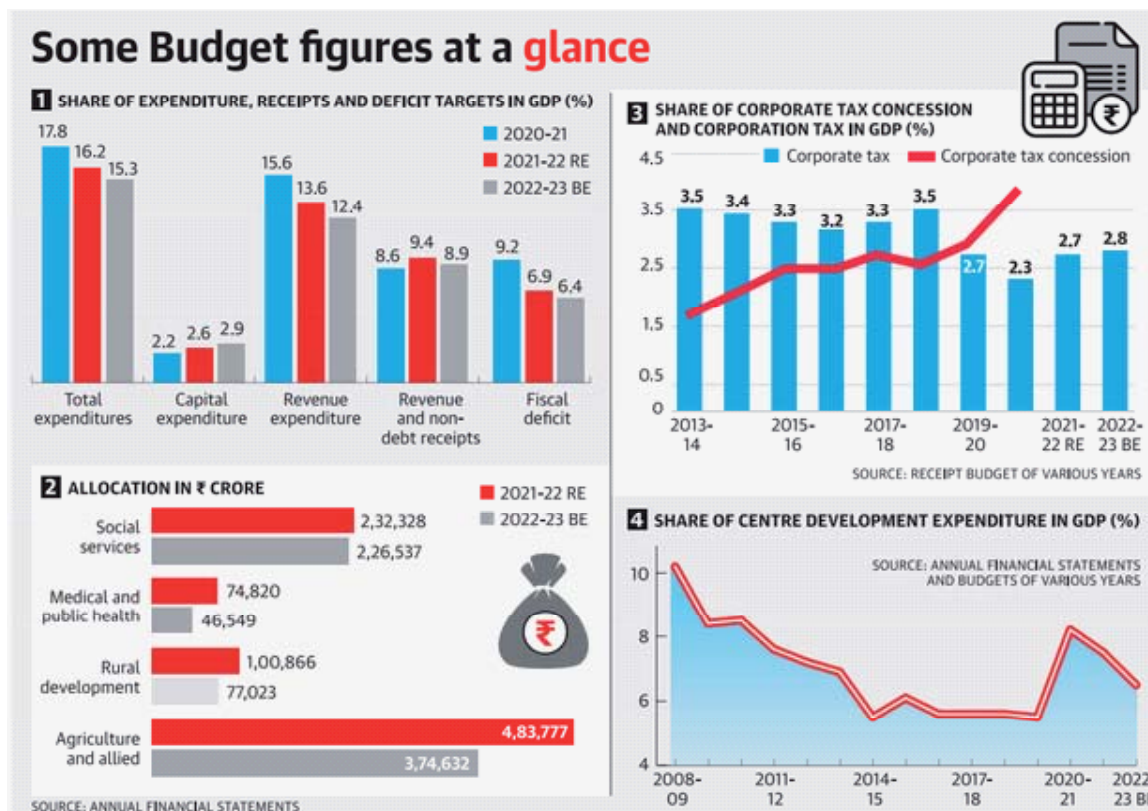
- Reduction in Labour Income and Consumption Expenditure:**
 - Sharper **reduction in labour income** as compared to corporate profits.
 - Sharp **fall in consumption-GDP ratio** as well as an absolute value of consumption expenditure during the pandemic.
- Structural Challenges:**
 - Need for the policies that can **boost labour income and consumption expenditure.**
 - Addressing the structural constraints** of the Indian economy that **restricted growth even during the pre-pandemic period.**

How has the Budget fared in this backdrop?

The budget falls short of addressing the above-mentioned challenges. There are three distinct features of the fiscal consolidation process that India is observing:

o **Expenditure Compression:**

- ▶ While the share of revenue and non-debt receipts in GDP has remained more or less unchanged, the budget has sought to achieve fiscal consolidation by **reducing the allocation for revenue expenditure-GDP ratio (Fig-1).**



- ▶ As a result, the brunt of this 'expenditure compression' fell on revenue expenditure. Although during the last two years, since the pandemic the allocation of capital expenditure as a share of GDP has been increased, but the spending on revenue expenditure has taken a hit, thereby affecting the livelihood of labour.

o **Reduction in Allocation for Revenue Expenditure:**

- ▶ As the **bulk of revenue expenditure** comprises food subsidies and meeting expenses in social and economic services, a **reduction expenditure has adversely affected the income and livelihood of labour.** The total subsidy bill has been cut by a humongous 27 per cent (Fig-2).

Subsidy/ Allocation for	2021-22	2022-23 (in Rs crore)
Petroleum	6,517	5,813
Fertiliser	1,40,000	1,05,000
Food	2,86,219	2,06,481
Mid-day	11,500	10,233

Meal scheme		
Crop Insurance	15,989	15,500
MGNREGA	98,000	73,300
Health	85,915	86,606

- ▶ For example, the allocation for both agriculture and allied activities and rural development registered a sharp decline.
- ▶ On similar lines, the **total nominal expenditure on medical and public health registered a sharp fall in 2022-23** as compared to 2021-22. Such a reduction in expenditure has been associated with the overall **fall in the allocation for total social sector expenditure (Fig-3).**

Revenue Expenditure: Revenue Expenditure is that part of government expenditure that does not result in the creation of assets. Payment of salaries, wages, pensions, subsidies and interest fall in this category as revenue expenditure examples. Also, note that revenue expenses are incurred by the government for its operational needs.

- **Low Corporate Tax-GDP ratio:**

- ▶ Despite the objective of fiscal consolidation, the **corporate tax ratio continues to remain below the 2018-19 level** due to tax concessions. **The sharp increase in corporate profits during the pandemic has not translated into an increase in the corporate tax-GDP ratio.**
- ▶ The corporate tax-GDP ratio registered a decline particularly since 2018-19 when corporate tax-ratio declined sharply from 3.5% to 2.7% (Fig-4).

Implications of reduced development expenditure:

- The **objective of fiscal consolidation** along with the **inability to increase revenue receipts** has posed a constraint on development expenditure.
- With **non-development expenditure** comprising of interest payments, administrative expenditure and various other components which are typically rigid downward, the brunt of expenditure compression has fallen on **development expenditure.**

Developmental expenditure refers to the expenditure of the government which helps in economic development by increasing production and real income of the country. The brunt of expenditure reduction can be felt on development expenditure and it is worrisome.

- The reduction in the allocation for development expenditure ratio for 2022-23 reflects a reduction in the allocation for social and economic services like food subsidies, national rural employment guarantee program, expenditure in agriculture, rural development and social sector.
- The decade of 2010s is characterised by a decline in developmental expenditure, but for a brief period, the fiscal stimulus was introduced after the advent of the pandemic in 2019-20. But the overall picture suggests that the **strategy of fiscal consolidation has resulted in a decline in development expenditure in the last decade,** highlighting a major constraint (Fig 5).

Concern from Macro-economic Perspective:

- Possibility of actual expenditure falling short of Budget Estimates:
 - ▶ The Budget estimates of different expenditures are sensitive to the growth estimates for 2022-23. **The actual GDP growth rate in at least the last four years** have been consistently lower than what was initially projected by the Economics Survey, so the possibility of actual

expenditure falling short of budget numbers cannot be assumed away. If the GDP growth rate and revenue growth rate happens to be lower than what is projected, then the **actual expenditure can turn out to be even lower than what is projected and if so happen it can further deteriorate the situation.**

- ▶ **Even if the actual expenditure is close to the budget estimates,** the **recovery of labour income and consumption expenditure would be largely restricted** by how fiscal consolidation has been carried out. This is because the reduction in the allocation for development expenditure would hurt labour income and consumption expenditure.
- ▶ The **positive impact of higher capital expenditure on the recovery process** would be largely **curtailed by the adverse impact of more than proportionate fall in revenue expenditure.**
- **Dependent on External Factor for Economic Revival:**
 - ▶ In the backdrop of **fiscal consolidation strategy,** the prospect and extent of **economic revival in the present scenario appear to be depending heavily upon external demand.**
 - ▶ Despite the recovery in exports, the **possibility of sustained economic recovery** relying exclusively on **exports appears bleak at the present** as different countries have also started pursuing the strategy of fiscal consolidation at the dictate of the IMF.

Boosting wages and raising consumption:

- India, which is a young nation with a **median age of 28.43 years,** poses a great demographic advantage. But at the same time, unemployment poses the gravest economic challenge to India. **Massive expansion in government spending** is needed, which will **uplift workers' skills as well as their incomes and purchasing power.**

The current unemployment rates are Urban: 8 per cent, Rural: 6 per cent. In the last two years, 84 per cent of households have suffered a loss of income. As against the 12 lakh new jobs a year, the number of persons who enter the workforce every year is 47.5 lakh (source: Labour Bureau). In the workforce, the **LFPR (Labour Force Participation Rate)** is the proportion of the population that is presently employed or seeking employment. In India, the current numbers are workforce: 94 crores, LFPR: 37.5 per cent, equal to 52 crores (source: Economic Survey, Appendix).

- Incentives must be given to the sectors where jobs can be created.

- We are a consumption-driven economy and the following measures may be considered to boost consumption expenditure:
 - ▶ Increasing the disposable income
 - ▶ Rationalising taxes
 - ▶ Measures to create livelihoods, especially in rural areas
 - ▶ Reviving the hard-hit sectors like the MSMEs
- Incentivising the farming community to **shift from grain-based farming to cash crops, horticulture and livestock products.**
- **Shifting labour force from agriculture to manufacturing.** That is possible if labour-intensive manufacturing takes place in a big way, creating employment opportunities for the labour force with low or little skills, generating income and demand. We also have to go for large-scale vocational training from the secondary-school level.
- **“Labour reforms”** for guaranteeing minimum wages to be paid.
- For equitable growth, India must **maximise labour’s share in national income.** The labour share of income- the share of national income paid in wages, including benefits, to workers needs to be increased.
- **Improving the corporate tax-GDP ratio** can help the government to register an increase in

its revenue and by doing so it can allocate funds to revitalise social security schemes targeted at income generation for lower-income groups.

◎ CONCLUSION:

- In a **consumption-driven economy** like India, the income must reach the lower-income group that can **spur the demand of goods resulting in increased consumption expenditure.** Jobs generation is critical to a country like us, given the size of its young population. **Jobs generate income and income results in more consumption.** As the consumption increases, the demand for goods and services also increases and the manufacturers have to produce more to meet the demand, which means even **more jobs gets created, exemplifying the multiplier effect.**
- **Low labour income negatively affects macroeconomic aggregates** like household consumption and savings, investments, output and demand, all of which are important ingredients for growth. In addition, **low labour share makes it impossible for the workers to accumulate wealth, invest in education, skill training, housing or health.** The key to the faster economic progress of India lies in income growth. At the moment Indian economy needs an effective policy that can not only give impetus to aggregate demand but also give a boost to labour income.

BUDGET AND AGRICULTURE

CONTEXT:

Recently, the finance minister presented the Union Budget 2022-23 in Parliament. We shall be taking up the analysis of the budgetary allocations in the agriculture sector in the following discussion.

ANALYSIS:

- Agriculture is a diverse subject that is compressed into a sub-section of the regular budgets of the Centre and States.
- The Union budgetary **allocation for agriculture has risen marginally** but **schemes for crop insurance, MSP have seen a dip in funds in this budget.**
- **Limited focus on the agriculture sector** and related policies can be seen in the Union Budget 2022-23.

Budgetary allocation for Farm Sector:

- The **overall allocation increased by a meagre 4.4 per cent** for the year, compared to the expenditure on the sector in the last financial year. There was a marginal increase of Rs 5,700 crores, from Rs 126807 crore in the financial year (FY) 2021-22 to about 132513 crores in FY 2022-23.
- The worrying part is that even the important **schemes for crop insurance** and **minimum support price (MSP), especially for pulses and oilseeds** saw a drastic slashing of funds.
- The **Market Intervention Scheme and Price Support Scheme (MIS-PSS)** was allocated Rs 1,500 crore, 62 per cent less than Rs 3,959.61 crore in revised estimates (RE) of FY 2021-22.
- The **Pradhan Mantri Annadata Aya Sanrakshan Abhiyan (PM-AASHA)** saw an even deeper cut. It was allocated just Rs 1 crore for the year as against an expenditure of Rs 400 crore in 2021-22. This is almost a 100 percent reduction.

Pradhan Mantri Annadata Aya Sanrakshan Abhiyan (PM-AASHA) is an umbrella scheme aimed at ensuring remunerative prices to the farmers for their produce. Components of PM-AASHA:

- Price Support Scheme (PSS)
- Price Deficiency Payment Scheme (PDPS)
- Pilot of Private Procurement & Stockist Scheme (PPPS)

- Both **PM-AASHA** and **MIS-PSS** ensure MSP operations in the country. This reduction in allocation is contrary to the demands for MSP

by the farmers, especially in the just concluded farmers agitation for the three farm laws relating to marketing reforms and stocking of essential commodities. There can be two reasons for this reduction:

- ▶ **Either the government is anticipating that prices of pulses and oilseeds will remain expensive** (due to the ongoing food inflation) in 2022-23 and will not be sold at MSP, or
- ▶ The **government is looking to wind up the scheme**- an indication that is not faring well, given the government has been saying that it will procure under MSP and talking about nutrition security.

- Even the **allocation under food and nutritional security has come down** to Rs 1,395 crore from Rs 1,540 crore in RE 2021-22. The **'Distribution of Pulses to state / Union territories for Welfare Schemes'** that aims to dispose of pulses procured for utilisation under midday meals, public distribution system, among others, saw an allocation of just Rs 9 crore.

Silence on doubling of Farmers income:

- This year the doubling of farmer's income was supposed to have happened.
- But the budget 2022-23 maintains **complete silence on that target or on how much we have achieved in the last six years since that promise was first made.**
- But it was the first time in six years that the budget speech skipped mentioning 'doubling of farmer's income' altogether.
- According to the government's statistics, the monthly income of farmers in 2015-16 was Rs 8,059. Now according to the 2021 Situation Assessment Survey of agricultural households, a farming household's monthly income was Rs 10,218, which is quite far from the target announced for 2022.
- And the silence on this issue in this year's budget seems to suggest that the government might have missed the target.

Crop Insurance Schemes:

- Crop insurance is particularly important because of adverse weather from climate change and this too has seen a reduction.

- Allocation for **Pradhan Mantri Fasal Bima Yojana (PMFBY)** or crop insurance scheme was also reduced marginally to Rs 15,500 crore for this year from Rs 15,989 crore in 2021-22. This is significant at a time when crop loss has been increasing.
- Schemes like **Agriculture Infrastructure Fund or AIF** has seen a marginal increase from Rs 200 crores in 2021-22 (RE) to Rs 500 crore in 2022-23. However, this AIF which was announced as a Rs 1 lakh crore fund in 2020 as part of the government's **Atmanirbhar Bharat Abhiyan** was meant to be spent over the subsequent six years has been a **non-starter**.
- Only Rs 6,627 crore worth of projects have been sanctioned until now after two years and the actual disbursements are much lower at only Rs 2,654 crore.
- This is about 2.6 per cent only of the target (one lakh crore), which is indicative of **poor implementation of the scheme**.

Decrease in Capital Investment:

- Allocation for rural development was 5.59% in the previous Budget and it has been reduced to 5.23%.** The allocation of funds towards schemes such as Pradhan Mantri Kisan Samman Nidhi (PM KISAN), Pradhan Mantri Kisan Maandhan Yojana, though desirable, will not result in long-run asset generation.
- Most of them are poor farmers with small landholding sizes. They cannot invest in irrigation techniques in a country where seasonal rains through the monsoon fail regularly.
- They cannot invest in required agri-technology and scientific methods to increase their per unit crop yield.

The Bright Spots in the Agriculture Budget:

- One bright spot in the agriculture budget is the **focus on the Rashtriya Krishi Vikas Yojana (RKVY)** that has been losing its sheen in the last few years. The programme has been restructured to include schemes like:
 - Pradhan Mantri Krishi Sinchai Yojana-Per Drop More Crop
 - Paramparagat Krishi Vikas Yojana
 - National Project on Soil and Health Fertility
 - Rainfed Area Development and Climate Change
 - Sub-Mission on Agriculture Mechanization including Management of Crop Residue
- These schemes were earlier a part of the Green Revolution programme.** Allocation under PM-KISAN, which provides income support by way of the cash benefit to all landholding farmers, has also increased marginally to Rs 68,000 crore from

Rs 67,500 crore last year. Overall, the farm sector has very little cheer in this year's Union Budget.

- Digital and hi-tech services to farmers:** While countries like Israel, Vietnam, China etc., have been spraying pesticides in a regulated manner through sprayers from the sky, Indian farmers to a large degree are spraying them manually. Initiatives like promoting the use of '**Kisan drones**' to **crop assessment, digitisation of land records, spraying of insecticides and nutrients** through the **public-private partnership model** will go a long way in helping Indian farmers reap the benefits of technological advancements.
- Promoting chemical-free natural farming starting with farmers'** lands close to the Ganga.
- Post-Harvest value addition, consumption and branding of millet products, funds to finance start-ups for agriculture and rural enterprises, supporting FPOs through these enterprises, and boosting domestic oilseed production,** have the potential to transform the sector.
- Implementation of the Ken-Betwa River interlinking project** is the other thrust area of the Budget for the farm sector.

Need for Increased spending to Boost Farm Incomes:

- Although the overall budgetary allocation towards the agricultural sector has marginally increased by 4.4% in the Union Budget 2022-23, the rate of increase is lower than the current inflation rate of 5.5%-6%. The picture changes and rather looks disappointing when we look at the **Agriculture Orientation Index (AOI)**- an index that was developed as part of **Goal 2 (Zero Hunger) of the 2030 Agenda for Sustainable Development in 2015**.

The **Agriculture Orientation Index (AOI)** is calculated by dividing the agriculture share of government expenditure by the agriculture value-added share of GDP. In other words, it measures the ratio between government spending towards the agricultural sector and the sector's contribution to GDP.

- The **Sustainable Development Goal (SDG) 2** emphasises an **increase in investment in rural infrastructure, agricultural research and extension services, development of technology to enhance agricultural productivity and eradication of poverty in middle- and lower-income countries.** India's index is one of the lowest, reflecting that the spending towards the agricultural sector is not commensurate with the sector's contribution towards GDP.

- **India holds only the 38th rank in the world**, despite being an agrarian economy wherein a huge population is dependent on the agricultural sector for its livelihood, and despite being among the largest producers of several crops produced and consumed in the world. **India's poor AOI is a stark reminder of the need to attain a key sustainable development goal of higher agri-growth.**

Steps that can be taken for the Improvement of Agricultural Sector:

- **Engaging Universities in Agriculture**, Animal Husbandry and Horticulture and NABARD to prepare a profile of the State in terms of soil, climate changes, emerging technologies and the pitfalls or inadequacies of the present system.
- **Reduction in the GST and customs duty rates** on some of the agro-chemical products could have reduced the overall cost for the farmers increasing their income.
- The **budget should contain only those resources that flow from the governments** and not from the credit institutions. The budget for agriculture should not include the crop loan targets as it will be misleading.
- **Irrigated farming and rain-fed farming should be separate components** as much as livestock, horticulture, apiculture, and aquaculture.
- In the **high-income zones of the farm sector**, we see the adoption of robots, artificial intelligence and machine learning. Possibilities of **introducing agricultural income tax may be considered.**

- The perverse **subsidies in the farm sector**, like for fertilisers, could be considered to be **scrapped.**
- **Balancing the food system with the environment and renewable** or alternative energy systems are essential to building a resilient food production system.
- When States formulate a budget for agriculture, there is scope for the **right balance between the resources and expenditures consistent with their respective agro-climatic zones.**

◎ CONCLUSION:

- **Intensification in government spending towards the agricultural sector** is the key to attaining higher agricultural growth and farm income. The focus on the **development of irrigation facilities, urban infrastructure and development of national highways** must be complemented with an emphasis on the **development of rural infrastructure and rural transportation facilities**, along with an **increase in the number of markets.** Such measures can play a crucial role in enhancing farmers' access to markets and integrating small and marginal farmers into the agricultural supply chain.
- During the last five years, the Budget allocation to agriculture has seen positive shifts consistent with the Centre's role in research, marketing, exports, and agricultural education. This year too the basket has a lot to cheer about, and at the same time leaving areas for improvement.

UNION BUDGET FALLS SHORT IN ADDRESSING GAPS TO BUILD DISASTER RESILIENCE

CONTEXT:

One of the major expectations from the recent Union Budget 2022-23 was that the compensation given under the National Disaster Relief Fund (NDRF) and State Disaster Relief Fund (SDRF) would be enhanced and the allocations to the states would be increased.

The budgetary allocations under relief on account of natural calamities and MGNREGA have been decreased; this will affect the country in building disaster resilience.

The allocation for relief operations on account of natural calamities has been decreased to Rs 1,511.93 crore in 2022-23 from Rs 1,538.03 crores in 2021-22.

◎ BACKGROUND:

- India lost Rs 65 lakh crore in 2020 alone because of tropical cyclones, floods and droughts, according to the World Meteorological Organization's 'State of the Climate in Asia'.
- A billion people have been impacted and nearly 83,000 lives lost due to natural disasters in India since 2001, according to a report released by the State Bank of India (SBI) in 2021.
- If the losses are adjusted with current prices, the amount comes to a staggering Rs 13 lakh crore or six per cent of India's gross domestic product, according to the SBI.

◎ ANALYSIS:

Sendai Framework for Disaster Risk Reduction

The Sendai Framework for Disaster Risk Reduction (SFDRR) highlights the role of improved disaster resilience of infrastructure as a cornerstone for sustainable development.

The SFDRR includes four specific targets related to loss reduction:

- Reduce global disaster mortality
- Reduce the number of affected people
- Reduce direct disaster economic loss
- Reduce disaster damage to critical infrastructure

What is disaster resilient?

Building disaster resilience is the term we use to describe the process of helping communities and countries to be better prepared to withstand and rapidly recover from a shock such as an earthquake, drought, flood or cyclone.

Issues with the Budget Allocation on Disaster resilience:

- People affected by natural calamities and disasters have said the compensations in the budget are minimalistic and need to be reviewed.
- The state allocation needs to be increased for SDRFs.
- There should also be uniformity of compensation needs across the country.
- The list of items and norms of assistance from SDRF and NDRF for 2010-15 and 2015-20 is outdated and needs to be revised.
- Some of the compensation listed in the norms is highly inadequate.
 - For example, compensation for houses lost during natural disasters was Rs 17,600 in the 2010-15 guidelines.
 - Under the 2015-20 guidelines, Rs 3,200 is given as compensation for partially damaged kuchcha (mud or wood) houses and Rs 95,100 for fully damaged kuchcha houses.
 - However, no one gets Rs 95,100 as compensation and Rs 3,200 is highly inadequate for restoring even a kuchcha house.
- A disaster-risk reduction (DRR) component needs to be present in departments like rural housing that can be prioritized first for people living in coastal regions, within 5 km of the sea.
- PM Awas Yojana** has got an allocation of Rs. 48,000 crore but this needs to be prioritized for ecologically sensitive zones by building disaster-resilient houses.
- Besides housing, there are several departments like rural development and fisheries, which are key to disaster resilience.

Issue with the Budget Allocation for MGNREGA:

- It is also unfortunate that the allocation for the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) has been reduced by 25 per cent to Rs 73,000 crore, from Rs 93,000 crore in the previous budget.
- This is despite the fact that there has been significant demand for work under MGNREGA after the loss of livelihoods post COVID-19 and post-natural disasters.
- Also, the urban employment programme which started briefly in states like Odisha, should have been encouraged in those states where there is an outflow of internal migrants.
- More than 90 per cent of survey respondents wanted to work for more than 100 days under MGNREGA.
- The wage rate had to be increased at least up to the local average agriculture labour wage.

What needs to be done?

- In states like Odisha, which have already formulated community-level disaster management plans, it is important to provide them with financial resources so that they act quickly in the event of disaster.
- There is an urgent need to map the blocks and Gram Panchayats which are susceptible to disaster and fund them to operationalize their DRR plan.
- It is important to provide DRR and climate change adaptation resources to the Panchayats, blocks and districts to plan and implement programmes in a localized manner.

- Vulnerable population groups such as women, children, elderly people, those with disabilities and others should be the focus.
- The **National Coastal Mission**, which has a budget outlay of Rs 195 crore, needs to ensure livelihood security of coastal communities including fisherfolk.
- The MoEFCC has been allocated more funds as compared to previous budget. This amount should be designed to build disaster resilience in India by not only protecting livelihoods of fisherfolk but also protecting the mangroves in the Sundarbans, Odisha and other states which offer protection against cyclones.
- But these efforts need to be encouraged and the budget should have given clear directions on that.

◎ WAY FORWARD:

- Achieving SDG goal 13(to combat climate change and its impact), cannot be done if India does not set aside funds and continues to promote grand infrastructural projects in ecologically fragile areas. The focus should shift to the villages, towns and other locations in the states which are affected by disasters every year. Not only should we speed up relief distribution and rehabilitation but should also enhance amounts of compensation with greater allocation to the states.
- In addition to this, a resident of a highly vulnerable village or city not only needs relief but also a disaster-resilient house and safety net of social security schemes, including creative use of MGNREGA.

GUIDING PERI-URBAN TRANSFORMATION

CONTEXT:

The rural characteristics of many peri-urban areas (PUAs) adjoining large cities are undergoing a transformation with in-migration of population.

The rapid urbanization of peri-urban areas across India requires targeted and planned intervention to allow cities to grow in a sustainable manner.

ANALYSIS:

What are peri-urban areas (PUAs)?

- As the name indicates, peri-urban areas (PUAs) are areas at the periphery of cities.
- In India's PUAs, different forms of settlement structures can be found, such as hamlets, villages, urban villages, slums, unauthorized colonies, and census towns.
- In addition, numerous planned housing colonies and townships have come up in PUAs due to availability of vacant land.
- People who are unable to live in cities due to high living costs or non-availability of houses reside here.
- PUAs are inhabited by the native population that is engaged in agro-based activities, as well as migrants, who pursue non-farm interests.

How PUAs are transforming the region?

The transformation occurring in PUAs is seen in the form of:

- Increasing population densities
- Changes in land use and occupational patterns
- Reduced farmlands
- Growth of built structures (residential, commercial, institutional, and industrial)

Many people living in PUAs benefit from this transformation

- There is exchange of knowledge and ideas
- New income generating activities come up

Fundamental problems observed in peri-urban areas:

When an **ecosystem's carrying capacity** is pushed to the limits, it is bound to be affected. This is exactly what is happening in several peri-urban areas of India. These areas are under tremendous stress due to pressures created by urbanization.

- Indiscriminate conversion of land use:** Open spaces, green areas, and farmlands are reducing, with the coming up of built structures and non-farm economic activities.

- Occurrence of unregulated development:** There is haphazard growth of built structures due to high demand. Many buildings do not meet safety norms.
- Emergence of informal/unplanned slums in PUAs:**
- Inferior quality of life:** In view of their illegal status, slums and unauthorized colonies remain uncovered by formal service delivery systems, such as water and sanitation.
- Issue of drainage and Waste disposal:** While there is uncontrolled construction of built structures, no provision is made for drainage.
- Women safety:** Frequent incidents of harassment reduce their ability to contribute to city life and limits opportunities available to them.
- Population displacement:** At times, the so called 'unauthorized occupants' living in slums and unauthorized colonies are evicted due to implementation of government infrastructure projects, such as regional road/rail corridors.
- Lack of access to good and reliable public transport:** Due to their peripheral location, many PUAs are not served properly by public transport.

Government Initiatives at state levels:

- In **Delhi**, the Development Authority's land pooling policy aims to ensure planned development in PUAs. At the regional level, some metropolitan regions have formulated spatial plans for PUAs.
- Amongst the states, the government of **Uttarakhand**, with support from the World Bank, has launched a water supply programme to improve access for peri-urban residents.
- Projects have been initiated in PUAs of Dehradun, Roorkee, Haridwar, Haldwani, etc.
- In **Haryana**, the government aims to introduce the concept of peri-urban agriculture for supplying essential commodities, such as fresh vegetables, fruits, milk, and fish, to residents in neighbouring cities. For this purpose, the Russian government has sought cooperation from Haryana.

At the national level:

- **Metropolitan Planning Committees** (MPCs) proposed under the Constitution (74th Amendment Act) are required to look into matters of common interest between municipalities and panchayats, including coordinated spatial plans of the metropolitan area, which includes PUAs.
- **The Ministry of Housing and Urban Affairs** (MoHUA) has requested state governments to take steps towards constituting municipalities in census towns, which are presently governed by rural governments to ensure better governance.
- **The Union Ministry of Agriculture and Farmers Welfare** (MoAFW) has taken steps to promote food production and diversification in PUAs to improve supply of food to cities.
- Under the **National Rurban Mission**, in the PUAs of Chhattisgarh, women have been empowered by way of training in activities such as handloom, bee keeping, poultry/pig rearing, amongst others. This has helped in employment generation.

Measures required:

- Existing reform initiatives at local/regional/state/national level should be scaled up.

- Rural-urban cooperation possibilities or partnerships should be explored.
- Statutory participatory plans should be prepared and implemented efficiently in peri-urban areas.
- Intangible contribution, especially the ecological role, of PUAs in making cities resilient must be taken into account during policy and plan formulation.
- Non-farm employment opportunities should be promoted amongst women in PUAs; gender-responsive interventions, such as dark spots, safety audits, awareness programmes, should be introduced.

CONCLUSION:

With India urbanizing rapidly and with the scarcity of land in cities, the pressure on PUAs will continue to grow. The social, economic, and environmental adversities visible in many PUAs are an indication of the deficiencies in legislation, planning, and governance. Thus, efforts must be made to protect the traditional character of PUAs and guide future growth in an orderly manner.

OPINION POLL & ETHICAL ISSUES

CONTEXT:

Opinion Polls are the highlight of modern day elections of every thriving democracy, often extrapolated and extended they have the potential to influence voting behaviour and here lies the problem. Hence, raising a pertinent point about ethics of free and fair elections.

During the election times, opinion polls are stimulating considerable debate among the voters, politicians and the media.

Since this exercise has become more of a ritual, it is required to connect such polling directly to morality and democratic processes.

◎ ANALYSIS:

Opinion Poll

- During election season, media outlets, in partnership with pollsters, carry out 'opinion poll' and 'exit poll' to gauge which party is most likely to win.
- Opinion poll is conducted in the run-up to the election as indication of the voters' mood. Exit poll is done after a voter has actually voted

Opinion Poll

- An opinion poll is a survey of public opinion from a particular sample.
- Opinion polls are usually designed to represent the opinions of a population by conducting a series of questions and then extrapolating generalities in ratio or within confidence intervals.
 - The **first opinion poll** seems to have been published in **1824**, when the **Harrisburg Pennsylvania newspaper** correctly predicted the result of the **US presidential election**.

How Opinion Polls are regulated in India?

The earliest attempt to regulate opinion polls was made in 1998 when the ECI took an overall view of the situation and issued an order laying down "**Guidelines for Publication and Dissemination of Results of Opinion Polls/Exit Polls**", including government-controlled electronic media, in connection with the conduct of opinion polls and exit polls by them.

- Currently, opinion polls are barred from being published in electronic media for **48 hours** prior to an election in that polling area under **Section 126(1)(b)** of the **Representation of the People Act, 1951**.
 - The contravention of **Section 126(1)(b)** is punishable under **Section 126(2)** with imprisonment for a term which may extend to two years or with fine, or with both.

- Earlier, the EC had withdrawn this rule following an adverse remark from the apex court.
- The apex court had made critical observations against the poll panel's power to ban publication of exit polls saying it involved citizens' right to speech and expression guaranteed by the Constitution.
- However, the rule was later ratified by Parliament.

Global Practice

In most democracies, opinion and exit polls are common during elections. However, restrictions are also imposed in many countries, extending from two to 21 days prior to the poll — Canada, France, Italy, Poland, Turkey, Argentina, Brazil, Colombia, to name a few examples.

How opinion polls interfere with 'free and fair elections'?

The following points have been argued:

- Paid agenda:** Today, "paid news" are very common action, therefore, it is highly possible that some opinion polls may be sponsored, motivated and biased.
- Undue influence:** Opinion polls directly affect the sanctity and integrity of the electoral process. They are able to influence electoral behaviour and distort electoral outcomes.
- Disinformation:** Almost all polls are non-transparent, providing little information on the methodology. With such infirmities, many "polls" amount to **disinformation** that can result in "undue influence", which is an "electoral offence" under **IPC Section 171 (C)**.
 - It is a "corrupt practice" under **Section 123 (2) of the RP Act**.
- Suspicious affair:** A survey getting some elections right is not proof of its credibility or robustness.
- Bandwagon effect:** The bandwagon effect claims that voters "jump on the bandwagon," which

means that if a party is gaining in the polls, the party will gain additional support from the voters, and vice versa if the party is losing in the polls.

Case Study

Cambridge Analytica scandal

- The Cambridge Analytica scandal has raised question after question.
- Cambridge Analytica, the political consulting firm worked for the **Trump campaign** and harvested raw data from up to 87 million Facebook profiles
- Once at the centre of a global storm for allegedly manipulating elections in the US and other countries, Cambridge Analytica is a non-entity today.
- However, it does hold the rather dubious distinction of being synonymous with misuse of personal data and harvesting data from online firms.

Austria's Sebastian Kurz : Corruption Scandal

- Austria's conservative Chancellor Sebastian Kurz was forced to resign amidst a unique scandal.
- He was charged with orchestrating fake surveys and bribing the news media to show them as genuine opinion polls.

Point for opposition to the ban

- **Freedom of speech and expression:** The opposition to the ban in India is mainly on the ground that **freedom of speech and expression** is granted by the **Constitution (Article 19)**.

Restrictions

What is conveniently forgotten is that this freedom is not absolute and allows for "reasonable restrictions" in the same article. The **Indian Penal Code and Representation of the People Act, 1951** do contain certain restrictions.

- **A 'must' in modern democracy:** It is needed to be recognised that systematic collection of public opinion is a must in modern democracies. Since elections are not a private act, citizens wish to, and need to, know how others are making up their mind.
- **Affecting morale:** More than the voters, opinion poll-based forecasts do affect the morale of party workers and supporters. This makes a big difference during the campaign.

What is the real problem with Indian opinion polls?

The real problem with Indian opinion polls, barring some honourable exceptions, lies with their **non-transparency and non-professionalism**.

- **Lack of common sense:** Unfortunately, there is very little understanding among the common people or even media persons of what the polls can and cannot deliver.
- **Vague and excessive claims:** Pollsters make matters worse by making excessive claims, nothing short of black magic.
- **Less focus on methods:** A general unwillingness on the part of polling agencies and the media to share even basic methodological details about their polls compounds the problem.

What would be the most appropriate and efficacious intervention?

The real question is: what would be the most appropriate and efficacious intervention? Unfortunately, most of the reformers have little patience and understanding to address this question.

- A call for a complete ban on pre-election polls, or a ban beginning the day of notification that amounts to the same thing, reflects the knee-jerk response that has come to dominate much of our policymaking.
- Unfortunately, many well-meaning democratic reform activists and the Election Commission itself have lent their weight to this ill-considered proposition.
- Banning pre-election opinion polls is a remedy worse than the disease it seeks to cure.
 - ▶ There already exists a ban on publishing the findings of polls beginning 48 hours before polling and till the last voter has cast her vote. This is a reasonable restriction, enough to safeguard against manipulations.
- A full ban for the entire duration of campaign may not stand **judicial scrutiny**. It is hard to see how such a ban could be presented as a "reasonable restriction" of freedom of expression guaranteed under the Constitution.
- Besides, it would be very hard to implement. It could either exist only on paper, like the ban on smoking in public places.
- Or, worse, it could drive all the credible and law-abiding agencies out and leave the field open for rogue polls of fly-by-night operators. In all likelihood, it would open a black market of information where confidential polls and rumours will replace transparent and accountable polling.

Besides, a ban is only a measure of last resort, when all other methods have been tried and found wanting.

What measures are 'actually' required?

- **Effective alternative method:** There is required efforts to explore alternatives to a ban, alternatives that have been successfully used all over the world.
- **Regulatory framework:** What we need is a regulatory framework for election-related opinion poll — comprising a code of conduct, mandatory disclosures and independent inquiry — to be enforced by an independent agency. Every election-related poll, or any opinion poll for that matter, must be required to make the following disclosures:
 - ▶ the ownership and track record of the organisation carrying out the survey, details of the sponsor
 - ▶ sampling frame, sample size and the exact technique used to draw the sample; the social profile of the achieved sample

- ▶ where, when and how were the interviews conducted
- ▶ the exact wording of the question and sequence of questions asked
- ▶ raw vote shares reported in the survey and how they were converted into vote estimates and seats forecast

◎ CONCLUSION

- Opinion polls do not just reflect the opinions of people but influence them to create an aura of winnability. Analyzing vulnerability of voters to such influence, there is a crying need to regulate this danger and protect the sanctity of India's democracy.
- Once in place, such a mechanism would help the public tell the difference between a genuine and rogue poll and incentivise transparent practices. That would be a significant step forward in democratic public culture. After all, public opinion polling is too valuable and consequential to be left to politicians, or pollsters.

SECTION: B

(PRELIMS)

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BHIMSEN JOSHI: A HUNDRED YEARS OF THE EXTRAORDINARY

◎ CONTEXT:

Pandit Bhimsen Joshi is touted as one of the greatest vocalists of all time having profoundly contributed to the Indian classical music field for more than four decades.

- Born on February 4, 1922, this day marks the birth anniversary of the late legendary artist, who received the Bharat Ratna in 2008.

About

■ Who was Bhimsen Joshi?

- Bhimsen Joshi was born on February 4, 1922, in a family that lived in Dharwad district's Gadag taluka.
- This was a day associated with the worship of the sun god and celebrated as Ratha Saptami.
- **Family background:** His family had an environment of music and scholarship as his grandfather **Bhimacharya** was a well-known **kirtankar** (a singer of kirtans) and father **Gururaj** was a teacher armed with a Bachelor's degree in education and a Master's degree in languages.
- He was influenced by the music of **Kirana gharana's Ustad Abdul Karim Khan** from a very early age.



Musical training

- In 1933, the 11 year old left home to learn singing through the **Guru-Shishya tradition**.
- He spent three years in Gwalior, Lucknow and Rampur, trying to find a guru but without luck.
- Eventually, his father tracked him down and brought young Joshi back home.

Fun Fact

- Bhimsen was known to follow processions accompanied by music bands when he was a young boy in Pune.
- He would eventually get tired and curl up and sleep somewhere.
- His parents would go looking for him, sometimes seeking police help.

Fed up, Bhimsen's father came up with a solution — he started writing "**Joshi mastarara maga (son of teacher Joshi)**" on Bhimsen's shirts.

- He began receiving training in **Hindustani Classical music** under **Pt Sawai Gandharva** for four years from 1936 to 1940.
- Gandharva trained him in Hindustani Classical music, teaching him the nuances of the ragas that formed the base of the **Kirana gharana**.
- He stayed at the latter's house and followed the guru-shishya tradition of gaining knowledge and in return, performing odd jobs.

Awards and Achievements

- In 1975, Joshi was awarded the **Sangeet Natak Akademi Award** for Hindustani music - vocal.
- In 1985, he was conferred with **Padma Bhushan**.
- In 2008, he was honoured with the **Bharat Ratna**.
- In 2008, he bagged the **Swami Haridas Award**, which was then followed by the Delhi government's **Lifetime Achievement Award** in 2009.

Hindustani Classical Music

- Hindustani music is one of the two principal types of **South Asian classical music**.
- (The other principal type, **Karnatak music**, is found in the Dravidian-speaking region of southern India.)
- It is found mainly in the northern three-fourths of the subcontinent, where **Indo-Aryan languages** are spoken.
- The roots of Hindustani Music is traced to the emergence of **Dhrupad & Dhamar**. It further developed into Vocal & Instrumental Streams.
- Further emergence of Khayal from Dhrupad as a result of influence of the Mughal Kingdom, Classical Music underwent a change in character, moving from Temples to the Courts.
 - Names like **Miyan Tansen** have been one of the greatest influence on the Hindustani Style.
- **Instruments:** The most prominent instruments of Hindustani music are the
- **sitar** (a long-necked fretted lute with about 30 melodic, drone, and sympathetic strings)
- **sarod** (a short-necked unfretted lute with sympathetic and drone strings)
- **sarangi** (a bowed fiddle)
- **shehnai** (an oboe like wind instrument)
- **tabla** (a set of two drums played by one musician, the right-hand drum carefully tuned)
- **tambura** (a large long-necked lute with four strings, used only to play the supporting drone, a single repeated chord)



Styles of Singing

Various styles of singing in the North Indian Style are Dhrupad, Khayal, Thumri, Tarana and Tappa.

- **Dhrupad:** The most ancient form. "Dhruva" means fixed & "Pada" means text.
- **Khayal:** The most popular form of singing at present, 'Khayal', an urdu word means imagination.

- **Thumri:** A Form of light Classical Music, developed during the later part of the Mughal rule, Thumri allows for extreme flexibility and freedom.
- **Tarana:** Like khayal, tarana has sthayi & antara but difference lies that it uses syllables like nadir, tanana, yalali etc.
- **Tappa:** Also a form of light Classical Music, it originates from Punjab and is richly ornamental, with quick turn of phrases and incessant volleys of Taans emerging from each word, in a swinging rhythm.

हिन्दुस्तानी संगीत का विभाजन ध्रुपद, धमार, खयाल, तराना, ठुमरी, दादरा, टप्पा आदि में किया गया है।

BIRTH ANNIVERSARY OF TRIBAL LEADER TILKA MANJHI

- ◎ **CONTEXT:** The Nation is remembering revolutionary freedom fighter and tribal leader Tilka Manjhi on his 272nd birth anniversary.

About Tilka Manjhi:

- The first Tribal revolt in India was led by Baba Tilka Majhi in 1784.
- It was the result of a great famine in 1770 and the court of director's orders.
- In January 1784, Tilka attacked 29 year old Cleveland with bows and arrows in which Cleveland died.
 - Tilka Manjhi disappeared in the Tilapore forest and started guerilla war against British.
 - The British army surrounded the forest, but he and his men held the enemy at bay for several weeks before he was caught in 1785.
- Tilka Manjhi's fight against the British colonial power was the first in a long series of Tribal resistance in this region.
 - It was followed by
 - ▶ Bhumij Revolt in Manbhum in 1798
 - ▶ Chero Uprising in Palamau (1810)
 - ▶ Munda uprising in Tamar (1819-1820)
 - ▶ Kol rebellion (1833)
 - ▶ Second Bhumij Revolt (1834)
 - ▶ Santhal Hool (1855)

WORLD PULSES DAY 2022

- ◎ **CONTEXT:** World Pulses Day is observed yearly on the 10th of February. In the current year 2022, it would be the 4th time when World Pulses Day will be observed on 10, Feb.

What are Pulses?

- **Pulses, also known as legumes,** are the edible seeds of leguminous plants cultivated for food.

- Dried beans, lentils and peas are the most commonly known and consumed types of pulses.
- **The term “pulses” differentiates from “Crops”** because pulses are harvested when the seeds become dry whereas crops are harvested with their plants still green.
- Pulses are a **rich source of protein, dietary fiber and minerals** which are needed in our body whereas, **having a higher amount of nitrogen, they add to the fertility of the land and are environment-friendly.**



Pulses production in India

- The country produces a **quarter of all pulses** in the world and **consumes 27 percent** — more than any other. India is also the **largest importer of pulses**.
 - ▶ Apart from India, other countries, which produce a large number of pulses include Canada, Myanmar, China, Nigeria, Brazil, Australia, the USA, Russia, and Tanzania, while Argentina, France, Ethiopia, and Turkey.
- Madhya Pradesh is a **major pulse-producing state** in the country; it caters to 32 per cent of the country's total production.
- A large number of pulses are grown across multiple **agro-climatic zones**:
 - ▶ **Kharif:** Arhar (pigeonpea); urad (black gram); moong (green gram); barbati (cow pea), lathyrus
 - ▶ **Rabi:** gram; pea; ramjash masoor (lentil)
 - ▶ **Zaid (summer):** urad; moong; cow pea

Average productivity per hectare of various pulses at the national level is:

- **Moong:** 414 kg / hectare (kharif), 577 kg / hectare (zaid)
- **Urad:** 519 kg / hectare (Kharif), 745 kg / hectare (zaid)
- **Arhar:** 725 kg / hectare
- **Moth:** 382 kg / hectare
- **Chick pea:** 932 kg / hectare
- **Peas and beans:** 940 kg / hectare
- **Lathyrus:** 776 kg / hectare

Theme

- **World Pulses Day 2022** is under the theme “**Pulses to empower youth in achieving sustainable agrifood systems**”.
- **World Pulses Day 2021** theme is **#LovePulses**.

Background

- In 2018, the **UN General Assembly** decided to mark **10 February as World Pulses Day**.
- The first WPD was held on **February 10, 2019**.
 - On **20 December 2013**, the **UN General Assembly** adopted a resolution proclaiming **2016 as the International Year of Pulses (IYP)**.
- The celebration of the year, led by the **Food and Agriculture Organization of the United Nations (FAO)**, increased the **public awareness of the nutritional and environmental benefits of pulses as part of sustainable food production**.

FROZEN BY UNCERTAINTY: ON RBI AND ITS MANDATE TO ENSURE PRICE STABILITY

◎ CONTEXT:

The RBI's Monetary Policy Committee (MPC) kept key interest rates unchanged and retained the accommodative stance in its first policy meeting after Union Budget 2022.

Status-quo:

- The six-member Monetary Policy Committee (MPC), headed by Governor Shantikanta Das, decided to keep the policy Repo Rate unchanged at 4.0%.
- The Reverse Repo Rate was also kept unchanged at 3.35%.
- Marginal Standing Facility Rate and Bank Rate are at 4.25%.

Rationale behind Keeping Policy Rate unchanged:

- **Accommodative stance of RBI:**
 - It means RBI aims to make interest rates low enough.
 - It will spur strong enough economic growth to reduce unemployment or to prevent unemployment from rising.
- RBI is aiming to **revive and sustain growth on a durable basis**.
- It may help in neutralising the adverse **impact of COVID-19** on the economy.
 - While ensuring that inflation remains within the target, going forward.

About Monetary Policy:

- Monetary policy can be defined as a process of managing a nation's money supply to contain/control the inflation, achieving higher growth rates and achieving full employment.
- Generally, all across the globe, monetary policy is announced by the central banking body of the country, for example the RBI announces it in India.

Objectives of Monetary Policy:

In India, as defined by former RBI governor C. Rangarajan, broad objectives of monetary policy are:

- To regulate monetary expansion so as to maintain a reasonable degree of price stability; and
- To ensure adequate expansion in credit to assist economic growth

Further the objectives of Monetary Policy are:

- **It leads to economic growth:** The monetary policy can influence economic growth by controlling real interest rates and its resultant impact on the investment.
- **Price Stability:** Inflation and deflation both are not suitable for an economy.
- **Exchange Rate Stability:** Monetary policy aims at maintaining the relative stability in the exchange rate.
- **It generates employment:** If the monetary policy is expansionary then credit supply can be encouraged. It would thus help in creating more jobs in different sector of the economy.

Monetary Policy Tools:

- **Cash Reserve Ratio (CRR):** Banks are required to set aside this portion in cash with the RBI. The bank can neither lend it to anyone nor can it earn any interest rate or profit on CRR.
- **Statutory Liquidity Ratio (SLR):** Banks are required to set aside this portion in liquid assets such as gold or RBI approved securities such as government securities. Banks are allowed to earn interest on these securities.
- **Open Market Operations (OMO):** In order to control money supply, the RBI buys and sells government securities in the open market. These operations conducted by the Central Bank in the open market are referred to as Open Market Operations.
- **Bank rate:** The interest rate at which RBI lends long term funds to banks is referred to as the bank rate.
- **Liquidity Adjustment Facility (LAF):** RBI uses LAF as an instrument to adjust liquidity and money supply. The following types of LAF are:
 - **Repo rate:** Repo rate is the rate at which banks borrow from RBI on a short-term basis against a repurchase agreement. Under this policy, banks are required to provide government securities as collateral and later buy them back after a pre-defined time.
 - **Reverse Repo rate:** It is the reverse of repo rate, i.e., this is the rate RBI pays to banks in order to keep additional funds in RBI. It is linked to repo rate in the following way:
- **Marginal Standing Facility (MSF) Rate:** MSF Rate is the penal rate at which the Central Bank lends money to banks, over the rate available under the rep policy. Banks availing MSF Rate can use a maximum of 1% of SLR securities.

PHASI WOOD FOR JAGANNATH CHARIOT

◎ **CONTEXT:**

Odisha marked the day of Basant Panchami February 5, 2022, with a prayer ceremony to consecrate the logs used in the chariot of the deity Jagannath.

- **But this year, most of the Phasi (Anogeissus acuminata) wood came from private land rather than forests, according to the state forest department.**
- **About Phasi Wood**
- Phasi wood is used in chariot. The chariot is used in the **Jagannath Yatra** of Puri later in the year.

- Three new wooden chariots to carry the presiding deities of the **Srimandira temple** at **Odisha's Puri** are constructed every year for the **Ratha Yatra**.
- Phasi trees are mostly found in the **alluvial floodplain** of the Mahanadi.
- These trees take 50-60 years to mature.
- The trees for the chariot have to be pencil straight, six feet in girth and 12-14 feet in height. If the girth is less, they cannot be used.



Around 865 logs of Phasi, **Dhaura (*Anogeissus latifolia*)**, **Asan (*Terminalia elliptica*)** and **Simal (*Bombax ceiba*)**, along with a few others, are the tree species majorly used for the construction of chariots of Jagannath, Balabhadra and Subhadra every year.

Reason behind decline in Phasi wood

- Recent years have shown a decline in the growth of trees such as Phasi wood.
- The reason: excessive forest loss sans regeneration as well as climate change.

Jagannath Yatra of Puri

- Jagannath Rath Yatra is celebrated by worshipping **Lord Jagannath** (ruler of the world), his elder brother **Balabhadra (Balaram)** and sister **Subhadra**.
- Ratha Yatra, the Festival of Chariots of Lord Jagannatha is celebrated every year at **Puri, the temple town in Orissa, on the east coast of India**.
- In the Yatra, **Lord Jagannatha** and siblings **Balabhadra** and **Subhadra** ride the three colourful chariots in their annual sojourn to their garden house and birthplace **Gundicha Temple**, where they stay for seven days before returning, is a meticulously planned event that sees the congregation of lakhs of devotees.
- Features:** The huge, colourfully decorated chariots, are drawn by hundreds and thousands of devotees on the badadanda, the grand avenue to the **Gundicha temple**, some two miles away to the North.
 - Gundicha temple** is beautifully made on the lines of the **Kalinga style of architecture**.
- After a stay for seven days, the deities return to their abode in **Srimandira**.
- Other names:** The festival is also known as **Gundicha yatra, Ghosa yatra, Navadina yatra, Dasavatara yatra** and by a variety of other names.



KAZIRANGA NATIONAL PARK IS RELEASING MORE CARBON THAN IT IS ABSORBING: STUDY

◎ CONTEXT:

Kaziranga National Park in Assam, home to the largest-population of the one-horned rhinoceros in the world, is releasing more carbon than it is absorbing.

Important facts about Kaziranga National Park

- **Location:** Spread over **Golaghat and Nagaon** districts of Assam **Kaziranga National Park** lies at the edge of **eastern Himalayas**.
- **Origin:** The park owes its existence to the conservation efforts of **Mary Curzon** and her husband **Lord Curzon, then Viceroy of India**.
 - It became a **reserve forest in 1904** primarily to protect the declining population of Rhinos.
 - **Assam National Park Act** was passed by the Assam Government in 1968, declaring Kaziranga a **designated national park** with an area of 430 sq km.
 - ▶ An additional area of 429 sq km was added later to provide an extended habitat to the wild animals.
- Central Government recognized it as a **national park** in 1974.
- Kaziranga National Park got the status of a **tiger reserve** in 2006
- Kaziranga National Park is a **UNESCO World Heritage Site**.
- The Kaziranga National Park in Assam is home to the threatened one-horned Rhino.
- **Other important species: Wild Asiatic Water Buffalo and Eastern Swamp Deer, leopards, Royal Bengal Tigers, two of the largest snakes in the world (the Reticulated Python and Rock Python), King Cobra** (the longest venomous snake in the world)



The name game

Kaziranga is also locally known as the land of red Goats (Deer). This is because, it derives its name from the words Kazi and Ranga. Kazi in Karbi language (one of the local dialects of Assam) means 'Goat'. And Ranga means 'Red'.

Why Kaziranga National Park releases more carbon?

- **Less rainfall:** Decreasing rainfall in the region
- **Unique soil of the deciduous forest:** The soil is home to a large population of bacteria that release carbon dioxide as they breathe, which adds to the carbon dioxide being emanated by other organisms, including trees.

How forests act like a 'carbon sink'?

- A forests, or trees in a forest, take up carbon dioxide for the process of photosynthesis and release carbon dioxide when they breathe.
- If the amount of carbon dioxide taken up by a forest is more than the carbon dioxide released by it through respiration, it acts like a **carbon sink**.
- Usually, forests absorb more carbon than they release, which makes them carbon sinks and they are globally promoted to counter the carbon dioxide emissions from different human activities.
- The main process by which a forest absorbs carbon is the process of photosynthesis that trees use to produce food for themselves and for other organisms in the forest.

SANCTUARY TAG FOR 'GOLDEN LANGUR' HABITAT OPPOSED BY ASSAM VILLAGERS

◎ CONTEXT:

Neighbours of a golden langur habitat in western Assam's Bongaigaon district have opposed a move by the State government to upgrade it to a wildlife sanctuary.

About

■ The Species

- **Gee's golden langur (Trachypithecus geei)**, also known as simply the **golden langur**, is an **Old World monkey** found in a small region of **Western Assam, India** and in the neighboring foothills of the Black Mountains of **Bhutan**.



- Long considered sacred by many Himalayan people, the golden langur was first brought to the attention of the western world by the naturalist Edward Pritchard Gee in the 1950s.
- Adult males have a cream to golden coat with darker flanks while the females and juveniles are lighter.
- It has a black face and a long tail up to 50 cm (19.69 in) in length.
- It lives in high trees and has a herbivorous diet of ripe and unripe fruits, mature and young leaves, seeds, buds and flowers.
- The average group size is eight individuals, with a ratio of several females to each adult male.

Species Specification	
KINGDOM	Animalia
PHYLUM	Chordata
SUBPHYLUM	Vertebrata
CLASS	Mammalia
ORDER	Primates
SUBORDER	Haplorhini

INFRAORDER	Simiiformes
FAMILY	Cercopithecidae
GENUS	Trachypithecus
SPECIES	Trachypithecus geei

Background

- **Kakoijana Reserve Forest** is one of the better-known homes of the golden langur (*Trachypithecus geei*) found only in Assam and Bhutan and a Schedule-I species under the Wildlife Protection Act of 1972.
- It is listed as among the world's 25 most endangered primates.
- The Assam Forest Department had in January issued a preliminary notification for converting the 19.85 sq. km. patch of forest into the **Kakoijana Bamuni Hill Wildlife Sanctuary**.

SPACEX SATELLITES FALLING OUT OF ORBIT AFTER SOLAR STORM

◎ **CONTEXT:** SpaceX's newest fleet of satellites is tumbling out of orbit after being struck by a solar storm.

What happened?

- A geomagnetic storm made the atmosphere denser, which increased the drag on the Starlink satellites and thereby effectively dooming them.
- The satellites hit by the solar storm were in a temporary position.
- SpaceX deliberately launches them into this unusually low orbit so that any duds can quickly re-enter the atmosphere and pose no threat to other spacecraft.

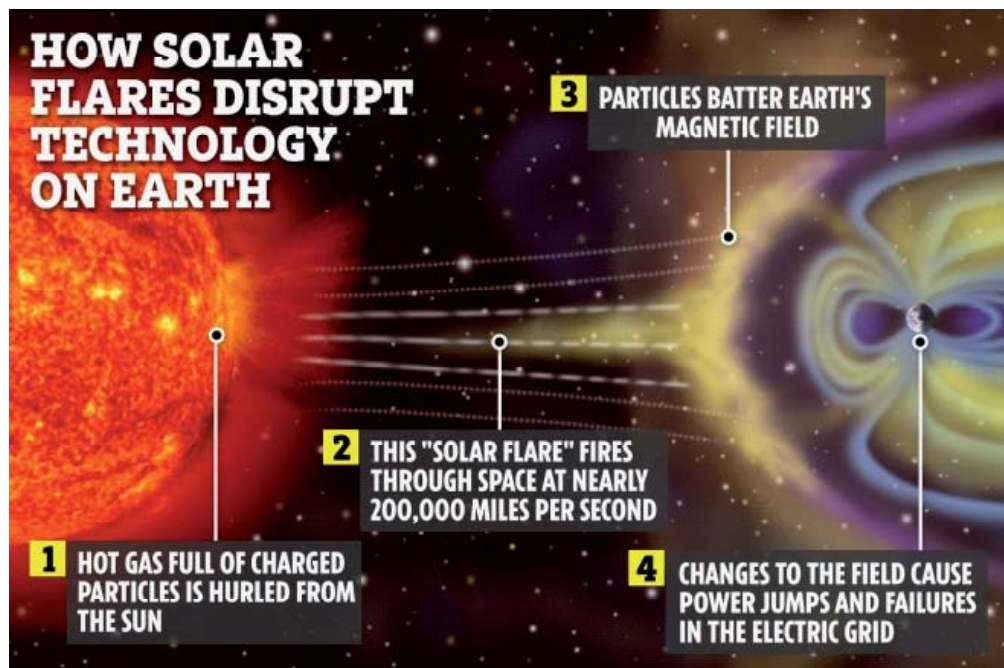
What is a Solar Storm?

- Solar storms are magnetic plasma ejected at great speed from the solar surface.
- They occur during the release of magnetic energy associated with sunspots ('dark' regions on the Sun that are cooler than the surrounding photosphere), and can last for a few minutes or hours.
- Solar storms can hit operations of space-dependent services like global positioning systems (GPS), radio, and satellite communications.

Types of Solar Storms:

Solar Storms come in the form of the following types:

- **Solar Flares:** A solar flare is a sudden flash of increased brightness on the Sun, usually observed near its surface and in proximity to a sunspot group.
 - Powerful flares are often, but not always, accompanied by a coronal mass ejection.
 - Even the most powerful flares are barely detectable in the total solar irradiance (the "solar constant").
- **Coronal Mass Ejection:** A coronal mass ejection (CME) is a significant release of plasma and accompanying magnetic field from the solar corona.
 - They often follow solar flares and are normally present during a solar prominence eruption.



- **Geomagnetic Storm:** A geomagnetic storm is a major and temporary disturbance of Earth's magnetosphere.
 - They occur when a surge of solar wind (charged particles from the sun) interacts with Earth's magnetic field and generates charged particles and currents in Earth's upper atmosphere.
 - Geomagnetic storms interfere with high-frequency radio communications and GPS navigation systems. Aircraft flights, power grids, and space exploration programmes are vulnerable.
- **Solar Particle Events:** A solar particle event or solar proton event (SPE), occurs when particles (mostly protons) emitted by the Sun become accelerated either close to the Sun during a flare or in interplanetary space by coronal mass ejection shocks.

About Starlink Project:

- The "Starlink" is a SpaceX project to build a broadband network to provide space internet (i.e satellite based) to the remotest corner of world.
- It is done by a constellation of low earth orbit satellites.
- The Starlink satellites will be deployed in the altitude band of 350 km to 1,200 km in the Low Earth Orbit (LEO). The LEO extends up to 2,000 km above the Earth's surface.

SCIENTISTS SET NEW RECORD IN CREATING ENERGY FROM NUCLEAR FUSION

◎ CONTEXT:

Nuclear Fusion Energy: The Joint European Torus (JET) nuclear-fusion experiment based in Oxfordshire, UK, has more than doubled the amount of fusion energy produced in a single "shot".

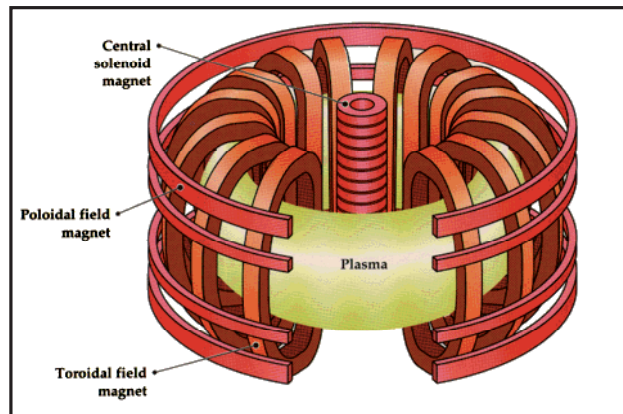
What is Nuclear energy?

- Nuclear energy is a form of energy released from the nucleus, the core of atoms, made up of protons and neutrons.

- This source of energy can be produced in two ways:
 - **fission** – when nuclei of atoms split into several parts
 - **fusion** – when nuclei fuse together
- The nuclear energy harnessed around the world today to produce electricity is through nuclear fission.
- Nuclear fusion is the process whereby nuclei join together into one nucleus. The fusion of two atomic nuclei into one nucleus is not possible under standard temperature and pressure.

About Joint European Torus (JET):

- JET, which was built in 1983, is operated by the Culham Centre for Fusion Energy (CCFE) – the UK's national fusion research laboratory.
- It is a fusion reactor that uses magnetic confinement to hold a hot plasma reaching temperatures of 150 million kelvin, 10 times hotter than the centre of the Sun.
- JET is the only device currently operating that can use the deuterium–tritium fuel mix, of the kind that will be used for commercial fusion power.
- It is the world's most powerful tokamak (a doughnut shaped apparatus) and is the focal point of the European fusion research program.



Results of the recent research by JET:

- During an experiment in late 2021, JET achieved 59 megajoules (MJ) of fusion energy, beating the previous record of 22 MJ in 1997.
- The record and scientific data from these crucial experiments are a major boost for ITER, the larger and more advanced version of the JET.

About ITER:

- ITER is the next-generation power-plant-scale (target: 500 MW fusion power) tokamak currently under construction at Cadarache, France.
- It is intended to be capable of long (100s of seconds) pulses and generate significant fusion power in a range of experimental scenarios to prove the controlled plasma physics required for commercial fusion power.
- ITER is an international collaboration between the EU, China, India, Japan, Korea, Russia, and the United States, covering nearly half the world's population.

ISRO DEMONSTRATES HACK-PROOF QUANTUM COMMUNICATION

◎ CONTEXT:

Recently, Scientists from **Ahmedabad-based Space Applications Centre and Physical Research Laboratory** have successfully **demonstrated Quantum Entanglement**.

Key-highlights of the experiment

- Scientists from the two premier laboratories of Department of Space (DOS), viz. Space Applications Centre (SAC) and Physical Research Laboratory (PRL), jointly demonstrated **quantum entanglement based real time Quantum Key Distribution (QKD)** over 300m atmospheric channel along with quantum-secure text, image transmission and quantum-assisted two-way video calling.
- The demonstration was conducted at **SAC, Ahmedabad**, between two buildings separated by a distance of 300 m.
- This experiment and demonstration were repeated over several nights to ensure the repeatability and robustness of indigenously developed QKD system capable of seamlessly generating and utilizing secure keys for various applications.
- With these developments, ISRO, Department of Space is getting ready for satellite based demonstrations of fundamental quantum mechanics experiments as well as quantum communication for future-proof data security.



What is Quantum entanglement?

- Quantum technology is a class of technology that works by using the principles of quantum mechanics (the physics of sub-atomic particles), including **quantum entanglement**.
- Quantum entanglement is when two atoms are connected, or entangled, despite being separated.
- If you change the properties of one of them, the other changes instantly.

Quantum entanglement, or at least the principles that describe the phenomenon, was first proposed by **Einstein** and his colleagues **Boris Podolsky and Nathan Rosen** in a 1935 paper in the journal *Physical Review* titled "**Can Quantum-Mechanical Description of Physical Reality Be Considered Complete.**"

Quantum communication

- **Quantum communication is one of the safest ways of connecting two places with high levels of code and quantum cryptography** that cannot be **decrypted or broken by an external entity**.
- **If a hacker tries to crack the message in quantum communication**, it changes its form in such a manner that would **alert the sender and would cause the message to be altered or deleted**.

About this technology

- **Quantum computing** refers to a **new era of faster and more powerful computers**, and the theory goes that they would be **able to break current levels of encryption**.
- QKD works by using **photons — the particles which transmit light — to transfer data**.
- QKD allows **two distant users, who do not share a long secret key initially, to produce a common, random string of secret bits, called a secret key**.
- **Using the one-time pad encryption** this key is proven to be **secure to encrypt and decrypt a message**, which can then be **transmitted over a standard communication channel**.

Significance

- **The encryption is “unbreakable”** and that’s mainly because of the way data is **carried via the photon**.
 - A photon cannot be **perfectly copied and any attempt to measure it will disturb it**. **This means that a person trying to intercept the data will leave a trace**.
- The implications could be **huge for cybersecurity, making businesses safer, but also making it more difficult for governments to hack into communication**.

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8	9	12	13	14	16	17	19	20		
24	26	28	30	31	36	38	41	45	50	
51	52	55	56	58	59	67	68	70	71	73
74	76	78	83	84	85	86	89	93	98	100

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3	6	10	11	16	17	21	22	28			
30	33	38	39	42	44	46	53	54	59	66	69
70	72	77	78	80	82	84	86	87	94	97	98

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2	3	5	7	27	36	37	40	44	49		
51	52	56	58	62	74	81	89	92	94	98	100

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CSE 2017

3	10	19	31	33	35	40	41	44	45	48		
54	57	63	64	68	71	75	77	80	83	93	97	100