

MONTHLY

EPIC!

*Supplementary reading material for MGP and Current Affairs classes of
ForumIAS Academy*

AN EXCLUSIVE CURRENT AFFAIRS MAGAZINE FOR
PRELIMS + MAINS
PREPARATION

October 2023

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Congratulations

Celebrating our CSE 2022 Topper's Remarkable Achievement!

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8 Selections
in Top 10

64 Selections
in Top 100

I was a part of MGP at Forum IAS. Apart from this I also took Current Affairs classes for mains by Dipin Dandekar Sir. The top notch quality of the content and the versatile perspectives I got from Sir's classes really boosted my score in GS. One on one interaction with Ayush Sir during my interview preparation helped me.

I am really grateful to Forum IAS especially Dipin Sir and Ayush Sir for their valuable inputs.


GARIMA LOHIA
AIR 2

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I enrolled myself in multiple courses at ForumIAS - SFG, ANFG, MGP, current affairs classes and Ethos+ classes. The quality of content, the consistency of classes and availability of mentorship right when I needed it helped me throughout my preparation journey.

A special thanks to Ayush Sir and Dipin Sir for their efforts and constant support, even though I was practically invisible!

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5 students in Top 5, 8 students in Top 10 and 64 students in Top 100 Ranks List of CSE 2022 are ForumIAS Academy students.

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Focus Article

Gender Issues: Nobel Prize in Economics 2023 and Gender Gaps in Employment

News: The Nobel Prize in Economics, 2023 has been awarded to Ms. Claudia Goldin for her work highlighting key gender differences in the labour market.

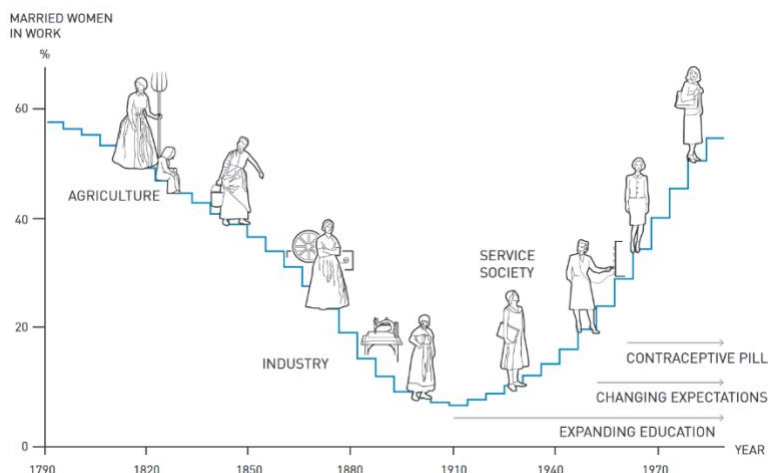
What are the major findings of Ms. Goldin's Research?

Ms. Goldin based her research work on the data from the US for the past 200 years.

Labour Force Participation Rate

- The participation of married women in the labour force decreased with the transition from an **agrarian to an industrial society** in the early 19th century. In 20th century, the participation rate improved with the growth of the services sector. It gave rise to a **U-shaped relationship between stage of economic development and women's labour force participation**.

- According to Ms. Goldin, in agrarian economies, women had a higher labour force participation as women could fulfil both domestic and farm responsibilities. With industrialization, women found it harder to work since they were unable to balance the demands of work and domestic responsibilities. With the growth of the services sector and rise in education level of women, their participation in the labour force improved.



Source: The Royal Swedish Academy of Sciences. The U-Shaped relationship between economic participation of women and the stage of economic development. Changing expectations, expanding access to education and contraceptives have improved economic participation of women.

Wage Gap

- Despite improvement in women's employment rate, there is still a significant gap in the earnings of men and women. Ms. Goldin has attributed this gap to 3 factors:
 - Occupational Segregation:** Women work in stereotypically feminine jobs that are low paying.
 - 'Greedy Jobs' and 'Mommy Track':** Greedy jobs have massive wage premiums but, in return, require long work hours, networking, late-night meetings, travel etc. Mommy track jobs are less paying and less demanding, which allows taking care of the kids' school, homework, sports, music lessons, and doctor visits etc. In almost all families, **the man works in the Greedy Job and the woman is in Mommy Track job**. This creates a gender gap.
 - Expectations and Career Choices:** Women are expected to play a mother's role and raise children. Thus, their educational decisions and career choices are impacted by the **future expectations** from them as mothers. Hence, women settle for low paying careers from childhood itself.

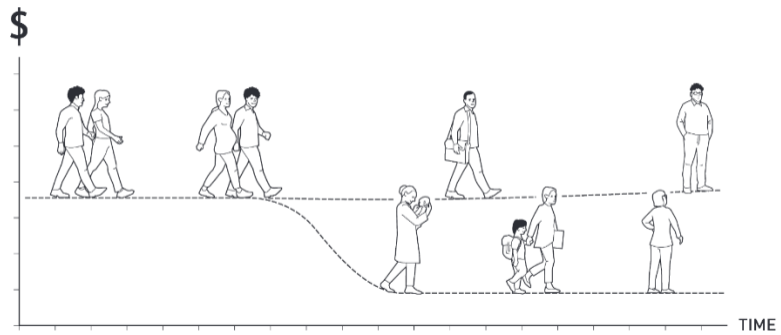
Marriage Barriers in Employment

- By the beginning of the 20th century, ~20% of women were gainfully employed. However, the share of married women was only 5%. Ms. Goldin has attributed this low share of married women participation in the workforce to 2 factors:

- **Marriage Bars:** The practice of firing and not hiring women once married.
- **Long uninterrupted Careers** in the service sector led to exclusion of married women from the workforce.

Role of Contraceptive Pills

- The availability of easy-to-use contraceptive pills by the end of the 1960s led to an increase in the female labour force participation rate. Contraceptive pills allowed women to **exercise greater control over childbirth** and plan their careers and motherhood. This led to more women studying subjects like law, economics and medicine and entering various fields of employment.



Source: The Royal Swedish Academy of Sciences. Illustration of how motherhood responsibilities lead to women exiting the workforce and the resulting wage gap.

Bias in hiring of female candidates

- In her work, '**Orchestrating Impartiality: The Impact of Blind Auditions on Female Musicians**', Ms. Goldin showed that holding auditions for symphony orchestras behind a screen, (jury cannot see the performing candidate), resulted in greater hiring and advancement of women. Ms. Goldin has attributed lower hiring of women due to the **patriarchal biases** in the recruiters. The patriarchal biases leave the deserving women out of the workforce.

What is the significance of Ms. Goldin's work?

- The research of Claudia Goldin has provided significant insights on the status, role and participation of women in the workforce. Her research can be applied in **making Government policies more gender sensitive** and designing special policies for women employment.
- Her work has brought forward the various **hidden biases and barriers** like 'marriage bars' and 'mommy track' jobs. These **biases hinder economic participation** and progress of women. Removing these barriers can reap rich economic dividends.
- Access to contraceptives provides women the **choice and agency to make motherhood decisions and shape their careers**. Focused interventions like **Antara (an injectable contraceptive)** by the Government of India can help improve the outcomes.
- Ms. Goldin has pointed at the role of **Women education in propelling economic growth and increasing individual productivity**. By investing in women education, India can replicate the achievements of the US, which progressed rapidly with greater participation of women in the workforce.

What is the applicability of Ms. Goldin's work with respect to India?

- In India, both economic growth and female educational attainment had increased rapidly between 2004-05 and 2011-12. However, during the same period, Female LFPR in the Indian labour market had declined. The trend in FLFPR has not followed the increasing pattern estimated and forecast by Goldin. However, India's FLFPR in 2022

Usual Status' Labour Force Participation India: 1993-2022. Levels and Gender Gap						
	1993	2004	2011	2017	2019	2022
Women in Labour Force (%)						
Ages 15-64	44.2	44	32.8	24.8	31.8	39.2
Ages 25-64	48.1	48.7	37.5	29.6	37.5	45.6
Men in Labour Force (%)						
Ages 15-64	87.6	86.4	82.3	79.4	80.5	82.5
Ages 25-64	96.5	95.9	95.8	94	94.4	95.3
Gap - Labour Force Participation (%) **						
Ages 15-64	49.5	49.1	60.1	68.8	60.5	52.5
Ages 25-64	50.2	49.2	60.9	68.5	60.3	52.2

has reached a level similar to that in 1993, conforming the U-shaped curve (after falling till 2017).

- For ages 25-64 years, the gender wage gap is **30%**. However, this wage gap does not adjust for education. For all **unmarried college degree workers**, the wage gap is almost non-existent, **only 3%** (lower than the US). For all **college educated workers**, the wage gap is just **16%** (lower than in the US).

(Refer EPIC May 2023 (click) for PLFS Data on Female Labour Force Participation Rate (FLFPR), EPIC March 2023 (click) for Issues with Measurement of Female Labour Force Participation Rate (FLFPR) in India and EPIC March 2022 (click) for Low Female Labour Force Participation Rate in India).

Gender Issues: Higher Mortality due to Cancer Among Women

News: A report by Lancet ('Women, Power and Cancer') has found that ~63% cancer-related deaths in Indian women were preventable. The report highlights the social dynamics and women's access to healthcare.

What are the findings of the Lancet Report?

- The Report has found that 6.9 million cancer deaths among women in India (63%) were preventable and another 4.03 million were treatable.
- The deaths could have been prevented through risk reduction, screening and early diagnosis measures with timely and optimal treatment.
- The report has emphasized that even though men are at a higher risk of cancers (affecting both genders), cancer incidence and mortality in women remains high. This happens when some of the cancers afflicting women like breast and cervical cancers are **easily identifiable** and are **highly preventable and treatable**.

What are the reasons for poor outcomes for women?

- **Access:** The Lancet report highlighted that women encounter difficulties in accessing timely and appropriate healthcare due to **limited knowledge, decision-making authority, financial resources, and poor availability of services** at the primary level near their homes.
- **Awareness:** Women lack the necessary knowledge and authority to make well-informed healthcare decisions. They lack ability to undertake self-screening tests for early diagnosis.
- **Policy Gaps:** Women are **underrepresented in leadership roles**, face **gender-based discrimination** and **sexual harassment** and constitute the largest group of **unpaid healthcare providers**. The Lancet report estimated that the value of unpaid cancer care-giving by women is ~3.66% of India's national health expenditure. India's healthcare interventions are focused mainly on maternal and reproductive health.
- **Stigma:** Women are hesitant in getting screening examinations from doctors (even female doctors) for breast and cervical cancers. There is severe lack of women doctors and healthcare workers in rural areas.
- **Logistical Issues:** The necessity of travelling to district hospitals, state capitals, or larger tertiary hospitals in other states for **cancer screening, diagnostic tests, and treatment** contributes to **treatment delays**.

How can the outcomes for women be improved?

- **Regular Screening:** Mortality is high because women seek medical attention at advanced stages. Monthly self-examination of breasts, annual clinical examination by physician and annual mammograms for women above 40 years of age can prevent mortality due to breast cancers.

FOR WOMEN, SCREENING MATTERS

BREAST & CERVICAL, the two most common cancers in women, are highly preventable and treatable.

SELF-EXAMINATION of breasts every month, and a clinical examination by a doctor every year, is important. Women who detect any lumps during self-examination must consult a doctor immediately. Women over age

40 should get a mammography once a year.

A PAP SMEAR TEST to check for pre-cancerous growth in the genitals is recommended for women ages 25-60.

HPV TEST to detect human papilloma virus that causes the majority of cervical cancers, can be done every 5-10 years.

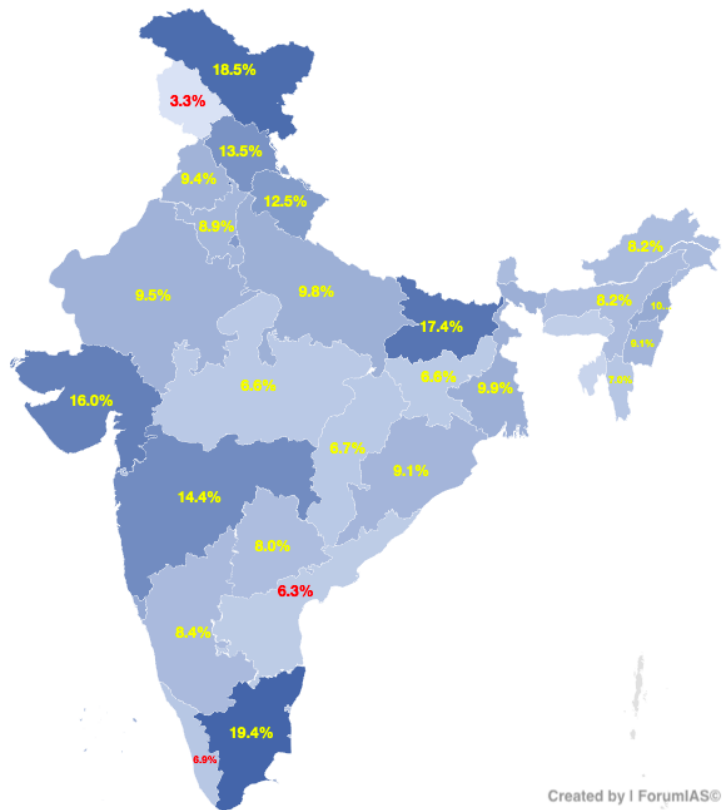
- Similarly, women between ages 25-65 years should undergo **regular pap smear tests** to **detect pre-cancerous changes in the cervix**. HPV tests (for identification of human papillomavirus that causes majority of cervical cancers) can be conducted every 5-10 years.
- Government's screening programs at **primary health centres** (PHCs) can aid in early diagnosis.
- For cervical cancer, treatment can be provided by nursing staff at PHCs, like the practice in Bangladesh.
- **Awareness:** It is necessary among the population, especially women, so they actively participate in self-screening and seek medical attention when required.
- **HPV Vaccination Program:** It will reduce the occurrence of common cancers in women. Vaccines against the **human papillomavirus (HPV)** are already available in India, and an **indigenous vaccine** has also been developed.
- **Access:** Women's access to healthcare need to be improved. The healthcare programmes need to be diversified (current emphasis on reproductive health) to include more interventions for multiple diseases. The Ayushman Bharat health insurance scheme offers a potential solution, as women account for 49% of all beneficiaries. Empowering women with greater agency in healthcare can lead to a significant benefit. (Refer EPIC June 2023 (click) for Gender Discrimination in the Field of Medicine and Medical Research).

Gender Issues: Poor Representation of Women in Police Forces

News: The representation of women in the State Police Forces remains poor.

What is the status of women's representation in the State Police Forces?

- According to the Bureau of Police Research and Development (BPRD), the **share of women in State Police Forces stood at 10.5% at an all India level**. (January 2021). There is variation across States, with Tamil Nadu having highest proportion (19.4%), followed by Bihar (17.4%) and Gujarat (16%). Among the UTs, Chandigarh has the highest share (22.1%).
- Most states have policies in place to increase the proportion of women in the police forces. Yet no State appears to be near the target level.
- The Union Ministry of Home Affairs has asked the States to increase the representation of women in police forces to 33%.



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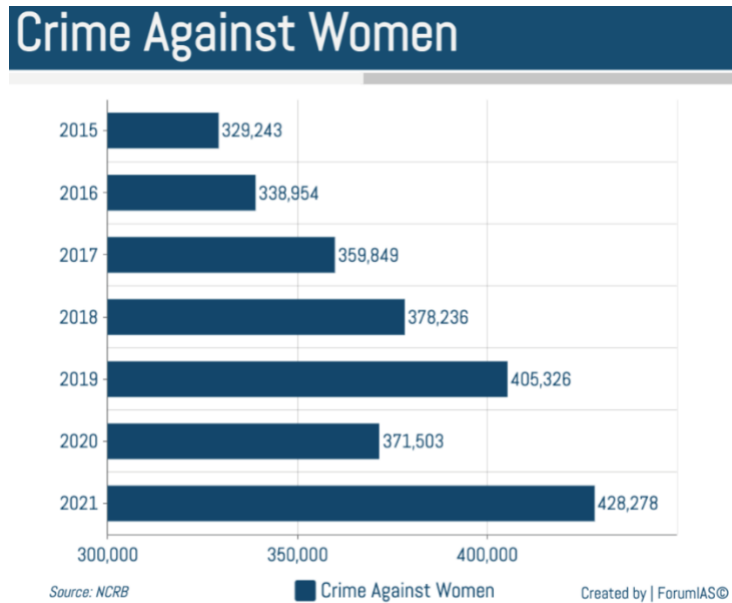
Data Source: BPRD. The share of women in police forces in all States is much below 33%.

What is the need for higher representation for women in police forces?

- **Legal Requirements:** Certain changes in the criminal laws and procedures require

presence of women police personnel (like recording statement or conducting search). Hence the proportion of women must be increased.

- **Rising Crimes Against Women:** The crimes against women has shown an increasing trend, and reached a high of 4.28 lakhs in 2021. Increase in women personnel can make the forces more sensitive and empathetic towards women and crimes against them.
 - Some experts have also argued that a greater number of women in the police force will help in better handling of cases related to POCSO and crimes against children.
- **Capabilities:** Women are increasingly proving their abilities in various fields including in the armed forces. CRPF already has 6 Mahila Battalions. Women personnel have played active role in crowd and riot control indicating their ability to handle sensitive situations under pressure.



What steps have been taken to promote gender equality in police force?

- The MHA has **been incentivizing states** to implement police reforms, including merging women police with regular police and establishing recruitment boards.
- The MHA provided a **special grant to encourage States** to establish a 'women desk' in every police station.
- Most States have a policy to fill up 30% or 33% of the vacant posts (of direct recruitment) with women in their police forces through horizontal reservation.

What are the challenges in ensuring gender equality in police forces?

- Police is State Subject. It is difficult to implement the reform measures uniformly across all States. While some States have declared policies, most other States have adopted a more piece-meal approach towards recruitment of women in the police forces. States have been reluctant to implement reforms being pushed by the Union Government.
- The stereotype about the policing being 'men's job' deters young women from coming forward to join the forces. Supposedly harsh nature of the job (long working hours in the field, dealing with hardened criminals etc.) also acts as a deterrent.

What should be done going ahead?

- The Union Government should coordinate with the State Governments to push for a more uniform policy across States, through a consultative process. All States should fix a timeline to improve the representation of women to an agreed level (like 33%).
- State Government should provide a conducive environment and essential infrastructure to support women personnel.
- An increasing number of women candidates are opting for IPS bucking the earlier trends. They can serve as role models for more women to join police forces.

General Studies Paper I

1. World Heritage Site Status for Santiniketan

News: Santiniketan has been granted the status of World Heritage Site.

How did Santiniketan achieve the status of UNESCO World Heritage Site?

- Santiniketan's nomination for the World Heritage Site was rejected by the **International Council of Monuments and Sites (ICOMOS)** in 2009. A revised nomination was prepared in 2021 with simplifications.
- For sites to achieve the UNESCO recognition, they must have an **Outstanding Universal Value (OUV)** and meet at least **1 of the 10 selection criteria**. To meet the criteria, the authorities widened focus from 'gurukul' and 'tapoban' traditions to highlighting ensemble art, architecture and Pan-Asian culture, making it **more tangible for recognition**. The revised proposal positioned Santiniketan as a **symbol of India's new modernity**. (Refer EPIC May 2023 (click) for Santiniketan Recommended for UNESCO World Heritage Status).
- During the period of independence struggle and revivalism, Santiniketan embraced Indian crafts, local materials, and folk and classical Indian art. This fusion created a harmonious blend of Balinese, Burmese, Chinese, and Japanese traditions. This aspect was suitably highlighted.

Criteria for World Heritage Site Status

- Till 2004, the sites were selected on the basis of **6 cultural** and **4 natural** criteria.
- Cultural Heritage includes **monuments, groups of buildings or sites** which have **Outstanding Universal Value** from point of view of history, aesthetics, art or science.
- Natural Heritage includes **natural features** (physical or biological), **geological and physio-graphical formations** making habitat of threatened species, or **natural sites**; that are of **Outstanding Universal Value** from aesthetic, scientific or conservation point of view.
- Now only **1 out of 10 criteria** must be met. These include:
 - Masterpiece of human creative genius.
 - Unique/exceptional testimony to a cultural tradition or civilization (living/disappeared).
 - Directly/tangibly associated with events or living traditions, with ideas, or with beliefs, with artistic and literary works of outstanding universal significance.
 - Contain superlative natural phenomena or areas of exceptional natural beauty.

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What were the views of Rabindranath Tagore regarding Santiniketan?

- Rabindranath Tagore's educational experiment in Santiniketan was rooted in his belief that diversity was crucial to overcome the constraints of parochiality (narrow outlook/views).
- In 1901, he established **Patha Bhavan**, a residential school. During the Non-Cooperation Movement, he founded **Visva Bharati as a global gurukul** (1921). The vision of establishing Visva-Bharati aimed to **unite people beyond nationalism**, focusing on the vision of shared humanity.
- Tagore **expressed his discontent with nationalism**, which he saw as limiting and eventually leading to arrogance. His university vision aimed to **connect people to nature** and others worldwide, going beyond borders, unlike the Western model.
- Santiniketan was meant to be a **place of empathy**, where teachers, students, colleagues, and neighbours built close relationships. It was like a **global village**, with a motto '**Yatra visvam bhavatieka nidam**'; unhindered by the territorial limitation of the nation-state.

What are the challenges ahead?

- Ensuring the continuation of heritage status will pose new challenges. The authorities have to **strictly restrict any haphazard construction** within the ashram and its vicinity. Dresden (Germany) had lost its UNESCO Heritage Site in 2009 when it built a 4-lane bridge within its cultural landscape.
- Physical barriers** will need to be erected which **contradicts the Tagore's concept of openness**.
- Balancing rise in the tourism (with the heritage status) and preserving its educational mission and rich heritage will be difficult and will require innovative solutions.

2. Supreme Court's Judgment on Same-sex Marriage

News: A 5-Judge Constitutional Bench of the Supreme Court has refused to grant legal status to same-sex marriages in India.

What are the details of the SC Judgment on same-sex marriage?

- During the hearings of the case, 4 key questions were framed. On 2 questions, all 5 judges gave unanimous judgment. On 2 other questions, the judgment was split 3:2.

Key Question	Judgment
<p>The Fundamental Right to Marry The petitioners wanted the SC to declare marriage as a fundamental right as the SC declared Privacy as a fundamental right in 2017.</p>	<ul style="list-style-type: none"> • Both the majority (3) and minority views (2) rejected the question of declaring marriage as a fundamental right. • Minority's Rationale: Marriage has attained the social and legal significance only because the State has regulated it through law. • Majority's Rationale: Marriage is important for an individual but cannot be considered fundamental for his existence.
<p>Re-Interpretation of the Special Marriage Act (SMA) 1954 The petitioners had asked the SC to interpret the word 'marriage' to be defined as between "spouses" instead of "man and woman". They had also asked for striking down provisions of the SMA that are gender-restrictive.</p>	<ul style="list-style-type: none"> • Both the majority and minority views rejected the demand. • Minority's Rationale: The re-interpretation of SMA 1954 would amount to entering into the realm of the Legislature. • Majority's Rationale: At the time of enactment of the law, the Parliament intended it to be applicable only for heterosexual couples belonging to different faiths.
<p>Queer couples' right to adopt children The petitioners had argued that the guidelines of the Central Adoption Resource Authority (CARA), disallowing unmarried couples to jointly adopt children, are discriminatory against queer couples as they cannot legally marry.</p>	<ul style="list-style-type: none"> • Minority View: Strike down the discriminatory provisions of the CARA regulation. • Rationale: The guidelines reinforce the disadvantage already faced by the queer community. Law cannot make an assumption on good and bad parenting based on the sexuality of individuals. • Majority View: CARA provisions are discriminatory. But these provisions cannot be struck down by the Judiciary. • Rationale: The Legislature and Executive have the power and should remove these discriminatory provisions.
<p>Civil Unions for Queer Couples Civil Union was considered as the halfway approach before granting complete marriage rights. The US Supreme Court had adopted the same approach of recognising civil unions first before granting complete marriage rights. However, the petitioners argued that civil unions are not an equal alternative to the legal and social institution of marriage. Relegating non-heterosexual relationships to civil unions would send the queer community a message that their relationships are inferior to those of heterosexual couples.</p>	<ul style="list-style-type: none"> • Minority View: Favoured the civil union and prescribed it as a 'choice' for the queer community. They located the right to form Civil Unions within the fundamental right to freedom of speech and expression. The Committee under Cabinet Secretary should set out the rights which would be available to queer couples in civil unions. • Majority View: The Judiciary should not prescribe civil unions as a 'choice' to queer couples. The State (Legislature and Executive) should facilitate this choice and only for those who wish to exercise it.

What arguments were put in favour of legalisation of same sex marriage?

- **Equality:** Article 14 of Constitution prohibits discrimination on the basis of sex. In *Navtej Singh (2018)* case the SC had **interpreted sex to include 'sexual orientation'**. Denial of marriage to non-heterosexual couples amounts to discrimination based on sexual orientation.
- **Legal Protection and Rights:** Legal recognition will guarantee rights like adoption, surrogacy, inheritance, joint ownership of property etc. to the non-heterosexual couples.
- **Inclusion:** It will provide new identity to non-heterosexual relationships and will be a step towards inclusion of such couples in the society. It will promote gradual social acceptance.
- **Transformative Constitutionalism:** The legalisation of same-sex marriage will be a step further in the domain of transformative constitutionalism and **progressive realisation of the minority rights**. The Supreme Court had invoked the aforesaid principles of transformative constitutionalism in the *Navtej Singh Johar Case (2018)* which had **invalidated Section 377 of the IPC**. Legal recognition of same-sex marriage is the next logical step.
 - The SC had given several judgments in the past through **progressive judicial innovation** (including the concept of basic structure doctrine), which have been **far more substantial and extensive** cases of interpretation of the Constitution. Legalization of same-sex marriage can be done within the extensive interpretation framework evolved by the sc.
- **Human Rights:** Same-sex marriage is a human rights issue. The UN has called for the protection of the human rights of LGBT individuals, including their right to marry.
- **Marriage as Evolving Institution:** Marriage has been an evolving institution according to the prevalent social values of the times e.g., The age of marriage has risen and inter-caste marriages have gradually gained greater acceptance in the society.
- **Global Experience:** Same-sex marriage is legal in 34 countries around the world.

Key Highlights of the SC Judgment



- Right to marriage is **not a fundamental right**.
- The SC **rejected the demands** of the petitioners for the re-interpretation of **Special Marriage Act, 1954 (SMA)** to include the word "spouses" in place of "man and woman".
- The SC held that the provisions of CARA which **prohibit queer couples from adoption are discriminatory**. But the provisions **cannot be stuck down by the Judiciary**. Legislature and Executive should take the necessary steps.
- The SC noted **Union Government's assurance** that a **Committee chaired by the Cabinet Secretary** will be constituted to **set out the rights** which would be **available to queer couples in civil unions**.

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What arguments were put against the legalisation of same-sex marriage?

- **Cultural Practices:** Conjugal rights, inheritance and adoption etc. are governed by religious personal laws which recognize heterosexual marriages only. Legalization will interfere with religious and cultural practices. Religions view **marriage as a channel for procreation**, which is possible only through heterosexual marriages. **Homosexual marriages go against the order of nature** according to this view.
- **Rights of Children:** Till there is wide societal acceptance, legalization of same-sex marriage may lead to **discrimination and societal stigma** against children adopted by such couples. This may have a **deep impact on their psychology** and violate their rights.
- **Societal Impact:** Marriage is a social institution. Legalization of same-sex marriage has widespread implications which need to be deliberated with all stakeholders. Legislature is the appropriate platform to undertake these deliberations and judiciary should not enter this domain.
- **Urban-elitist Demand:** The opposing view is that the demand for same-sex marriage is limited to urban areas among the elite sections.

What should be way forward?

- **Set-up Committee:** The SC has left it to the Legislature to grant legal status to the same-sex couples.

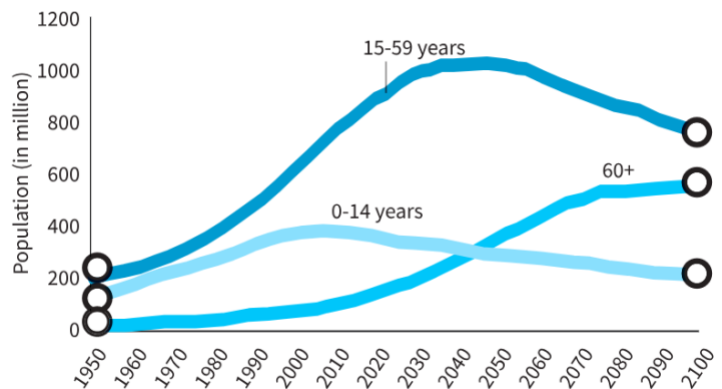
- During hearings, the Government had proposed to set a Committee under the Cabinet Secretary for granting rights related to civil union to homosexual couples. This should be set up at the earliest.
- **Inclusive Family Laws:** The Legislature must improve family laws to make them more inclusive, gender-just and non-discriminatory.
- **Awareness:** Social sensitization campaigns must promote equality and inclusion of all social orientations. This can improve social acceptance of LGBT community.

3. Ageing Population in India

News: The India Ageing Report, 2023 has been released by the UN Population Fund and the International Institute for Population Sciences (IIPS).

What are the key findings of the Report?

- **Elderly Population Growth:** The decadal growth rate of India's elderly population is 41%. By 2050, the share of elderly individuals in the total population is expected to reach over 20%. By 2046, elderly population would have surpassed the that of children (0-15 years).
- **Poverty among the Elderly:** More than 40% of the elderly in India are in the poorest wealth quintile, and about 18.7% of them live without an income. This level of poverty has a negative impact on their quality of life and healthcare utilization.
- **Agging Beyond 80:** The report predicts a 279% growth in the population aged 80 and above between 2022 and 2050, with a predominance of widowed and **highly dependent very old women**.
- **Life Expectancy:** Women have higher life expectancy than men. In some States like Kerala and Himachal Pradesh, women can live up to 4 more years than men.
- **Gender Ratio:** The sex ratio among the elderly has been increasing since 1991. It was 930 in 1991 (930 women/1000 men) and has been projected to reach 1078 by 2031 (more elderly women than men).
- **Gendered Poverty:** Poverty among the elderly is often gendered, with older women more likely to be widowed, living alone, without income, and dependent on family support.
- **Regional Variations:** There are significant regional variations in the elderly population's absolute levels and growth. Southern and select northern states have a higher share of the elderly population, while central and north-eastern regions have younger populations.



Source: The Hindu. By 2100, the share of elderly population (60+ years) is expected to reach 36%. The ageing of population is due fall in fertility rates and increase in longevity.

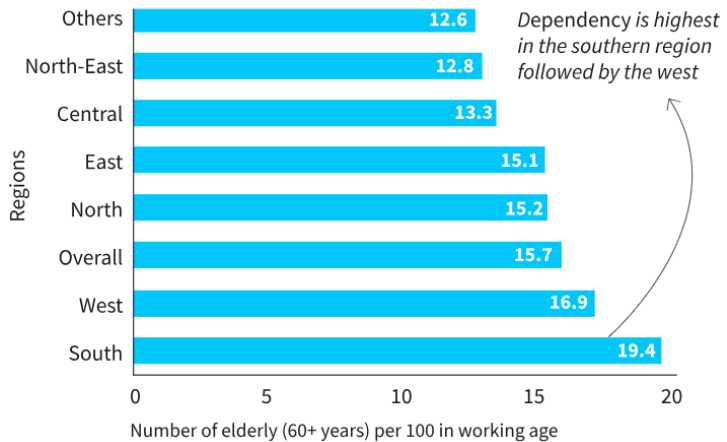
What are the challenges faced by elderly women?

- **Dependence:** Women are more likely to struggle in the old age as they lack financial independence, access to land or financial assets (savings) and hence have greater dependence than men.
- **Awareness:** A study found that less than 25% of elderly women are aware about government concession schemes, suggesting a barrier in awareness and potentially accessing support services available to them.
- **Mental Health:** The incidence of depression is higher among elderly women across different age groups, pointing towards additional mental health challenges.

- **Health Challenges:** 30% of women over 60 have one morbidity (28% for men) and nearly 25% suffer from two morbidities (22% for men), showing worse health conditions than men.

What are the recommendations given by the report?

- Special focus should be there on older persons in disaster-preparedness plans that are formulated henceforth.
- There is a lack of credible data on various issues related to the elderly in India. More questions should be included on **relevant and emerging issues related to older persons** in the upcoming data collection exercises of the National Sample Survey, the National Family Health Survey, and the Census of India, respectively.
- Government must work on **increasing awareness** about schemes for older persons, bring all Old Age Homes under regulatory purview and focus on facilitating in-situ ageing to the extent possible.
- Government should encourage the **creation and running of elderly self-help groups**.
- Government should also encourage *in situ* (at home) ageing as much as possible by creating **short-term care facilities** like creches or day-care facilities, citing better care when elderly people live with their respective families.
- Other steps that can be taken or considered (other than provided by the report) include increasing age of retirement (prolong productive phase), increasing employer contribution to pensions, providing incentives for household savings and elderly care. Government should also focus on raising awareness to prevent lifestyle diseases, change the '**calorie**' mindset to a '**balanced nutrition**' mindset.



Source: The Hindu. The dependence ratio in the Southern India is much higher than the other regions. Ageing population will pose challenges related to increased expenditure on healthcare and social security with fall in productivity due to higher dependence ratio.

4. Slum Redevelopment in India

News: Slum Redevelopment is an essential requirement for urban rejuvenation and making cities sustainable.

What are the reasons for growth of slums in India?

- **Regional disparities in development** has led to **unchecked migration** to a few urban centres. This has created high pressure of population on infrastructure.
- **Scarcity of land** in urban areas amidst **rising population** in urban areas leads to formation of congested communities.
- **High price of land and rent** in urban areas creates **dearth of affordable housing** forcing people to move to slums. Prevalence of black money in real estate sector is a factor that inflates prices and rent.

Definition of Slum

- The word 'slum' is often used to describe **informal settlements** within cities that have **inadequate housing** and squalid, miserable living conditions. They are often **overcrowded**, with many people crammed into very small living spaces.
- **UN-HABITAT** defines a slum household as a group of individuals living under the same roof in an urban area who lack one or more of the following:
 - Durable housing of a permanent nature that protects against extreme climate.
 - Sufficient living space, which means not more than three people sharing the same room.
 - Easy access to safe water in sufficient amounts at an affordable price.
 - Access to adequate sanitation in the form of a private or public toilet shared by a reasonable number of people.
 - Security of tenure that prevents forced evictions.

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- **Urban Planning is poor** in India. City development plans fail to take into account future expansion of cities. Corruption in local bodies lead to delay in development projects related to housing.
- Slums have become **contesting grounds of politics** with many redevelopment projects been caught in party politics over role of big real estate developers.

What are the issues associated with Slums?

- **Basic Amenities:** Slums lack basic amenities like access to clean drinking water, sanitation, waste collection systems, sewerage, electricity and hospitals leading to poor living conditions. Lack of sanitation leads to diseases (like malaria and cholera) and **poor health outcomes** especially among children (hunger, malnutrition, high mortality rate etc.).
- **Overcrowding** has been linked to low space per person, high occupancy rates, different families living together, and a lot of one-room units. Most slum units are too crowded.
- Slum areas have a high number of **substandard housing structures** (non-compliant with building standards). Many structures are unsafe for habitation.
- The slum dwellers **lack ownership title to the land**. They are under perennial risk of evacuation and harassment by land-mafia.
- Poor living conditions, lack of economic opportunities, presence of illegal migrants etc. **provide fertile ground for criminal activities**.
- Slum-dwelling women and children are at a higher risk of falling victim to social ills such as prostitution, beggary and trafficking.

What are the challenges in Slum Redevelopment?

- **Unmet Demand:** Government reports there is a shortage of about 19 million homes in urban India, 56% of which are from Economically Weaker Section (EWS) households with monthly income less than INR 25,000.
- **Access to Finance:** The urban poor lack the access to formal financial resources to help them purchase new homes even when subsidy is provided by the Government under Rehabilitation schemes. Housing Finance Companies are reluctant to serve the urban poor due to perceived risks.

Steps taken for Slum Redevelopment in India

- **Slum Areas (Improvement and Clearance) Act, (1956):** It intends to provide for the improvement and clearance of slum areas in certain UTs and for the protection of tenants from eviction. It gives the authority to declare any location to be a slum, and takes steps to improve or eradicate slums.
- **National Slum Development Programme (NSDP):** It was initiated in 1996. It provides loans and subsidies to States for slum rehabilitation projects on the basis of their urban slum population.
- **Valmiki Ambedkar Malina Basti Awas Yojana (VAMBAY):** It was introduced in 2001 with focus on shelter for the urban poor, with 20% of total allocation for community sanitation facilities under the *Nirmal Bharat Abhiyan* (NBA) program.
- **Basic Services to the Urban Poor (BSUP):** It was an important component of Jawaharlal Nehru National Urban Renewal Mission (JNNURM). It aimed to provide basic services to urban poor. Created by I ForumIAS®
- **Slum Redevelopment Scheme (SRS):** It was launched by the Government of Maharashtra in 1995. It allowed the redevelopment of slums through owners, developers, cooperatives or NGOs. To attract private developers, it granted Transferable Development Rights (TDR) and provided Floor Space Index (FSI) incentives. It also established the Slum Rehabilitation Authority (SRA).
- **Integrated Housing & Slum Development Programme (IHSDP):** It was launched by merging the schemes of NSDP and VAMBAY. Its objective is to provide adequate shelter and basic infrastructure facilities to the slum dwellers in urban areas.
- **Interest Subsidy Scheme for Housing the Urban Poor (ISHUP):** The Scheme envisages the provision of interest subsidy to economically weak section and Low income groups to enable them to buy or construct houses. Created by I ForumIAS®
- **Rajiv Awas Yojana (RAY):** It was launched in 2013. It was focused on bringing existing slums within the formal system and enabling them to avail basic amenities. It also aimed to tackle the shortages of urban land/housing that kept shelter out of reach of the poor.
- **Smart City Mission:** It has its focus on basic amenities, education, health services, IT accessibility, digitization, e-governance, sustainable development, safety, and security.
- **Housing for All:** Its objective is to construct houses for slum dwellers under the slum-rehabilitation scheme and provide loans at subsidized rates for the EWS.
- **Atal Mission for Rejuvenation and Urban Transformation (AMRUT):** Its mission is to provide basic services (e.g. water supply, sewerage, urban transport) to households and build amenities in cities to improve the quality of life for all.
- **National Heritage City Development and Augmentation Yojana (HRIDAY):** It aims to preserve and holistically develop the heritage cities of India. Created by I ForumIAS®

- **Lack of available urban land:** According to UN-HABITAT, 675 million Indians (~43%) will reside in urban areas by 2035. Land is in high demand due to urbanisation. **Stringent control over land development** generates an **artificial urban land shortage**, leading to urban sprawl and corruption in land licensing.

Lack of Available Urban Land is Driving Up Land Cost	
Constraint	Details
Excess control on the development of land creates artificial shortage	<ul style="list-style-type: none"> • Tend to sprawl out urban development towards the periphery • May lead to rampant corruption as few stakeholders with large influence
Lack of marketable land parcels	<ul style="list-style-type: none"> • Nonmarketable state-owned entities often incompatible with real land value • Lack of monitoring provides proliferation of slums and squatter settlements
Titling issues and lack of transparent information	<ul style="list-style-type: none"> • Incomplete registration form creates great disadvantages to land buyers • Lack of transparency in transaction information hinders land acquisition

- **Lack of transparent land transaction records** add up the search time and costs for developers.
- A lot of **state-owned entities** are located in the middle of cities, **limiting available land for housing**.
- **Rising Construction Costs:** Over the last decade, construction costs have risen by ~80%. With rising material and labour costs, private developers may be unable to supply inexpensive housing to the market on their own.
- **Regulatory Constraints:** Development projects are subject to **long approval process** regarding different aspects from both State and Central level, which brings about postponement in tasks.
- **Litigation:** The nature of informal settlements leads to complicated and disputed land rights, leading to **litigation and delays**. Entities opposed to redevelopment projects also resort to litigation e.g., a PIL has been filed against Dharavi Slum Redevelopment Plan, arguing it will impact Mahim Nature Park, a protected area.
- **Illegal subletting:** According to Slum Rehabilitation Agency (SRA), many redeveloped units are illegally subleased. In the long run, this is counterproductive to the goal of creating slum free cities.
- **Environmental sustainability:** There are concerns about adding additional housing on an already over-constrained municipal systems. Without investing in adding capacity to existing civic infrastructure for the city, such policies could put undue burden on the city's civic amenities, in particular, utilities directly provided to households, such as water and electricity.

What should be the approach for Slum Redevelopment?

A report by the National Institute of Urban Affairs (NIUA) has made several suggestions.

- **Administrative Sustainability:** One-size-fit-all model may not work at a pan-India level. There is a need to **adjust slum redevelopment models according to the local needs**. There is need to examine demand (growth) and supply (density), as well as financial incentives. Financial incentives, Floor Space Index (FSI) and Transferable Developmental Rights should be customised according to local conditions.
- **Decentralized Systems:** Municipalities have typically centralised public services (sanitation, energy etc.). Slums lack access to essential services due to high investment costs, lack of resources to meet development and demand, and low-income groups' refusal to pay taxes and fees. **Decentralized systems** have the ability to alleviate these challenges since they are **more cost efficient**.
- **Financial Sustainability:** Giving out free housing to slum households under slum redevelopment scheme (SRS) results in issues of illegal subletting, illegal sales of housing, and people returning to slums. There should be **stringent measures to prevent sub-letting**. Financial support should be provided to the poor families in order to pay for the cost of the house.
- **Micro financing:** Scaling up micro-finance can be effective in delivering housing funds for the urban poor.
- **Land Ownership:** Securing land tenure and formalizing land ownership can encourage investment in housing and infrastructure, mitigating slum conditions.
- **Inclusive Urban Planning:** Inclusive and sustainable urban planning can prevent displacement and gentrification, protecting vulnerable communities. Bodies using data and technology are pivotal in tracking the progress and outcomes of transformation initiatives, identifying areas that need further interventions.

General Studies Paper II

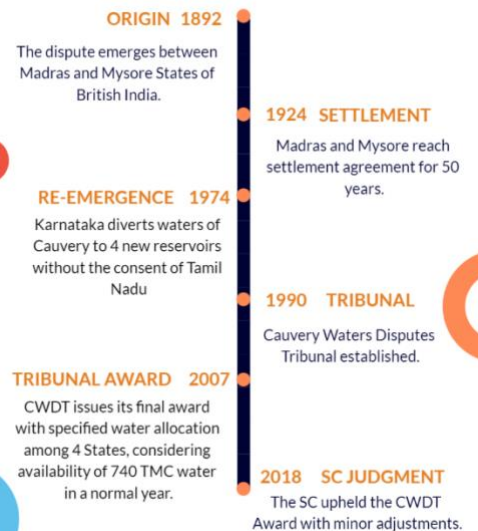
1. Inter-State River Disputes in India

News: Shortage of rainfall during the months of August and September reduced the availability of water in the reservoirs in South India. This has reignited the Cauvery River water dispute between Karnataka and Tamil Nadu.

What are the reasons for persistence of Inter-State Water Disputes in India?

- **Asymmetric Distribution of Power:** The legislative powers concerning water have been distributed between the Union and the State Governments (Item 56 in the Union List and Item 17 in the State List). However, this approach of **imprecise distribution of power** between the Union and the States, has created a **Federal-Jurisdictional ambiguity**.
- **Limited powers of River Tribunals:** The dispute Tribunal awards are not binding. They lack the ability to punish erring States for contempt in case of non-adherence to the award.
- **Institutional Ambiguity:** Article 262 provides that the Parliament may by law prevent the Supreme Court or any other Court from exercising jurisdiction in inter-State water disputes. However, under Article 136, the Supreme Court can hear appeals against the orders of Tribunals. Thus, the Supreme Court remains the adjudicatory body along with the tribunals, creating **an institutional ambiguity** regarding which body is the ultimate adjudicatory power on inter-State water disputes in India.
- **Lack of Technical Expertise:** The members of tribunals created for adjudicating the inter-State water disputes have been **predominantly from the Judiciary**. Thus, the inter-state water dispute settlement process has **lacked a multi-disciplinary approach**.
- **Procedural Delays:** Under the IWSDA (Inter-State Water Dispute Act), efforts are first made to settle the dispute through negotiations. The Government has 1-year time frame to set up the disputes tribunal. But the timelines are not adhered to strictly.
- **Political Mobilisation:** Inter-State disputes are exploited for political mobilization and electoral benefits. State Governments have rejected the awards of Tribunals for political gains.
- **Unscientific Data Management:** There is a **lack of data regarding water flows, seasonal variations etc.** which results in ambiguities regarding availability of water, surplus water for sharing etc. In addition, seasonal variations in monsoonal rainfall sometimes create shortage of water.

Timeline of Cauvery Water Dispute

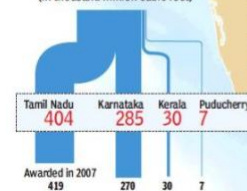


End Of A Century-Old Wrangle....

Cauvery stretches over 802km with origin at Tala-cauvery of Karnataka's Kodagu district



THE SPLIT: 2018 (in thousand million cubic feet)



Waters of an inter-state river... national asset... No state can claim exclusive ownership of such waters or assert... right so as to deprive other states... SC, Feb'16, 2018

Other major inter-state river disputes

Ravi & Beas
State concern: Punjab, Haryana, Rajasthan

Krishna
Maharashtra, Andhra Pradesh, Karnataka, MP

Godavari
Maharashtra, Andhra Pradesh, Karnataka, MP

Periyar
TN, Kerala

(Allocation of Cauvery Waters in Thousand Million Cubic (TMC) Feet).

State	Allocation by Tribunal	Allocation by the SC
Tamil Nadu	419	404.25
Karnataka	270	284.75
Kerala	30	30
Puducherry	7	7

What should be the way forward in resolving inter-state water disputes?

- The **Sarkaria Commission** has suggested that the awards of the tribunals be given the same weight as a Supreme Court Judgment.
- The Government's inability to properly handle water-related disputes is reflected in the high number of appeals to the Supreme Court. Some experts suggest that the **appeal to the Supreme Court should only be on procedural aspects**. The

awards based on expert opinions shouldn't be questioned in the Court.

- Tribunals should also try to avoid unnecessary delays in giving the award.
- The **Inter-State Council** can be rejuvenated to enable it to play a more active role in settlement of disputes.
- Some experts have suggested that mediation can also be explored as a possible option for successful resolution of disputes. Example of role of the World Bank as a mediator in the Indus Water Treaty between India and Pakistan is quoted as a success of this model.
- Infrastructure should be created for **better collection of the data related to inter-State river basins**. Better data will provide clear picture regarding availability of waters, seasonal variations and help in the equitable distribution of water among the States.

Provisions to Settle Inter-State Water Disputes

Constitutional Arrangements

- **Schedule 7 of the Constitution:** Union List, Entry 56 gives the Union Parliament the power to formulate laws and mechanisms for regulating Interstate rivers. State List, Entry 17, States retain autonomy regarding water utilisation for purposes such as water supply, irrigation and canals, drainage and embankments, water storage and water power subject to provisions of Entry 56.
- **Article 262:** Parliament may by law provide for the adjudication of any dispute with respect to the use, distribution or control of the waters of, or in, any inter-State rivers.

Statutory Arrangements

- **River Board Act, 1956:** The river Boards are supposed to advise on the Inter-state basin to prepare development scheme and to prevent the emergence of conflicts.
- **Inter-State Water Dispute Act, 1956:** If a particular State or States approach the Union Government for the constitution of the tribunal:
 - The Union Government should try to **resolve the matter by consultation** among the States.
 - If consultations do not work, then the Union Government may constitute the tribunal.

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Tribunal	States Concerned	Date of Constitution	Current Status
Godavari Water Disputes Tribunal	Maharashtra, Andhra Pradesh, Karnataka, Madhya Pradesh, Orissa	April 1969	Report and decision given in July 1980.
Krishna Water Disputes Tribunal – I	Maharashtra, Andhra Pradesh, Karnataka	April 1969	Report and decision given in May 1976.
Narmada Water Disputes Tribunal	Rajasthan, Madhya Pradesh, Gujarat, Maharashtra	October 1969	Report and decision given in December 1979. Narmada Control Authority (NCA) was constituted to implement the decision.
Ravi & Beas Water Tribunal	Punjab, Haryana, Rajasthan	April 1986	Report and decision given in April 1987. Further Report is pending.
Cauvery Water Disputes Tribunal	Kerala, Karnataka, Tamil Nadu, Puducherry	June 1990	Report and Decision given on 5 February 2007. Supreme Court modified the decision on 16 February 2018. The Cauvery Water Management Authority (CWMA) and Cauvery Water Regulation Committee (CWRC) were constituted to implement the modified decision.
Krishna Water Disputes Tribunal -II	Karnataka, Andhra Pradesh, Maharashtra, Telangana	April 2004	Report and decision given on 30 December 2010. SLPs filed pending in the Court. The term of the Tribunal has been extended after the bifurcation of Andhra Pradesh. The matter is under adjudication in the Tribunal.
Vansadhara Water Disputes Tribunal	Andhra Pradesh, Odisha	February 2010	Report and decision submitted on 13 September 2017. Further Report is pending.
Mahadayi Water Disputes Tribunal	Goa, Karnataka, Maharashtra	November 2010	Report and decision submitted on 14 August 2018. Further Report is pending.
Mahanadi Water Disputes Tribunal	Chhattisgarh, Odisha	March 2018	Under adjudication by the Tribunal. Report and decision are awaited.

- In the Cauvery Dispute, the **Cauvery Water Management Authority (CWMA)** should find a **mutually accepted water sharing/deficit formula**. Water Allocation should be based on the basis of amount of monsoon rainfall and availability of water.

2. Issues Associated with Delimitation

News: The provision of reservation for women in Legislatures will be active only after the next delimitation exercise has been completed. This has raised the issue of population rise and readjustment of seats.

What is Delimitation and Delimitation Commission?

- Delimitation is the exercise of redrawing boundaries of Lok Sabha or State Assembly Constituencies to represent changes in population over time.
- The exercise is undertaken by a **Delimitation Commission** appointed for this purpose. The Delimitation Commission is appointed by the President of India. It works in collaboration with the Election Commission of India.

Delimitation in the Constitution

- **Article 82** of the Constitution requires re-adjustment of allocation of seats to the States and the division of each State into territorial constituencies **after every Census**.
 - The Parliament is empowered to enact a law in this regard.
 - The **Delimitation Commissions** have been constituted 4 times -
 - 1952 (Delimitation Commission Act, 1952)
 - 1963 (Delimitation Commission Act, 1962)
 - 1973 (Delimitation Act, 1972)
 - 2002 (Delimitation Act, 2002)
 - In 1976, the 42nd Constitutional Amendment froze the delimitation process until 2001. This freeze was extended till the first census after 2026.
 - In 2002, **Delimitation Commission** was set up (based on the 2001 Census) to readjust the boundaries of existing Lok Sabha and Assembly seats and rework the number of reserved seats. There was **no change in the number of seats**.
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- The Delimitation Commissions constituted in 1952, 1963, 1973 and 2002 were **headed by retired Judges of the Supreme Court**.
 - The Delimitation Commission is mandated to:
 - Determine the number and boundaries of constituencies to make the population represented by each seat be same throughout the State (as far as practicable). Thus, the exercise of delimitation **tries to ensure that votes of all citizens have equal value all over the country**. (One Vote One Value)
 - Identify seats reserved for Scheduled Castes and Scheduled Tribes, wherever their population is relatively large.
 - The Constitution mandates that the orders of Commission are final and **cannot be questioned before any Court**.
 - The exercise of delimitation tries to ensure that **votes of all citizens have equal value all over the country**. (One Vote One Value).

Why has delimitation based on population become a contentious issue?

- In 1976, the 42nd Constitutional Amendment froze the process of delimitation till 2001. The freeze was extended till first census after 2026 by the 84th Amendment Act.
- The purpose of the freeze was **to boost family planning norms** and to enable the State Governments to **pursue the agenda of population stabilisation**. In the absence of the freeze, the State Governments had an incentive to let the population of their State increase, as more population would have meant **greater number of seats for their State in the Lok Sabha**.
- Since then the growth rate of India's population has declined. However, the population of States in northern India has grown much more considerably than in Southern India.
- Hence, after the freeze is lifted, if the number of seats is adjusted (to ensure that population to seat ratio is same for all seats), the States in northern India will see a great jump in the seats allotted to them.

Source: Indian Express. Based on 1971 census, at a pan-India level on average, each Lok Sabha seat represented ~10.11 lakh people. The number varied from 7.8 lakh in Bihar to 10.67 lakh in Kerala. Since then, the population of northern States has risen much more rapidly. If the same ratio is maintained (10.11 lakh persons/seat), the total number of seats of Lok Sabha must rise to 1,397 with the seats of UP rising to 250 (from 80, 212% rise), Rajasthan to 82 (from 25, 228% rise), Tamil Nadu 76 (from 39, 94.8% rise). If the ratio is increased to 20 Lakh persons/seat, then UP will require 126 seats (57% rise), Rajasthan 41 (64% rise), Tamil Nadu 39 (no addition in seats), Kerala 18 (10% fall in seats i.e., loss of 2 seats). Hence States in the South may end up with reduced representation in the Lok Sabha (relatively).

POPULATION-SEAT RATIO BROADLY EQUITABLE ACROSS INDIA

State	1961 population	1967 seats	Popn/seat ratio, 1967	1971 population	1976 seats	Popn/seat ratio, 1976
UP	7,01,43,635	85	8,25,219	8,38,48,797	85	9,86,456
Bihar	3,48,40,968	53	6,57,377	4,21,26,236	54	7,80,115
Rajasthan	2,01,55,602	23	8,76,331	2,57,65,806	25	10,30,632
Tamil Nadu	3,36,86,953	39	8,63,768	4,11,99,168	39	10,56,389
Kerala	1,69,03,715	19	8,89,669	2,13,47,375	20	10,67,369
India	43,92,34,771	520	8,44,682	54,81,59,652	542	10,11,365

PROJECTED 2025 POPULATION, SEATS AT MULTIPLE RATIOS

States	Current seats	2025 projected population (in thousands)	Seats at the same ratio as last time (10.11 lakh)	Seats at 15 lakh ratio	Seats at 20 lakh ratio
UP	85	2,52,342	250	168	126
Bihar	54	1,70,890	169	114	85
Rajasthan	25	82,770	82	55	41
Tamil Nadu	39	77,317	76	52	39
Kerala	20	36,063	36	24	18
India	545	14,13,324	1,397	942	707

- States in Southern India feel that if they the seats are increased in accordance with the latest population size, they'll effectively be **penalized for controlling their population**. An analysis has found that, based on projections, the 5 southern states (Andhra Pradesh, Karnataka, Kerala, Tamil Nadu, Telangana) will witness a decrease of 23 seats (4.24% decline), while northern states will gain 37 seats (6.81% rise).
- Southern States have also complained about loss of tax transfers from the Union Government. The share of these 5 southern states dropped from 21.1% to 15.8% from 2000-05 to 2021-26.
- Penalizing population control by reducing representation and financial allocations might discourage states from prioritizing such initiatives in the future.

What should be done?

- Some political analysts have recommended **extending the freeze** till the **population of all States stabilizes**. They advocate **active population growth management** in States still witnessing high population growth.
- The delimitation will be a contentious exercise given the political stakes. It is necessary to undertake a non-partisan political discussion to take into account the best interests of the electorate to decide on the issue through consensus. Parties should rise above narrow political interests to arrive at a middle-solution acceptable to all.

3. Caste Survey in Bihar and Caste Census

News: The Government of Bihar has released the findings of the Caste Survey undertaken in the State. The has increased the calls for undertaking Caste Survey at a pan-India level.

What is Caste Census and Caste Survey?

- Census:** Census is the total process of collecting, compiling, analysing and disseminating demographic, economic and social data of all persons in a country at a specific period of time. Census in India is conducted at regular intervals of 10 years (barring 2021), although **there is no specified timeline in the Census Act, 1948**.
 - Every Census in independent India from 1951 to 2011 has published data on SCs and STs, but not on other castes.

- Every Census until 1931 had data on caste. Hence there have been demands for Socio-economic caste census to be conducted for 2021.
- **Caste Census:** Socio-Economic caste census was conducted for the first time in Independent India in 2011. However, the **findings were never made public**. The last published data for all castes was done in the 1931 census.
- **Caste Survey:** Only the Union govt has the power to conduct census. Several State Governments like Bihar and Odisha have been conducting socio economic caste surveys to ascertain the **social and economic status of different castes for better policy making**.

Parameters	Census	Caste Census	Caste Survey
Legal Backing	Backed by the Census Act, 1948	Not backed by any law. Union Government by notification can provide for Caste Census.	Not backed by any law. State Governments have no power to conduct Census, but they can conduct surveys.
Caste Data	Socio economic data of only SCs and STs collected and released	Socio Economic data of OBCs were collected for the first time since independence in 2011 SECC census.	State Governments conducts caste surveys to collect widest possibly data.
Confidentiality	The Census Act makes it compulsory to keep the data collected during census confidential and anonymous.	All the personal information is open for use by Government Departments to grant and/or restrict benefits to households.	State governments use the caste survey data for informed policy making of State policies.

What are the advantages of Caste Census?

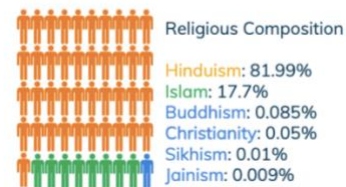
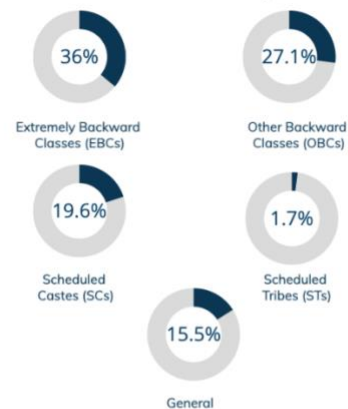
- **Policy-making:** Caste census will generate exhaustive data to allow policymakers to develop **better policies and implementation strategies** for upliftment of marginalised classes. It will help in data-driven affirmative policy formulation.
- **Reservation:** Current reservation policies are largely based on 1931 census caste data. Detailed caste data can help **identify creamy layers within the beneficiary classes**. The policies can be adjusted to provide greater opportunities to the most poor among the reserved categories who have **failed to draw benefits from the reservation policy**.
- **Targeting:** The welfare schemes of the Government can **be better targeted towards the most marginalized sections** through detailed analysis of granular data from caste census e.g., results of caste survey from Bihar show that ~22 million eligible persons may have been excluded from access to the subsidized food grains (in Bihar alone).
- **Inequalities:** Even today, inequalities persist in the society based on the caste in terms of access to education, health, financial resources and wealth. Caste census can help address these inequalities.
- **Constitutional Mandate:** **Article 340** mandates the appointment of a commission to investigate the conditions of socially and educationally backward classes and make recommendations as to the steps that should be taken by the Governments. Kalelkar Commission (1953) and Rohini Commission (2017) have been established under this Article.
- **Addressing Intersectionality:** Caste intersects with other factors such as gender, religion, and region, leading to **compounded disadvantages**. The census can reveal these intersections which will lead to more nuanced policy approaches that **target multiple dimensions of marginalisation**.

What are the disadvantages of Caste Census?

- **Caste-based Mobilization:** The data can be used by the political parties for narrow political gains.
 - Caste-based mobilization may strengthen caste identities, rather than eliminating them.

- **National Integration:** Strengthening of caste identities, struggle for greater share in political or economic resources and demands for extension of reservation rights may prove detrimental to national integration.
- **Stigmatization:** Hardening of caste identities could lead to individuals being stigmatized or discriminated against based on **preconceived notions associated with certain castes**.
- **Sanctity of Data:** Enumerating the caste numbers in India is a complex task as the **same caste is spelt in different ways in different States**. Also, one caste maybe extremely backward in one State and can be backward in another State.

★ Bihar Caste Survey Data



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What should be the way forward?

- **Sub-categorisation:** Instead of going behind the caste-based census, the Government can **subclassify the Backward Classes** like in Tamil Nadu, Andhra Pradesh, West Bengal etc. This will provide the benefit to intended beneficiaries. Rohini Commission has submitted its report to the President. Its findings should be laid before the Parliament.
- **Preliminary Census:** Independent of census, a preliminary socio-anthropological study can be done at the State and district levels to establish all sects and sub-castes present in the population.
- **Technology and Data Analytics:** The Government should deploy data analytics tools to assess SECC data and condense them into meaningful categories.

A caste census may not sit well with the goal of a casteless society, but it may serve as a means of addressing inequities in society. The long-term aim should be **gradual elimination of castes** by **up-lifting the socio-economically marginalised sections of the society**.

4. Abortion Rights in India

News: The Supreme Court has declined a married woman's plea to abort her 26-week pregnancy. This has brought India's Abortion Law in focus.

What were the observations in the SC Judgment?

- A Bench presided over by the Chief Justice of India (CJI) held that the woman's case fell outside the scope of the Medical Termination of Pregnancy (MTP) Act, 1971.
- The Court said that the law permitted the **termination of pregnancy beyond 24 weeks** only in cases where the **foetus exhibited substantial abnormality**, or where the **woman's life was under direct threat**.
- The SC rejected the plea to exercise its extraordinary powers to allow abortion since the doctors would have to terminate a **viable foetus**. The Court's stand was that when a foetus becomes viable, i.e., capable of surviving outside the mother's uterus, the **woman's right to choose stands extinguished**, barring circumstances where the **specific conditions outlined in the MTP Act are met**.

About the Case

In **X vs Union of India**, a woman had approached the Supreme Court, seeking abortion, as she was already a mother of two children. The woman was suffering from **post-partum depression** after the birth of her 2nd child. The woman had submitted that she was physically, emotionally, mentally, financially and medically unable to carry, deliver or raise another child.

What is abortion and what is the debate around it?

- An abortion is a medical procedure (using medication or a surgical procedures) to terminate a pregnancy.
- There is an intense debate surrounding the issue of abortion with the '**Pro-Choice**' and '**Pro-Life**' as the two opposing views.

Pro-Choice	Pro-Life
Support abortion rights of women.	Oppose abortion rights of women.
Right of women to 'bodily autonomy' is paramount.	' Right to life ' of the foetus is paramount.
Individuals have unlimited autonomy with respect to their own reproductive systems, as long as they don't breach the autonomy of others.	The Government has an obligation to preserve all human life , regardless of intent, viability, or quality-of-life concerns.

What is the current status of legislation on abortion in India?

- India has taken the Pro-Choice approach to abortion. Abortion is legal in India with certain conditions.
- The Medical Termination of Pregnancy (MTP) Act, 1971 was enacted on the recommendations of Shantilal Shah Committee.
- The MTP Act was amended in 2021. It has been brought in line with modern progressive ideas regarding women's reproductive rights and bodily autonomy.

What changes were brought by the MTP Act, 2021?

Parameters	MTP Act, 1971	MTP Act, 2021
Applicability	Only applicable to married woman	Applicable to unmarried women as well
Gestational Limit	20 weeks	Up to 24 weeks for survivors of rape or incest, minors, physically disabled, change in marital status, women with mental illness, foetal abnormalities etc. Abortion beyond 24 weeks only for ' substantial foetal abnormalities .'
Medical Opinion (Registered Medical Practitioners, RMPs)	Till 12 weeks: 1 RMP 12-20 weeks: 2 RMPs	Till 20 weeks: 1 RMP 20-24 weeks: 2 RMPs > 24 weeks: State Level Medical Board
Privacy of women	Not included	Privacy of women undergoing abortion protected. Revelation of information punishable by jail term up to 1 year.

What is the significance of the amended MTP Act 2021?

- **Easier Process:** For termination of pregnancy up to 20 weeks, opinion of only 1 RMP is required, compared to 2 earlier. The simplification has eased the process.
- **Bodily Autonomy:** The amended Act allows for **termination of pregnancy for unmarried women** also. It has enhanced the upper gestation limit from 20 to 24 weeks for some categories of vulnerable women. It has granted them **greater degree of bodily autonomy**.
- **Litigation:** The Act has removed the limit of 24 weeks for termination of pregnancy in case of substantial foetal abnormalities. Abortions beyond 24 weeks can be allowed by the State-level Medical Board. It may ease the burden of writ petition on Courts, for seeking abortion beyond the permitted period.
- **Privacy:** The amended Act protects the privacy of women thus ensuring their dignity.
- **Safe Abortions:** The simplified procedure and protection of privacy may help in better access to abortion services. This may reduce maternal deaths due to unsafe abortions. Unsafe abortions are the

third leading cause of maternal mortality in India, and ~8 women die from causes related to unsafe abortions each day.

What are the associated issues?

- **Limited Autonomy:** The MTP Act does not provide for 'at-will abortion'. In the landmark case of *X vs Principal Secretary, Health and Family Welfare Department, Government of NCT*, the SC has acknowledged that the MTP Act is a provider-centric legislation, where the **opinion of the Registered Medical Practitioner (RMP)** becomes "decisive and final".

- In the recent case (*X vs Union of India*), the SC declined to allow abortion based on medical opinion that the foetus has become viable.
- Only limited categories of women are allowed to terminate pregnancies beyond 20 weeks. Women with other conditions (like suffering from the post-partum depression in the present case or sudden financial crisis) are not covered.
- Abortion beyond 24 weeks is only allowed in case of 'substantial foetal abnormalities' or 'a risk to the life of the pregnant woman'. In other cases, approaching the Court is the only recourse.
- **Time Frame for Medical Opinion:** There is no specified time frame for Medical Board to decide on cases presented to it. Delays can lead to loss of crucial time and lead to more complications.
- **Low Number of RMPs:** According to NH&FS (2015-16) data, only 53% of abortions are performed by a registered medical doctor, the rest are conducted by a nurse, midwives, family members. Also, there is 75% shortage of such doctors in community health centres in rural areas. This results in more unsafe abortions.
- **POCSO Act:** Mandatory reporting requirements under the POCSO Act impact privacy and hinder access of adolescents to safe abortion services.

What should be done going ahead?

- **WHO Guidelines:** WHO has recommended that States should fully decriminalise abortion and remove gestational limits to abortion. It will ensure non-discriminatory and equal abortion care to all.
- **Expand Autonomy:** In *Justice K.S Puttaswamy (Retd.) vs. the Union Of India And Others (2017)*, the SC recognized the right of women to **make reproductive choices**, as a fundamental right under Article 21 of the Indian Constitution. The conditionalities in the Act must be removed to allow women to exercise their reproductive choices.
- **Expand Coverage:** The ambit of the act can be increased by including transgenders; other vulnerable women like those suffering from financial constraints, lactational amenorrhea or menopause (late detection).
- **Access to Services:** The Government must create a cadre of certified medical practitioners including **ASHA, ANM workers** in the health system who can carry out institutional abortions. This will reduce the problem of unsafe abortions in India. (Refer EPIC March 2022 (click) for *The New Guidelines on Abortion by the WHO and EPIC May 2022 (click) for The Debate Regrading Abortion*).

Bodily Autonomy

- **UN Population Fund (UNFPA)** defines bodily autonomy as the right to make decisions over one's own life and future.
- The **UN Human Rights Office (OHCHR)** observes that Women's human rights include the rights to equality, to dignity, autonomy, information and bodily integrity and respect for private life and the highest attainable standard of health, including sexual and reproductive health, without discrimination.
- **World Economic Forum** has noted that bodily autonomy for women includes power to say no to sex with husband/partner, to decide on contraception and to make independent decisions on healthcare including reproductive healthcare which includes abortion.

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Challenges in Accessing Quality Abortion Care

- **Financial Constraints:** Difficult for poor to access comprehensive abortion care that includes the provision of information, abortion management and post-abortion care. The situation becomes worsened if the healthcare system have gaps.
- **Geographical Barriers:** Pregnant women in remote regions lack access to quality maternity services. Locals have to rely on sub-standard local clinics and informal institutions.
- **Social Stigma associated with Abortion:** In Indian society pre-marital sex and abortion are still a taboo. It pressurises women to hide their pregnancy and avoid formal medical system to access abortion services.
- **Son Preference:** The preference for male child induces parents to go unregulated clinics for sex determination and subsequent abortion.

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5. Tackling Malnutrition Through Rice Fortification

News: Food fortification can help tackle the problem of malnutrition in India.

What is hidden hunger?

- Hidden hunger occurs when people get enough food to eat, but the **food lacks essential nutrients**, vitamins, and minerals, **leading to malnutrition**.
- Hidden Hunger condition is often **concealed until noticeable health issues arise**, such as impaired cognitive abilities and birth defects.

How prevalent is malnutrition in India?

- Inadequate protein intake and a **preference for processed foods and excessive cereal consumption** in India are contributing to hidden hunger, causing **long-term health problems** and affecting normal physical and mental functions among adults.
- In Aspirational Districts, only ~12.32% of children aged 6–23 months receive adequate nutrition.
- Malnutrition is widely prevalent in India. ~194 million people were undernourished in 2016–18.
- Over 690 districts have less than 30% of children receiving proper nutrition. **17 districts have over half their children suffering from stunting**.
- The prevalence of anaemia among women and children is on average 61.20%.
- The average daily calorie consumption is below the recommended 2,503 kcal per capita per day.
- People in India generally consume **inadequate amounts of proteins, fruits, vegetables, meat, legumes, fish, and eggs**.



What is Food Fortification?

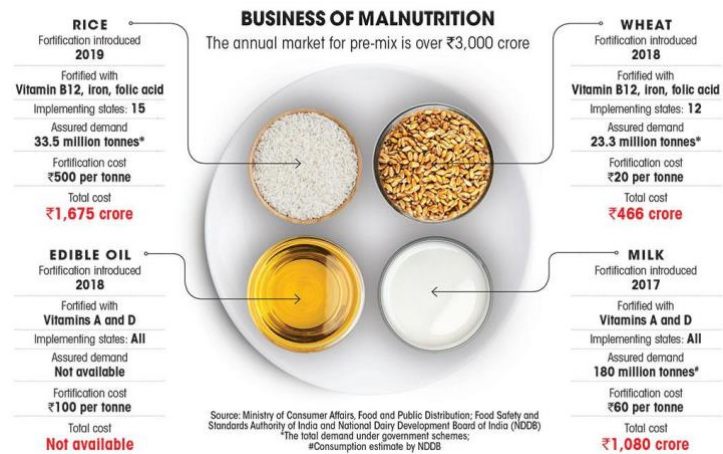
- Food fortification is the process of **adding essential vitamins and minerals to food to improve its nutritional value**. It began as a strategy to combat hidden hunger and micronutrient deficiencies.
- The practice started in 1920 in the US with the addition of iodine to salt.
- In India, fortification initiatives began in the 1950s with the fortification of vegetable oil and salt iodization.

Why is addressing hidden hunger important?

- **Individual Health:** Hidden hunger **causes serious health issues** like birth defects, impaired cognitive abilities in children, and maternal and infant mortality, affecting a significant number of people in India.
 - It can reduce the expenditure on healthcare by individuals which can be utilized for other useful purposes like education.
- **Productivity:** Hidden hunger impedes optimal development in children and affects normal physical and mental functions among adults, which can lead to **reduced productivity**. Addressing hidden hunger can avoid long-term negative impacts on the nation's workforce.
 - Given India's young demographic profile, addressing hidden hunger is essential to ensure the well-being and productive potential of the population.

What efforts have been made by the Government for Food Fortification?

- India began food fortification in the 1950s, starting with salt iodization and vegetable oil fortification. It's a strategy to combat hidden hunger by adding essential nutrients to common foods.
- Now, staples like rice and wheat are also being fortified. The Government aims to fortify rice in all social safety net schemes by 2024, with different phases covering various services and districts.
- The Food Safety and Standards Authority of India established fortification standards in 2016 and introduced the '+F' logo to facilitate food producers in joining the fortification efforts. This helps in enhancing the nutritional value of food items and improving the overall health of the population. (Read more about Food Fortification).



6. National Education Policy (NEP) and SDGs

News: The National Education Policy (NEP) can play a vital role in achieving the SDGs.

What are the Sustainable Development Goals (SDGs)?

- The United Nations SDGs are a set of **17 goals with 169 targets** to be achieved by 2030 by all UN-member countries.
- SDGs are crucial to **end poverty** and other **socio-economic and environmental problems**. However, slow progress was reported by **SDGs Report 2023**. (Read more on India's SDG performance and Gender Snapshot).
- It also highlighted the negative impact of **COVID-19**, **climate crisis**, the **Russia-Ukraine conflict**, and a **weak global economy** on achieving SDGs.
- India is not on-target for 19 of the 33 SDGs indicators.



How can NEP 2020 help in achieving the SDGs?

- India's actions and policies have indicated commitment to SDGs, particularly **SDG4** (Access to quality education). It is a prerequisite for the achievement of other goals.
- The National Education Policy (NEP) 2020 is an important policy in this regard.
- With **priority on higher education**, NEP may help to **accelerate social mobility**, **empower people** through creativity and critical thinking, and **make people employable**.
- According to Organisation for Economic Co-operation and Development (OECD), people with a higher education degree can **earn an average of 54% more** than those who only have completed senior secondary education.

- **Multi-disciplinary and inter-disciplinary systems of education** produce multitalented people who can find innovative solutions to global challenges such as **affordable and clean energy** (SDG7), **sustainable cities and communities** (SDG11), **climate change and global warming** (SDG13) and can develop **Innovative solutions and start-ups** (SDG 9) in collaboration with private companies.
- Introducing **Value-Based Education** will help citizens become responsible towards self, society, and the planet and help our nation achieve '**Life on Land**' (SDG15).
- Apart from this, University education has a direct bearing on other SDGs like:
 - Protecting people against poverty (SDG1).
 - Preventing hunger (SDG2).
 - Supporting good health and well-being (SDG3).
 - Promoting gender equality (SDG5).
 - Providing decent work, which in turn drives economic growth (SDG 8).
 - Reducing inequalities (SDG10).

What should be done going ahead?

- **'Research-Teaching Nexus' in University Education:** Knowledge generated from research would benefit students directly. It can help find innovative solutions to India-specific problems.
- **Universities and Local Communities:** Universities should play an active part in the **education, innovation, culture, and civic** life of their local communities.
- **New Culture in Universities:** This includes focus on community health, energy-saving measures, efficient resource allocation, waste reduction, and the development of local skills.
- Sustainability and SDGs should be incorporated into **institutional strategies**, both in daily administration and in teaching and research.
- Higher education must be directly **integrated with socio-economic development** which helps in achieving the targets under the UN SDGs.

7. Microfinance in India: Status, Benefits and Challenges

News: RBI had expressed concern about building stress levels in the loans portfolio of Microfinance sector. The sector is crucial to rural and inclusive development through its linkages with the Self-Help Groups.

What is the meaning of Microfinance?

- It is defined as provision of **credit and other financial services** and products of **very small amounts to the poor** in rural, semi urban, urban areas.
- The purpose of Microfinance is to enable the beneficiaries to **raise their income levels and improve living standards**.
- It is an economic tool to **promote financial inclusion** which enables the poor and low-income households to come out of poverty.

Components of Microfinance

- **Micro credit:** It is the extension of **very small loans** to borrowers who lack collateral, steady employment or income stream and **verifiable credit history**. It is designed to support small-scale entrepreneurship. It is delivered through a variety of **institutional channels** including Scheduled Commercial Banks (through Business Correspondents), Regional Rural Banks (RRBs), Cooperative Banks, Non-Banking Financial Companies (NBFCs) and Microfinance Institutions (MFIs).
- **Micro Insurance:** It is the insurance with **low premiums and low coverage**. It covers low income/net-worth persons and transactions are of low value. It can cover wide range of risks including damage to crops and livestock.
- **Micro Saving:** Micro saving is targeted at people with low incomes and low savings. They are similar to saving accounts, but designed for small deposits. The limit of minimum deposit/balance is low and there are **no service charges**.
- **Microfinance Institutions (MFIs):** They provide Microfinance services. The MFIs exist as separate institutions because of the unique features of Microfinance like **high transaction costs, short duration of loans, high frequency of repayment/installments, absence of collateral and relatively higher rate of default**.

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What is the Status of Microfinance in India?

- According to NABARD, the **SHG-Bank Linkage Programme**, covers **14.2 crore families** through **119 lakh SHGs (87% of which are women)** with savings deposits of **INR 47,240.48 crore** (March 31, 2022).
- NABARD has sanctioned a cumulative grant assistance of INR 255.81 crore to Joint Liability Groups Promoting Institutions (JLGPIs) for promoting **12.77 lakh JLGs** (March 31, 2022). There are 188 lakh JLGs of which 54 lakh were promoted during FY 2021-22 (as against 41 lakh promoted in FY 2020-21). During FY 2021-22, loan disbursed was INR 112,772.75 crore.
- According to NABARD, Microfinance operations in India are **spread across 595 districts** of 28 States and 5 UTs. As on 31 March 2022, the combined micro credit portfolio of 225 lenders is INR 262,599 crores.

What are the benefits of Microfinance?

- **Credit to Low-Income Borrowers:** Microfinance provides credit to the poor people with low income and assets who face difficulty in accessing finance from formal banking institutions. They help in providing funds to small entrepreneurs in poor regions.
- **Collateral-Free Loans:** No collateral is required for Microfinance loans, allowing people without assets to access credit. Microfinance **promotes financial inclusion**.
- **Income Generation:** Loans provided by MFIs help small entrepreneurs set-up/expand/scale-up their operations. This enables them to improve their income.
- **Women Empowerment:** Microfinance empowers women by enabling them to be financially independent. SHG-Bank Linkage Programme has benefited 119 lakh SHGs, 87% of which are women. Access to finance will help **increase women-led MSMEs**.
- **Rural Development:** It boosts economic activities in the rural area and thus aids in rural development. It helps **support entrepreneurship and create livelihood opportunities**.

Types of MFIs

- **Joint Liability Groups:** JLGs are informal group of 4-10 people that seek **mutually assured loans**. Farmers, rural labourers, and renters are among the debtors in this category. JLG members are **equally responsible for loan repayment**.
- **Self-Help Groups:** An SHG is a group of people in similar socioeconomic situations who come together to help each other. They are **self-governed**. Members come together (often for a limited time) to **form a shared fund** for their mutual business requirements. This type of cooperative financing does not necessitate the use of collateral. **Borrowing rates are often cheap**. Several banks have formed partnerships with SHGs to **increase financial inclusion** in the rural areas.
- **Regional Rural Bank Model:** The main purpose of this strategy is to boost the rural economy. They have been created to serve rural areas with basic banking and financial services.
- **Cooperatives:** Rural cooperatives were established at the time of India's Independence. Through the cooperatives, **resources of the poor are pooled and financial services are made available**.

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What are the challenges associated with Microfinance?

- **Financial Illiteracy:** Financial illiteracy leads to lack of awareness about various MFIs, and the services they offer. This makes the poor people **reluctant to approach the MFIs**.
- **Inability to Generate Funds:** MFIs face difficulty to raise sufficient funds as they are generally not 'for-profit'. This restricts their access to funds from private equity investors or other avenues of funding.
- **Heavy Dependence on Banks:** MFIs are dependent on borrowing from banks. Funds available from banks are typically for short term. Banks tend to disburse loans at the end of financial year to meet the targets. This can create issues for MFIs if there is delay in repayment of loans by borrowers.
- **Weak Governance:** Many MFI's are not willing to convert to a corporate structure; hence there is **lack of transparency**. This also limits their ability to attract capital. MFI's face challenge to strike a balance between social and business goals.
- **Interest Rate:** Some MFIs charge high interest rates, which the poor find difficult to pay.
- **Regional Imbalances:** There is unequal geographical growth of MFIs and SHGs in India. About 60% of the total SHG credit linkages in the country are **concentrated in the Southern States**. In poorer regions like in

Jharkhand, Bihar etc. where the proportion of the poor is higher, the coverage is comparatively lower. This could be attributed to lack of State government support, NGO concentration and public awareness.

What more can be done?

- **Regulation:** The Microfinance sector has undergone rapid expansion in the last 2 decades. There is a need for a comprehensive regulatory framework, instead of piecemeal and reactive regulatory initiatives.
- **Interest Rate Transparency:** MFIs are employing different patterns of charging interest rates and a few are also levying additional charges. The basis of interest rates should be made transparent.
- **Encourage Microfinance Penetration:** Encouraging MFIs for opening new branches in areas of low Microfinance penetration by providing financial assistance will increase the outreach of the Microfinance.
- **Expand Product Range:** MFIs should provide complete range of products including credit, remittance, savings, financial advice and non-financial services like training and support. This will enable the people from underserved access all financial services.
- **Use of Technology:** MFIs should use new technologies, IT tools, and applications to reduce operational costs.
- **Different Sources for Raising Funds:** In the absence of sufficient finances, the reach of MFIs becomes limited. MFIs should look for other sources for funding their loan portfolio e.g., by converting to for-profit company (NBFC).

Initiatives to Promote MicroFinance

- **SHG-Bank Linkage Programme (SHG-BLP):** It was initiated by NABARD in 1992. It incentivises women to form a group of 10-15 members and pool their savings. Loans are provided to the members by their contributions.
- **Micro Enterprise Development Programme (MEDPs):** It enables SHG members to be up-skilled for income generating livelihood activities. Its objective is to enhance the capacities of participants through appropriate skill up-gradation in farm or non-farm activities.
- **Livelihood and Enterprise Development Programme (LEDP):** It was initiated in 2015 with a view to create sustainable livelihoods among matured SHG members. It is implemented through cluster-based approach within contiguous villages.
- **Credit Guarantee Fund Trust :** It implements the credit guarantee scheme for Micro and Small Enterprises (MSEs).
- NABARD supports MFIs in their formative years (as NGO-MFIs) with grant support and **Revolving Fund Assistance (RFA)**. NABARD had created the **Micro Finance Development and Equity Fund** to help a number of MFIs with quasi-equity and subordinated debt instruments. Created by I ForumIAS®
- **SIDBI** has aided the growth of MFIs through its **SIDBI Foundation for Micro Credit (SFMC)**.
- The **India Microfinance Equity Fund (IMEF)** has supported MFIs with equity and quasi-equity.
- **MUDRA:** The Micro Units Development & Refinance Agency Ltd (MUDRA) was set-up in 2015. It is an NBFC that focuses on micro-enterprises, extending financial support to MFIs for on-lending to individuals/groups/JLGs/SHGs.
- **Regulations for NBFC-MFIs:** Based on the recommendations of the **Malegam Committee**, RBI introduced a comprehensive regulatory framework for NBFC-MFIs in December 2011. The regulations prescribed eligibility criteria for Microfinance loans i.e., lending of small amounts to borrowers belonging to low-income groups, without collateral, and with flexible repayment schedules.
- **Regulatory Framework for Microfinance Loans:** RBI has implemented Regulatory Framework for Microfinance Loans from April 1, 2022, to update Microfinance regulatory policy. This will create regulatory parity between Regulated Entities (RE) that provide Microfinance. Microfinance loans are now defined as **collateral-free loans for households having annual income up to INR 3 lakh**. Created by I ForumIAS®

8. Israel-Palestine Conflict and India's Position

News: Terrorists from Hamas raided Israel and killed more than 1000 people. Israel has retaliated by heavily attacking the Gaza strip. This has added another chapter in the bloody Israel-Palestine Conflict.

What is Israel-Palestine Conflict?

- The Israel-Palestine conflict is between two self-determination movements: the **Jewish** and **Palestinian nationalist project**, in the same territory.
- The claims of both Jews and Arab Muslims date back to a couple of thousand years. However, the current political conflict began in the early 20th century. Since then, there has been a gradual expansion of territory occupied by Israel and today Palestinians are confined to only two regions now: **West Bank** and **Gaza Strip**.

What are the reasons for the Israel-Palestine Dispute?

- **Normalisation of Relations between Israel and Arab World:** Abraham Accords was signed between Israel and UAE, Bahrain in 2020. Later Sudan and Morocco joined in 2020. Saudi Arabia and Israel have also been coming together for various economic projects like IMEC. Hamas wants to disrupt this normalisation of relation between Israel and the Arab countries.

- **Hamas' Aim:** The Palestinian Authority (PA) is the official government of the Palestinians that signed the Oslo Peace Accords with Israel. It never resulted in the promised Palestinian state. The PA today is riddled with corruption, misgovernance and has lost legitimacy. Hamas through this attack has been trying to **take leadership of the Palestinian cause from the PA.**

- **Proxy Support:** Hamas is being provided logistical, technological and intelligence support by terrorist organisations like **Hezbollah** operating in Lebanon, and **funding by Iran and Qatar.**

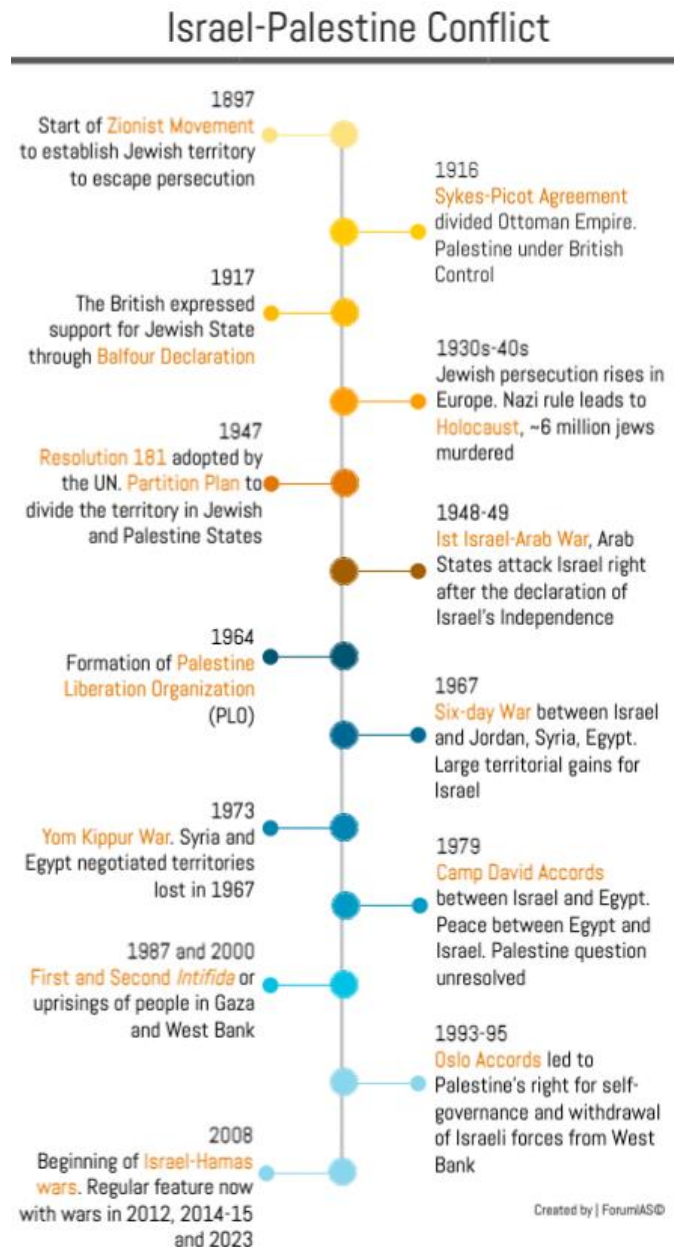
- **Unresolved Jerusalem Dispute:** Both Israel and the Palestine hold competing claims to the city. Israel regards the whole of Jerusalem as its capital. The Palestinians insist on East Jerusalem as their future capital. This has resulted in the **Al-Aqsa intifada.**

- **Israeli Settlements in West Bank:** Since 1967, Israel has built about 140 settlements in the occupied West Bank and East Jerusalem. They are considered illegal by most of the international community, though Israel disputes this. Palestinians say all settlements must be removed for a Palestinian state to be viable.

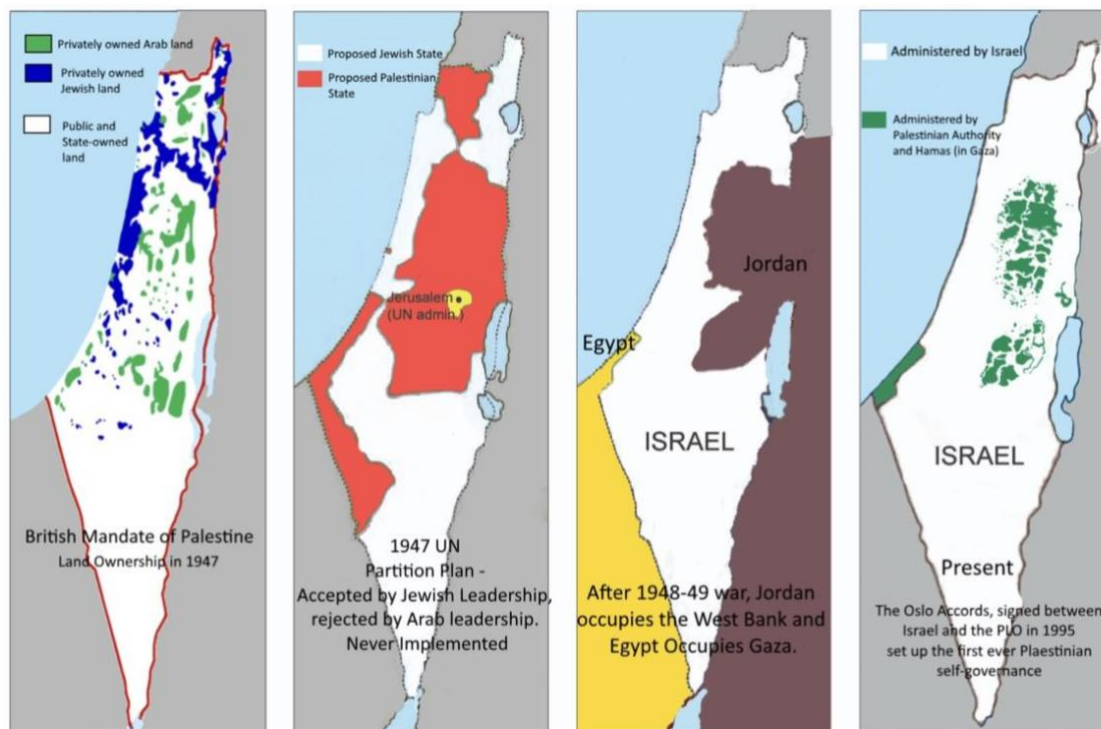
- **Border Dispute:** Israel and Palestine have dispute on the border. Palestinians insist on borders based on ceasefire lines which separated Israel and East Jerusalem, the West Bank, and Gaza **between 1949 and 1967.** However, Israel insists on an extended eastern border stretching up to the Jordan River.

- **No Consensus on Palestinian Statehood:** No consensus has been developed over the status of Palestinian Statehood among PLO and Israeli officials. Further Israel insists that any peace deal must include Palestinian recognition of it as the "nation-state of the Jewish people".

- **Political Division among Palestinians:** The Palestinians remain politically divided between Fatah and Hamas, and thus are unable to negotiate jointly. Further, Israel is unwilling to negotiate with the terrorist group like Hamas.



- **Lack of pursuit of peace process**- Both Israel and Hamas have not been following the path to achieve peace in the region. Israel has continued to build settlements in the West Bank, raising security barriers and checkpoints, limiting Palestinian movements, and never hesitating to use force or collective punishment to keep organised Palestinians under check. But the recent attacks from Hamas killing more than 1000 Israelis does not help the Palestinian cause. It has only escalated the conflict.



Source: Wikimedia Commons. The historical variation in the Israel-Palestine territories since the early 20th century when the struggle began.

What has been India's position on the Israel-Palestine Conflict?

Phase	India's Position
1947-92 Pro-Palestine	<ul style="list-style-type: none"> • Pro Palestine Policy, India voted against partition of Palestine in 1947. • In 1964, India supported formation of PLO. • India was one of the first countries to recognize Palestine.
Post-1992 De-hyphenation	<ul style="list-style-type: none"> • In 1992, India established full diplomatic ties with Israel. • In 1993, after Oslo Peace Accord, India opened Representative Office in Gaza, shifted to Ramallah in 2003. • In 2011, India voted in favour of accepting Palestine as full member of UNESCO. • In 2014, India voted in favour of UNHRC's resolution to probe Israel's human rights violations in Gaza. But India abstained from voting against Israel in 2015. • In 2017, complete de-hyphenation with first visit by India's PM to Israel.
Current War	<ul style="list-style-type: none"> • India abstained on the Arab resolution calling for a humanitarian truce in Gaza. • India pointed out that Arab resolution did not condemn October 07 attack by Hamas on Israel. • India supported Canadian resolution condemning Hamas attack on Israel. • India has reiterated support for a Two State solution.

What are the Global Ramifications of the Conflict?

- **Disrupt the geopolitical realignment process:** Middle East in recent times has been witnessing **Israel-Arab reconciliation** and the **Iran-Saudi détente**. However, the recent conflict will disrupt this peace and the normalisation process being pursued by middle eastern countries.
- **Broader War:** The recent conflict has potential to become a full-blown war with involvement of foreign powers like US, EU. This would make the region a theatre for proxy wars (US versus Iran/China).
- **Disrupt the global connectivity projects:** The envisaged projects like India Middle East Economic Corridor (IMEC) will be disrupted by this prolonged conflict. The escalation of the conflict would endanger the strategic supply routes like the Strait of Hormuz and the Red sea.
- **Disrupt the Global supply Chains:** The escalation of the conflict will impact the oil production and supply of goods. This will further increase inflation which has already been rattling the world economy.

What will be the impact of the Israel-Palestine Conflict on India?

- **De-hyphenation and West Asia Policy:** India had been successfully implementing its de-hyphenation policy in the region. India's relation with both the Arab World and Israel has improved. However, the current conflict puts India in a diplomatic tight spot to choose a side. India cannot afford to lose either.
- **Inflation:** Any prolonged conflict in the Middle East will impact the oil and gas production. Inflation in the country will further increase as India is heavily dependent upon imported oil and gas.
- **Depreciation of the Indian Rupee:** The conflict will impact the inflow of FPI and FDI in the Indian financial market. Increase in oil prices will further increase India's Current Account Deficit (CAD). All these may lead to depreciation of the Indian rupee.
- **Effect on the India Israel Trade:** Israel is a major defence and strategic partner of India. Involvement of Israel for a long period in the conflict may reduce the trade between India- Israel. In FY23, India's total exports to Israel stood at US\$ 8.4 billion while India's imports from Israel were at US\$ 2.3 billion.
- **Safety of Indian emigrants:** India has a large diaspora and emigrant population in West Asia. These are a source of large amount of remittance to India (~US\$40 billion). Full-scale war in the middle east will put security of Indians there in jeopardy. Remittances may fall.

What should be the way forward?

- **Arab Peace Initiative Offer:** This offer was proposed by the Saudi Arabia in the name of all Arab countries in 2002. This offer required the creation of a Palestinian state on the lands Israel occupied in the Six-Day War of 1967. In return, Israel would be fully recognised and accepted. This offer can be a possible basis for a lasting peace between Israelis and Palestinians.
- **Involvement of Arab States:** Neighbouring Arab States should participate in the negotiations and the final agreement should be recognized formally by each one of them along with the UN General Assembly and Security Council.
- **Role of the UNSC:** UNSC must broker a peace talk between the two warring factions. Global leadership platforms must be used to not let Middle-east become another theatre for warfare.
- **UNSC Resolution 2334:** UNSC Resolution 2334 concerns the Israeli settlements in Palestinian territories occupied since 1967, including East Jerusalem. The illegal Israel settlements in West Bank must be removed at the earliest.
- **India's Role:** India has good relations with both the Arab World and Israel. India must use its soft power and diplomatic outreach to solve the dispute.

General Studies Paper III

1. Issues with the Measurement of the GDP in India

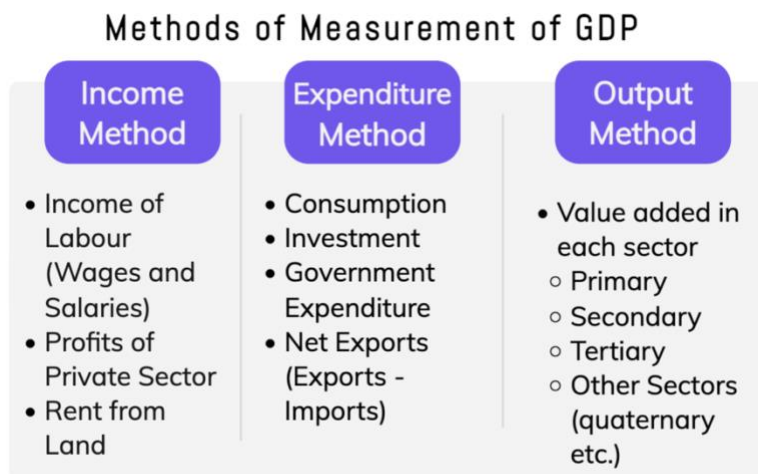
News: Several economic experts have pointed out the need for improving the method of measurement of GDP in India.

What concerns have been raised by experts about measurement of GDP in India?

- The current GDP estimates consider 2011-12 as the base year. The types of good and services produced and consumed in the economy have changed considerably in the last 10 years.
- The old method of measuring the GDP (base year 2004-05) used physical indices to capture the real GDP effectively. The real GDP was inflated to get the nominal GDP. The current approach relies on **price indices and is better suited for nominal GDP**. The nominal GDP is **deflated** to compute real GDP.

Experts point out that the deflator is based on WPI but CPI is better measure for consumer inflation.

- The discrepancies in the data especially on the expenditure side lead to flawed estimates.
- Unlike advanced countries like the US, India doesn't measure both sides of GDP independently. Reconciliation of GDP values through the two methods ensures better estimation.



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How can GDP measurement be improved in India?

- **Base Year:** The base year should be updated to accurately capture new economic activities.
- **New Data Sets:** New databases created through GST and digital payments can be analysed more deeply to estimate level of economic activities more accurately.
- **Initiate Revision Process:** The Ministry of Statistics and Program Implementation (MoSPI) and National Statistical Commission need to initiate the base year revision process immediately. The rest of the issues can be addressed gradually.
- **Implement Supply Use Tables:** These are critical for the validation of national accounts statistics, aiding in reconciling discrepancies in income and expenditure estimates. A committee of experts can be appointed to suggest long term measures.

Addressing the issues is expected to make the GDP measurement more accurate which will reflect the true growth of the economy. It can help in better policymaking and taking appropriate steps to ensure the long-term growth of the economy.

2. Moody's Concerns Regarding Aadhar Project

News: The global rating agency Moody's has highlighted certain concerns regarding the Aadhar Project.

What are the key concerns raised by Moody's Report?

Moody's has raised certain concerns in the Report '**Decentralized Finance and Digital Assets**'.

- **Biometric Issues:** The report has questioned the reliability of biometric technologies, especially for manual labourers in hot and humid climates. There are risks of change in fingerprint patterns. This results in denial of services.
- **Data Breaches:** Aadhar has a **centralized identification system**. This leads to the concentration of sensitive information with specific entities, which increases the risks of data breaches.

About the Aadhar Project

- Under Aadhaar Project, a unique identification number is issued by the Unique Identification Authority of India (UIDAI).
- It is issued to **every resident of India**.
- It is a **12-digit number** which is linked to the resident's **demographic and biometric information**.
- UIDAI was established in January 2009 by the Government of India, under the **Ministry of Electronics and Information Technology**.
- It was **given statutory status in 2016** under the provisions of the Aadhaar (Targeted Delivery of Financial and other Subsidies, Benefits and Services) Act, 2016.

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What are the advantages of the Aadhaar Project?

- **Check Fake Beneficiaries:** Aadhaar has helped to **remove fake and duplicate beneficiaries**. It has been used to filter the list of beneficiaries and stop the leakage of public money.
- **Targeted Delivery: JAM Trinity** (Jan Dhan Yojana, Aadhaar and Mobile numbers) has been employed for targeted delivery of subsidies. Use of Aadhaar Card for distributing social welfare schemes has led to **better targeting of poor**, which were suffering from leakages. It has led to **savings of INR 50,000 crore per year** by plugging the leakages in most schemes. In the form of DBT scheme for LPG, government has saved INR 10,000 crore in two years.
- **Mapping Development Parameters:** In critical sectors like healthcare and education, Aadhaar has been used to map the development processes and parameters. It has also been used to **map skilled manpower**, based on the vocational training acquired by the individual with the suitable job vacancies/ skill requirements.
- **Wide Range of Services:** A wide range of services are now being delivered through the Aadhar e.g., for old citizens transfer of pension money, issuing of digital life certification and easy Provident Fund disbursement.
- **Ease of Services:** Use of Aadhaar in various services like income tax filing (reducing the number of documents needed for filing income tax) has made the process more efficient and cost-effective.
- **Checking Illicit Transfers:** Linking of PAN, Aadhar and Bank Accounts has made it more difficult to undertake illicit transfers through the banking sector.

What other concerns have been raised about Aadhar?

CAG in its report has highlighted several concerns with the functioning of UIDAI and the Aadhaar project.

- **Data Management:** There are issues in the functioning of UIDAI like issues of data-matching, errors in authentication, and shortfall in archiving.
- **Privacy Risk:** The UIDAI has failed to ensure that the applications or devices used by agencies or companies for authentication do not store personal information of the residents. Hence, there is risk of breach of privacy if an authenticating agency stores information of users.
- **Data Archiving:** The UIDAI has not formulated a data archiving policy and there have **been** widespread cases of duplication of Aadhaar.
- **Fee:** UIDAI has been charging fee from people wanting to update their biometric information.
- **Failure of Authentication:** Failure of authentication leads to delay in disbursement of benefits including PDS.
- **Identity Theft and Frauds:** Aadhaar data have been used by fraudsters for criminal purposes such as identity theft, Know Your Customer (KYC)-related fraud etc.
- **Effectiveness of DBT:** Blanket application of DBT to all government schemes has caused troubles.

- Application of DBT for fertiliser scheme is being criticised by the farmers as they are finding it difficult to pay high upfront costs for fertiliser and then wait for payments through banks.
- **Aadhar for Minors:** Issue of Aadhaar to minors below 5 years, based on the bio-metrics of their parents without confirming the uniqueness of biometric identity, goes against the basic tenet of the Aadhaar Act.

What should be the way forward?

- **Decentralisation of Aadhaar Data:** In decentralized ID (DID) systems, personal data is saved in a user's digital wallet and identity verification takes place not via a single, centralized institution but on a **decentralized digital ledger** such as a blockchain. This enhances privacy and reduces the amount of personal information held by intermediaries. Estonia is known for its fully digitalized public services and has embraced SSI [Self-Sovereign Identity] to grant citizens complete control over their digital identities.
- **Banking Penetration:** There should be an increase in penetration of banks and financial institutions in rural areas. Further, Banking Corresponding agents can be used to educate farmers not to fall into traps of moneylenders. This can make delivery through more comprehensive and inclusive.
- **Internet Infrastructure:** There is need for infrastructure like cellular towers, more economical call and data plans. This can ensure access to the poorest people in remote areas and enable them to avail Government services. (Refer EPIC November 2022 (click) for Direct Benefits Transfer (DBT): Advantages and Challenges).

3. Inclusion of Government of India Bonds into Emerging Market Government Bond Index

News: The major investment bank JP Morgan has announced to include Government of India bonds in its Emerging Market Government Index.

What are the implications for Government of India (GoI) Bonds?

- JP Morgan's decision is expected to result in US\$ 24 billion being deployed in GoI bonds, as India will have a weighting of 10% in the index.
- The index is tracked by various investors. Over time, inflow of funds to Indian bond market is likely to grow.
- Other similar indices may also consider inclusion GoI bonds over time. It will encourage active fund managers to increase allocation to GoI bonds.

Emerging Markets Bond Index (EMBI)

It tracks the **performance of emerging market bonds** and was first published by investment bank JP Morgan. Emerging market bonds are debt instruments **issued by developing countries**. They tend to **carry higher yields** than government or corporate bonds of developed countries. Most of the benchmark EMBI index tracks emerging sovereign debt (i.e. Government debt), with the rest in regional corporate (private) bonds.

What are the implications for the Indian economy?

- The increase in demand for GoI bonds **will reduce the borrowing cost for the Government**. This will enable the Government to expand borrowing for infrastructure and development projects.
- Lower yields on GoI bonds could also **benefit States** and Corporations by reducing their borrowing costs. States and corporations can access capital to expand scope of services or undertake future expansion plans.
- The influx of foreign capital can help **finance the current account deficit**.

What are the associated risks?

There are risks associated with raising capital through foreign markets.

- **Increased Volatility:** Foreign investments are volatile and can fluctuate based on global macroeconomic trends or any major global disruption. This can negatively impact domestic bond and currency markets.
- **Impact on Currency:** An increased level of debt flows could also put **upward pressure on the currency**.

○ Appreciation of currency might affect the competitiveness of India's exports.
The Reserve Bank of India (RBI) has to be more vigilant and intervene in the market to manage volatility.

What can be the way ahead?

- Apart from accessing capital from foreign markets, the Government should focus on **reducing the general government budget deficit**. This will reduce the demand on domestic savings and bring down the cost of money and inflation.
- The fiscal deficit is usually higher in India than in its comparable economies. Higher deficit can **crowd out the private sector**. Increased foreign investment should not be seen as a way to run higher deficits. Instead, the Government should be more disciplined.

4. International Facilitation Agreement (IFA) and India's Approach

News: The major investment bank JP Morgan has announced to include Government of India bonds in its Emerging Market Government Index.

What is the Investment Facilitation Agreement (IFA)?

- The primary goal of **Investment Facilitation for Development Agreement** is to create a business environment that is favourable to investors. The IFA primarily focuses on FDI.
- The IFA strives to achieve this by implementing **transparent and predictable investment measures**, streamlining administrative procedures related to investment and establishing mechanisms for international cooperation.
- The IFA does not cover areas like **market access, investment protection, government procurement**, specific subsidies, or **Investor-State Dispute Settlement (ISDS)**.
- The IFA also contains safeguards (Firewall Provision) to shield it from spill-over effects of **International Investment Agreements (IIAs)** and vice versa.
- The IFA is not aimed at liberalising investment policies. Its objective is to **simplify investment procedures**.
- IFA incorporates provisions for **special and differential treatment**, which adjust the **scope and timeline** of the agreement's implementation for developing and least developed countries based on their respective capacities.
- It also includes provisions for providing **technical assistance and capacity building** to these countries.

Investment Promotion vs Facilitation

UNCTAD's Global Action Menu for Investment Facilitation draws a distinction between Investment facilitation and promotion. Both aim to attract foreign investment.

Investment Promotion places emphasis on showcasing a particular place as an attractive investment destination. It is country-specific and **competitive in nature**. Investment Facilitation aims to simplify the process for foreign investors to establish or expand their business. It seeks to address challenges faced by foreign investors.

What are issues faced by International Investment Agreements (IIAs)?

- IIAs have included very high-standard **investment protection provisions**.
- Their **inconsistent interpretation** by various arbitration panels has **constrained the policy flexibility** available to host countries to regulate in alignment with their developmental priorities.
- It is because of such strict provisions, India has terminated its **older bilateral investment treaties (BITs)** and is in the process of negotiating new agreements based on its 2016 Model BIT text.

What has been India's approach towards investment facilitation?

- India does not fundamentally oppose the concept of investment facilitation.

- **India-UAE Agreement** (2022), **India-Brazil BIT** (2020), include provisions related to investment facilitation.
- India is also a participant in the **BRICS Understanding on Investment Facilitation** and signed a similar mechanism with the EU in 2017.

Why has India decided not participate in the IFA talks?

- India is against utilising the WTO as a platform for **investment facilitation**.
- India considers **investment matters** to be outside the WTO's mandate. Instead, India prefers bilateral negotiations for investment provisions.
- India perceives the IFA as part of a strategy by developed nations to initiate **investment facilitation** within the WTO. Later on, the developed countries will introduce amendments to the IFA to include contentious investment protection rules.
- India opposes **plurilateral agreements** within the WTO. They **bypass the consensus-based decision-making process**.
- India is against the inclusion of '**Most Favoured Nation**' (MFN) provisions in the IFA due to past negative experiences, such as the repercussions faced after including an MFN provision in its Australia BIT.

How is WTO's investment facilitation framework a potential opportunity for India?

- India has opened up foreign investment in most sectors, and participation in the IFA could advance the goal of attracting foreign direct investment (FDI).
- India is also a capital-exporting country, and involvement in the IFA could facilitate its overseas investments.
- India has ambitious aspirations for achieving a **US\$ 5 trillion economy** in near future. Therefore, it is essential for India to move beyond a mindset shaped by **historical experiences**, and actively engage in shaping the **global economic framework**. (Refer EPIC February 2023 (click) for Bilateral Investment Treaties: India's Approach and Concerns).

5. Nobel Prize for Medicine, 2023

News: The Nobel Prize for Medicine 2023 has been awarded to Katalin Kariko and Drew Weissman for developing the mRNA vaccine technology. The technology was used in COVID-19 vaccines.

What is the history of vaccine development?

Phase	Details
Early Stage Vaccines (Whole Virus Vaccines)	Whole Virus Vaccines based were based on killed or weakened viruses e.g., Polio, measles and yellow are some examples of Whole Virus Vaccines.
Later Stage Vaccines (Protein and Vector-based Vaccines)	Protein vaccines are based on individual viral components rather than whole viruses e.g., hepatitis B virus and human papillomavirus. Vector-based Vaccines use a harmless carrier virus (vector) to carry the viral genetic code. This method is used in vaccines against the Ebola virus.
Producing whole virus, protein and vector-based vaccines required large scale cell culture . This resource intensive process limited the possibilities for rapid vaccine production in response to outbreaks and pandemics.	
Modern Vaccines (mRNA Vaccines)	m-RNA technology has been used to produce modern vaccines in the fight against COVID-19. Nobel Prize has been awarded for making possible to use m-RNA technology to produce vaccines.

DNA contains 4 bases, Adenine, Guanine, Cytosine, Thymine. RNA contains 4 bases, Adenine, Guanine, Cytosine, and Uracil.

What is the mRNA Technology?

- Messenger RNA (mRNA) is a type of single stranded RNA molecule that **carries the genetic information from DNA to the ribosome**. This information from mRNA is used to make proteins. mRNA serves as the intermediate between the genetic information stored in DNA and the functional proteins produced in cells. The mRNA molecule is synthesized from a DNA template in a process called **transcription**.
- The mRNA was produced in the lab for the first time in 1980s, through **invitro transcription**. It was hoped that the invitro transcribed mRNAs could be used to produce vaccines and for other therapeutic purposes.
- However, there were several challenges:
 - The biggest challenge was that these In vitro transcribed mRNA gave rise to **inflammatory reactions**.
 - These In vitro transcribed mRNA were also considered unstable. Also, it was challenging to deliver which required the development of sophisticated carrier lipid systems to encapsulate the mRNA.

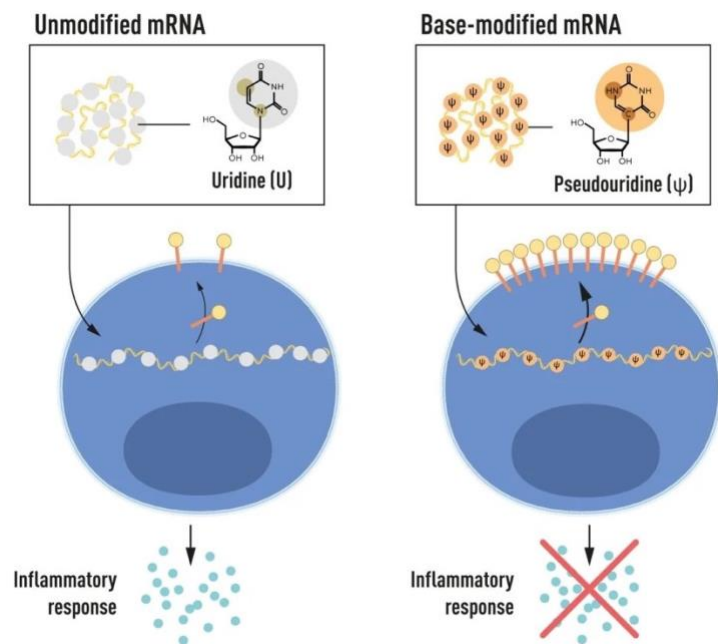
These challenges reduced the enthusiasm for developing the mRNA technology for vaccines, clinical purposes.

Inflammatory Response

The inflammatory response (inflammation) **occurs when tissues are injured by bacteria, trauma, toxins, heat, or any other cause**. The damaged cells release chemicals including histamine, bradykinin, and prostaglandins. These chemicals cause blood vessels to leak fluid into the tissues, causing swelling.

What is the contribution of the Nobel Prize winners in improving mRNA Technology?

- These challenges with invitro transcribed mRNAs were solved by the Nobel Prize 2023 winners.
- They noticed that **cells recognize in vitro transcribed mRNA as a foreign substance** which leads to the release of inflammatory signalling molecules. They observed that **mRNA from mammalian cells did not give rise to any inflammation** and realised that some critical properties distinguish between these two different types of mRNA.
- They concluded that bases in RNA from mammalian cells are frequently **chemically modified** while in vitro transcribed mRNA they are not modified.
- Thus, they started producing different variants of mRNA by making alterations in their bases. These modified mRNAs were delivered to the dendritic cells.
- The results were striking as the inflammatory response was almost abolished when base modifications were included in the mRNA.



Source: nobelprize.org. The base-modified mRNA prevents inflammatory response.

What is the significance of their discovery?

- **Development of COVID-19 Vaccine:** The fundamental discoveries of base modifications in mRNA paved the way for record production of COVID-19 Vaccines in record time. More than 13 billion COVID-19

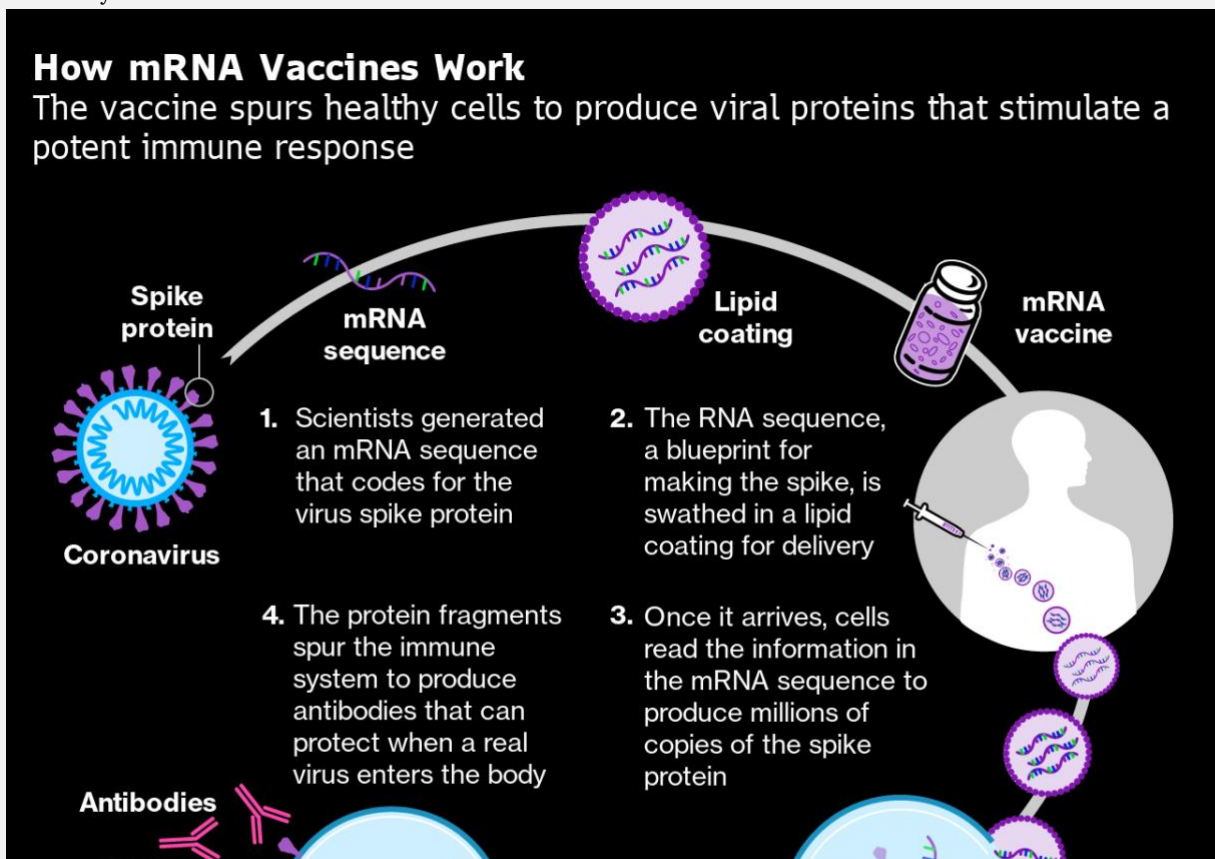
vaccine doses have been given globally. The vaccines have saved millions of lives and allowed societies to open and return to normal conditions.

- **Further Research for Treatment of Other Diseases:** The impressive flexibility and speed with which mRNA vaccines can be developed using the technology pave the way for developing vaccines against other infectious diseases. The technology may be used to deliver therapeutic proteins, treat some cancer types and for diseases like Malaria, HIV and Zika.

The benefit of the mRNA vaccines should be made available to every segment of the society. The technology should not be monopolized by the big pharma. The Government should increase investments in R&D to facilitate research and transform India from 'vaccine manufacturer' to 'vaccine developer'.

Working of mRNA Vaccines

- mRNA vaccines work by introducing a piece of mRNA that corresponds to a viral protein, usually a small piece of a protein found on the virus's outer membrane. Using this mRNA, cells produce the viral protein.
- As part of a normal immune response, the immune system recognizes that the protein is foreign and produces specialised proteins called **antibodies**.
- Once produced, antibodies remain in the body, even after the body has rid itself of the pathogen, so that the immune system can quickly respond if exposed again.
- Antibodies help **protect the body against infection** by recognizing individual viruses or other pathogens, attaching to them, and marking the pathogens for destruction.
- If a person is exposed to a virus after receiving mRNA vaccination for it, antibodies can quickly recognize it, attach to it, and mark it for destruction before it can cause serious illness.
- Individuals who get an mRNA vaccine are not exposed to the virus, nor can they become infected with the virus by the vaccine.

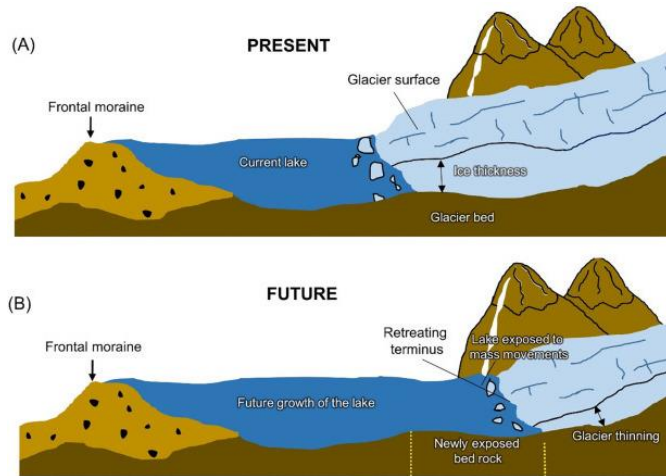


6. Glacial Lake Outburst Floods (GLOFs): Causes, Impacts and Solutions

News: Glacial Lake Outburst Flood (GLOF) caused heavy damage in Sikkim. The South Lhonak Lake, a glacial lake in North-west Sikkim (~17,000 ft height) burst due to incessant rains.

What is Glacial Lake Outburst Flood (GLOF)?

- Glacial lakes, like the South Lhonak Lake, are large bodies of water that sit in front, on top or beneath a melting glacier. These glacial lakes are mostly **dammed by unstable ice or sediment** composed of loose rock and debris.
- As the glacial lakes grow larger, they become more dangerous because they are dammed by unstable ice or sediments composed of loose rock and debris. When the boundary around these glacial lakes breaks, huge amounts of water rush down the side of the mountains, which causes flooding in the downstream areas. This is called glacial lake outburst floods or GLOF.
- There have been several GLOF incidents in India in the recent past like the Uttarakhand Kedarnath Flash Floods 2013 (Chorabari Tal glacial lake) and **Chamoli District Flash Floods (Nanda Devi Glacier)** 2021 were caused by GLOFs.



What are the reasons for the GLOF?

- **Melting of Glaciers:** Rapid melting of glaciers due to **rising global temperatures** is increasing water level in the glacial lake. The increase in the volume of water puts pressure on the boundary of the glacial lake which consists of unstable ice and rubbles. The **breaking of natural boundaries** leads to GLOFs.
- **Avalanches and Earthquakes:** Landslides or ice avalanches in the area near glacial lakes displace large volumes of water. This large volume of displaced water breaches the natural dams resulting in GLOF.
- **Extreme Meteorological Conditions:** Heavy rainfall, extreme storms and sudden temperature changes can influence the stability of glacial lakes and trigger GLOF.
- **Climate Change:** The Himalayan-Hindukush region is a climate change hotspot region. Accelerated glacier melting leads to the formation of glacial lakes. These have increased the GLOFs in the Himalayan region. Climate change has also **increased the frequency and intensity of cloudbursts** leading to GLOF.
- **Volcanic Activities:** Volcanic activities near the glacial regions of the world can increase the chances of GLOF due to melting of the glaciers.
- **Susceptibility of Moraine embankments:** Moraines and piles of debris carried by glaciers act as natural barriers of the glacial lakes. The moraines which act as dams of the glacial lakes are susceptible to breaching leading to GLOF.
- **Anthropogenic Reasons:** Modern infrastructure like dams and roads in the mountainous regions intensify geological stresses leading to GLOFs like the Chamoli GLOF 2021 due to multiple hydro power projects.

What are the Impacts of GLOFs?

- **Loss of Life:** GLOFs are deadly events that cause large loss of life in the affected areas. People are caught off guard and there is not enough time to evacuate or prepare for the flood.

- **Infrastructural Damage:** The high volume and force of water released during a GLOF causes significant damage to infrastructure such as roads, bridges, buildings, and power plants. This leads to severe economic losses and long-term disruption of essential services.
- **Agricultural Loss:** GLOFs damage agricultural land, crops and livestock leading to food shortages and loss of income for farmers. These also have **long-term effects on the local economy** and pose **challenges to food security**.
- **Environmental Damages:** GLOFs cause heavy destruction of biodiversity in the areas of its occurrence with heavy destruction of flora and fauna.

Vulnerability of the Himalayas to GLOFs

- The Himalayan States Uttarakhand, Sikkim, Himachal Pradesh are vulnerable to GLOFs.
- Out of ~8800 glaciers present in the Himalayan region, **200 glaciers (~2.3%) have been classified as dangerous**, which can trigger the Glacial outburst.
- According to the **Hindu Kush Himalayan Assessment Report**, ~33% of the region's glaciers would melt due to climate change leading to increased GLOFs.
- The Indian plate is continuously moving towards north about 2 cm every year. So the Himalayas is rising about 5 mm a year. This makes the **Himalayan region geologically active and structurally unstable**. Landslides and earthquake are regular features here triggering glacial outburst floods.
- The large **human settlements** and **human activities** have resulted in large scale **deforestation**. This intensifies the GLOFs, as there is no natural barrier to control the floods.

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What should be the Way Forward?

The NDMA has released guidelines to mitigate the negative impacts of GLOFs:

- **Identification of Potentially Dangerous Lakes:** Potentially dangerous lakes must be identified based on field observations, records of past events, geomorphologic and geotechnical characteristics of the lake, dam and surroundings. This will help in preparing development plan near these potentially dangerous lakes.
- **Increased Use of Technology:** Promotion of use of Synthetic-Aperture Radar imagery (a form of radar that is used to create two-dimensional images) to automatically detect changes in water bodies, including new lake formations, during the monsoon months.
- **Channel out Potential Floods:** Reducing the volume of water in the glacial lakes with methods such as **controlled breaching**, pumping or siphoning out water and making a tunnel through the moraine barrier or under an ice dam.
- **Enhancement of Early Warning Systems (EWS):** The number of deployed Early Warning Systems must be increased in the Himalayan region for effective mitigation of damage from the GLOF.
- **Comprehensive Alarm Systems:** Modern communication technology using smartphones must complement the traditional alarming infrastructure of acoustic alarms. This will help in early evacuation in case of danger.
- **Development of Uniform Codes for Construction Activity:** The construction activity in the vulnerable areas should be strictly regulated.
- **Training of Local Manpower:** Apart from the specialised forces such as National Disaster Response Force (NDRF), ITBP and the Army, NDMA has emphasised on the need for training local manpower. It has been observed that over 80% of search and rescue is carried out by the local community before the intervention of the state machinery and specialised search and rescue teams.

7. Earthquake Preparedness in India

News: Devastating earthquakes have recently hit Morocco, Afghanistan, and Nepal. India is also one of the most vulnerable regions. Earthquake Preparedness in India is lacking on several counts.

What are the challenges in Earthquake preparedness in India?

Structural Challenges

- **Retrofitting Challenges:** The majority of the earthquake prone areas in India are hilly and mountainous. Retrofitting is challenging and expensive in these areas.

- **Lack of Proper Structural Design:** According to NDMA, most buildings in large Indian cities (vulnerable to earthquakes) won't be able to withstand a high-magnitude earthquake because of poor structural design.
- **Lack of Skilled Structural Labours:** There is a shortage of skilled labour for designing and constructing earthquake-resistant structures.

Governance Challenges

- **Non-Enforcement of Building Codes:** Building codes for earthquake resistant buildings are not strictly enforced and safety requirements are not closely maintained. Furthermore, the building code **ignores the buildings** that were **constructed before such codes were published in 1962**. These buildings form a large part of our cities.
- **Licenses to Structural Engineers:** The licencing of structural engineers based on competency is not implemented properly. Buildings are not constructed with the help of certified structural engineers.
- **Lack of Proper Coordination:** There is lack of coordinated response to disasters in India, various agencies do not act in unison. It leads to duplication of resources and response.
- **Lack of Awareness:** The post disaster response is not properly implemented by the local population due to lack of awareness.

What measures have been undertaken to mitigate impacts?

- **National Building Code (NBC):** The Government has set building regulations and requirements for construction that are earthquake resistant which are contained in the **National Building Code of 2005**.
- **National Retrofitting Program:** It was **introduced by the Home Ministry in 2014**. The RBI had instructed the banks to refuse loans to any construction that does not adhere to the regulations for earthquake-resistant structures.
- **National Disaster Management Authority (NDMA):** The Disaster Management Act was passed in December 2005. The Disaster Management Act called for the establishment of **State Disaster Management Authorities (SDMAs)** led by the respective Chief Ministers to carry out similar functions at the state level and the **National Disaster Management Authority (NDMA)** to oversee earthquake disaster management efforts in India.
- **Launch of Mobile Apps:** The Government launched two Mobile apps: '**India Quake**' for dissemination of earthquake parameters and '**Sagar Vani**' to disseminate ocean related information and alerts (like high waves and Tsunami early warnings) to the user community in timely manner for their safety.

What should be the way forward?

- **Earthquake Monitoring Centres:** More seismological centres must be established for regular monitoring and fast dissemination of information among the people.
- **Preparation of Vulnerability Map:** Vulnerability map of every part of India must be prepared and the **vulnerability risk information** must be disseminated among the people to educate them about the ways and means minimising the adverse impacts of disasters.
- **Modification of houses in High Risk Areas:** The house types and building designs in the vulnerable areas must be modified and construction of high-rise buildings, large industrial establishments and big urban centres must be discouraged.
- **Learnings from Japan:** Compliance to earthquake resistant buildings is > 80% in Japan. **Earthquake early warning system** which triggers an alert when seismic waves are detected should be widely deployed. Since electric signals travel faster than seismic waves, the lead time is used to alert people via media, internet and trains, elevators, industrial machines are automatically stopped.

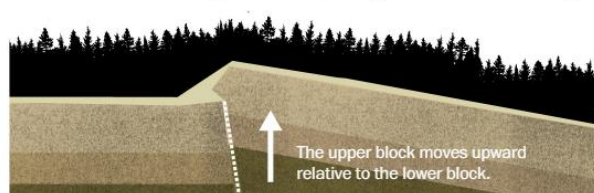
- **Providing tax Incentives:** The Governments must **grant tax breaks** and provide financial relief to corporates and individuals who construct structures with earthquake resistance.
- **Empowerment of Local Bodies and Communities:** The skills and capabilities of the local community must be enhanced through the empowerment of panchayats and municipal corporations in earthquake management.
- **Use of International Institutions and mechanisms:** Countries must incorporate the **Sendai Framework for Disaster Risk Reduction** in framing their policies of disaster management. Joint exercises of international organisations like **SCO JtEx-2019 of SCO** or the **BIMSTEC Disaster Management Exercise** must be used for disaster management and mitigation.
- **Promote Vernacular Architecture:** Features of Old vernacular architecture, using local resources and traditional materials, which are resistant to earthquakes should be revived and widely used in new structures.

(Refer EPIC May 2023 (click) India's Earthquake Disaster Preparedness and EPIC January 2023 (click) for Earthquake Prone Areas in India).

The earthquake in Morocco resulted from a geological phenomenon called a '**reverse fault**'. This occurs when tectonic plates collide which cause thickening of the Earth's Crust. The stress along these fault lines induce earthquakes as rocks abruptly shift to release accumulated stress.

Reverse fault

The earthquake resulted from a geological phenomenon called a "reverse fault," which occurs when tectonic plates collide, causing the Earth's crust to rise up.



8. Climate Polycrisis, Carbon Accounting and Management

News: The rising green-houses gases has given rise to climate polycrisis. To address the challenge, there is a need to integrate carbon management into the economy and policymaking.

What is the Climate Polycrisis?

- The Climate Polycrisis represents **multiple, interconnected crises** stemming from **climate change**. It affects numerous sectors globally.
- **Physical Impacts:** This involves rising temperatures, escalating sea-levels, and increased extreme weather events, which individually and collectively pose challenges across various domains. In addition to direct damages through extreme weather events, it includes cost of rebuilding and diversion of funds other from development projects.
- **Socio-economic Challenges:** Climate change disproportionately impacts the poor. It has posed challenges in terms of food security, climate-induced migration, health crisis etc.
- **Holistic Approach:** Addressing the polycrisis requires a holistic strategy that considers all physical impacts and the resulting socio-economic challenges, ensuring solutions are resilient, equitable, and just across all sectors. There is a need for interconnected solutions.

What is Carbon Accounting?

- **Tracking Carbon:** Carbon Accounting involves **monitoring and managing carbon emissions** and transactions.
- **Individual to National Level:** It considers carbon flows from individuals to the entire nation, aiming to measure all emissions and interactions involving carbon.
- **Carbon Balance Sheets:** Researchers have evolved methods for tracking carbon balance sheets at the corporate level, which can record and manage a company's carbon transactions.

- **National Carbon Accounting (NCA):** The concept involves extending carbon accounting to an entire nation. It requires both individuals and businesses to declare their carbon inflows and outflows. It makes carbon circulation visible and accountable.

What are Market-based solutions to Carbon Management?

- Market-based solutions include strategies **using market forces** to incentivize the reduction of carbon emissions.
- At present, market-based carbon management solutions are being implemented or planned in 73 jurisdictions, they cover 23% of global greenhouse gas emissions.

What has been India's Approach to Carbon Emission?

- **Coal Cess and GST:** The Government of India has levied a cess and GST on coal. Considering the CO₂ emissions from coal consumption in that year (1,678 million tonnes), this translates to an implicit carbon tax of US\$ 5 per tonne of CO₂e.
- **Taxation of Petroleum Products and Natural Gas:** In 2019, these products resulted in about 800 million tonnes of CO₂ emissions and yielded tax revenue of US\$ 69.6 billion. This implies an implicit carbon price of US\$ 87 per tonne of CO₂e.
- **Global Pressure:** India may soon have to consider carbon pricing options due to increasing global pressure, especially as Europe implements a **Carbon Adjustment Border Mechanism (CABM)** which would levy duties on imports from countries not accounting for carbon emissions.
- **Potential Carbon Pricing Approaches:** The Government is contemplating introducing carbon pricing either directly or through a CaT system, focusing on sectors like electricity generation, steel, and cement production. The primary challenge is the political complexity due to taxation by both Union and State Governments.

What can be done going ahead?

- **Consider Carbon Pricing:** Due to global pressure and potential carbon emission-linked trade barriers from Europe, the Government should think about carbon pricing solutions.
- **Develop a National System:** It's essential to create a national system that not only reduces carbon emissions but also boosts R&D in relevant technology areas.
- **Reconsider Taxation Sources:** Introducing carbon pricing might need a partial shift in sources of budgetary finance from coal cess and GST to carbon pricing.

Implications of Carbon Accounting

- **New Taxation/Financial Structure:** In future carbon tax returns might be filed alongside income tax returns, thereby altering public finance dynamics.
- **Developmental Funding:** The method of allocating funds for different developmental activities might experience a shift, with carbon management influencing budget allocations and policy-making.
- **Influence on Public Finance:** By making carbon transactions visible through accounting, public finance and budgeting could integrate carbon management, potentially funding goods and services using carbon surpluses.
- **Alignment with Sustainability:** A National Carbon Accounting (NCA) system could lead to an alignment between development and ecological sustainability, offering a new form of public discourse that transparently highlights the carbon implications of various activities.

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Market-based Carbon Management (By Country)

- **Carbon Pricing:** Charges are levied on carbon emissions **without a set target**. Sweden launched a carbon price in 1991 for certain designated emitters. The carbon price is now about \$100 per tonne, which led to a 25% emission reduction since its inception.
- **Cap-and-Trade (CaT):** An approach where a **target emission level is specified**. China introduced CaT in 8 regions in 2021. The emerging carbon price from emissions trade in China is US\$ 8 per tonne of CO₂e.
- **Social Cost of Carbon (SCC):** The **US Environmental Protection Agency's** method to estimate the **societal impact of carbon**. US's evolution: US\$ 43/tonne (Obama era), dropped to \$3-5/tonne (Trump era considering only US impacts), and a recent suggestion of US\$ 190/tonne.
- **Implicit Carbon Pricing:** India's **indirect method by taxing fuels**. Coal taxation in 2019-20 translates to an implicit carbon tax of US\$ 5 per tonne of CO₂e. Taxes on petroleum products and natural gas result in a higher rate of US\$ 87 per tonne of CO₂e. Tax on petroleum products is driven primarily for revenue rather than emission reduction.

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Factly

Polity

1. Law Commission Report on e-FIRs

News: The 22nd Law Commission has given several suggestions related to electronic-FIRs.

Recommendations of the Law Commission

- **e-FIR:** At present, the electronic registration of First Information Reports (FIRs) is being implemented in 8 states, but only for specific crimes. The Law Commission highlights that e-FIRs can be especially beneficial in areas where visiting a police station is not feasible due to security or infrastructural issues. It can also help overcome reluctance by police officers to file FIRs for petty offenses.
- **Limited roll out of e-FIR:** The Law Commission has recommended **allowing the filing of e-FIRs for cognisable offenses** in all cases where the accused is unknown and all cognisable offenses with a jail term of up to 3 years where the accused is known.
- **Amendments:** The commission has recommended suitable amendments to the Code of Criminal Procedure, 1973, Indian Evidence Act, 1872, the Information Technology Act, 2000, the Indian Penal Code, 1860 and other legislation to support e-FIR registration.
- **Verification and Prevention of False Complaints:** To prevent false e-FIRs and complaints, authentication techniques like OTP verification of mobile number and mandatory uploading of valid ID proof etc. can be undertaken. The Commission also recommends **imposing a minimum punishment**, including imprisonment and fines, for false e-FIRs.
- **Exemptions:** The Commission recommended against allowing registration of e-FIR in all cases. It referred to the SC's verdict in *Lalita Kumari v. State of Uttar Pradesh*, in which the SC held that preliminary enquiry should be conducted in cases pertaining to matrimonial disputes, commercial offences, medical negligence and corruption, among others.

Cognizable and Non-cognizable Offences

For cognisable offences, the **police officers can arrest an accused without a warrant or court permission**. They are typically more serious such as murder, rape or abduction.

For Non-cognisable offenses, the police officers do not have the authority to arrest without a warrant.

2. Law Commission Report on Age of Consent and POCSO Act

News: The Law Commission has recommended to retain the existing age of consent under the POCSO Act.

Recommendations of the Law Commission

- **Age of Consent in POCSO Act:** The Law Commission has recommended to retain the existing age of consent under the Protection of Children from Sexual Offences (POCSO) Act. The current age of consent in India is 18 years.
- It said that reducing the age of consent would have a **direct and negative bearing on the fight against child marriage and child trafficking**.
- **Tacit Approval:** The Law Commission has suggested amendments in the POCSO Act, 2012 to include the term 'tacit approval', instead of legal consent, for cases involving children of 16-18 years.
- **Cautious Approach:** The Commission advised the courts to tread with caution in **cases related to adolescent love, where criminal intention may be missing**. In such cases, the sentence can be reduced. This will ensure that the law is balanced, thus safeguarding the best interests of the child. The Commission has provided guidelines for determining cases that are befitting of sentence reduction.

Issues with Recommendation

- POCSO Act imposes a mandatory minimum sentence of 10 years for statutory rape without regard to whether the minors consented (16-18 years). Prosecutions against adolescents, engaged in non-coercive consensual sexual activity, have risen.
- In *Veekesh Kalawat vs State of Madhya Pradesh* (2023) it was noted that a mandatory minimum sentence of 10 years for an underage husband destroyed the families, leaving the wife and children to the vagaries of social exploitation.
- The 'close-in age' exception (where age gap between two adolescents is small) is **not available as a defence for acquittal** but only for sentence reduction. Criminalisation and incarceration will still happen.
- The term '**tacit approval**' is **without a definition and may be confusing**. Consent is defined in law, backed by jurisprudence.
- A checklist of circumstances to guide whether or not exemption can be applied has **caveats** that include circumstances listed include pregnancy, marital status, family acceptance, good behaviour, absence of criminal antecedents etc. These suggest that judicial discretion is guided in favour of underage sexual relations that occur within **socially conforming marriages** backed by familial support.

Recent HC Judgments on the Issue



- *Vijayalakshmi vs State* (2021): The Madras HC stated that punishing an adolescent boy, who enters into a relationship with a minor girl by treating him as an offender, was never the objective of POCSO Act.
- *AK v. State Govt of NCT of Delhi* (2021): The Delhi HC stated that the intention of POCSO was to protect children below the age of 18 years from sexual exploitation and not to criminalise romantic relationships between consenting young adults.
- *Dharmendra Singh v State Govt of NCT* (2020): The Delhi HC has attempted to increase the chances of bail of an accused by issuing guidelines that pertain to close-in-age exemptions, available in statutory rape cases in most US states. Also known as the Romeo-Juliet law, it provides a degree of protection to the offender where the age difference between him and the victim is within the stipulated limit.
- Karnataka High Court urged the Law Commission of India to have a rethink on the criteria for age of consent, taking into consideration the ground realities.

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Way Forward

- **The UN Convention on the Rights of the Child (UNCRC)** calls for age-appropriate sexual education, access to confidential medical counselling, and prohibiting laws from criminalising consensual sexual activity with peers.
- The US, Canada, Japan, Australia and South Africa have lower ages of consent and protect adolescents from shame and stigma for consensual sexual activity through close-in-age exceptions. The Government can adopt a similar approach, to ensure **consensual sex between peers is not punished**. (Refer EPIC August 2023 (click) for Issues Related to Age of Consent).

3. Criminal Cases Against MPs

News: Several Members of Parliament had raised concerns about many fellow MPs having pending cases of serious crimes against women during the discussion on the Women Reservation Bill in the Parliament.

About the Data Related to Criminal Cases against MPs and MLAs

- **MPs with Criminal Cases:** According to the Association of Democratic Reforms' analysis of 763 Lok Sabha and Rajya Sabha MPs, ~40% (306) had criminal cases and ~25% (194) had serious criminal cases pending against them when they filed their affidavits. Serious

SC Judgments Related to Criminalisation of Politics



- *Union of India (UOI) v. ADR* (2002): The SC held that every candidate, contesting an election to the Parliament, State Legislatures **must declare their criminal records**, financial records and educational qualifications along with their nomination paper.
- *Ramesh Dalal vs. Union of India* (2005): The SC held that a sitting MP or MLA shall be **subject to disqualification from contesting elections** if he is convicted for more than 2 years of imprisonment.
- *Lily Thomas v. Union of India* (2013): The SC held Section 8(4) of The RoPA, 1951 as unconstitutional. The section allows convicted MPs/MLAs to continue in office till an appeal against conviction is decided. The SC held that MP/MLA sentenced for 2 years or above would be **disqualified immediately**.
- *Public Interest Foundation vs Union of India* (2018): The SC directed political parties to **publish online the pending criminal cases of their candidates**. The SC left the matter of disqualification of politicians carrying criminal charges to the Parliament.

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criminal cases include **non-bailable offences**, murder, kidnapping, prevention of corruption, rape and other crimes against women.

- **MPs Accused of Crimes Against Women:** 21 MPs had pending charges of involvement in crimes against women at the time of their election.
- **MLAs with criminal cases:** Of all the MLAs analysed, about 28% of them have declared serious criminal cases against themselves, including charges related to murder, attempt to murder, kidnapping, and crimes against women, among others.
- **MLAs Accused of Crimes Against Women:** A total of 114 MLAs have declared cases pertaining to crimes against women, with 14 of them specifically declaring cases related to rape (IPC Section-376). (Refer EPIC July 2023 (click) for Criminalization of Politics: Challenges and Remedies).

4. e-Cabinet System

News: Tripura has become the 4th State to adopt the e-Cabinet system after Uttarakhand, Uttar Pradesh and Arunachal Pradesh.

About the e-Cabinet System

- It is a powerful tool for State Governments to conduct Cabinet meetings electronically. It has been developed by the National Information Centre (NIC).

About the Features of e-Cabinet

- Replace paper-based Cabinet Meetings which is environment-friendly.
- Automate workflow activities before, during and after meetings.
- Rich UI & UX tools (user interface and experience), for ease of use by Ministers.
- Enhanced level of Security.
- Build institutional memory and knowledge repository, enabling quick search and retrieval.

About the Benefits of e-Cabinet

- Saves resources related to paper, fuel and manpower.
- Online Data updating and availability of Information for all, leading to coordinated action.
- Better decision making, Quick retrieval of Decisions taken in meetings and review Action taken.
- Enables Virtual participation of Ministers.
- Brings in Corporate style in conduct of meetings, with standardization of data, formats and works.

5. Parliamentary Committee's Recommendations on Prisons

News: The Parliamentary Committee on Home Affairs has released a report titled 'Prison Conditions, Infrastructure and Reforms'.

About the Status of Prisons in India

- According to the Prison Statistics published by the National Crime Record Bureau (2021), there are 1,319 prisons in India with a total capacity of 425,609 prisoners. The actual inmates are 554,034; with the occupancy ratio of 130.2%.
- Of the total inmates, the number of undertrial prisoners is 427,165 (77.1%) and the number of convicted prisoners is 122,852 (22.2%). The occupancy of women prisoners has increased.
- The prisons are understaffed by ~30% of the required strength.
- Uttar Pradesh has the highest number of undertrial prisoners, accounting for 21.21% of the total while Delhi has the highest percentage of undertrial prisoners, comprising 91% of its total inmate population.

Recommendations of the Parliamentary Committee

- **Use of Technology:** Bail is denied for 3 primary reasons: Concerns that the undertrial prisoner might influence or intimidate witnesses, Attempt to flee the country or Commit additional crimes.
- To address, technology can be used to **produce cost-effective bracelets or anklet trackers** that can be worn by the prisoners who have procured bail and are out of prison on bail. However, this method should be used on a **voluntary basis** after procuring the consent of inmates.
- **Overcrowding of Jails:** The panel recommended that prisoners from overcrowded jails may be transferred to other jails with vacant cells in the same State or other States.
- **Lack of Jamming Capability:** It highlighted the inadequate jamming capabilities in many State Prison Departments, with some only able to block 2G and 3G network signals. This lack of jamming technology has led to the frequent smuggling of mobile phones into prisons, posing a **potential security hazard**. (Refer EPIC February 2023 (click) for Issues Related to Prisons and Prison Reforms).

International Covenants Related to Prisons/Prisoners

- ✓ **The Universal Declaration of Human Rights (1948)**
It lays down principles of administration of justice.
 - No one should be subjected to torture or to cruel, inhuman or degrading treatment or punishment.
 - No one shall be subjected to **arbitrary arrest, detention or exile**.
 - Everyone charged with a penal offence has the right to be **presumed innocent until proved guilty according to law** in a public trial at which he has had all the guarantees necessary for his defence.
- ✓ **The International Covenant on Civil and Political Rights (ICCPR)**
 - It is the core international treaty on the protection of the rights of prisoners.
 - India ratified it in 1979 and is bound to incorporate its provisions into domestic law and state practice.
- ✓ **The International Covenant on Economic, Social and Cultural Rights (ICESR)**
 - It states that prisoners have a right to the highest attainable standard of physical and mental health.
 - It sets civil, economic, social and human rights for the prisoners.
- ✓ **Declaration on Protection from Torture (Adopted by the UNGA, 1975)**
 - This declaration acts in tandem with the human rights principles of an individual and protects that person from any kind of torture, or inhuman and cruel behaviour.
- ✓ **General UN directives**
 - The Body of Principles for the Protection of All Persons under Any Form of Detention or Imprisonment (1988) and the Basic Principles for the Treatment of Prisoners (1990).

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6. ED Must Inform the Accused of Grounds of Arrest: Supreme Court

News: The Supreme Court has held that the Enforcement Directorate (ED) should furnish the grounds of arrest to the accused in writing at the time of arrest.

About the SC Ruling on ED's Power to Arrest

- The Supreme Court has ruled that the Enforcement Directorate (ED) must provide a copy of the grounds of arrest to accused in money laundering cases **instead of just verbal information**.
- The SC held that it is the **Constitutional right of a person under Article 22(1)** to be **informed of the grounds of arrest**. This right can be effectively realized only when the grounds are supplied in a written form.
- Article 22(1) of the Constitution says, "No person who is arrested shall be detained in custody without being informed, as soon as may be, of the grounds for such arrest nor shall he be denied the right to consult, and to be defended by, a legal practitioner of his choice".
- The Court also said that ED mandated with investigation of the offense of money laundering and violations of foreign exchange laws should not be vindictive in its approach while conducting an investigation.
- This judgment of the Supreme Court is in contrast to a previous SC Judgment in 2022 that had held that informing an accused about the grounds of arrest is "sufficient compliance" of the mandate of Article 22(1) of the Constitution. (Refer EPIC August 2023 (click) for Enforcement Directorate (ED):Functioning and Challenges and EPIC August 2022 (click) for Supreme Court's Judgment on Prevention of Money Laundering Act (PMLA)).

Salient Provisions of the PMLA

- Prevention of Money Laundering Act was enacted to deal with money laundering and has three main objectives:
 - Prevent and control money laundering.
 - Provide for confiscation and seizure of property obtained from laundered money.
 - Deal with any other issue connected with money-laundering in India.
- The **Enforcement Directorate** is empowered to conduct a Money Laundering investigation.
- The provisions of this act are applicable to **all financial institutions** like banks, mutual funds, insurance companies, and their financial intermediaries.
- According to the Act, there can be punishment of **imprisonment up to 3-7 years with fine up to INR 5 lakh**.

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7. Reforming Special and Local Laws (SLLs)

News: The Union Government has introduced new laws to replace the IPC, CrPC and the Evidence Act. However, the criminal reform process may require reforming the Special and Local Laws as well.

Significance of the SLLs

SLLs have immense relevance in the Indian criminal justice system.

- **Quantitative Terms:** According to the Crime in India Statistics 2021, ~40% of all cognisable offences registered in 2021 were under SLLs.
- **Qualitative Terms:** SLLs have given rise to several important debates regarding the limits on the State's power of criminalisation especially in the context of violation of individual rights and liberties.

Need to Reform SLLs

- **Ambiguity:** Several terms such as 'terrorist act', 'unlawful activity' etc. in Unlawful Activities (Prevention) Act, 1967 (UAPA) have not been defined precisely. The vagueness leads to misuse.
- **Application of Laws:** The application of laws is not uniform and is sometimes used for unintended purposes e.g., POCSO Act, 2012 is being applied to consensual sexual activities between minors.
- **Criminalization:** In some cases, civil or regulatory wrongdoings are also criminalized.
- **Bails and Due Process:** The stringent provisions provided for under Section 43 of the UAPA make it nearly impossible to get bail.

Approach

- SLLs can be included as separate chapters within the larger structure of the IPC or the CrPC.
- Reforms should be brought in to **address the non-inclusion** of the substantive and procedural aspects of the SLLs in the ongoing reform project.

8. New Rules for NGOs under the Foreign Contribution Regulation Act

News: The Union Ministry of Home Affairs has modified rules pertaining to filing of annual returns by NGOs registered under the Foreign Contribution Regulation Act (FCRA).

About the FCRA

- The FCRA regulates foreign donations and ensures that such contributions **do not adversely affect internal security**.
- It was enacted during the Emergency in 1976 amid apprehensions that foreign powers were interfering in India's affairs by pumping money into the country through independent organizations.
- The Law **mandates all NGOs to register themselves** under the FCRA. The registration is initially valid for 5 years and it can be renewed subsequently if they comply with all norms.
- According to the FCRA, every person or NGO seeking foreign donations has to be registered under the Act and has to open a bank account in State Bank of India, Delhi.
- They can utilize the funds received from abroad only for the purpose they stated during registration.

About the New Rules (2023 and Earlier)

- **2023:** NGOs and associations registered under the FCRA will now be required to annually declare details of movable and immovable assets created by them out of the foreign contributions received.
- **2022:** The Union Government had allowed Indians to receive up to INR 10 lakh in a year from relatives staying abroad without informing the authorities. The earlier limit was INR 1 lakh. If the amount exceeds, the individuals will now have 90 days to inform the government instead of 30 days earlier.

- **2020:** The Union Government had amended the FCRA to include that foreign contributions received by an organization cannot be transferred to any other person or organization unless that person or organization is also registered to accept foreign contributions.
 - The new rules had also reduced the use of foreign funds to meet administrative costs by NGOs to 20% from the existing 50%.

9. Performance of Information Commissions (ICs)

News: Satark Nagrik Sangathan (SNS) has released the 'Report Card on the Performance of the Information Commissions in India, 2022-23'.

Key Findings of the Report

- **Pending Appeals:** ~3 lakh appeals and complaints are pending in 27 State Information Commissions (ICs). The pendency has shown an increasing trend, 2.1 lakhs in 2019 and 2.8 lakhs in 2021.
 - Maharashtra has highest pendency (99,722) followed by Uttar Pradesh (44,482) and Karnataka (30,358).
- **Vacancies:** 4 Information Commissions (Jharkhand, Telangana, Mizoram and Tripura) are defunct because no new Information Commissioners were appointed after the incumbents left their positions.
 - 5 State ICs are currently functioning without a head viz., Manipur, Chhattisgarh, Maharashtra, Bihar and Punjab.
- **Time for Disposal of an Appeal:** Based on the current status, West Bengal will take ~24 years and 3 months (8850 days) to dispose of an appeal. Maharashtra with the highest pendency cases may take four years and three months to clear a case. In comparison, Goa may take only 2 months to clear an appeal, while the waiting time is negligible for Meghalaya and Mizoram. (Refer EPIC August 2022 (click) for RTI Act: Benefits and Concerns).

Policy

1. Parliamentary Standing Committee's View on Multiple Entry/Exit under the NEP

News: The Parliamentary Standing Committee on Education has released a report 'Implementation of the National Education Policy, 2020 in Higher Education'.

About the Provision of Multiple Entry and Multiple Exit (MEME)

- The National Education Policy (NEP) has proposed Multiple Entry and Multiple Exit (MEME).
- The system allows students to drop their course and resume it at a later stage as and when they desire or deem it worth pursuing.
- This arrangement will prove to be helpful for those students who cannot continue their studies due to financial, social or any other reason and desire to resume their studies when the conditions become favourable in future.

Challenges in Implementing MEME

The Report by the Parliamentary Panel highlight several challenges.

- **Predicting Student Flow:** MEME looks like a flexible system which is being operated by western educational institutions effectively. But it might not work well in India. In India, because of high population, it is

Not a viral MEME

The National Education Policy, 2020 promises multiple entry and multiple exit (MEME) for students, offering 'greater attention to life aspirations and greater flexibility' for students

- NEP says it removes 'rigid boundaries' and creates new possibilities for 'life-long learning'
- An academic bank of credit will digitally store the academic credits earned by a student
- Students can opt for it at graduate, Master's and doctoral levels
- Kerala government had decided not to implement MEME in the State
- A certificate will be provided after completing one year of study, a diploma after two years, and a degree after a three-year programme
- State will allow multiple entry, but exit will be allowed either after three years with a degree or after four years with an Honour's degree

Source: The Hindu.

challenging for institutions to predict how many students may exit or join midway. This uncertainty could **disrupt the pupil-teacher ratio**.

- **Uneven Distribution of Institutions:** The uneven geographical distribution of higher educational institutions, especially in rural areas could create obstacles in implementing MEME effectively.

Recommendations to Implement MEME

The Committee has recommended:

- Develop **comprehensive guidelines** and a well-defined framework for MEME options, including specific eligibility criteria, credit transfer mechanisms providing a clear road map for students pursuing different exit points.
- Conduct wider consultations with universities, institutions, regulatory bodies, and stakeholders to address the challenges and difficulties associated with MEME implementation.

Approach of the Government of Kerala

- The Kerala government has decided not to implement MEME in colleges and universities in the State.
- The curriculum document states that the Government would allow multiple entry, but exit will be allowed either after 3 years with a degree or after 4 years with honours degree.

Other Findings of the Report

- The Report pointed out that 94% of students attend State or private institutions, with only 6% in Central higher education institutions. This emphasizes the important role that States play in providing higher education.
- It also addressed several critical issues, including the rigid separation of academic disciplines, **limited access to higher education in socio-economically disadvantaged regions**, the scarcity of higher education institutions (HEIs) teaching in local languages, insufficient faculty numbers, etc.

Recommendations

- The Committee recommended that by 2030, every district in India should have at least one multi-disciplinary HEI. The Gross Enrolment Ratio in higher education, including vocational education, should be increased from 26.3% in 2018 to **50% by 2035**.
- It recommended **increased funding, higher enrolment targets, gender balance, and more financial support and scholarships for Socially and Economically Disadvantaged Groups (SEDGs)** in public and private HEIs.
- The Government should **promote inclusivity in admission procedures and curriculum, enhance the employability prospects of higher education programs**, and develop more degree courses taught in regional languages and bilingually.
- The Government should provide specific **infrastructural support for physically challenged students** and enforce all no-discrimination and anti-harassment rules. The Committee cited Jammu and Kashmir as an example of NEP implementation in 2022 which resulted in substantial changes in teaching methods and improved lifelong learning opportunities for students.
- It proposed improving **Higher Education Financing Agency (HEFA's)** funding effectiveness by diversifying its sources to include **partnerships with private sector**, philanthropic foundations, and international institutions. It also suggested reviewing and adjusting loan interest rates to make them more competitive and affordable for HEIs.

2. Government of Rajasthan's Guidelines on Coaching Institutions

News: Rajasthan Government has issued guidelines to regulate coaching institutes in Kota.

About the Guidelines

- The guidelines were recommended by a committee headed by the Principal Secretary (Higher and Technical Education) of the Government of Rajasthan.
- The committee was appointed to look into the **issue of suicides by students in the coaching hub of Kota.**
- In 2023, 23 students have died by suicide. This year has recorded the highest number of students' suicides since 2013.
- The key guidelines issued by the committee include:
 - Students below Class 9 may not be admitted to coaching institutes.
 - Confidentiality of test results is essential.
 - Batches should be formed alphabetically rather than based on students' ranks.
 - There should be no glorification of toppers.
 - No segregation of students based on their ranks.
 - A policy should be formulated for an easy exit from coaching centers with a refund of fees within 120 days.
 - Routine tests at coaching institutes were halted for two months to reduce mental pressure on students.

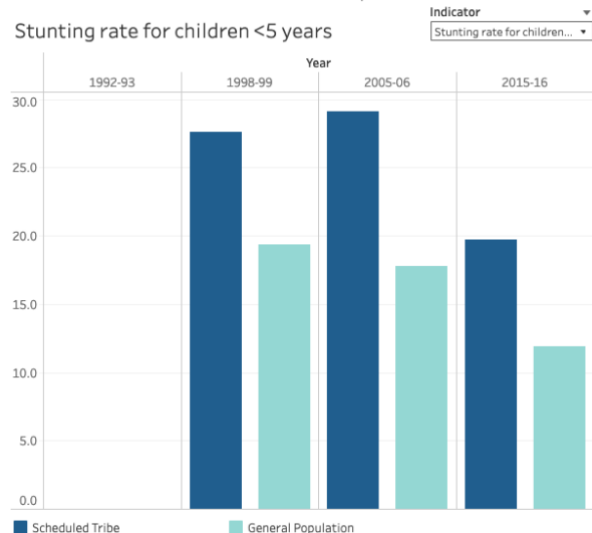
3. Poor Health Indicators of the ST Population

News: A recent study published in The Lancet has highlighted the poor health status of the Scheduled Tribe (ST) population in India. The study was based on the NFHS data.

Key Findings of the Study

- **ST Population:** According to the 2011 Census, there are over 104 million STs spread across 705 recognised ethnic groups. They make up 8.6% of India's population.
- **Challenges faced by STs:** In 2021, the non-ST population outperformed the ST population in 81 out of 129 indicators. STs continued to face challenges, particularly concerning women's status and major public health issues such as child malnutrition, anaemia, insufficient vaccination coverage and disparities in fertility and mortality rates.
- **Child Mortality:** The child mortality rate for STs was alarmingly high, with 50 out of every 1,000 children not surviving to their 5th birthday.
- **Child Malnutrition:** Over 40% of ST children under-5 are stunted and underweight.
- **High Blood Pressure:** Between 2016 and 2021, there was a notable increase in high blood pressure levels among ST men and women aged 15–49, with increases of 7.5% and 8.9%, respectively.
- **Indicators in which STs outperformed non-STs:** STs surpassed non-STs in indicators such as **gender balance, gender balance at birth, use of family planning methods, consistent treatment during pregnancy and adherence to recommended breastfeeding practices.**
- STs showed a reduced occurrence of diabetes and hypertension compared to non-STs.
- **Improvements between 2016 to 2021:** During this period, STs made progress in indicators such as:

Scheduled Tribes Have Worse Health Outcomes Than The Rest Of The Population



Source: IndiaSpend. The U5 Mortality for tribals is significantly higher in Tribals (~66% higher).

- **Sanitation Facilities:** Access to sanitation facilities improved significantly, with a 30.4 percentage point increase from 2015–2016 to 2019–2021.
- **Skilled Birth Rate:** More births were attended by skilled health personnel, rising by 13 percentage points.
- **Full Vaccination Coverage:** Coverage for full vaccination among children aged 12–23 months increased by 18.6 points.
- **Civil Birth Registration:** Civil registration of births among STs also rose from 76% in 2016 to 88% in 2021, indicating better documentation and recognition of births within the community.

4. Salient Features of PM Vishwakarma Scheme

News: The Government has launched the PM Vishwakarma Scheme.

About the PM Vishwakarma Scheme

- It has been launched by the Ministry of Micro, Small and Medium Enterprises. It is a Central Sector Scheme.
- Its aim is to provide end-to-end support to artisans and craftspeople who work with their hands and tools.
- The Scheme covers artisans and craftspeople engaged in 18 trades.
- The benefits under the scheme include:
 - **Recognition:** Recognition of artisans and craftspeople through PM Vishwakarma certificate and ID card.
 - **Skill Upgradation:** Basic Training of 5–7 days and Advanced Training of 15 days or more, with a stipend of INR 500 per day.
 - **Toolkit Incentive:** A toolkit incentive of up to INR 15,000 in the form of e-vouchers at the beginning of Basic Skill Training.
 - **Credit Support:** Collateral free ‘Enterprise Development Loans’ of up to INR 3 lakh at a concessional rate of interest fixed at 5%, with Government of India subvention to the extent of 8%. The loan will be provided in two tranches to beneficiaries who have completed the basic and then the advanced training.
 - **Incentive for Digital Transactions:** An amount of INR 1 per digital transaction, up to maximum 100 transactions monthly will be credited to the beneficiary’s account for each digital pay-out or receipt.
 - **Marketing Support:** Marketing support will be provided to the artisans and craftspeople in the form of quality certification, branding, onboarding on e-commerce platforms such as GeM, advertising, publicity and other marketing activities to improve linkage to value chain.
 - **Recognition as entrepreneurs:** The scheme will onboard the beneficiaries on **Udyam Assist Platform** as ‘entrepreneurs’ in the formal MSME ecosystem.

5. District Mineral Foundations (DMFs)

News: DMFs have been set up in 644 districts in 23 States/UTs. 17 States have DMFs in all districts.

About the District Mineral Foundation (DMF) Trust

- **Section 9B** of the **Mines & Minerals (Development & Regulation) (MMDR) Act, 1957** empowers the **State Government** to establish District Mineral Foundation (DMF) Trust as a **non-profit body** in all the **districts affected by mining** for the **benefit of the people** and areas affected by mining activities.
- The object of the DMF is to work for the interest and benefit of persons and areas affected by mining related operations in such a manner as may be prescribed by the State Government.

About the Pradhan Mantri Khanij Kshetra Kalyan Yojana

- The Ministry of Mines launched the Pradhan Mantri Khanij Kshetra Kalyan Yojana (PMKKKY) in 2015.
- It is meant to provide for the welfare of areas and people affected by mining related operations, using the funds generated by District Mineral Foundations (DMFs).
- Its objectives include to:
 - Implement various developmental and welfare projects/programs in mining affected areas, and these programs will be complementing the existing ongoing schemes of State and the Union Government.
 - Minimize/mitigate the adverse impacts, during and after mining, on the environment, health and socio-economics of people in mining districts.
 - Ensure long-term sustainable livelihoods for the affected people in mining areas.
- PMKKKY provides for utilization of at least 60% of the funds for high priority areas like (i) drinking water supply; (ii) environment preservation and pollution control measures; (iii) health care; (iv) education; (v) welfare of women and children; (vi) welfare of aged and disabled people; (vii) skill development; and (viii) sanitation.
- The remaining 40% of the funds shall be utilized for other priority areas (i) physical infrastructure; (ii) irrigation; (iii) energy and watershed development; and (iv) any other measures for enhancing environmental quality in mining districts.

6. Habitat Rights for Baiga Tribe

News: The Baiga Particularly Vulnerable Tribal Group (PVTG) became the second to get habitat rights in Chhattisgarh, after the Kamar PVTG.

About the Habitat Rights

- According to **Section 2(h) of Forest Rights Act (FRA)**: “Habitat includes the area comprising the customary habitat and such other habitats in reserved forests and protected forests of primitive tribal groups and pre-agricultural communities and other forest dwelling Scheduled Tribes”.
- Habitat rights **grant a community certain rights and control** over their traditional living areas, cultural practices, economic activities, ecological knowledge, and natural resources.
- These rights **protect and support the community’s traditional ways of life** and **ecological wisdom** passed down through generations.
- They also help converge different government schemes and initiatives from various departments to empower PVTG communities to develop their habitats.

Granting of Habitat Rights

- Habitat rights are given to PVTGs **under Section 3(1)(e) of The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006** (Forest Rights Act (FRA)).
- Out of 75 PVTGs in India, **only 3 have habitat rights**. The **Bharia PVTG** in Madhya Pradesh was the first, followed by the **Kamar tribe** and now the Baiga tribe in Chhattisgarh.

Significance

- The habitat rights will help the PVTG protect their habitat from developmental activities harmful to them.
- **Habitat rights are not an ownership title** in the nature of a private property owner. However, **consent and consultation of the gram sabha will be needed** for any developmental activity.

Economy

1. PLFS Annual Report 2022-23

News: The National Sample Survey Office (NSSO) has released the Periodic Labour Force Survey (PLFS) Annual Report 2022-23.

About the Periodic Labour Force Survey (PLFS)

- It was launched in 2017 by the NSSO.
- Its objective is to estimate the key employment and unemployment indicators (viz. Worker Population Ratio (WPR), Labour Force Participation Rate (LFPR), Unemployment Rate (UER)) in the time interval of 3 months for the urban areas only in the 'Current Weekly Status' (CWS).
- It also aims to estimate employment and unemployment indicators in both 'Usual Status' (PS+SS) and CWS in both rural and urban areas annually.

Key Findings of the PLFS Annual Report 2022-23

- **LFPR:** It increased significantly over the last 6 years, from 36.9% in 2017-18 to 57.9% in 2022-23.
 - In rural areas, LFPR increased from 50.7% in 2017-18 to 60.8% in 2022-23 while for urban areas it increased from 47.6% to 50.4%.
 - LFPR for male in India increased from 75.8% in 2017-18 to 78.5% in 2022-23 and corresponding increase in LFPR for females was from 23.3% to 37.0%.
- **Worker Population Ratio (WPR):** In rural areas, WPR increased from 48.1% in 2017-18 to 59.4% in 2022-23 while for urban areas it increased from 43.9% to 47.7%.
 - WPR for males increased from 71.2% in 2017-18 to 76.0% in 2022-23 and the corresponding increase in WPR for females was from 22.0% to 35.9%.
- **Unemployment Rate (UR):** India's unemployment rate dropped to a 6-year low in the financial year July-June 2022-23 to 3.2%.
 - In rural areas, UR decreased from 5.3% in 2017-18 to 2.4% in 2022-23 while for urban areas it decreased from 7.7% to 5.4%.
 - UR for males decreased from 6.1% in 2017-18 to 3.3% in 2022-23 and corresponding decrease in UR for females was from 5.6% to 2.9%.

2. NBFCs Under Prompt Corrective Action (PCA) Framework

News: The RBI has announced that it will bring the state-owned Non-Banking Finance Companies (NBFCs) under the Prompt Corrective Action (PCA) Framework from October 2023.

About the Prompt Corrective Action (PCA)

- It is a framework under which financial institutions with weak financial metrics are **put under watch** by the RBI.
- The objective of the PCA framework is to **enable supervisory intervention at appropriate time** and require the supervised entity to **initiate and implement remedial measures** in a timely manner. This is done to **restore its financial health**.
- The framework is also intended to act as a **tool for effective market discipline**.
- The framework allows the RBI to take any other action as it deems fit at any time in addition to the corrective actions prescribed in the framework.
- The PCA Framework for NBFCs came into effect from October 1, 2022 based on the financial position of NBFCs on or after March 31, 2022.

Actions Under the PCA

The RBI has drawn up a menu of corrective actions for NBFCs/core investment companies (CICs), depending on the level of breach of the risk threshold. These actions include:

- Restriction on dividend distribution/remittance of profit.
- Requiring promoters/shareholders to infuse equity and reduce leverage.
- Restriction on issue of guarantees or taking on other contingent liabilities on behalf of group companies (only for CICs).
- Restriction on branch expansion; special supervisory actions.
- Discretionary actions related to governance, capital, profitability and business. (Refer EPIC January 2023 (click) for Status of Non-Performing Assets (NPAs)).

3. Social Bonds

News: NABARD has issued social bonds worth INR 1,040.5 crore.

About Social Bonds

- It is a financial instrument issued by governments, international organizations or corporations to raise funds for projects and initiatives that have a **positive social impact on society**.
- These bonds are designed to **finance projects that address various social issues**, such as healthcare, education, affordable housing, poverty alleviation, and environmental sustainability.
- The Pimpri **Chinchwad Municipal Corporation** (PCMC) in Pune and the UN Development Programme (UNDP) in 2020 co-created India's inaugural Social Impact Bond (SIB).

About Sustainability Bond Framework

- It has been announced by NABARD.
- The framework seeks to **finance and refinance new or existing eligible green and social projects**.
- Eligible social projects include affordable basic infrastructure, access to essential services, affordable housing, employment generation, food security, socioeconomic advancement, and empowerment.
- Projects that promise energy efficiency including green buildings, energy storage, and smart grids, would also be eligible to get funding.

4. Vizhinjam Port

News: The Chief Minister of Kerala has inaugurated the first cargo ship at the under-construction Vizhinjam International Seaport Project.

Need for a Transshipment Port

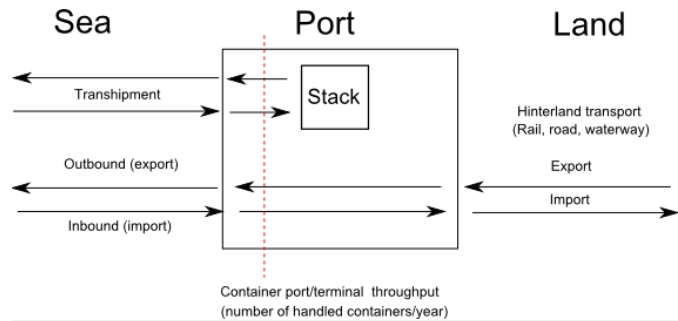
- India has 13 major ports but lacks infrastructure for handling ultra-large container ships.
- About 75% of India's transshipment cargo is managed at foreign ports like Colombo, Singapore and Klang (Malaysia).
- In FY 2021-22, India's total transshipment cargo was approximately 4.6 million TEUs. Of this, around 4.2 million TEUs were processed outside India.

Benefits of Transshipment Port

- Establishing a transshipment hub in India offers several advantages such as:



- Saving Foreign Exchange.
- Attracting Foreign Direct Investment (FDI).
- Creating job opportunities.
- Encourages various associated businesses such as ship repair services, crew change facilities, logistics value-added services, Warehousing among others.
- Attract a significant portion of the container transshipment traffic currently diverted to ports in Colombo, Singapore, and Dubai.
- Enhancing operational and logistics efficiency.



Source: Wikimedia Commons. Operations at a port. **Transshipment** is the shipment of goods or containers to an intermediate destination, then to another destination. It is done generally to combine small shipments into a large shipment (consolidation), to divide a large shipment into smaller shipments (deconsolidation). It is also undertaken to change the means of transport during the journey.

About Vizhinjam Port

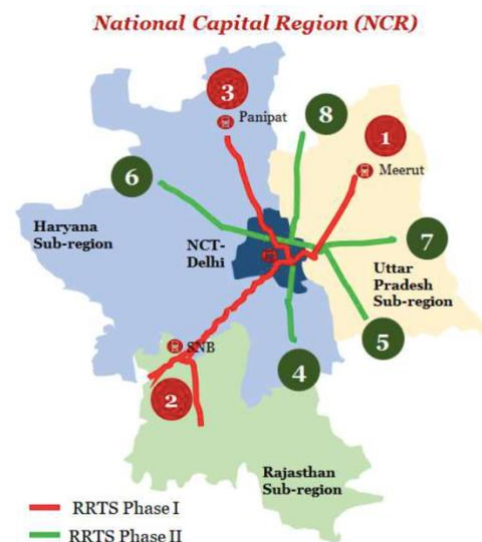
- It is located near Thiruvananthapuram, Kerala.
- It is India's first international Deepwater transshipment port.
- It is being built by Adani Ports and SEZ Private Limited on a design, build, finance, operate and transfer (DBFOT) model.
- It is the first greenfield port project to receive viability gap funding from the government of India.
- **Deep Natural Depth:** The port boasts a natural depth of over 18 meters. This will help in accommodating large vessels and mother ships.
- **Cargo Handling:** The port is designed to handle various types of cargo such as: Container transshipment Multi-purpose cargo and Break-bulk cargo.
- **Strategic Location:** The port is located just ten nautical miles from the international shipping route.
- **Capacity:** The port has the capability to accommodate substantial cargo volumes.
- **Advanced Features:** The port offers large-scale automation for quick turnaround of vessels.

5. RRTS: Namo Bharat

News: The Prime Minister has inaugurated the first phase of the Regional Rapid Transit System (RRTS).

About the RRTS

- RRTS is a rail-based, semi-high-speed, high-frequency commuter transit system.
- Its aim is to ensure **balanced and sustainable urban development through better connectivity** and access across the National Capital Region (NCR).
- It is being implemented by the **National Capital Region Transport Corporation (NCRTC)**. It is a joint venture company of the Union Government and the **Governments of Delhi, Haryana, Rajasthan and Uttar Pradesh.**
- There will be 8 corridors under the RRTS: Delhi-Ghaziabad-Meerut, Delhi-Gurugram-Alwar, Delhi-Panipat, Delhi - Faridabad - Ballabgarh - Palwal, Ghaziabad - Khurja, Delhi - Bahadurgarh - Rohtak, Ghaziabad-Hapur and Delhi-Shahadra-Baraut.



Source: NCRTC. Route Map of RRTS Network.

- **Speed:** RRTS trains will travel significantly faster than metro trains. These will operate at a speed of 160 km/hour but are designed to be able to run at speeds up to 180 km/hour.
- RRTS is different from metro as it caters to passengers looking to travel a **relatively longer distance** with **fewer stops and at higher speed**.
- RRTS is different from conventional Railway as it will provide reliable, **high frequency, point to point regional travel at high speed along dedicated path way**.

Benefits of the RRTS Project

- RRTS will be **integrated with various modes of transport** like Airports, Railway Stations, Inter-State Bus Terminals, Delhi Metro Stations, etc providing seamless connectivity.
- Fast connectivity with satellite towns will reduce the burden of urbanization in Delhi.
- It will reduce usage of fossil fuel powered vehicles for ferrying people from the outskirts to the city.
- RRTS will increase the share of public transport resulting in a reduction in traffic.

6. Advanced Traffic Management System (ATMS)

News: The National Highways Authority of India (NHAI) has released the Advanced Traffic Management System (ATMS) Standards and Specifications 2023 to improve road safety and reduce incident response time.

About the Advanced Traffic Management System (ATMS) Standards and Specifications, 2023

- The aim is to improve road safety and reduce incident response time with the help of advanced AI technologies.
- Key Technologies introduced under ATMS include:
 - **Video Incident Detection and Enforcement System (VIDES):** It aims to enhance digital enforcement of traffic rules.
 - The cameras can **identify 14 distinct incidents**, such as triple riding, helmet and seatbelt violations, wrong lane driving, presence of animals on the highway, and pedestrian crossings.
 - Depending on the detected incident, it can **alert route patrol vehicles and ambulances**, generate e-challans, relay alerts on variable messaging boards, or notify nearby travellers through the 'Rajmargyatra' mobile app.
 - It will be installed every 10 kilometres along national highways. State-of-the-art command and control centers will also be set up every 100 kilometres, integrating various camera feeds.
 - **Traffic Monitoring Camera System (TMCS):** It is installed every 1 km on the National Highway. It will be upgraded with advanced capabilities like automated detection of accidents and stalled vehicles.
 - **Strengthening Collaboration with Local Traffic Agencies:** NHAI will allocate dedicated workstations in the Command & Control Centre for traffic police representatives.

7. Global Innovation Index (GII), 2023

News: The Global Innovation Index, 2023 has been published by the World Intellectual Property Organization.

About the Global Innovation Index

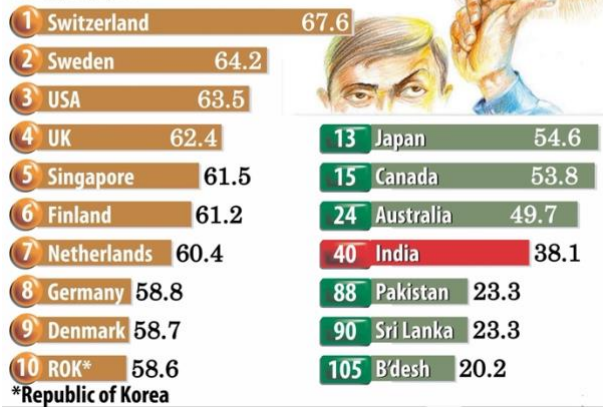
- It is published by the **World Intellectual Property Organization (WIPO)** in partnership with the Portulans Institute and with the support of corporate network partners. Till 2020, it was co-published by Cornell University, INSEAD and WIPO.
- The GII ranks world economies according to their **innovation capabilities**. It ranks countries based on roughly 80 indicators listed under parameters like Institutions, Human Capital and Research, Infrastructure, Market and Business Sophistication etc.

Key Findings of GII 2023

- Switzerland, Sweden, US, UK and Singapore are the world's most innovative economies in 2023.
- **India has maintained its 40th rank.** In 2015, India stood at the 81st spot and has been rising in the past 8 years.
- India ranked 1st among the 37 lower-middle group of income and first among the 10 economies in Central and South America.
- India holds top rankings in key indicators such as: ICT services exports (5th rank), Flow of venture capital (6), Graduates in Science and Engineering (11) and Global corporate R&D investors (13). The areas where India needs to improve a lot are Infrastructure (84th rank), Business Sophistication (57) and Institutions (56).

Global Innovation Index 2023

The GII 2023 tracks global innovation trends against a background of uncertainty caused by slow economic recovery from the COVID-19 pandemic, high interest rates and geopolitical conflict, but with the promise of Digital Age and Deep Science innovation waves and technological progress



Challenges Before India

- Countries like Turkey, Vietnam, and the Philippines have seen even more significant progress.
- India's **modest R&D expenditure** poses challenges for its future competitiveness. Establishing factories for advanced chips requires investments exceeding US\$ 20 billion.
- India has **only 4 science and technology clusters** in the top 100 globally, compared to China's 24 and the US's 21. While Japan, Canada, and South Korea also have 4 clusters, their populations are much smaller than India's.
- Concentration of innovation and capital in cities like Bengaluru, Delhi, Chennai, and Mumbai indicates that a **significant portion of India's potential remains untapped**.

8. Agro-textiles

News: The Ministry of Textiles recently organized the National Conclave on Agrotech. A special session on future growth and opportunities in Agro-textiles was held.

About Agro-textiles

- Agro-textiles are specialized textiles used in agriculture to enhance crop growth, protect plants, and improve farming practices.
- The common uses of agro-textiles include
 - **Crop Protection:** They are used to protect crops from **adverse weather conditions**, such as frost, hail, or excessive sunlight. They act as a barrier, shielding plants from external elements.
 - **Shade Nets:** Shade nets are used to **provide shade to crops** and control the amount of sunlight they receive. This is especially useful for plants that require partial shade or protection from extreme heat.
 - **Fruit Packaging:** Agro-textiles are used for packaging and **protecting fruits during transportation** and storage. They help reduce bruising and damage to produce.
 - **Windshield Nets:** Windshield Nets are designed for the protection of crops, small trees and plants from **strong winds**. They are **UV stabilized** in order to ensure durability and they are easy to install.
 - **Insect Nets:** Insect-proof nets or screens are employed to **keep harmful insects and pests away** from crops. They allow for adequate ventilation while creating a barrier against pests.

Importance of Agro-textiles

- Agro-textiles offer various advantages in agriculture, including **improved crop quality**, **increased yield**, **reduced pesticide use**, and **better resource management**.
- Agro-textiles in horticulture lead to an **increase in farm productivity by 2-5 times**, **increase in crop intensity**, **reduction in water consumption by 30- 45%**, **reduction in fertilizer usage by 25- 30%**, and higher harvest cycle per year.
- India holds a tremendous potential in the global Agro-textiles market of ~US\$ 12 billion wherein India's share is ~3%.

Steps taken by the Government for promoting Agro-textiles

- **Quality Standards Notification:** Ministry of Textiles has notified **Quality Control Orders (QCO)** for 20 agro-textile items, effective from April 1, 2024. This will ensure superior quality and safety.
- **Research and Development:** Government has sanctioned 11 Research and Development (R&D) projects in agro-textiles. These projects aim to develop innovative agro-textile products.
- **Climate Smart Agro-textile Demonstration Center:** The Government plans to establish a Climate Smart Agro-textile Demonstration Center in collaboration with SASMIRA. This centre will focus on digitized microclimate farming to revolutionize agriculture practices.
- **Schemes like the Mission for Integrated Development of Horticulture (MIDH)** have incorporated various agro textile products to promote their wider usage and adoption in agriculture.



Source: Ministry of Textiles. From Top to Bottom: Shade Net, Wind Net, Insect Net, Harvesting Net.

9. Ban on Cultivation of PUSA-44 (Paddy)

News: The Chief Minister of Punjab has announced that the State will ban the cultivation of PUSA-44 paddy variety from 2024.

About History of PUSA-44 Cultivation

- PUSA-44 is a variety of paddy. It was developed in 1993 by the **Indian Council of Agricultural Research**.
- Initially it was launched in few areas of Punjab. Once its high yield was established, area under PUSA-44 cultivation rose rapidly.
- By the end of 2010s, it had covered ~70-80% of the area under paddy cultivation.
- By 2018, the Punjab government reduced the area under PUSA-44 to 18% of the total area under paddy, but it rebounded to 22% in 2022.

Reasons Behind Ban

- **Extended Maturity Period:** PUSA-44 takes ~160 days to mature.

- This is much longer (~35-40 days) than other paddy varieties.
- **Water Conservation:** Punjab is facing severe groundwater depletion and banning PUSA-44 is a measure to conserve irrigation water.
- **Stubble Burning:** PUSA-44 is harvested right before the ideal time for wheat sowing which is around first week of November. Farmers typically need 20-25 days between paddy harvesting and wheat sowing to effectively handle stubble disposal.
 - However, PUSA-44's late harvest makes it difficult to manage stubble through both in-field and out-of-field methods. This leads to **more incidents of stubble burning**.
 - PUSA varieties produce about 2% more stubble compared to shorter-duration paddy varieties, which is a significant concern when cultivated extensively.

International Relations

1. 5-Eyes (Five Eyes) Intelligence Alliance

News: The Prime Minister of Canada had linked killing of a Khalistani leader in Canada to 'agents of the Government of India. This has put spotlight on the intelligence-sharing alliance 'Five Eyes'.

About the Five Eyes Alliance

- The 'Five Eyes' alliance is a **multilateral intelligence-sharing network** of 5 countries, Australia, Canada, New Zealand, the UK and the US.
- The alliance is both **surveillance-based** and tracks **signals intelligence** (SIGINT). Intelligence documents shared between the member countries are classified as 'Secret—AUS/CAN/NZ/UK/US Eyes Only,' which gave the group its title 'Five Eyes'.
- **Origin:** In 1943, the Britain-USA (BRUSA) agreement laid the foundations for the UK-USA (UKUSA) agreement.
 - BRUSA was signed between the US War Department and the UK's intelligence and security agency Government Code and Cypher School (GC&CS). Its purpose was to share intelligence information to support US forces in Europe, exchange personnel and develop joint regulations for the handling and distribution of highly sensitive material.
 - The UKUSA was signed in 1946. Canada joined it in 1949, and New Zealand and Australia did so in 1956 forming the alliance.

Objective of the Five Eyes Alliance

- The objective of the Five Eyes alliance has shifted following the collapse of the USSR and the emergence of **new global challenges** like **terrorism** and the **growing influence of China**.
- The alliance has now become involved in ocean and maritime surveillance, scientific and defence intelligence analysis, medical intelligence, geospatial intelligence, counter-intelligence, counter-terrorism and the continuous sharing of intelligence products via a secret collective database known as 'Stone Ghost'.

Concerns Related to the Five Eyes Alliance

- There have been concerns regarding the **privacy, security and methods of working** of the intelligence alliance, which remained shrouded in mystery for long.
- The alliance was embroiled in a major controversy in 2013 following the disclosure of classified documents by Edward Snowden, a former National Security Agency (NSA) contractor. Mr. Snowden described the network as a supranational intelligence organization that doesn't answer to the laws of its own countries.

2. Comprehensive Nuclear Test Ban Treaty (CTBT)

News: Russia might revoke its ratification of the Comprehensive Nuclear Test Ban Treaty (CTBT).

About the CTBT

- CTBT is a **multilateral treaty** that **bans all nuclear explosions**, whether for **military or peaceful purposes**.
- The treaty was adopted by the United Nations General Assembly in 1996.
- **For the treaty to enter into force**, it must be signed and ratified by **44 specific nuclear technology holder countries**. 8 of these 44 countries have not ratified the agreement yet. These 8 countries are: China, Egypt, India, Iran, Israel, North Korea, Pakistan and the US.

About the Preparatory Commission for the Comprehensive Nuclear Test-Ban Treaty Organization (CTBTO)

- It is an international organization established by the States Signatories to the Treaty on 19 November, 1996 and has its headquarters in Vienna, Austria.
- The objective of the organization is to achieve the object and purpose of the Treaty, to ensure the implementation of its provisions, including those for international verification of compliance with the Treaty and to provide a forum for consultation and cooperation among Member States.

Origin of the Treaty

- **Nuclear Tests in 1940's:** The US conducted the world's 1st successful nuclear weapons test in 1945 whereas the USSR tested its 1st nuclear weapon in 1949. These tests triggered a decades-long **arms race between the two superpowers**. Between 1945 and 1996, more than 2,000 nuclear tests were carried out.
- **Limited Nuclear Test-Ban Treaty (LTBT) 1963:** It prohibited nuclear testing in the atmosphere, outer space, and underwater, but **underground tests were still permitted**.
- **Threshold Test Ban Treaty (TTBT):** The US and the USSR agreed to sign the Threshold Test Ban Treaty (TTBT), which **established a nuclear threshold** by banning the two countries from conducting tests that would produce a **yield exceeding 150 kilotons** (equivalent to 150,000 tons of TNT).
- **CTBT:** A major breakthrough came after the Cold War ended through the CTBT in 1996 that will prohibit all nuclear weapons tests and other nuclear explosions upon its entry into force.

Impact of the CTBT

- Since the CTBT, nuclear tests have taken place on 10 occasions.
- India conducted 2 tests in 1998 (detonated 5 devices on May 11 and May 13), Pakistan conducted 2 in 1998, and North Korea conducted tests in 2006, 2009, 2013, 2016 (twice) and 2017.
- The United States last tested in 1992, China and France in 1996 and the Soviet Union in 1990. Russia, which inherited most of the Soviet nuclear arsenal, has never conducted a nuclear test.

3. Ferry Service (HSC Cheriyanani) Between India and Sri Lanka

News: A historic sea route between India and Sri Lanka has been revived with the launch of a passenger ferry service between Nagapattinam, India, and Kankesanthurai, Sri Lanka.

Earlier Attempts for a Service

- One of the most popular routes linking India with Sri Lanka was from **Dhanushkodi** (India) to **Talaimannar** (Sri Lanka). This route has been served by the **Boat Mail Express** train and a **coal-powered steam ferry**. However, the civil war in Sri Lanka in 1982 resulted in the halting of these services.
- India and Sri Lanka have been working to bring back ferry services since the civil war ended in 2009.

- The Governments signed an MoU in 2011 and started a service. However, it only lasted 6 months due to the poor demand.
- The Governments have also tried to start ferry services from Rameswaram to Talaimannar and Karaikal to Kankesanthurai, but these plans have not worked out.



Impact of New Service

- The ferry service would boost regional commerce, trade and religious tourism.
 - Indian pilgrims could easily visit religious sites in Colombo and southern Sri Lanka, while Sri Lankan tourists could visit religious sites in Nagapattinam, Nagore, Velankanni, Thirunallar, and temple towns such as Thanjavur, Madurai, and Tiruchi.
 - The development would strengthen **cultural, economic, and civilisational ties**.
- It can also improve cooperation in **disaster management** and **maritime security**.
- It may also enable **voluntary repatriation of refugees** from Sri Lanka, living in Tamil Nadu.

Challenges

- Factors such as **Sri Lanka's civil war**, **lack of patronage** and **cyclones** have led to lukewarm response to earlier connectivity initiatives.
- The effectiveness of the new India-Sri Lanka ferry service **depends on its operational strategy**.
- Initially, the Shipping Corporation of India (SCI) intended to operate daily for ten days but has since reduced it to **3 times a week**. This change is due to the start of the northeast monsoon, high fares, and ticketing system challenges.

Steps Required for Success

- **Lowering of the fare** and increasing the baggage allowance.
- **Provision of amenities** at Nagapattinam such as a dormitory and improving rail connectivity.
- Bookings must be made accessible on well-known **travel websites**.
- **Sustained policy attention** to address all the roadblocks.

4. Conflict Between Armenia and Azerbaijan

News: Azerbaijan has recaptured Nagorno-Karabakh, an Armenian-populated enclave.

About the Armenia-Azerbaijan Conflict

- The conflict originated during the disintegration of the USSR, when the majority Armenian-Christian population conducted a referendum to declare independence from Azerbaijan, which had a Shia majority.
- Until recently, Nagorno-Karabakh was under the administration of Armenian separatists with tacit support from the Republic of Armenia.
- The province is **officially recognised as part of Azerbaijan**. Its population is **predominantly ethnic Armenian**, having close



cultural, social, and historical ties with Armenia. The Armenians are Christians, while Azeris are Muslims. The enclave is connected to Armenia only through the **Lachin Corridor**.

- In 2020, Azerbaijan, with backing from Turkey, engaged in a conflict with Armenia, which is a Russian treaty partner.
- This conflict resulted in the **capture of a significant portion of Nagorno-Karabakh by Azerbaijan**. Despite Russia's role in brokering a ceasefire, it provided limited assistance to Armenia, and the ceasefire short-lived.
- Azerbaijan blockaded the **Lachin Corridor**, causing severe economic hardship for the enclave's 120,000 residents.
- Despite international criticism, Azerbaijan maintained control over the corridor and restricted the flow of goods and medicines.
- Recently, Azerbaijan attacked Stepanakert, the capital of Nagorno-Karabakh, forcing the separatists to cede full control of the enclave.

Azerbaijan's Capture of Nagorno-Karabakh

- **Turkey supported Azerbaijan** both politically and militarily, seeking a greater role in the Caucasus region.
- Russia's engagement in Ukraine weakened its influence in the Caucasus.
- Recognizing this geopolitical advantage, Azerbaijan took control of the enclave.

About India's Position

- India's foreign policy position has been one of balance and not taking clear sides.
- India believes that any lasting resolution of the conflict can only be **achieved peacefully through diplomatic dialogue and negotiations**.
- India supports **OSCE (Organization for Security and Co-operation in Europe) Minsk Group's** continued efforts for a peaceful resolution.
- India has ties with both Armenia and Azerbaijan. The region is also important for its centrality to **India's plans of connectivity through the south Caucasus**.
- **India Armenia Ties**
 - Historical ties of the India and Armenia date back thousands of years. Cultural interactions have taken place as part of military invasions, establishing of communities and movement of traders.
 - After the collapse of the USSR, India established diplomatic relations and has a **treaty relationship with Armenia**.
 - Armenia also supports India's position on the **Kashmir issue** and on the question of a **permanent seat in the UNSC**.
 - In 2022, India supplied **military weapons and ammunitions** worth US \$250 million.
- **India-Azerbaijan Ties**
 - After the collapse of the Soviet Union, India established **diplomatic relations with Azerbaijan**.
 - However, Azerbaijan's **proximity to Pakistan** has been seen as a roadblock in the bilateral ties. In contrast to Armenia, there has not been a single high-level visit between the two countries.

Way Ahead

- Azerbaijan's recent takeover has caused a significant refugee movement into Armenia, accompanied by allegations of genocidal crimes.
- To peacefully integrate Nagorno-Karabakh, Azerbaijan must **guarantee equal rights and respect autonomy for the Armenian population**.

Science and Technology

1. Galactic Tides

News: Galactic Tides can have a profound impact on the evolution of galaxies.

About Galactic Tides

- Galactic tides are a **gravitational phenomenon** that occurs within galaxies, including our Milky Way.
- They are similar to Earth's ocean tides but on a much larger scale.
- They are caused by gravitational forces within a galaxy arising in the interactions between celestial objects like stars and gas clouds.
- Galactic Tides influence various aspects of evolution of galaxies
 - They can reshape a galaxy structure by creating **tidal tails and bridges**, **promoting star formation**, and **disrupting smaller star systems**.
 - They can **disrupt the orbits of stars**, leading to gradual and long-term changes in a galaxy's structure.
 - Galactic tides impact the ways in which proximate galaxies interact with each other.
 - Researchers have observed the closest galaxy to the Milky Way, the colossal Andromeda, and found that tidal streams near its edges could be signatures of dwarf galaxies that were later devoured. The Andromeda galaxy is heading towards the Milky Way and will collide in 4 billion years.
 - They also **affect the supermassive black holes** at galaxy centers, leading to events that change the ways in which these cosmic beasts interact with nearby stars.



Source: Wikimedia Commons.
Tidal Tails of two colliding galaxies.

2. OSIRIS-REx Mission

News: NASA's OSIRIS-REx mission collected rock samples from the asteroid Bennu and returned them to Earth. It will help scientists learn about the history of Solar System and evolution of life on Earth.

About the OSIRIS-Rex Mission

- OSIRIS-REx stands for Origins, Spectral Interpretation, Resource Identification, Security, Regolith Explorer. The mission was launched by NASA in 2016.
- Its aim was to travel to a **near-Earth asteroid named Bennu** and bring a small sample back to Earth for study.
- It is the first US mission to successfully collect a sample from an asteroid. **Japan is the only other country to bring back asteroid samples.**

About Asteroid Bennu

- It has been named after an **Egyptian deity**. It is located about **200 million miles away from the Earth**.
- A team from the NASA-funded Lincoln Near-Earth Asteroid Research team in 1999 discovered the asteroid.
- Characteristics of Asteroid Bennu:
 - It is a **B-type asteroid**. It contains significant amounts of carbon and various other minerals.
 - Due to high carbon content, the asteroid reflects ~4% of the light that hits it. Earth reflects about 30%.
 - ~20-40% of Bennu's interior is empty.
 - It is estimated that it was formed in the **first 10 million years of the solar system's creation** which is roughly around 4.5 billion years old.

○ It has been classified as a **Near-Earth Object (NEO)**. So, it has a possibility to strike the Earth in the next century between the 22nd and 23rd centuries.

- NEOs are comets and asteroids nudged by the gravitational attraction of nearby planets orbits. This allows them to enter the Earth's neighbourhood.

Significance of the Mission

- Such samples are important because asteroids like Bennu can act as “time capsules” for the earliest history of our solar system.
- They can also **preserve chemical signatures** from a long time ago when the universe was a younger place. In fact, it is even possible that they **contain samples of the ancient building blocks of life**.
- Scientists believe that life on Earth may have emerged from asteroids or comets striking on the Earth which delivered life-forming compounds to Earth. Studying the samples may help uncover the truth.
- Studying Bennu is pivotal for developing technologies and strategies to avoid its potential collision with Earth between 2178 and 2290.



3. ISRO's Test Vehicle Development Flight (TV-D1)

News: ISRO successfully conducted the Test Vehicle Development Flight as part of the *Gaganyaan* programme.

About the Test Vehicle Development Flight (TV-D1)

- Test Vehicle Development Flight (TV-D1) tested the ‘crew module’ of the *Gaganyaan* Mission. The astronauts aboard the *Gaganyaan* vehicle will be housed in the crew module.
- The test involved launching the crew module to outer space and bringing it back to earth and recovering it after touchdown in the Bay of Bengal.
- It also has a **crew escape system** that can safely return the astronauts to the sea if there are any issues during the launch.
- The success of this test has set the stage for the first unmanned *Gaganyaan* mission and ultimately manned mission to outer space in low earth orbit.

About the *Gaganyaan* Mission

- The mission envisages **demonstration of human spaceflight capability** by launching a human crew to an **orbit of 400 km** and **bringing them back safely to earth**, by landing in Indian sea waters.
- The prerequisites for *Gaganyaan* mission include development of many **critical technologies** including **human-rated launch vehicle** for carrying crew safely to space, **Life Support System** to provide an earth like environment to crew in space, **Crew emergency escape provision** and evolving **crew management aspects** for training, recovery and rehabilitation of crew.
- The mission is expected to be executed in 2025.

4. ISRO's Future Missions

News: The Prime Minister chaired the meeting to assess the progress of the *Gaganyaan* mission and outline the future of Indian space exploration.

Key Highlights

- **Gaganyaan Mission** is scheduled to be launched in 2025. It aims to demonstrate human spaceflight capability by launching a human crew to an orbit of 400 km and bringing them back safely to earth, by landing in Indian sea waters.
- **Indian on Moon:** The PM has said that ISRO should now plan to land an Indian on the moon by 2040.
 - The US is planning to send the first humans to explore the region near the south pole of the moon later this decade, in a mission called **Artemis II**.
 - China has also planned to place astronauts on the moon by 2030.
- **Indigenous Space Station:** The PM has said that India should now aim for setting up '**Bharatiya Antariksha Station**' (Indian Space Station) by 2035. The **International Space Station (ISS)** has been developed and maintained by the US, Russia, Canada, Japan, and European agencies. It is the largest space station. It is expected to be decommissioned by 2030.
- **Interplanetary Missions:**
 - **Shukrayaan-1:** It is a proposed mission of ISRO. It aims to study the surface and atmosphere of Venus.
 - **Mangalyaan 2:** It is a proposed second mission to Mars by ISRO. It will study aspects of Mars, including interplanetary dust, and the Martian atmosphere and environment.

5. Discovery of Vanadium in Gujarat

News: Vanadium, a rare metal, has been discovered from the Gulf of Khambhat in Gujarat.

About Vanadium

- Vanadium is a medium-hard, steel-blue metal. It rarely exists as a free element in nature but can be found in about 65 different minerals, including magnetite, vanadinite, carnotite and patronite.
- **Brazil is the world's largest exporter of vanadium** followed by Russia and South Africa. Brazil alone is responsible for nearly one-quarter of the metal's global export market.
- China has the highest vanadium reserves in the world.

Applications of Vanadium

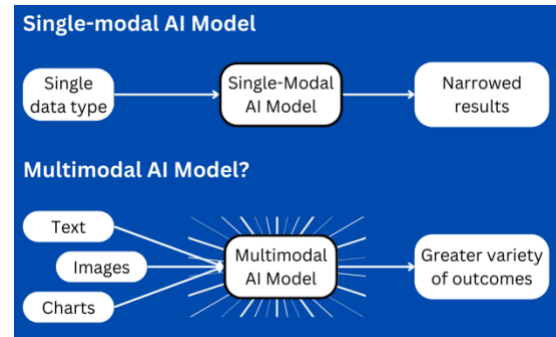
- Vanadium is used primarily as an **alloying element in Iron & Steel Industry** as it **imparts toughness and strength** to steel.
- Modern applications of vanadium include its use as vanadium secondary batteries for power plants and rechargeable **Vanadium Redox Batteries (VRB)** for commercial applications. The main advantages of VRBs are:
 - Offer almost unlimited capacity by using sequentially larger storage tanks.
 - Can be **left completely discharged for long periods** of time with no ill effects.
 - Can be recharged by replacing the electrolyte if no power source is available to charge it.
 - **Suffers no permanent damage** if the electrolytes are accidentally mixed.
 - It has also been shown to have the **least ecological impact** of all energy storage technologies.
- **Defence and Aerospace:** Vanadium holds significant importance as a crucial raw material in strategic domains like defense and aerospace. E.g., alloys combining vanadium with titanium and aluminium are employed in the **manufacturing of components for jet engines** and **high-speed aircraft frames**.

6. Multimodal Artificial Intelligence (AI)

News: Multimodal AI promises several revolutionary applications.

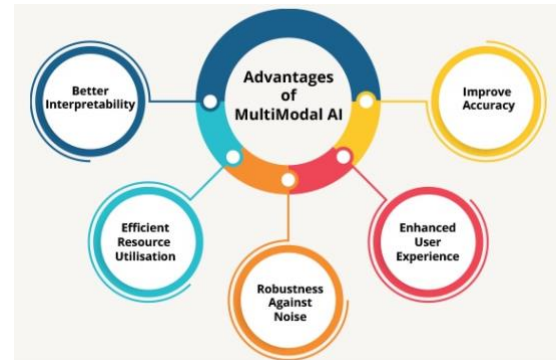
About Multimodal Artificial Intelligence

- Multimodal artificial intelligence refers AI systems that can understand and process information from multiple modalities or sources, such as text, images, videos, audio, and other forms of data simultaneously.
- Multimodal AI can analyse and **extract insights from various types of data** to gain a more comprehensive understanding of a situation or problem.
- Some notable developments in multimodal AI include **OpenAI's GPT-3.5 and GPT-4 models**, which can analyse images and engage in spoken conversations. Google's multimodal large language model, Gemini, leverages its vast image and video database for understanding multiple modalities.



Importance of Multimodal AI

- **Enhanced Understanding:** Multimodal AI can provide a **richer and more nuanced understanding of data** by combining information from different sources e.g., it can analyse both the text and images in a news article to gain a deeper understanding of the content.
- **Improved Accuracy:** Combining data from multiple modalities can lead to **improved accuracy** in tasks like natural language processing (NLP), computer vision, and speech recognition. It helps AI systems **make more informed decisions**.
- **Real-World Applications:** Multimodal AI has a **wide range of practical applications**, such as in healthcare (integrating medical images with patient records), autonomous vehicles (processing both visual and sensor data), and content recommendation systems (analyzing text and user behaviour).
- **Better User Experience:** In applications like virtual assistants or chatbots, multimodal AI can better understand and respond to users by considering both their spoken words and visual cues.
- **Problem Solving:** Multimodal AI can help **address complex problems** that require insights from different data sources e.g., in disaster response, it can analyse text reports, satellite images, and sensor data to assess the situation and plan a response.



7. Cookies

News: Cookies enhance online experiences but pose privacy and security challenges. Their usage and regulation are evolving in the digital landscape.

About Cookies

- Cookies contain tiny amounts of data about users in text files that act like a **website's memory**.
- As soon as a website server is used, tiny amounts of data start getting stored inside a cookie.
- The website **uses the data to identify users and their devices**, which also stores these cookies. Whenever a user visits the same website, the cookies identify the person and make it **show relevant information**.

Different Types of Cookies

- **Session Cookies:** They are temporary and disappear when the browser is closed. They help websites remember user's actions during a single visit.
- **Persistent Cookies:** They are the digital equivalent of bookmarks. They stay on the device after the browsing session ends. They remember the login information, language preferences, and even the ads the user interacted with. They are handy for a more personalized web experience.
- **Secure Cookies:** These are sent over encrypted connections, making them safer from hackers. Secure cookies are often used for sensitive data like login credentials.
- **Third-Party Cookies:** They come from domains other than the site the user visits and are used for tracking and advertising.

Various Uses of Cookies

- **User Authentication:** Cookies keep the user logged-in on websites.
- **Personalization:** Cookies customize user experience based on stored preferences.
- **Shopping Carts:** Cookies help maintain items in the shopping carts across visits.
- **Analytics:** Cookies help websites gather data for improvements.
- **Targeted Advertising:** Cookies display ads matching user's interests.

Challenges Associated with Cookies

- **Privacy Concerns:** Cookies track online behaviour, which often harmless, can sometimes encroach upon user's digital privacy. Third-party cookies are controversial because of privacy concerns.
- **Security Risks:** Poorly secured cookies can lead to data theft.
- **User Consent:** Regulations require websites to seek approval for certain cookies e.g., Digital Personal Data Protection Act 2023 necessitates websites to acquire explicit consent from users prior to collecting or processing their personal data via cookies. However, it is difficult to ensure compliance due to lack of awareness among users and monitoring capacity.
- **Third-Party Cookies:** Controversial due to privacy concerns.
- **Data Overload:** Too many cookies can slow down your browser.

8. Watermeal Plant

News: Scientists are conducting research into the potential of Watermeal plants as source of nutrition and oxygen for astronauts.

About Watermeal Plant

- It is the **world's smallest flowering plant**. It is known for its tiny size and floating habit on water bodies. It lacks roots, stems, or leaves.
- Watermeal thrives in quiet, **nutrient-rich freshwater environments** like ponds, lakes and marshes.
- It is also a producer of oxygen through photosynthesis and a rich source of protein.
- In Thailand, it has been part of the local diet for generations.



Utility for Astronauts

- Watermeal doesn't have any roots, stems or leaves. It is like a sphere floating on a body of water. Hence it will be **easy to 'cultivate' it in space**.

- As a complete protein, it can offer astronauts a **sustainable source of essential amino acids**.
- Watermeal is a producer of oxygen and can act as an economical source of oxygen in space missions.

9. Estivation

News: Estivation is a technique for some organisms to survive hot and dry conditions.

About Estivation

- Estivation (aestivation) is a biological phenomenon during which some animals enter a **prolonged state of dormancy or inactivity during hot and dry conditions**.
- It serves as a **survival strategy** to **conserve energy and water**.
- Animals during estivation **seek shelter in cool places** like underground burrows, crevices, or cocoons.
- During this time, animals **reduce their metabolic activity** which in turn reduces their energy consumption.
- This helps them avoid extreme dryness and safe from predators.
- Some examples include:
 - **West African Lungfish:** It burrows into the mud of a drying water body and secretes a cocoon of mucus around itself during a drought.
 - **Desert Tortoises:** It digs burrows to stay cool in hot summers.
 - **Land Snails:** They seal themselves in their shells with a mucous plug and stay inactive until the conditions outside improve.

Environment

1. Climate Ambition Summit (CAS)

News: The Climate Ambition Summit was held in New York. It was convened by the UN Secretary General.

About the Climate Ambition Summit

- It aimed to **showcase 'first mover and doer leaders'** from government, business, finance, local authorities, and civil society.
- It was focused on **credible actions, policies and plans** (and not just pledges) to accelerate the decarbonization of the global economy and deliver climate justice in line with **Acceleration Agenda**.
- The Summit represents a critical political milestone for demonstrating that there is collective global will to **accelerate the pace** and scale of a **just transition** to a more equitable renewable-energy based, climate-resilient global economy.
- For countries to be considered for a speaking slot, they were expected to present updated pre-2030 Nationally Determined Contributions (as agreed in Glasgow); Updated net-zero targets;

Acceleration Agenda

The Acceleration Agenda sets out the actions that are needed from government, business and finance leaders to prevent crossing dangerous climate thresholds and to deliver justice for those on the frontlines of the climate crisis. It has 2 aspects: Emission cuts, and climate justice.

CUT EMISSIONS	
<p>1 Bring forward net-zero deadlines as close as possible to:</p> <p>Developed countries → 2040</p> <p>Emerging economies → 2050</p>	<p>3 Present energy transition plans which include tangible actions to ensure net-zero electricity generation:</p> <p>Developed countries → 2035</p> <p>Rest of the world → 2040</p> <p>Tangible actions must include:</p> <ul style="list-style-type: none"> ▶ No new coal now and coal phase-out: OECD countries → 2030 ▶ Rest of the world → 2040 ▶ Shift fossil fuel subsidies to renewables. ▶ End all licensing and funding (public and private) of new coal, oil and gas. ▶ End expansion of existing oil and gas reserves.
<p>2 Prepare updated Nationally Determined Contributions (national climate action plans) to be presented in 2025 that, at least for G20 countries, are economy-wide, present absolute emissions cuts and cover all gases.</p>	<p>4 Speed up decarbonization of high-emitting sectors like shipping, aviation, steel, cement, agriculture, aluminum.</p>
DELIVER CLIMATE JUSTICE	
<p>1 Protect all people from climate disasters with early warning systems by 2027.</p>	<p>3 Double adaptation finance by 2025, working towards half of climate finance flowing to adaptation.</p>
<p>2 Present economy-wide adaptation investment plans for climate-resilient development.</p>	<p>4 Make good on the US\$100 billion annual promise to developing countries.</p>
	<p>5 Reform the international financial architecture so developing countries have the support to turbocharge their climate ambitions and build resilience.</p>
	<p>6 Deliver a record replenishment of the Green Climate Fund.</p>
	<p>7 Operationalize the new loss and damage fund this year.</p>

Energy transition plans with commitments to **no new coal**, oil and gas; Fossil fuel phase-out plans; More ambitious renewable energy targets; Green Climate Fund pledges etc.

- The summit was marked by the absence of major economies whose actions significantly influence the future of global emissions: **China, the US and India**, the top 3 emitters and collectively accounting for ~42% of global greenhouse gas emissions) **were absent from the summit**.
- India's neighbours, Sri Lanka, Nepal and Pakistan were among the listed speakers at the summit. The European Union, Germany, France and Canada also attended the summit.

2. Land Subsidence in Joshimath

News: The Uttarakhand Government had made public the reports on land subsidence crisis in Joshimath.

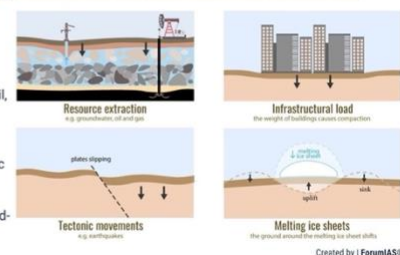
Reasons for Land Subsidence in Joshimath

- **Central Building Research Institute Roorkee:** ~99% buildings in Joshimath **did not meet building code standards**. The town was situated on **geologically unstable terrain**.
 - It recommended **developing disaster-resilient model town** to rehabilitate people displaced from Joshimath.
- **Central Ground Water Board:** It said that Joshimath's **location on loose sediment** embedded with large boulders overlying metamorphic rocks was a significant factor contributing to the crisis.
 - It recommended an **immediate halt to construction activities** in the spring zone area and clearing any concrete material covering the emergence point of springs.
- **IIT Roorkee:** It pointed out that the main reason for the subsidence appears to be **internal erosion caused by the subsurface drainage**, which may be due to infiltration of rainwater, melting of ice, waste water discharge from households and hotels.
- **National Institute of Hydrology:** It suggested that the subsidence might have been caused by a **blockage of sub-surface channels**, leading to an eruption when the hydrostatic pressure of stored water exceeded the soil-water bearing capacity of the area. It recommended **prioritizing the safe disposal of water** coming from the upper reaches and waste from the town.
- **Wadia Institute of Himalayan Geology:** It mentioned earthquakes as a contributing factor to gradual land subsidence. It is situated in seismic zone V.
- **Indian Space Research Organisation (ISRO):** It suggested various reasons including **slope instability** due to drainage water, loose soil and flash floods.
- **Geological Survey of India (GSI):** It reported that areas with **dense populations and multi-storey buildings** experienced a higher density of ground cracks. The report explained that the excessive load from densely constructed towering structures on the colluvium debris mass, saturated with shallow subsurface water, contributed to increased subsidence in these areas.
- **National Disaster Management Authority (NDMA):** It has confirmed that the town's development has surpassed its carrying capacity. (Refer EPIC January 2023 (click) for Joshimath Crisis: Causes and Solutions).

Land Subsidence

- According to National Oceanic and Atmospheric Administration (NOAA), Land subsidence is **sinking of the ground** because of **underground material movement**.
- Subsidence can be caused by **gradual settling** or **sudden sinking** of the Earth's surface.
- Subsidence is generally caused by
 - **Resource Extraction:** The removal of water, oil, natural gas, or mineral resources out of the ground by pumping, fracking, or mining etc.
 - **Natural Causes:** Natural events such as earthquakes, soil compaction, glacial isostatic adjustment, erosion, sinkhole formation, and adding water to fine soils.
 - **Infrastructural Load:** High load exceeding load-carrying capacity of the underlying soil.

WHAT CAUSES LAND SUBSIDENCE?



Recommendations

- **Adherence to Building Codes:** The technical reports stress adherence to mandatory building codes to ensure structural safety in the unstable geology of the region.

- **Monitoring of Geological Aspects:** Monitoring springs, drainage systems, and areas of subsidence is crucial to understand their influence on land subsidence.
- **Public Awareness and Information Dissemination:** Information on risks should be widely disseminated, and the public should be made aware of the risks involved in the region.
- **Independent Scientific Counsel in Policymaking:** The incorporation of advice from independent scientific counsel is essential to form policies that respect the geological limitations of the region.
- **Assess Carrying Capacity:** Governments should conduct assessments to understand the carrying capacity of each region, especially in environmentally sensitive areas, to avoid overdevelopment.
- **Transparent Risk Assessment:** There needs to be transparent **risk assessments of infrastructure projects**, considering the high seismic activity and incidence of landslides in regions like Joshimath.

3. Drought in the Amazon

News: There has been a severe drought in the Amazon.

About Amazon Drought

- The Amazon is experiencing its worst drought in history, with the Rio Negro River reaching a record low of 13.59 metres. This has led to the death of many fish and river dolphins.
- This drought has also **spiked wildfires** in the Amazonas state to 2,700 in October, the highest in 25 years.
- Communities, especially Indigenous ones, are suffering, lacking essentials like water and food.

Reasons for Drought in the Amazon

- **Effect of the El Nino:** El Nino causes an abnormal warming of waters in the equatorial Pacific Ocean.
- This warming can lead to **extreme heat events around the world**.
- **High Atlantic Ocean Temperatures:** The northern tropical Atlantic Ocean has unusually warm waters.
- When this warm water heats the air, it moves to the Amazon. This heated air stops clouds from forming and reduces rain.
- **Combined Impact of Both Phenomena:** The drought gets worse when El Nino and warm Atlantic waters happen at the same time.
- Together, they affect a larger area of the Amazon.

Impacts of Drought in the Amazon

- **Wildlife Suffering:** High numbers of fish and river dolphins, known as boto, are dying. Their decomposing bodies contaminate water supplies.
- **Impact on Human Communities:** Indigenous villages face shortages of water, food, and medicine. ~ 500,000 people could be impacted by the end of October.
- **Increase in Wildfires:** Dry conditions have led to 2,700 wildfires in the Amazonas state in October, a 25-year record. Smoke from these fires has degraded air quality in Manaus, affecting residents' health.
- **Economic Impact:** A major hydropower dam's operations have halted due to the drought, impacting power supply.

About Amazon's Future

- **Frequency of Droughts:** If fossil fuel burning continues at the current rate, the Amazon could face major droughts almost every year by 2060.
- **Recovery from Droughts:** Over the past 20 years, the Amazon has become slower at recovering from long drought periods.
- **Tipping Point:** The Amazon is nearing a critical tipping point and could transform into a drier savanna.

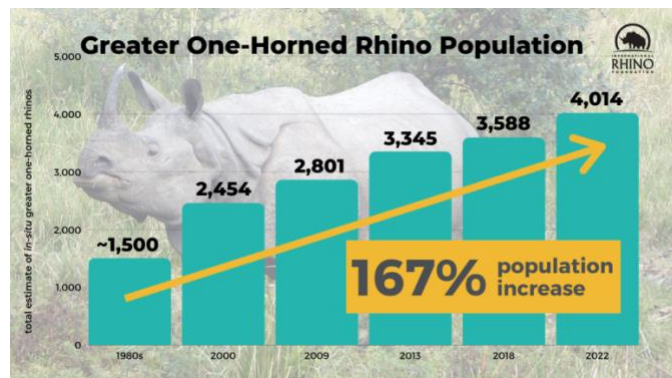
- **Release of Stored Carbon:** Such a transformation would release large amounts of stored carbon. This would further accelerate global warming. (Positive Feedback)
- **Deforestation Data:** In the past five decades, between 17% and 20% of the Amazon has been destroyed. Experts emphasize reducing deforestation to safeguard the Amazon's future.

4. State of Rhino Report, 2023

News: The Report has been released by US-based International Rhino Foundation.

Key Findings of the Report

- **Threats:** Habitat loss, poaching and climate change continue to threaten the existence of all 5 rhino species. Rhino populations that were once considered less threatened have seemingly become the primary target of poaching efforts which are orchestrated by highly organized, transnational criminal syndicates.
- **Impact of Climate Change:** In Africa, climate change-induced drought and in Asia, increased precipitation and longer monsoon periods could cause more direct deaths of rhinos. Changing weather conditions and landscapes can also trigger an increase in invasive plant species, crowding out or overtaking native rhino food plants and causing general habitat degradation.
- **Greater One Horned Rhino:** Greater one-horned rhinos (*Rhinoceros unicornis*) reside primarily in India and Nepal, though there is a population that occasionally crosses into Bhutan.
 - Bhutan, India and Nepal work together to implement a trans-boundary management strategy for the greater one-horned rhino.
 - The population of greater one-horned rhino has steadily increased over the last century, and has grown about 20% over the last decade.
- **Deaths of Greater One Horned Rhino:** After reporting no poaching deaths in 2022, India has recorded two deaths of Greater One-Horned Rhino (*Rhinoceros unicornis*) until September 2023. The deaths were reported from Manas National Park and Kaziranga National Park.



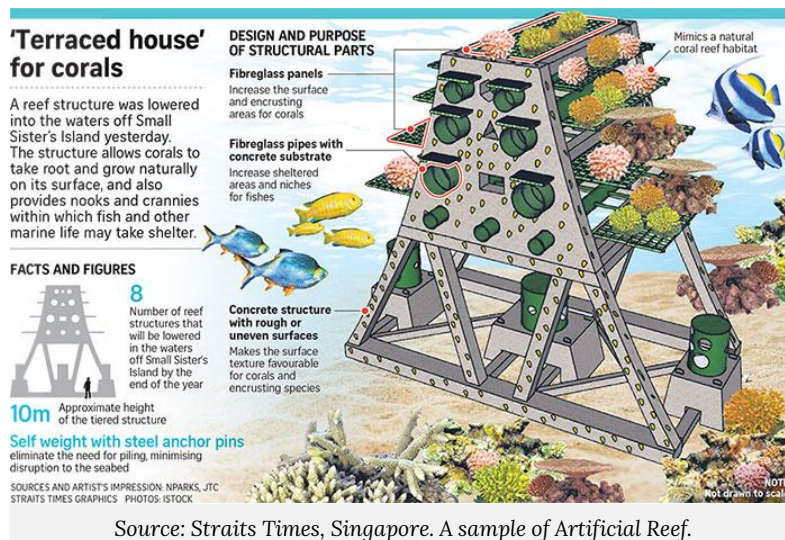
5. Artificial Reefs

News: The Department of Fisheries has approved 732 artificial reef units for 10 coastal States. The initiative falls under Integrated Modern Coastal Fishing Villages programme of Pradhan Mantri Matsya Sampada Yojana.

About Artificial Reef

- An artificial reef is a sheltered human-built structure, placed on the seabed as a substitute for natural habitats.

- They represent engineering interventions **designed to restore and enhance natural habitats**, boost productivity, and efficiently manage aquatic resources.
- According to the National Ocean Service (the US), submerged shipwrecks are the most common form of artificial reef. Oil and gas platforms, bridges, lighthouses, and other offshore structures often function as artificial reefs.
- In India, the projects are being implemented with the technical support of **Fishery Survey of India (FSI)** and ICAR-Central Marine Fisheries Research Institute (CMFRI).



Advantages of Artificial Reef

- **Fish Aggregation and Habitat:** Like natural reefs, artificial reefs, serve as gathering points for fish, providing them with a habitat to thrive. These structures also **mitigate wave damage along the coasts**, facilitate marine ecosystem regeneration and act as carbon sinks.
- **Marine Life Support:** These reefs provide a solid substrate for various marine life forms, including corals, algae, and plankton, to attach and grow. They serve as crucial spawning and nursery grounds for fish.
- **Recreational and Ecotourism Opportunities:** Artificial reefs enhance recreational fisheries and create suitable areas for activities like snorkelling and diving. This contributes to local tourism and reduces conflicts over fishing grounds.
- **Environmental Conservation:** These structures help restrict bottom trawling in nearshore areas, aiding marine ecosystem regeneration. Small-scale fishermen also benefit from higher catch rates.
- **Support for Non-Mechanized Boats:** A single artificial reef unit of 300m³ is expected to support 25-30 non-mechanized boats, further boosting the livelihoods of traditional fishermen.

6. Marine Cloud Brightening

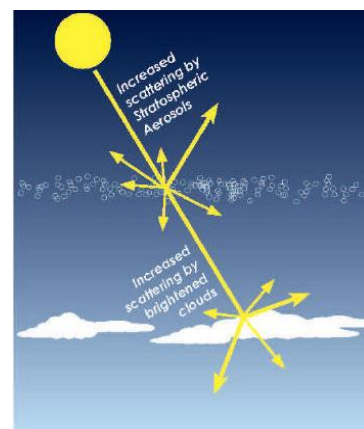
News: Researchers in Australia are exploring the concept of 'marine cloud brightening' as a potential solution to protect the Great Barrier Reef from heat-induced coral bleaching.

About Marine Cloud Brightening

- It is a proposed technique to combat global warming. The concept involves **making clouds over the ocean brighter so they reflect more sunlight back into space**. This will help cool down the Earth.
- British cloud physicist John Latham proposed cloud brightening in 1990.

Working of Marine Cloud Brightening

- Tiny particles like sea salt are sprayed into clouds over the ocean. These particles attract water vapor, **forming small cloud droplets**.
- The increased number of **droplets make the clouds whiter**, so they reflect more sunlight.



- By reflecting more sunlight, less heat reaches the Earth's surface. This could potentially lower the temperature of both the atmosphere and oceans.

Impact on Corals

- Lowering of temperature of the oceans will help in cooling down the ocean surface.
- This may **reduce coral bleaching** and can in turn **protect underwater life**.
- The aim behind this method is to **delay coral bleaching during marine heatwaves**, potentially buying more time for the reef's recovery.

7. Microalgae

News: A study has found that microalgae are adopting a unique strategy to adapt to global warming.

About Microalgae

- Microalgae are **microscopic algae that are invisible to the naked eye**. They are found in freshwater and marine systems.
- They are **unicellular species** that exist individually or in chains or groups.
- Unlike higher plants, microalgae **do not have roots, stems, or leaves**.
- Microalgae are **capable of performing photosynthesis**. They produce approximately half of the atmospheric oxygen and **capture the carbon dioxide** from the atmosphere.

Importance of Microalgae

- **Food Chain:** They play a crucial role in the food chain as they serve as a **primary source of nutrition** for a wide range of aquatic organisms. They are consumed by various aquatic creatures, including zooplankton, which, in turn, are eaten by larger organisms like fish.
- **Nutrition:** Some species of microalgae, such as spirulina and chlorella, are **highly nutritious** and are used as **dietary supplements**. They are rich in proteins, vitamins, minerals, and other essential nutrients.
- **Biofuel:** Microalgae can be used to **produce biofuels**, such as biodiesel. They have a **high lipid content**, which can be converted into fuel through various processes.
- **Environmental Remediation:** Microalgae can help in **wastewater treatment** and **carbon capture**. They can absorb nutrients and pollutants from water and help improve water quality.
- **Biotechnology:** Microalgae are used in biotechnology for the production of various compounds, including pigments, pharmaceuticals, and chemicals.

Microalgae Adapting to Global Warming

- As climate change reduces nutrient availability in the ocean, microalgae activates a protein called **rhodopsin**. This protein is related to the one responsible for low-light vision in the human eye.
- Rhodopsin enables these microalgae to thrive by using sunlight instead of traditional chlorophyll when nutrients are scarce.
- Microbial Rhodopsins are proposed to be major light capturers in the ocean. They absorb light as much as chlorophyll-based photosynthesis in the sea to generate energy and food.

8. Pipe Composting

News: Assam is actively promoting pipe composting among its rural communities.

About the Pipe Composting Technology

- Pipe composting technology is a method of **converting organic waste into compost** using PVC pipes.

- The pipes are 8 – 10 inches in diameter and 1.25 metres in length. The pipes are placed vertically keeping them 25-30 cm inside the ground.
- Only degradable waste can be disposed of into the pipes including leftover food, fruit and vegetable peels, flowers, dung, agricultural waste, etc.
- Once in 2 weeks, a little cow dung and dry leaves are mixed with water and poured inside to accelerate the growth of the worms.
- This should remain closed so that rainwater does not enter the pipes. Compost manure can be removed by lifting the pipe after 2 months.



Benefits of Pipe Composting Technology

- **Efficient Waste Conversion:** It rapidly transforms biodegradable waste into valuable compost, contributing to **waste reduction and environmental preservation**.
- **Environmental Friendliness:** Pipe composting is eco-friendly, as it doesn't harm the environment.
- **Clean and Hygienic Environment:** It helps maintain a clean and hygienic environment, promoting health and well-being.
- **Odourless and Fly-Proof:** This composting method is odourless and prevents the attraction of flies, ensuring a pleasant atmosphere.
- **Space Efficiency:** It doesn't require much space, making it suitable for places with limited area for waste management.
- **Sustainability:** The system is sustainable, as the same pipes can be used repeatedly, reducing the need for additional materials.
- **Educational Opportunity:** It offers a valuable educational opportunity for students to learn about decomposition science, the role of microorganisms and invertebrates, waste management, and sustainability, fostering environmental awareness.

History, Art and Culture

1. World Heritage Status for Hoysala Temples

News: The Sacred Ensembles of the Hoysalas have been included in the UNESCO's World Heritage List. This will be India's 42nd UNESCO World Heritage Site.

About the Sacred Ensembles of Hoysalas

- Sacred Ensembles of the Hoysalas comprises **3 temples in Karnataka** namely the **Channakeshava temple in Belur**, the **Hoysaleswara temple in Halebidu** and the **Keshava temple in Somanathapura**.
- These temples were constructed during the 12th and 13th centuries by the Hoysala kings and are dedicated to **deities Shiva and Vishnu**.
- These temples are known for their ornate and incredibly detailed stone carvings that are put together in a stellate plan on a star-shaped raised platform
- The material used in temple construction is chlorite schist which is also known as soapstone that is soft and amiable to carving.

Channakeshava Temple: Belur

- Channakeshava Temple is also referred to as Vijayanarayana Temple of Belur. It is a 12th-century Hindu temple in Karnataka.

- It is located on the banks of **Yagachi** River (also known as Badari River in historic texts), a tributary of **Hemavati** River.
- It was commissioned by **King Vishnuvardhana** in 1117 CE, on the banks of the Yagachi River in Belur also called Velapura, an early Hoysala Empire capital.
- The temple is devoted to **Lord Vishnu**.
- The richly sculptured exterior of the temple narrates scenes from the life of Lord Vishnu and his reincarnations and the epics, **Ramayana** and **Mahabharata**. However, some of the representations of Lord Shiva are also included.
- One of the sculptures, '**Darpana Sundari**' (lady with the mirror), is believed to be modeled after **Queen Shantala Devi**.



Hoysaleswara Temple: Halebidu

- Hoysaleswara temple also referred simply as the **Halebidu** temple is a 12th-century Hindu temple dedicated to Lord Shiva. It is located on the banks of **Dwarasamudra** tank.
- The temple was built in 1121 CE during the reign of the Hoysala King, **Vishnuvardhana Hoysaleswara**.
- The temple is most well-known for the more than 240 wall sculptures that run all along the outer wall.



Keshava Temple: Somanathapura

- Keshava Temple is a **Vaishnava temple** on the banks of **River Kaveri** at Somanathapura, Karnataka.
- The temple was consecrated in 1258 CE by **Somanatha Dandanayaka**, a general of the Hoysala King Narasimha III.
- The temple is enclosed in a courtyard with a pillared corridor of small shrines (now damaged). The main temple in the centre is on a high star-shaped platform with three symmetrical sanctums (*garbha-griha*).
- The western sanctum was for a statue of **Kesava** (missing), the northern sanctum of **Janardhana** and the southern sanctum of **Venugopala**, all forms of Vishnu.



Unique Features of Hoysala Temples

- **Use of Soapstone:** Hoysala temples are known for their intricate sculptures made possible by the **use of soapstone**. Soapstone is easy to carve. These sculptures depict various subjects, including animals, daily life scenes and stories from epics and Puranas, providing insights into the society of that era.
- **Unique Confluence of Styles:** Hoysala architecture combines three distinct architectural styles: Mainstream **Dravidian architecture** (seen in Pallava and Chola temples), **Vesara style** (a variant of Dravida style from Chalukya and Rashtrakuta temples), and **North Indian Nagara style**. This blend of styles was influenced by the Hoysalas military expeditions to different regions, bringing in diverse artistic influences.
- **Star-Shaped Platforms:** Hoysala temples are typically constructed on **star-shaped platforms**, and they comprise multiple structures within the complex. The walls and pillars are adorned with intricate sculptures, often with rich narratives and descriptions.
- **Artistic Signatures:** A distinctive feature of Hoysala temples is that sculptors and masons left their names and sometimes additional details on the temple structures, providing historical insights into the craftsmen.
- **Transition to Hinduism:** These temples were constructed during a period when Jainism was prevalent in the region, signifying a shift towards Hinduism in the Hoysala dynasty.

2. Adi Shankaracharya

News: A 108-foot-tall Statue of Oneness of Adi Shankaracharya has been unveiled at Omkareshwar, Madhya Pradesh. It depicts Shankaracharya as a 12-year-old child when he is said to have visited Omkareshwar.

About Adi Shankaracharya

- Adi Shankara is believed to have lived between 788 and 820 AD. He was born in Kerala's **Kaladi**, situated on the bank of the **Periyar** River.
- He became a sanyasi at an early age and went to Omkareshwar. He then studied under his guru **Govinda Bhagavatpada**.

About the Philosophy and Works of Adi Shankaracharya

- **Non-Dualism (Advaita Vedanta):** Shankaracharya's central philosophy revolved around the concept of '**Brahman**' the ultimate reality or cosmic consciousness, being the only true and unchanging reality. He argued that the individual self (Atman) is ultimately identical with Brahman and that the perceived duality of the world is an illusion (maya). This non-dualistic perspective is a cornerstone of **Advaita Vedanta**.
- **Writings:** Shankaracharya is known for his extensive writings and commentaries on various Hindu scriptures, particularly the Vedas, Upanishads, and the Bhagavad Gita.
- His commentaries helped to clarify and systematize the teachings of **Advaita Vedanta**. Some of his most famous works include the "**Brahma Sutra Bhashya**" the "**Vivekachudamani**" and the "**Atma Bodha**".
- **Travel:** He is said to have visited all the important spiritual centres of the time — from Kanchi (Kancheepuram in Tamil Nadu) to Kamrup (Assam), and Kashmir and the Kedar and Badri dhams, as well as Sringeri, Ujjain, Kashi, Puri, and Joshimath.

About Mandhata Island

- The Mandhata island on the Narmada River is an important religious destination because it houses **two of the 12 Jyotirlingas**, which are considered sacred manifestations of Lord Shiva.
- One of these Jyotirlingas is called **Omkareshwara** and the other is **Amareshwara**. The island is also close to the **Mahakaleshwara Jyotirlinga** in Ujjain.
- The island is adorned with **Shaivite, Vaishnavite, and Jain temples** dating back to the 14th and 18th centuries.

- The name 'Omkareshwar' is derived from the shape of the island, which resembles the sacred syllable 'Om', and its name means 'the Lord of Omkara'.

3. Toto Shabd Sangraha

News: A dictionary in Toto language is being made to preserve it.

About the Toto Shabd Sangraha

- Toto language is spoken by ~1,600 people in parts of West Bengal bordering Bhutan.
 - It is a Sino-Tibetan language. It is primarily spoken orally and is currently written in the Bengali script.
 - It is listed as a critically endangered language by UNESCO.
- To help preserve the language, a professor from the University of Calcutta is making a dictionary for the Toto language. The dictionary will translate Toto words into Bengali and English, using Bengali script,
- The project aims to preserve the Toto language, primarily oral until now, by documenting its vocabulary. It will help keep the language from disappearing and integrate marginal languages into the academic curriculum.

Significance of Toto Shabd Sangraha

- It is possibly the first attempt to compile a dictionary for the language. It will help enrich the language.
- It will help keep the language alive.
- Translating the language into Bengali and English will make it more accessible to new learners. It will also enable the speakers of the language to stay connected with their language.

4. Sarakka Central Tribal University, Telangana

News: The Union Cabinet has approved the Sarakka Central Tribal University.

About the Sarakka Central Tribal University

- The Tribal University was a commitment made by the Union government as a part of the **Andhra Pradesh Reorganisation Act, 2014**. Under the Act, both Andhra Pradesh and Telangana were promised to get support to establish a tribal university each.

About Sammakka and Sarakka

- Sammakka is said to have been married to Pagididda Raju, a feudal chief of the Kakatiyas who ruled the Warangal area. She had two daughters and one son: Sarakka or Saralamma, Nagulamma and Jampanna.
- In the 13th-century, in a battle against the local rulers in protest against the imposition of taxes, Saralamma died while Sammakka disappeared into the hills. The local (Koya) tribals believed that she (Sammakka) metamorphosed into a vermillion casket.

About Sammakka Saralamma Jatara

- Sammakka Saralamma Jatara is a tribal festival celebrated in the state of Telangana. The Jatra begins at Medaram in Mulugu district.
- The festival commemorates the battle of the mother-daughter duo against the imposition of taxes on the Koya people.
- Over the period, the festival has assumed a lot of importance. It is believed that after Kumbh Mela, the Sammakka Saralamma Jatara attracts the largest number of devotees in the country.
- The Samakka-Sarakka Jatara was declared as a **State festival in 1996**.

5. Sarna Religion

News: The Chief Minister of Jharkhand has written to the Prime Minister seeking recognition of the 'Sarna' religious code for tribals.

About Sarna Religion

- Followers of Sarna faith regard themselves as belonging to a distinct religious group.
- They are nature worshippers. The holy grail of the Sarna faith is '**Jal** (water), **Jungle** (forest), **Zameen** (land)'.
- The followers of Sarna faith pray to the trees and hills while believing in protecting the forest areas.
- Believers of Sarna faith do not practice idol worship, nor do they adhere to the concept of the Varna system, or belief in heaven-hell, etc.
- The followers are largely concentrated in the tribal belt states of Odisha, Jharkhand, Bihar, West Bengal, and Assam.

About the Demand of Sarna Faith

- Sarna followers are demanding to include 'Sarna' as a separate religion for indigenous people in the next census.
- A separate 'Sarna' code in the census is the key to a distinct identity for tribals. Without it, they are classified in other religions, as Hindus, Muslims or Christians. They feel recognition as a separate religious community will enable better protection of their language and history.

Miscellaneous

1. Fujiwhara Effect

News: The tropical cyclones often display Fujiwhara effect, which impacts their movement.

About the Fujiwhara Effect

- According to the National Weather Service (NWS), when **two hurricanes or cyclones spinning in the same direction are brought close together**, their centers **circle each other cyclonically** (counter-clockwise in the Northern Hemisphere and clockwise in the Southern Hemisphere) due to the cyclonic wind circulations.
- According to the National Weather Service, one of three things happen when the storms come near each other:
 - If one hurricane is a lot stronger than the other, the smaller one will orbit it and eventually come crashing into its vortex to be absorbed.
 - If the two storms are close to the same size, they can gravitate toward each other until they reach a common point where they either merge or they spin each other around for a while before they spin off in different directions.
 - If the two hurricanes are intense enough, they may merge with one another, leading to the formation of a **mega cyclone** much stronger and destructive than the either cyclone.
- Fujiwhara effect was first described by Japanese meteorologist Sakuhei Fujiwhara.



2. Pacific Decadal Oscillation (PDO)

News: According to the climate scientists, Pacific Decadal Oscillation can impact the monsoon and formation of cyclones in the Indian ocean.

About the Pacific Decadal Oscillation

- The Pacific Decadal Oscillation (PDO) is a **long-term climate pattern** that affects the temperature of the Pacific Ocean and the weather patterns around it.
- The phenomenon is centred over the **mid-latitude Pacific basin**. The PDO is detected as warm or cool surface waters in the Pacific Ocean, north of 20°N.
- The PDO is a **naturally occurring phenomenon** that shifts between **warm and cool phases**, with **each phase lasting around 20-30 years**.
- The PDO has positive and negative phases. During a warm (positive) phase, the west Pacific becomes cooler and part of the eastern ocean warms. During a cool (negative) phase, the opposite pattern occurs.
- El Nino Southern Oscillation (ENSO) with a positive PDO is generally not good for India but when linked with a negative PDO, it brings more rain to India.
- Unlike an ENSO whose stage can be determined any year, a 'positive' or 'warmer phase' of a PDO can be known only after several years of measuring ocean temperatures and their interaction with the atmosphere

Impact of PDO and ENSO

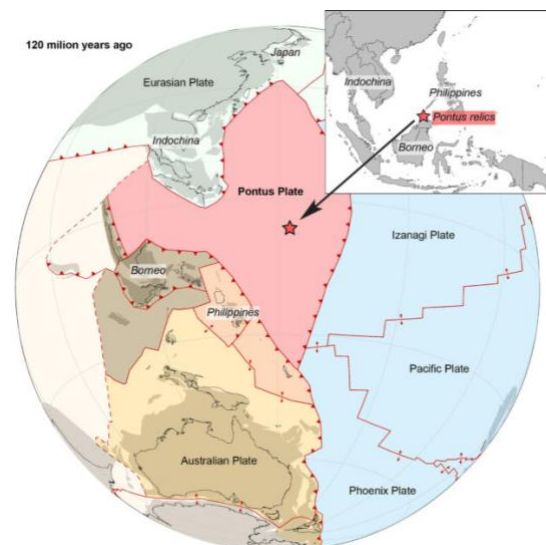
- The ENSO phenomenon repeats in the Pacific **over 2-7 years**. But the PDO has a longer cycle as it repeats **every 20 to 30 years**.
- The PDO phenomenon has major implications for the global climate. It affects hurricane activity in the Pacific and Atlantic oceans, and can cause droughts or flooding around the Pacific basin, in addition to impacting the productivity of marine ecosystems and global land temperature patterns.
- The interaction between PDO and ENSO is dependent on the phase. If both ENSO and the PDO are in the same phase, their impacts are magnified. If they are out of phase, then PDO may prevent the occurrence of 'true' ENSO effects.

3. 'Pontus' Tectonic Plate

News: Scientists have discovered a long-lost tectonic plate named 'Pontus' Plate.

About the Pontus Plate

- The Pontus plate is a tectonic plate that disappeared about 20 million years ago.
- It has been recently discovered in the **West Pacific Ocean**.
- It has been named as Pontus Plate as it once existed beneath an ancient ocean known as the Pontus Ocean.
- The plate was formed at least 160 million years ago. It was ~15 million square miles in size (~25% the size of the Pacific Ocean).
- It eventually disappeared as it was **subducted beneath the Australian and Chinese plates** and fell into the mantle. The subducted plate left behind fragments of rock when it 'sank' into Earth's mantle.



- These fragments (~135 million years old) were found in the mountains of Borneo, Indonesia. The scientists analysed the magnetic properties of these rocks to determine that they were from a different plate.
- The scientists had earlier detected a huge slab of crust of unknown origin in the mantle, beneath the same region. Now, they are able to explain the presence of large slab of a plate in the mantle.
- This discovery provides insight into Earth's geological history and plate movements.

4. Rubber Industry in India

News: The annual conference of Association of Natural Rubber Producing Countries was held in Guwahati.

About Size of India's Rubber Industry

- India is the world's 5th-largest producer of natural rubber. India's annual production varies between 6-7 lakh tonnes.
- India is also the 2nd-biggest consumer of Natural Rubber globally. Major sectors consuming rubber are automotive tyres sector (~50% of total consumption), bicycle tyres (~15%), Footwear (~12%), Latex products (~7%) etc. among others.
- About 40% of India's total natural rubber consumption is currently met through imports.

Challenges Faced by the Natural Rubber Industry

- The challenges faced by the Natural Rubber Industry are: Low rubber prices, rising labour costs, shortage of labour, diseases, climate change, environmental problems etc.

• About the INROAD Project

- It stands for Indian Natural Rubber Organisation for Assisted Development project.
- It has been launched by the **Rubber Board of India** in collaboration with the Automotive Tyre Manufacturers' Association. Its aim is to boost rubber cultivation across the North-eastern States.

About Rubber Board of India

- Rubber Board is a **statutory body** constituted by the Government of India under the **Rubber Act 1947**.
- It functions under the Ministry of Commerce and Industry.
- The Board is responsible for the development of the rubber industry in the country by way of assisting and encouraging research, development, extension and training activities related to rubber.
- It is headquartered in **Kottayam**, Kerala.

About the Association of Natural Rubber Producing Countries (ANRPC)

- ANRPC is an **intergovernmental organization** established in 1970.
- The membership is open to the governments of countries producing natural rubber.
- At present, 13 countries are members: India, Bangladesh, Cambodia, China, Indonesia, Malaysia, Myanmar, Papua New Guinea, Philippines, Singapore, Sri Lanka, Thailand and Vietnam.
- It is headquartered in Kuala Lumpur, Malaysia.

5. Freedom on the Net 2023 Report

News: Freedom House has released a report 'Freedom on the Net 2023: The Repressive Power of AI'.

About the Freedom on the Net Report

- Freedom on the Net is an annual study of human rights in the digital sphere. The report **assesses internet freedom** in 70 countries, accounting for almost 89% of the world's internet users.

Key Findings of the Freedom on the Net Report

- **Decline in the Global Internet Freedom:** Internet freedom has declined globally for the 13th consecutive year. Out of 70 countries assessed, 29 have witnessed a deterioration in online human rights, while only 20 have shown improvements.
- **Country Ranking:** China was ranked as the world's worst environment for Internet freedom for the 9th consecutive year. Myanmar emerged as the world's second most repressive country for online freedom. Iran also experienced a significant increase in digital repression, including Internet shutdowns and social media blockages during anti-government protests.
- **Legal Implications:** 55 countries saw individuals facing legal repercussions for online expression. The number of countries **imposing arrests and long prison terms for online activities** has risen from 18 in 2014 to 31 in 2023.
- **Elections as Triggers:** Elections often serve as triggers for digital repression. Incumbent leaders frequently criminalize speech, block independent news sites, and control information to influence election outcomes.

Key Findings Related to India

- **Censorship in India:** India has incorporated censorship including the use of automated systems, into the country's legal framework.
- The Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules require large social media platforms to use **AI-based moderation tools** for broadly defined types of content, such as speech that could undermine public order, decency, morality, or the country's sovereignty, integrity, and security, or content that officials had previously ordered removed.
- The report evaluates countries on **5 censorship methods:** Internet connectivity restrictions, blocks on social media platforms, blocks on websites, blocks on VPNs, and forced removal of content. India engaged in all forms of censorship methods except VPN blocking.
- **Digital Freedom Score:** India received a score of 50 on a scale of 1 to 100 for Digital freedom where '100' represented highest digital freedom. Iceland had the highest Internet freedom with a score of 94.

6. WHO Report on High Blood Pressure (BP)

News: The WHO has released its first-ever report on the devastating global impact of Hypertension.

Key Findings of the WHO Report

Global

- Hypertension affects 1 in 3 adults worldwide. It can lead to stroke, heart attack, heart failure, kidney damage and many other health problems.
- The number of people living with hypertension doubled between 1990 and 2019, from 650 million to 1.3 billion.
- Nearly half of people (~50%) with hypertension globally are currently unaware of their condition.
- More than three-quarters of adults (~75%) with hypertension live in low- and middle-income countries.
- Approximately 4 out of every 5 people (~80%) with hypertension are not adequately treated, but if countries can scale up coverage, **76 million deaths could be averted between 2023 and 2050.**

India

- Over 180 million people in India are impacted. 63% of people aren't aware of their condition.
- The 2019-20 National Family Health Survey (NFHS-5) reported a hypertension prevalence of 24% in men and 21% among women, an increase from 19% and 17% respectively, from the previous round (2015-16).
- Hypertension is the most important **risk factor for death and disability in India.**

- Less than 25% of hypertensive patients in India had their blood pressure under control (2016-2020).

Recommendations of the WHO to control Hypertension

- **Protocol:** Practical dose- and drug-specific treatment protocols with specific action steps for managing uncontrolled blood pressure can streamline care and improve adherence.
- **Medication and Equipment Supply:** Regular, uninterrupted access to affordable medication is necessary for effective hypertension treatment; currently, prices for essential anti-hypertensive medicines vary by more than ten-fold between countries.
- **Patient-centred Services:** Reduce barriers to care by providing easy-to-take medication regimens, free medications and close-to-home follow-up visits, and making blood pressure monitoring readily available.
- **Information Systems:** User-centred, simple information systems facilitate rapid recording of essential patient-level data, reduce health care worker data entry burden, and support rapid scale-up while maintaining or improving the quality of care.

India has made progress in managing hypertension through the India Hypertension Control Initiative (IHCI). As of March 2021, 48% of patients at primary health centers and 55% at health wellness centers achieved blood pressure control under this program.

7. Declining Use of Toilets in Rural India

News: A working paper released by the World Bank on the progress of the Swachh Bharat Mission-Gramin, has highlighted decline in the use of toilets in rural India.

Key Findings of the World Bank Paper

- Swachh Bharat Mission-Gramin (SBM-G) has led to a **substantial increase in access to improved toilets** (own or shared) in rural India; from 38% in 2012 to 90% in 2019-20.
- Most **low-income States** were the **best performers** in terms of their overall **increase in regular use of toilets**. The performance of richer States was mixed.
- A large increase in toilet use was seen in the poorest 20% of the rural population, which reported toilet use going up from 7% to 43% in between 2015-16 and 2019-21.
- However, there has been a clear **trend of regular toilet use declining in rural India** since 2018-19.
- The decline in toilet usage was the **largest among the SCs and the STs**. There was a 20 percentage point decline in regular use of toilets for the SCs and a 24 percentage point decline for the STs. The decline for OBCs and General categories was 9 and 5 percentage points respectively.
- The States where there has been a sustained decline in regular use of toilets since 2018 were Uttar Pradesh, Gujarat, Chhattisgarh, Telangana, Karnataka, and Himachal Pradesh.
- On the other hand, states like Odisha, Punjab, Kerala, Bihar, Uttarakhand, Haryana, and Assam were found to be steady performers in terms of continued toilet usage.

Swachh Bharat Mission: Gramin

- Swachh Bharat Mission Gramin (SBMG) was launched in 2014.
- It is the **world's largest sanitation campaign** that led to the construction of over 100 million individual household toilets over a 5-year period.
- It took **sanitation coverage** from 39% in 2014 to **100% in 2019**.
- More than 6 lakh villages declared themselves **Open Defecation Free (ODF)** by 2nd October, 2019.
- SBM-G Phase II was launched in 2020-21 with the objective of **transforming all the villages from ODF to ODF Plus**.
- An ODF Plus village is one which has **sustained its Open Defecation Free (ODF) status** along with implementing either **solid or liquid waste management systems**.
- Its components include sustaining ODF status, Solid and Liquid Waste Management, Plastic Waste and Faecal Sludge Management, GOBARdhan, Information Education and Communication/Behavior Change Communication (IEC/BCC) and Capacity Building.

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1. Inter-Parliamentary Union

It was established in 1889 as a global organization of national Parliaments. Its aim is to **promote parliamentary dialogue** worldwide and works for peace and cooperation among the people. It consists of 179 Member Parliaments and 13 Associate Members. IPU has **permanent observer status** at the **United Nations General Assembly**. It is headquartered at **Geneva, Switzerland**.

2. UN Human Rights Council (UNHRC)

It is an **intergovernmental body** within the United Nations system. It was created in 2006 to replace the United Nations Commission on Human Rights. It is responsible for strengthening the **promotion and protection of human rights** around the globe and **addressing situations of human rights violations** and making recommendations on them. It is composed of **47 member States** elected by the **United Nations General Assembly**. The term of each seat is 3 years, and no member may occupy a seat for more than two consecutive terms. The seats are distributed according to the region: African Group (13), Asia-Pacific Group (13), Eastern European Group (6), Latin American and Caribbean Group (8), Western European and Others Group (7). It is headquartered in Geneva, Switzerland.

Universal Periodic Review (UPR) is a mechanism within the UNHRC designed to assess and **review the human rights records** of all United Nations member States.

3. United Nations Convention against Transnational Organized Crime (UNTOC)

It was adopted by the UN General Assembly in 2000 and entered into force in 2003. It is also known as the **Palermo Convention** (adopted in Palermo, Italy). It is the first comprehensive and global **legally binding instrument** to fight transnational organized crime. Signatory countries commit themselves to taking a series of measures to **prevent and control transnational organized crime** including like **criminalizing** of the participation in an organized criminal group, of money laundering, related corruption and obstruction of justice and the **adoption of frameworks for extradition, mutual legal assistance and international cooperation**.

It is supplemented by **3 Protocols**: (a) Protocol to Prevent, Suppress and Punish **Trafficking in Persons** especially Women and Children; (b) Protocol against the **Smuggling of Migrants** by Land, Sea and Air and (c) Protocol against the Illicit Manufacturing of and **Trafficking in Firearms**, their Parts and Components and Ammunition.

The Government of India had ratified the UNTOC and its 3 protocols in 2011. **The CBI is the nodal agency for all dealings with UNTOC.**

4. Operation Ajay

The Government of India has launched Operation Ajay to facilitate the **return of citizens** from Israel amid a full-blown war with the Hamas group in Gaza. Other similar operations include Operation **Kaveri** (Sudan), **Ganga** (Russia-Ukraine war), **Devi Shakti** (Afghanistan), **Raahat** (Yemen), **Safe Homecoming** (Libya).

5. Baltic-connector Gas Pipeline

Baltic-connector gas pipeline is a **natural gas pipeline between Finland and Estonia**. It was opened in 2020. It is

Baltic gas pipeline and telecoms cables damaged

A subsea gas pipeline between Estonia and Finland, and three telecommunications cables—two connecting Estonia with Finland and Sweden, and one connecting Russia's mainland with its Kaliningrad exclave—were damaged on Oct. 7-8 in the Baltic Sea. The damage comes more than a year after the larger Nord Stream gas pipelines were damaged by explosions.



used to send gas between Estonia and Finland, depending on which country is most in need at any point. The pipeline has been **Finland's only natural gas import channel since Russian imports were stopped in 2022**. Finland is investigating potential sabotage of the Baltic-connector gas pipeline.

6. Baltic Sea

The Baltic Sea is a part of the Atlantic Ocean. It is surrounded by Denmark, Estonia, Finland, Germany, Latvia, Lithuania, Poland, Russia, Sweden and the North and Central European Plain.

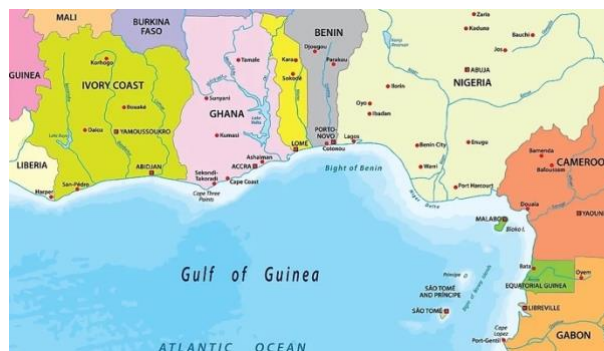


7. Baltic States

Baltic states is a geopolitical term typically used to refer to three countries namely: **Estonia, Latvia and Lithuania**. All 3 countries are **members of NATO**, the **European Union**, the **Eurozone**, and the **OECD**. These countries are also classified as **high-income economies** by the World Bank and maintain a **very high Human Development Index**.

8. Gulf of Guinea

The Gulf of Guinea is the North-easternmost part of the Atlantic Ocean. **Null Island**, defined as the **intersection of the Equator and Prime Meridian** (0° latitude and 0° longitude) is located in this gulf. Among the many rivers that drain into the Gulf of Guinea are the Niger and the Volta.



The Gulf of Guinea is known for its rich maritime resources, including oil and natural gas. It is also an important region for international shipping and trade.

The Gulf of Guinea is also known as the **world's hotspot for maritime piracy**.

9. India-UN Capacity Building Initiative

Its aim is to build the capacity of countries in the Global South by **sharing India's development experiences, best practices, and expertise** through capacity-building and training programs. The UN-India team and the **Gates Foundation** will collaborate, utilizing India's technical and economic cooperation platforms. The initiative will put into action the development goals established during India's G20 Presidency, including the G20 Action Plan for advancing the Sustainable Development Goals (SDGs) and enhancing technology and digital infrastructure. The initiative shows India's commitment to the Global South.

10. Asia-Pacific Institute for Broadcasting Development (AIBD)

India has been re-elected as the President of Asia-Pacific Institute for Broadcasting Development (AIBD) for a 3rd-successive term. It was established in 1977 under the auspices of the UNESCO. It is a **regional intergovernmental organization** servicing countries of the United Nations Economic and Social Commission for Asia and the Pacific (UN-ESCAP) in the field of **electronic media development**.

It currently has 92 member organizations from across 44 countries. Its secretariat is in Kuala Lumpur, Malaysia.

11. Liptako-Gourma Charter

Military leaders of **Mali, Burkina Faso, and Niger** have signed a mutual defense pact called Liptako-Gourma Charter. The charter establishes the **Alliance of Sahel States (AES)**. The charter aims to establish an architecture of **collective defence and mutual assistance** for the benefit of the population. This alliance will be a **combination of military and economic efforts** between the 3 countries. Liptako-Gourma region is where the Mali, Burkina Faso and Niger borders meet. The Sahel region has been the site of an ongoing jihadist insurgency since 2011, such as the Boko Haram insurgency.



12. Nobel Peace Prize, 2023 Awarded to Narges Mohammadi

The Norwegian Nobel Committee has awarded the Nobel Peace Prize, 2023 to Iranian activist Narges Mohammadi. She is an **Iranian human rights activist and scientist**. She has been awarded for **her fight against the oppression of women in Iran** and her fight to **promote human rights and freedom for all**. She has written many articles arguing for social reforms in Iran. Her book '**White Torture: Interviews with Iranian Women Prisoners**' won an award for reportage at the International Film Festival and Human Rights' Forum. She has also won the **Olof Palme Prize** earlier in 2023. She is the 19th woman to ever win the Nobel Peace Prize and the second Iranian woman to win the award.

13. Indian Ocean Rim Association (IORA)

It is an **inter-governmental organization** established in 1997. Its aim is to **strengthen regional cooperation and sustainable development within the Indian Ocean Region (IOR)**. It has **23 Member States**: Australia, Bangladesh, Comoros, France, **India**, Indonesia, Iran, Kenya, Madagascar, Malaysia, Maldives, Mauritius, Mozambique, Oman, Seychelles, Singapore, Somalia, South Africa, Sri Lanka, Tanzania, Thailand, United Arab Emirates and Yemen.

It has **11 Dialogue Partners**: China, Egypt, Saudi Arabia, Germany, Italy, Japan, South Korea, Russia, Turkey, the United Kingdom, and the US.

Its secretariat is in **Ebène, Mauritius**.

14. Positive Indigenisation List

The concept of the positive indigenization list entails that the Indian Armed Forces will **exclusively source the listed items** (in the indigenisation list) **from domestic manufacturers**. These manufacturers may include entities from the private sector or Defense Public Sector Undertakings (DPSUs). So far 5 lists have been released.

15. Operation Sajag

It is a **monthly drill** conducted by **Indian Coast Guard**. Its purpose is to **revalidate the coastal security system** while **raising awareness** among fishermen at sea. The drill involves a thorough review of various coastal security measures and highlights important lessons and emerging trends in coastal security.

16. Steps Taken to Strengthen Coastal Security

The measures include Issuance of **Biometric cards for the fishermen**, **colour coding of fishing boats** as per each State, **manning of fish landing centers** and **access control** at entry/exit check points, **coastal mapping**, designating specific marine band frequency for security agencies, **training of marine police personnel** by Indian Coast Guard amongst others.

17. Samudra Prahari

It is Indian Coast Guard's specialized **Pollution Control Vessel**. The ship is equipped with state-of-the-art **pollution response and control equipment** including containment equipment like Hi-Sprint Booms and river booms to **prevent spread of oil spill**, **oil spill recovery devices** such as skimmers and side sweeping arms and storage devices in the Indian Exclusive Economic Zone. The ship is capable of unhindered oil recovery operations with storage capacity of 500 KL. It is designed to operate twin-engine Advanced Light Helicopters and to operate and embark Chetak helicopter.

18. Bharat NCX 2023

It is the National Cyber Security Exercise. It is conducted by the **National Security Council Secretariat (NSCS)** in strategic partnership with **Rashtriya Raksha University (RRU)**. Its aim is to train senior management and technical personnel of Government/Critical Sector organizations and Public and Private agencies on **contemporary cyber threats** and **handling cyber incidents and response**. The participants will be trained on various key cyber security areas such as **Intrusion Detection Techniques**, **Malware Information Sharing Platform (MISP)**, **Vulnerability Handling and Penetration Testing**, Network Protocols and Data Flows, **Digital Forensics** etc. It will help strategic leaders to better understand cyber threats, assess readiness, and **develop skills for cyber crisis management** and cooperation.

19. Dhanush

Dhanush is a 155 mm, 45-calibre **towed artillery gun** with a range of 36 km. The gun is an upgrade of the existing 155 mm, 39-calibre Bofors FH 77 gun. The **Advanced Weapons and Equipment India Limited**, carved after **corporatisation of the Ordnance Factory Board** is manufacturing the Dhanush guns.



20. Metal-Insulator Transition

Normally, materials are either good at conducting electricity (conductors) or they block it (insulators). But **some materials can switch between these two states** when parameters like temperature or pressure are changed. This switching is known as a **Metal-Insulator Transition (MIT)**. This phenomenon was first discovered in magnetite in 1939.

Scientists have found that the **magnetic stress caused by the arrangement of atoms** in a material can be the reason for this transition of materials from being metallic to insulators. These findings could help discover new materials that can switch between being conductors and insulators.

21. Rashtriya Vigyan Puraskar

Rashtriya Vigyan Puraskar has been constituted by the Government of India to felicitate scientists, technologists and innovators.

They will be given under 4 categories:

Vigyan Ratna: It will recognise the lifetime achievement of scientists; **Vigyan Shri:** It will recognise distinguished contributions to a field; **Vigyan Yuva Shanti Swarup Bhatnagar:** It will encourage young scientists who have made exceptional contributions in their field and **Vigyan Team:** It will recognise teams of three or more.

These awards will be given annually for **13 domains:** physics, chemistry, biological sciences, mathematics and computer science, earth science, medicine, engineering science, agricultural science, environmental science, technology and innovation, atomic energy, space science and technology, and others.

There will 3 Vigyan Ratnas awarded yearly, 25 Vigyan Shri, 25 Vigyan Yuva, and 3 Vigyan Team. Only Vigyan Yuva will have an age limit of 45 years. The awards can also be **given to Persons of Indian Origin (PIOs).**

The awards will be announced on **National Technology Day**, May 11. The award ceremony will be held every year on the **National Space Day**, August 23.

The awards processes will be managed by the Council for Scientific and Industrial Research (CSIR) for the first 2 years and will be taken over by the newly instituted **National Research Foundation.**

22. Hemochromatosis

It is a disorder associated with **deposits of excess iron that causes multiple organ dysfunction.** The organs affected by hemochromatosis include the liver, pancreas, heart, thyroid, joints, skin, gonads and pituitary.

Hemochromatosis has been dubbed '**bronze diabetes**' because of the **skin darkening** and concomitant pancreatic illness. It can be **Hereditary** (genetic disorder with excessive iron absorption within the intestines) or **Secondary** (caused by external factors like frequent blood transfusions, excessive iron supplementation, or certain medical conditions). It can cause symptoms including feeling of tiredness or weakness, pain in the joints, pain in the abdomen over the liver and darkening of skin colour

Treatment options include **therapeutic phlebotomy**, which involves **regular blood removal to reduce iron levels.**

23. Highly Pathogenic Avian Influenza (HPAI)

The **World Organisation for Animal Health (WOAH)** has approved **India's self-declaration of freedom from Highly Pathogenic Avian Influenza.** Avian influenza is also known as 'bird flu'. It is a disease primarily affecting birds. It is caused by a virus of the Orthomyxoviridae family. It is classified into 2 categories: **The Low Pathogenic Avian Influenza Virus (LPAIV)** can cause a mild illness, often unnoticed or without symptoms. **The Highly Pathogenic Avian Influenza Virus (HPAIV)** causes serious illness in birds that can spread rapidly, resulting in high death rates in birds. **Some HPAI strains have the ability to infect humans.**

India follows a '**detect and cull**' policy as outlined in the **National Action Plan for Prevention, Control, and Containment of Avian Influenza** (revised – 2021).

The policy approach includes humane destruction of infected and exposed animals, eggs, feed, litter and other contaminated materials and restricting the movement of poultry and poultry products.

24. NexCAR19

NexCAR19 is an **indigenously developed CAR-T cell therapy.** It has been developed by IIT Bombay and Tata Memorial Centre. The therapy has been approved for the treatment of relapsed/refractory B-cell lymphomas and leukemia. (Refer EPIC February 2023 (click) for CAR T-Cell Therapy).

25. White Phosphorous

It is a waxy, yellowish-to-clear chemical with a pungent, garlic-like odour. It is a **highly combustible chemical** that burns quickly and brightly when **exposed to air**. It can be deployed through artillery shells, bombs, rockets or grenades. It is **not considered a chemical weapon** because it **operates primarily by heat and flame rather than toxicity**. White phosphorus **causes severe burns** that are slow to heal and are likely to develop infections. It can cause dysfunction in multiple organs, including the liver, kidneys and heart. It can also be lethal if inhaled.

White phosphorus is not explicitly banned by international conventions. **Protocol III** of the **1980 Convention on Certain Conventional Weapons** prohibits incendiaries or the use of other substances to attack civilian populations. However, white phosphorus can also be used as a **smokescreen**, to signal or to illuminate a target. This allows militaries to argue that **its use is not covered by Protocol III**.

26. Tilapia Parvovirus

It is a small, nonenveloped, **single-stranded DNA (ssDNA) virus**. The virus was first reported in China (2019) and Thailand (2021). India is the 3rd country to report the occurrence of TiPV. It has a mortality rate ranging from 30 to 50% in the farm and 100% mortality in the laboratory.

The virus affects **Tilapia**, a **freshwater fish species**. It inhabits the shallow streams, ponds, rivers, and lakes, and less commonly in brackish water. They are mainly considered as a **poor man's fish**.

27. Lymphatic Filariasis (LF)

It commonly known as **elephantiasis**, and is a **neglected tropical disease**. Infection occurs when **filarial parasites are transmitted to humans through mosquitoes**.

Lymphatic filariasis infection involves asymptomatic, acute, and chronic conditions. In chronic conditions, it leads to **lymphoedema** (tissue swelling) or **elephantiasis** (skin/tissue thickening) **of limbs and hydrocele** (scrotal swelling).

WHO recommended strategy for lymphatic filariasis elimination is **mass drug administration**. It involves **administering an annual dose of medicines to the entire at-risk population**.

India aims to eliminate Filariasis by 2027, 3 years ahead of the global target. The Government of India has launched a **5-pronged strategy for elimination of LF**: Multi-drug administration (MDA) Campaign; Early diagnosis and treatment; Integrated Vector Control; Inter-sectoral convergence with allied departments and ministries and Leveraging existing digital platforms for LF and exploring alternate diagnostics.

28. R21/Matrix-M Vaccine

The World Health Organization (WHO) has recommended a new vaccine **R21/Matrix-M for the prevention of malaria in children**. It has been developed by the **Oxford University** and the **Serum Institute of India**. It contains **R21 antigen** developed by University of Oxford, specific to the malaria parasite, and Novavax's **Matrix-M**, a **saponin-based adjuvant** that enhances the immune response, making it broader and more durable. It has shown as **high efficacy** when given just before the high transmission season to reduce symptomatic cases of malaria by 75% following a 3-dose series. Its price is US\$ 2-4 per dose, making it comparable to other recommended malaria interventions. The R21 vaccine was **shown to be safe in clinical trials**.

29. Truenat Test

Truenat is a chip-based, point-of-care, **rapid molecular test for diagnosis of various diseases**. It is a portable, battery-operated machine. Truenat tests **use real-time Micro Polymerase Chain Reaction**

(PCR) technology. It has been approved by WHO and ICMR for TB diagnosis, Covid and other diseases. Traditional RT-PCR tests can take up to eight hours to complete. TrueNat tests use the same scientific principle, but deliver the results in half an hour.

30. Committee for the Purpose of Control and Supervision of Experiments on Animals (CPCSEA)

It is a **statutory body** formed under the **Prevention of Cruelty to Animals Act 1960**. In 2022, CPCSEA had recommended that **stray dogs may be used for new vaccine trials**. The condition was that these animals should be **quarantined and rehabilitated**. However, it did not allow the use of stray dogs for **challenge trials**. Challenge trials involve **intentionally infecting a healthy animal with a biological agent**, such as a virus, to test the efficacy of a potential vaccine. Such trials are also employed to test vaccines in people. The CPCSEA has now withdrawn the circular that allowed the trials.

31. Consortium of International Agricultural Research Centres, CGIAR

It was established in 1971. It is a **network of publicly-funded agri-food systems research centres**. Its aim is to reduce rural poverty, increase food security, improve human health and nutrition, and sustainable management of natural resources. It consists of 15 international agricultural research institutes.

32. International Crops Research Institute for the Semi-Arid Tropics (ICRISAT)

It is a non-profit, non-political organization founded in 1972. Its charter was signed by the FAO and the UNDP. Its aim is to **conduct agricultural research for development in Asia and sub-Saharan Africa**. ICRISAT holds a special status as a UN organization in India. This makes it eligible for special immunities and tax privileges. It is headquartered in **Patancheru, Hyderabad**. ICRISAT was awarded the 2021 Africa Food Prize, for work that has improved food security across 13 countries in sub-Saharan Africa.

33. Norman E Borlaug Award

Dr. Norman E. Borlaug Award is presented every year by the **World Food Prize Foundation**. It is presented in memory of the Nobel awardee Dr. Norman Borlaug, This award recognizes exceptional, science-based achievement in **international agriculture and food production** by an **individual under the age of 40**. Indian agriculture scientist **Swati Nayak** has become the 3rd Indian agriculture scientist to win the prestigious Norman E Borlaug Award for 2023. The other two include **Aditi Mukherjee** (2012) and **Mahalingam Govindaraj** (2022). Swati Nayak is credited with the **successful dissemination and adoption of more than 20 climate-resilient and bio-fortified rice varieties**. Among these are '**Sahbhagi Dhan**', a drought-tolerant variety suitable for hilly uplands, and '**BINA Dhan-11**', which is flood-tolerant.

34. India's first Green Hydrogen Fuel Cell Bus

It has been developed by Indian Oil Corporation. The fuel cell **utilizes Hydrogen and air to generate electricity** to power the bus. The only **by-product is water** therefore making it **possibly the most environmentally friendly mode of transportation** as compared to conventional buses that run on diesel and petrol. The buses have also been equipped with four cylinders that have a capacity of 30 kg and **can run the buses for 350 km**. Initially, 15 fuel cell buses will be deployed on specified routes in the Delhi NCR Region to establish the performance data under Indian operating conditions.

35. RISE Initiative

The World Bank has launched the **Resilient and Inclusive Supply-chain Enhancement initiative**.

It has been launched by the World Bank in partnership with Japan, Italy, Republic of Korea, Canada and the UK. Its aim is to help create jobs and address climate change. It will focus on **assisting emerging markets and developing countries in expanding their clean-energy production and increasing their involvement in the minerals industry.**

36. Green Credit Programme (GCP)

It is a **market-based mechanism** that aims to **incentivize voluntary environmental actions** by various stakeholders like individuals, communities, private sector industries and companies. The program focuses on **2 key activities: water conservation and afforestation.** These activities can earn **green credits certificates.** The **certificates can be traded** on a trading platform. To obtain these Green Credits, individuals and entities must register their actions through the government's website. The Administrator verifies the activities and will then grant a Green Credit certificate. The **Indian Council of Forestry Research and Education (ICFRE)** is the implementing and monitoring agency.

37. Ecomark Scheme

It provides **accreditation and labelling for household and consumer products** that meet specific environmental criteria while maintaining quality standards as per Indian norms.

Products accredited under this scheme adhere to specific environmental criteria **ensuring minimal environmental impact.** It is being administered by the **Central Pollution Control Board** in partnership with **Bureau of Indian Standards (BIS).** It will help build **consumer awareness about environmental issues** and **encourage eco-conscious choices.** It will motivate manufacturers to **shift towards environmentally friendly production.**

38. Green Ammonia

Ammonia is a pungent gas that is widely used to **make agricultural fertilisers.** Green ammonia production is where the process of making ammonia is **100% renewable and carbon-free.** It can be made by using hydrogen from **water electrolysis** and nitrogen separated from the air. These are then fed into the **Haber process** (also known as Haber-Bosch). Uses of Ammonia include

- **Energy Storage:** Ammonia is **stored in bulk as a liquid** at pressures ~10-15 bar or refrigerated to -33°C. This makes it an ideal chemical store for renewable energy.
- **Zero-carbon fuel:** It can be burnt in an engine or used in a fuel cell to produce electricity. Ammonia's only by-products are water and nitrogen. The maritime industry is likely to be an early adopter, replacing the use of fuel oil in marine engines.
- **Fertilizers:** Green Ammonia can directly replace Grey Ammonia currently used in fertilizer plants without requiring any changes to existing infrastructure.

39. Coral Reef Breakthrough Initiative

It has been launched by **International Coral Reef Initiative (ICRI)** in partnership with the **Global Fund for Coral Reefs (GFCR)** and the High-Level Climate Champions (HLCC). Its aim is to secure the future of at least 125,000 km² of shallow-water tropical coral reefs with investments of at least US\$ 12 billion to support the resilience of more than half a billion people globally by 2030.

40. International Coral Reef Initiative (ICRI)

It is a **global partnership** between nations and organizations which strives to **preserve coral reefs and related ecosystems.** It was founded by 8 Governments at the **1st COP of the Convention on Biological Diversity** in December 1994. At present, it has 45 countries. India is also a member.

41. Travel for LiFE Initiative

It is a sectoral program under **Mission LiFE** targeted towards the **tourism sector**. It has been launched by the **Ministry of Tourism** in partnership with the **Ministry of Environment, Forest and Climate Change (MoEFCC)**, **United Nations World Tourism Organisation (UNWTO)**, and the **United Nations Environment Programme (UNEP)**. The initiative embodies the ethos of '**Pro Planet People**' and operates on the fundamental principles of living "**Lifestyle of the planet, for the planet, and by the planet**". It aims to bring about significant **behavioural changes in both tourists and tourism businesses**, with a **strong emphasis on environmental protection and socio-cultural sustainability**. Travel for LiFE Program will **position India as leader in promoting sustainable and responsible tourism** and **using tourism as a vehicle for achieving SDGs by 2030**.

42. Balsams

Balsams refer to plants belonging to the genus **Impatiens**. These are **flowering plants** known for their **small pink flowers**. They are locally called as *Kasithumba* and *Onappovu*. They are also known as 'touch-me-not' because of the bursting of mature seeds and seed distribution. There are ~220 balsam species in India, of which 135 are found in the southern Western Ghats. Anamudi, the highest mountain in the Western Ghats, and the surrounding high ranges are known for the diversity of wild balsams. Munnar is also the major habitat of balsams. ~46 species of balsams have been discovered near Munnar. No other place in the world has such diversity. Balsams are considered an **important indicator of climate change**, as changes in climate can affect their population.



43. Conocarpus Tree

It is an **evergreen species** with dark-green shiny leaves. Its trees have been the **popular choice in recent years for beautification** of public spaces to residential societies and factories. It is **fast-growing** and can be trimmed into various shapes. It is native to parts of North and South America, as well as parts of Africa.

It has become a popular choice to line public roads as well as hedges along walkways in gardens. However, there are several adverse impacts:

- Pollen from the trees have been found to **trigger health issues** like cold, cough, asthma, and allergies.
- They **penetrate deep into the ground and extend horizontally**. Their roots **damage underground infrastructure** like electricity cables, communication lines, drainage lines and drinking water pipes.
- It **absorbs more water** from soil than other species and is a threat to groundwater.

The Government of Gujarat has banned the **planting of Conocarpus trees in both forest and non-forest areas** due to their adverse impact on the environment and human health.



44. Vilayati Kikar

Vilayati kikar (*Prosopis juliflora*) is a **thorny shrub or tree** growing up to 15 m height. It is an **invasive Mexican tree**

species. It was introduced by the British in Delhi in the 1930s. The roots of the tree can grow over **50 meters deep, depleting groundwater.** The trees also make it **difficult for native species to germinate around them.** The Madras High Court in 2016, passed an interim order clearing removal of *Prosopis juliflora* as they were depleting the water table in areas already struggling for water.

45. Mithun as Food Animal

Food Safety and Standards Authority of India (FSSAI) has recognized **Mithun as a 'food animal'.** This will help farmers and tribal village communities to **sell mithun meat for commercial purposes**

Until now, mithuns and their meat were sold only for very special occasions like festivals or weddings.

Its scientific name is ***Bos frontalis***. It is a **ruminant species** of the **Bovidae family** found in **Arunachal Pradesh, Nagaland, Manipur and Mizoram.** It is also the **State animal** of both **Arunachal Pradesh and Nagaland.** Mithun is **semi-domesticated** and is reared in a free-range forest ecosystem. The animal is usually let loose in a community forest and has rarely required shelter or supplementary feeding except for salt. As of 2019, there are ~3.9 lakh mithuns in Arunachal Pradesh, Nagaland, Manipur and Mizoram.



46. Olive Ridley Turtles

The Olive Ridley turtles are the **smallest and most abundant of all sea turtles** found in the world. Olive ridley gets its name from its **olive coloured carapace** (hard shell), which is heart-shaped and rounded. They are **carnivores**, and feed mainly on jellyfish, shrimp, snails, crabs, molluscs and a variety of fish and their eggs. They are **found in warm waters** of the Pacific, Atlantic and Indian oceans.



These turtles **spend their entire lives in the ocean**, and **migrate** thousands of kilometres between **feeding and mating grounds** in the course of a year. They are best known for their **unique mass nesting called Arribada**, where thousands of females come together on the same beach to lay eggs. Odisha's **Gahirmatha Marine Sanctuary** is the **world's largest known rookery** (breeding colony) for them.

Their IUCN Red List status is **Vulnerable**, and they are classified under **Schedule 1 of the Wildlife Protection Act, 1972**; and **Appendix I of CITES.**

The Indian Coast Guard undertakes '**Operation Olivia**' every year to protect them. To reduce their accidental killing, the Odisha government has made it mandatory for trawlers to use **Turtle Excluder Devices.** It is a net specially designed with an exit cover that allows the turtles to escape while retaining the catch.

47. Badis Limaakumi

Scientists have discovered a new fish species from the Milak river, Nagaland, named as Badis Limaakumi. It is a freshwater fish that belongs to the Badidae family. It is commonly found in **streams with slow or moderate water flow**, in ditches and stagnant water bodies. The fish is found in India, Bangladesh, Nepal, Pakistan, Thailand and Myanmar. Fish from the Badis family are also known as **chameleon fish** for their ability to change colour. This helps them blend with the surroundings when under stress.



48. Jageshwar Dham

It is a Hindu pilgrimage town in the Almora district of Uttarakhand. It is known for its group of **125 ancient temples** built between the 7th and 14th centuries. These temples were primarily constructed and restored by the kings of the **Katyuri dynasty**. These temples are dedicated to various deities with many honouring Lord Shiva. It is believed that Lord Shiva came to meditate in the dense forests of Jageshwar, leaving behind these temples as a testimony of his presence. The Jageshwar temples are a prime example of the **Nagara style of architecture**. The temples are characterized by **intricately carved stone structures** and **tall shikharas**. The engravings and sculptures on the temple walls depict various deities and mythological narratives, offering a glimpse into the rich cultural heritage of the region.



49. Parvati Kund

It is located in Uttarakhand. It is situated at an elevation of about 5,338 feet. It is believed to be the location where Lord Shiva and Goddess Parvati engaged in meditation.



50. Bekal Fort

Bekal Fort is located in **Kasargod district, Kerala**. It is the largest fort in Kerala. It was built in the 17th century by **Shivappa Nayaka** of the **Keladi dynasty**. The fort has seen rise and fall of several dynasties and later came under the control of the Kingdom of Mysore. The fort appears to emerge from the sea. Almost three-quarters (~75%) of its exterior is in contact with water. The fort's zigzag entrance and surrounding trenches reveal its defensive strategy. Holes on the outer walls are designed to defend the fort effectively from naval attacks. The upper holes are meant for aiming at the farthest targets; lower holes below for striking the enemy that is nearer. The fort's solid construction resembles the **Thalassery Fort** and the **St. Angelo Fort** at Kannur built by the Dutch.



51. GI Tag for Basohli Pashmina

Basohli Pashmina from Jammu and Kashmir has got the GI Tag. Basohli Pashmina is a more than **100-year-old traditional craft** from Jammu and Kashmir's **Kathua district**. It is a **hand-spun product** known for **extreme softness, fineness and light-weight**. **Pashmina Shawl** is a fine wool made from the undercoat of the **Changthangi** or **Pashmina goat**.



52. GI Tag for Kalari Cheese

Kalari is a **Dogra cuisine**. The dish finds its origin in Udhampur district, Jammu and Kashmir. The dish is made from milk and is a **dense cheese**. It's cooked in its own fat, salted, and served hot with bun slices.

53. GI Tag for Udangudi Panangkarupatti

It is also referred to as **palm jaggery**. It is prepared using the **palm sap** collected from the inflorescence of **palmyra trees**. They grow on the **red sand dunes** in and around the **Tiruchendur region, Tamil Nadu**. The palm jaggery preparation procedure in this area is **traditional** till date without inclusion of any additional modern strategies like use of chemical additives. The red sand dunes add a unique flavour. This soil holds less groundwater. The moisture content in the atmosphere is less because of the dry climatic condition **which leads to high sucrose content**, in turn **adding taste**.



54. GI Tag for Yak Churpi

Yak Churpi is a **naturally fermented milk product** prepared from the **milk of Arunachalee Yak**. It is an **excellent source of proteins** and is frequently used as a substitute for vegetables by tribal yak herders in the vegetation-starved cold and hilly mountainous regions of the state. It is also considered an integral part of the **tangible cultural and tribal heritage** of Arunachal Pradesh.



55. Arunachalee Yak

It is a unique yak breed found in **West Kameng** and **Tawang** districts of Arunachal Pradesh. This breed is reared by tribal yak pastoralists known as **Brokpas** who migrate along with their yaks to higher reaches up to 10,000 ft altitude and higher during summers. They descent to mid-altitude mountainous regions during winters.



56. Nobel Prize in Literature, 2023

The Nobel Prize for Literature 2023 has been awarded to **Norwegian author Jon Olav Fosse** for his innovative plays and prose which give voice to the unsayable. He is considered as one of the most important contemporary European writers. He published his first novel, **Red, Black** in 1983. He has since published numerous novels, stories, books of poetry, essay collections and children's books. His themes explore the absurdity, the futility and yet the power of the human condition; everyday confusions and irresolutions and the difficulty to form actual connections.

57. Project Udbhav

It was started by the **Indian Army** in collaboration with the **United Service Institution of India**, a defence think-tank in 2021. Its aim is to **rediscover the profound Indic heritage of statecraft and strategic thoughts** derived from **ancient Indian texts** of statecraft, warfare, diplomacy etc. Its ultimate goal is to understand the profound depths of indigenous military systems, their evolution, strategies that have been passed down through the ages and **integrate that age-old wisdom with modern military pedagogy**. The Army aims to nurture its officers to **apply ancient wisdom in modern scenarios** and allow a **more profound understanding of international relations and foreign cultures**.

58. Project Mariana

It was developed jointly by the Bank for International Settlements (BIS) along with the Bank of France, Monetary Authority of Singapore and Swiss National Bank. The project tested the **cross-border trading and settlement** of **wholesale Central Bank Digital Currencies** (wCBDCs) between **financial institutions**, using new **decentralized finance** (DeFi) **technology** concepts on a **public blockchain**.

59. Bank for International Settlements (BIS)

It is an international financial institution established in 1930. It is owned by **63 central banks**, representing countries from around the world that together account for about **95% of world GDP**. Its aim is to support central banks' pursuit of **monetary and financial stability through international cooperation**, and to act as a **bank for central banks**. Its **head office is in Basel, Switzerland** and it has two representative offices: in Hong Kong SAR and in Mexico City.

60. e-NAM

National Agriculture Market (e-NAM) is a **pan-India electronic trading portal** launched in 2016. The platform **connects the Agricultural Produce Market Committee (APMC) mandis** to form a **unified national market for agricultural commodities**. The portal is managed by **Small Farmers' Agribusiness Consortium (SFAC)**, under the aegis of the Ministry of Agriculture and Farmers Welfare. At present, **1,361 regulated mandis** in 23 States and four UTs are linked with the electronic National Agriculture Market (eNAM).

e-NAM has been able to bring competence in APMC mandi operations through the real-time online information on commodity prices, access to more buyers/sellers and transparency in trade resulting in competitive bidding and better price discovery, transparency in payments etc.

61. Yashaswini

Yashaswini is a **cross-country bike expedition** organized by the **Central Reserve Police Force (CRPF)** in collaboration with the **Ministry of Women and Child Development**. Under this, 150 women CRPF officers will embark on a cross-country rally on bikes to **celebrate women power or Nari Shakti** of the country. The rally will cover approximately 10,000 km, passing through 15 States and 2 UTs. Along their routes, various events are planned, including interactions with groups associated with '**Beti Bachao Beti Padhao**' (BBBP), such as school children, college girls, women self-help groups among others.

62. Yashobhoomi

Yashobhoomi is India's new **world-class convention center**. It is located in **Dwarka, New Delhi**. It consists of a Convention Centre, multiple exhibition halls and other facilities. The Convention Centre is built across **~73,000 m²**, comprises **15 convention rooms**, including the main auditorium, the grand ballroom, and 13 meeting rooms with a **capacity of holding 11,000 delegates**. The auditorium has an innovative **automated seating system** which allows the floor to be a **flat floor** or an **auditorium style tiered seating** for different configurations along with wooden floors and acoustic wall panels.



The centre has **some of the largest exhibition halls in the world**. These halls will be utilized for hosting exhibitions, trade fairs, and business events. It is the second convention centre with world-class infrastructure for exhibitions/conferences after the **Bharat Mandapam** (hosted the 2023 G20 Summit).

63. SHREYAS Scheme

It stands for Scholarships for Higher Education for Young Achievers Scheme (SHREYAS). It is being implemented by the **Ministry of Social Justice and Empowerment**.

It comprises of **4 Central Sector Sub-schemes**. These include

- **Free Coaching Scheme for SCs and OBCs** (provide good quality coaching to economically disadvantaged SC and OBC candidates).
- **National Overseas Scheme for SCs** (financial assistance to the selected students from SCs/De-notified Tribes, landless labourers to pursue masters and Ph.D. level courses abroad).
- **National Fellowship for SC Students** (provide fellowship to SC students for pursuing higher education).
- **Top Class Education for SCs** (recognizing and promoting quality education amongst students belonging to SCs, by providing full financial support).

64. PM SVANidhi Scheme

The **Prime Minister Street Vendor's AtmaNirbhar Nidhi** (PM SVANidhi) scheme has achieved the milestone of extending support to more than **50 lakh street vendors** across India. The scheme was launched in 2020 by the **Ministry of Housing and Urban Affairs** (MoHUA). It is a **micro credit scheme** for urban street vendors that aims to provide **collateral-free working capital loans up to INR 50,000**. It is a Central Sector Scheme

65. Coffee Production in India

The most well-known species of coffee grown in India are **Robusta** and **Arabica**. Robusta coffee accounts for over 70% of coffee production. In the year 2021-22, India was the **5th largest exporter of coffee** in the world with a share of about **6% of global coffee exports**. **Karnataka is the largest coffee producer in India**, accounting for **70% of total coffee production**. It is followed by Kerala and Tamil Nadu. Globally, **Brazil is the largest coffee-producing country** in the world.

66. Coffee Board of India

Coffee Board is a **statutory organization** constituted under **Section (4) of the Coffee Act, 1942**. It functions under the administrative control of the **Ministry of Commerce and Industry**. The Board is **headquartered in Bengaluru**.

67. India Smart Cities Award Contest (ISAC)

It is organized by the Ministry of Housing and Urban Affairs. Its aim is to recognize and reward cities, projects and innovative ideas that are **promoting sustainable development across the 100 smart cities** as well as stimulating inclusive, equitable, safe, healthy and collaborative cities leading to a better quality of life for all. **Indore has been named as the best Smart City**. **Surat** and **Agra** have been ranked 2nd and 3rd respectively. **Madhya Pradesh has been chosen as the top state**. Tamil Nadu is the 2nd in the State category followed by Rajasthan and Uttar Pradesh. The award for the **best UT** has gone to **Chandigarh**.

68. UMEED (Understand, Motivate, Manage, Empathise, Empower, Develop) Guidelines

The have been released by the **Union Ministry of Education** to **prevent student suicides in schools**.

The guidelines aim to serve as **directions to schools for enhancing sensitivity, understanding, and providing support** in case of reported self-harm. The guidelines suggest:

- Formation of **School Wellness Team (SwT)** to **handle crisis situations** and respond immediately.
- **Orientation** for teachers and family members.
- **De-stigmatize** mental health concerns.
- Action that should be taken by individuals or members of the wellness team when they encounter a student displaying warning signs.
- Small and immediate changes such as locking all empty classrooms and not having any dark corridors or areas in schools. (Refer EPIC September 2023 (click) for Rising Cases of Student Suicides in India).

69. Passport to Earning (P2E) Initiative

It has been launched by the UNICEF. It is a **digital platform** that aims to **provide young people with free, world-class and job-relevant skills training** and position them for employment opportunities. P2E is built on the **Microsoft Community Training platform** and offers **digitized content** provided by public and private sector partners. It provides free access to certificate courses in **digital productivity, financial literacy, employability skills**, and other in-demand, job-ready skills. It provides learning options in **online, hybrid and offline models**. It has **skilled and certified more than one million young in India**. It aims to deliver long-term sustainable skills to 5 million youth in India in the age group of 14-29 by 2024. **62% beneficiaries** of P2E courses in India are **adolescent girls and young women**.

70. Complementary Feeding

Complementary feeding is defined as the process starting **when breast milk alone is no longer sufficient to meet infants' nutritional requirements**, resulting in the **need for other foods and liquids along with breast milk**. The Indian Council of Medical Research (ICMR) has formed a team to conduct a research study on **improving the nutrition of children aged 6 to 24 months**. This age range is crucial for a child's growth and **poor nutrition** during this time can lead to issues like **stunting and undernutrition**. The ICMR points out several challenges in complementary feeding such as not giving enough or good-quality food, not feeding properly, starting too early or late, and not giving enough food frequently. ICMR believes that the current **Take Home Ration (THR) program can be enhanced to improve child nutrition**.

71. Intelligent Grievance Monitoring System (IGMS) 2.0

The Government of India has launched the Intelligent Grievance Monitoring System (IGMS) 2.0 **public grievance portal**. It is an **Artificial Intelligence (AI)-driven Grievance Monitoring System**. It aims to **enhance the efficiency** of the public grievance redressal process. It has been developed by the **Department of Administrative Reforms and Public Grievances (DARPG)** in collaboration with **IIT Kanpur**. It provides real-time analysis of grievances received and resolved, as well as State-wise and District-wise data. It also **helps identify the root cause of grievances**, allowing for **targeted interventions**. In India, ~20 lakh grievances are raised annually on the CPGRAMS portal.

72. CRIIO 4 Good Initiative

The Government of India has launched 'CRIIO 4 GOOD' initiative. It is a online, life skills learning module to promote gender equality among girls and boys. It has been launched in collaboration with UNICEF, International Cricket Council (ICC), and the Board of Control for Cricket in India (BCCI). It is a series of 8 **cricket-based animation films to promote gender parity**, equip girls with **life skills** and

encourage their participation in sports. The 8 modules on leadership, problem-solving, confidence, decision-making, negotiation, empathy, teamwork and goal setting can be accessed free of cost.

73. World Health Summit

World Health Summit is an **international strategic forum for global health**. It was **founded in 2009** on the occasion of the **300th anniversary of Berlin's Charité Hospital**. It is held under the patronage of the German Chancellor, President of the Republic of France, President of the European Commission and Director-General of the World Health Organization (WHO). It is held annually in Berlin, Germany. Its aim is **to set the agenda for a healthier future** by inspiring innovative solutions for better health and wellbeing for all.

NOTE: With effect from 1st February 2022, the monthly ForumIAS Epic Magazine, for the month will provide wholistic coverage for the said month up to 20th of the month. This ensures that issues / stories that occur after 21st of the month are allowed to fully develop and are covered wholistically in the next month.