MONTHLY

EPIC!

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AN EXCLUSIVE CURRENT AFFAIRS MAGAZINE FOR

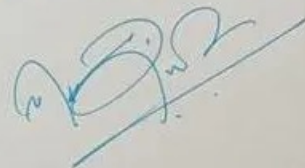## PRELIMS + MAINS

PREPARATION

JUNE 2022

I enrolled myself in the Forum Mains Guidance Program + for GS and Essay test series. The answer writing practice and written feedback from Forum alongwith 'Best answers' and topper's copies provided helped me improve my answers and get a high score in my General Studies papers.

Ayush sir's regular articles were also fun and encouraging reads - I thank the ForumIAS team for their guidance during my two year association with them.

Shruti Sharma
AIR 1, CSE 2021

forumIAS has been an integral part of my upsc journey, right from my very first attempt. The prelims and mains test series have helped me a lot and I have referred to them in all my three attempts. One on one session with Ayush sir for interview was beneficial too. Always enjoy reading his articles on the forumIAS blog.

with Best wishes,

Utkarsh Dwivedi
AIR 5, CSE 2021

5 students in Top 10 and 57 students in Top 100 Ranks List of CSE 2021 are ForumIAS Academy students. Total 303 selections out of 685 vacancies.

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Focus Article

#1 The Report on State of Inequality in India

News: The Economic Advisory Council to the Prime Minister has released a Report on the State of Inequality in India. The Report has presented a holistic analysis of the depth and nature of inequality in India. Among its various recommendations, the Report has advocated the provision of Universal Basic Income as an elementary safety net.

What are the key findings of the report? – (1) Income: **(a)** An Indian earning a monthly wage of Rs 25,000 is among the top 10% of earners in the country; **(b)** Incomes of the top 1% earners grew 15% between 2017-2020, while that of the bottom 10% declined 1%; **(c)** The top 10% earn more than 30% of total income earned, while bottom 50% earn about 22%.

Report on the State of Inequality in India

- The Report has been prepared by the **Institute of Competitiveness, India**. It is the Indian subsidiary of the global network of the **Institute for Strategy and Competitiveness of the Harvard Business School**.
- **Purpose**: The report presents a holistic analysis of the depth and nature of inequality in India.
- **Focus Areas**: The report looks at five key areas that **influence the nature and experience of inequality**.
  - Income distribution
  - Labour Market Dynamics
  - Health,
  - Education
  - Household Characteristics.
- **Source of Data**: The report is based on the data derived from various rounds of the Periodic Labour Force Survey (PLFS), National Family Health Survey (NFHS) and UDISE+.

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(2) Labour Force: **(a)** The Labour Force Participation Rate (LFPR) has risen from 49.8% in 2017-18 to 53.5% in 2019-20; **(b)** The country's unemployment rate is 4.8% (2019-20), and the worker population ratio is 46.8%; **(c)** In 2019-20, the highest percentage of workers was self-employed workers, followed by regular salaried workers and casual workers.

(3) Education: **(a)** By 2019-20, **95% of schools had functional toilet facilities** on the school premises; **(b) 80.16% of schools had functional electricity connections** with States like Goa and Tamil Nadu achieving 100% coverage of functional electricity connections; **(c)** The Gross Enrolment Ratio has increased at the primary, upper primary, secondary and higher secondary.

(4) Health: **(a)** There has been a considerable improvement in increasing the infrastructural capacity with a targeted focus on rural areas; **(b)** Total health centres in India stood at 185,505 (comprising Sub-Centres, Primary Health Centres, and Community Health Centres) in 2020; **(c)** 78% of women received post-natal care from a doctor or auxiliary nurse within 2 days of delivery, and 79.1% of children received post-natal care within 2 days of delivery.

(5) Household Conditions: (a) They have improved enormously due to targeted efforts through several social protection schemes, especially in the **area of water availability** and **sanitation; (b)** According to the NFHS-5 (2019-21), 97% of households have electricity access, 70% have improved access to sanitation, and 96% have access to safe drinking water.

What is the significance of the report? – (1) It throws light on **glaring inequalities in India**. **(2)** It **presents an opportunity** for the government to acknowledge the magnitude of inequality and take remedial steps. **(3)** It **testifies to the failure of the trickle-down approach** to economic growth as seen by rising incomes of top 1% and falling incomes of bottom 10%. **(4)** It also **builds a case for Wealth Tax**. Wealth is **accumulated across generations** through inheritance. The rich section's wealth grows faster than poor, increasing the gap. World Inequality Report 2022 had noted that over 50% of India's

population are without any significant wealth. Thus, there is a need to take steps to redistribute the wealth.

What are the implications of rising inequality? – (1) Higher Vulnerability to Extreme Events: Poor people have little to no savings or wealth which makes it very difficult for them to survive in extreme situations like Pandemic, Disasters etc. **(2) Hampers progress of Future Generations**: Lack of access to income and wealth hampers the ability of the poor to access the levers (like education) that enable upward mobility. Children born in poor families remain trapped in poverty, perpetually. **(3) Undermines Dignity**: People with less resources have to work day and night without any rest. They are starved for food, clothing and other basic things. This undermines their **right to a dignified life under Art. 21. (4) High Crime Rates**: A study published in the journal Nature showed that more unequal societies tend to have higher crime rate. Inequitable distribution of wealth leads to lower social trust. **(5) Lower Investment Levels**: Marginal propensity to save is high in upper income levels. Marginal propensity to consume is more at the lower levels. The surplus goes into savings. This in turn gets transformed into increased investments for the economy through financial intermediaries.

What are the challenges in addressing inequality? – (1) Low Female Labor Force Participation Rate: The Female LFPR still remains low. The Report notes that India's FLFPR has increased from 23.3% in 2017-18 to 30% in 2019-20 (although PLFS survey has put this figure to 22.8% for 2019-20). Lack of Education, early marriage, household responsibilities etc. force women to opt out of jobs which reduces their income. **(2) Poor Coverage of Schemes**: Social sector schemes related to health, skilling, etc. have poor coverage, especially in rural areas. **(3) Global Uncertainties**: The continuation of COVID-19 and Russia-Ukraine conflict have pushed up the inflation levels. It has created more problems for the poor. A recent World Bank estimate shows that 1% increase in the food price will push 10 million people into extreme poverty.

(4) Heath Lacunae: Nutritional deprivation in terms of **overweight, underweight, and prevalence of anaemia** (especially in children, adolescent girls and pregnant women) remains areas of huge concern. **Low health coverage**, leading to high out-of-pocket expenditure, directly affects incidence of poverty.

Steps Taken to Reduce Inequality in India

- **Financial Inclusion/*Jan Dhan-Aadhar*-Mobile Trinity (JAM Trinity)**: It focuses on mobile numbers, Aadhar Card and post office accounts as alternative financial delivery mechanisms to ensure that benefits reach the poor households seamlessly.
- ***Ayushman Bharat***: It focuses on providing care through Health Wellness Centres (AB-HWC) covering child and maternal health services, non-communicable diseases, and free drugs and diagnostic services.
- ***Samagra Shiksha Abhiyan***: It is an Integrated Scheme for School Education. This programme subsumes the three erstwhile Centrally Sponsored Schemes of *Sarva Shiksha Abhiyan* (SSA), *Rashtriya Madhyamik Shiksha Abhiyan* (RMSA) and Teacher Education (TE).
- **Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA)**: It guarantees 100 days of work a year to every rural household with an aim to enhance the livelihood security of people.

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What steps are required to address inequality? – (1) The government should **raise the minimum wage** rate especially in the unorganized sector. Workers in unorganized sector do not get social security benefits. Assurance of minimum wage can be done by proper implementation of MGNREGA. The Report recommends introduction of an employment guarantee scheme in urban areas. **(2)** The report has recommended implementation of **Universal Basic Income**. The Government should explore the possibility of the same. **(3)** The report also recommends that there should be higher allocation of money towards social services. The need is 6% of GDP in Education and 2.5% of GDP in Health to ensure equitable development.

(4) There should be greater focus on digitization and JAM usage in order to reduce inclusion and exclusion errors in schemes.

India stands out as a poor and unequal country with an affluent elite as per the recent report. The current situation is not sustainable. The Government must take proactive steps to reduce inequality and achieve SDG 10 (reducing inequalities).

#2 Universal Basic Income

The broad focus of the State of Inequality in India Report was on the nature of inequality and poverty. Two suggestions given by the Report have become a matter of discussion among the economists. The Report advocates fallback job options for urban Indians along the lines of the MEGREGA. The Report has also supported the provision of Universal Basic Income as an elementary safety net, an idea that is still considered somewhat radical by many policy makers.

What is Universal Basic Income? – (1) It is a guaranteed regular cash transfer by the Government to all citizens irrespective of their income or financial condition. As a **universal safety net**, UBI will be applied to all individuals, irrespective of income and age. **(2)** The Economic Survey (2016-17) had noted that the UBI has 3 components: **(a)** *Universality*: UBI will cover all citizens, **(b)** *Unconditionality*: UBI has no criteria to select the beneficiaries **(c)** *Agency*: Providing support in the form of cash transfers to respect, not dictate, recipients' choices.

(3) UBI is supposed to be **easily accessible**, **periodic**, in the **form of funds** (and not vouchers/coupons) and is **paid to individuals** instead of households.

Since governments commit to a legally stipulated and equal financial grant, it is also **considered to be a form of social welfare**, especially for those who are unemployed, sick and at the end of their working life.

Earlier Proposals on UBI in India

Officially, a UBI plan was first suggested in the Economic Survey of 2016-17.
- It proposed to provide INR 7,620 per annum to **75% of the population**, based on the official poverty line from 2011-12.
- Subsequently updated twice, the plan advocated for a fixed sum to each rural household, except those which were '*demonstrably well-off*'.
- However, the Finance Minister back then had said the **plan would face operational and political challenges**.

In 2020, Economics Nobel Laureate Abhijit Banerjee said India should immediately begin cash transfers of INR 1,000 per person per month as an ultra-basic version of UBI.

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What has been the global experience with respect to Universal Basic Income? – (1) In 2020, countries worldwide resorted to cash transfer to help vulnerable citizens cope up with the economic turmoil posed by the pandemic. **(2)** Among the **developed economies,** where economic growth had stagnated, most cash transfers schemes have **broadly adhered to the principles of UBI: (a)** Canada, provided $1,400 per month to those who lost income due to the COVID-19 pandemic; **(b)** The United States offered its citizens cheques of US$ 1,200 for individuals or US$ 2,400 for those who were married; **(c)** South Korea issued cash transfers of US$ 820 for its citizens; **(d)** Japan announced cash transfers of US$ 931 per person.

Major Social Safety Measures in India

- India spends about **2% of its GDP** on **core social protection** and **welfare schemes**.
- This translates into an expense of I**NR 9 lakh crore** in more than 10,000 schemes.
- This amount does not cover the high set-up costs and expenditure in maintaining the systems (including manpower) to administer them.
- Annual budgets for some of India's key flagship welfare schemes amount to **INR 379,100 crore per year**. These include **MGNREGS, PM** *Kisan Samman Nidhi Yojana* (PM *Kisan*), and **National Social Assistance Programme**, among others.

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(3) The **Arab Monetary Fund,** which includes poorer economies like Iraq, Somalia, and Libya, have reached a consensus on the implementation of UBI set at 10% of the per capita income.

(4) The birthplace of the idea of State providing direct cash to stimulate growth and ensure minimum living standards is the **Scandinavian region of Europe**: Denmark, Norway, Finland and Sweden. These nations implemented their own variety of Nordic welfare systems back in the 1970s at a time when none of them were considered rich.

What are the perceived benefits of implementing Universal Basic Income? – (1) Resilience: **(a)** A basic income support to everyone will help in developing strong **resilience against extreme** events like pandemics (e.g., COVID-19) or natural disasters (e.g., floods, tsunami, earthquakes etc.); **(b)** UBI will help against **price shocks** arising due to global conflicts. The Russia Ukraine conflict has pushed up the oil prices leading to increased inflation levels in India.

Issues with India's Welfare Programmes

Coverage of schemes varies widely in enrolment and delivery. A survey undertaken in April 2020, covering Below Poverty Line (BPL) families across 10 states revealed:

- **Coverage is not universal**. The gaps in coverage varied according to the scheme: PDS (15%), *Jan Dhan* (43%), Social Pension (56%), and PM *Kisan* (66%).
- **Delivery of benefits is low**. The percentage of eligible households that received their entitlements: PDS (55%), Social Pension (34%), PM *Kisan* (30%), and *Jan Dhan* (28%).
- These gaps are largely on account of:
  - Eligibility challenges.
  - Lack of awareness. 52% of the surveyed beneficiaries were unaware about their entitlements.
  - Onerous administrative procedures. In addition, there are huge costs in implementing the schemes.

Communication is the **most overlooked components** of welfare programmes. Effective programme communication ensures that beneficiaries are well aware of their entitlements, eligibility criteria, and delivery mechanisms.

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(2) Economic Revival: The recent pandemic has forced many enterprises to shut down. This has resulted in large number of layoffs. This has diminished the consumption demand in the economy. UBI can be helpful in **reigniting the demand** and revive the economy.

(3) Efficiency: **(a)** UBI seeks to replace the existing myriad subsidies given by the government under its social welfare schemes. Many schemes are riddled with shortcomings like **misallocation, leakages and inclusion/exclusion errors**; **(b)** The Economic Survey (2016-17) noted that 7 of the top government schemes suffer from acute misallocation of funds while ignoring the poorest districts in many states; **(c)** There is **ineffective programme communication.** Most beneficiaries are not well aware of their entitlements, eligibility criteria, and delivery mechanisms; **(d) UBI will ease the implementation**. There will be no exclusion errors. Implementation costs will come down due to direct transfer of cash through existing systems and infrastructure. It will **eliminate last-mile delivery challenges** of other welfare schemes.

(4) Choice to Beneficiaries: UBI is not tied to the recipients' behavior. They are free to spend the money as they wish. This is in **contrast to the conditional in-kind transfers** that limit the options for beneficiaries. UBI will entrust them with the responsibility to devise their own spending proportions for utilities and other goods.

(5) Social Justice: UBI, by guaranteeing a minimum unconditional income, promotes social justice.

(6) Ensuring Dignity: An assured periodic cash transfer would allow every individual to live a more dignified life thereby upholding the Right to Life under Article 21.

What are the challenges in implementing Universal Basic Income? – (1) Fiscal Stress: **(a)** Implementation of UBI would require a large budgetary allocation. It is difficult to arrange considering the widening fiscal deficit of the Government; **(b)** Covering about 1.3 billion beneficiaries would cost **INR 15.6 trillion (annual)** just for each person to get a monthly INR 1,000 (or INR 12,000 annual); **(c)** According to different estimate, a transfer of INR 10,000 per annum will cost around 10% of GDP to the exchequer. All current welfare schemes putting together cost ~ 5.2% of GDP. **(2) Subsidy Withdrawal:** Post UBI, the government may **phase out critical subsidies** like power, water, fertilizer

etc. which may cripple many enterprises in the agriculture and industrial sector. **(3) Challenge due to Universal Nature**: A UBI would require providing benefits to ~78% of the population who do not fall in the poverty bracket. Amount paid to each individual may be **too small to have any significant impact** on people's lives. Moreover, the universality of the transfer does not address the aspect of equity. **(4) Improper Human behavior**: Recipients might misuse the money they receive and undermine social security objectives. Critics argue that UBI will induce people to work less or create a disincentive to work. Although, the opinion of economists is divided here. A 2018 study on the behavioural effects of cash transfers found just a 1% drop in labour supply induced by a 10% income boost.

What should be the approach going forward? – (1) The Government **can rethink true universality**. The 'well-off' can be omitted from the cash transfer schemes. There can be automatic exclusion of certain class of citizens (like possession of certain class of assets). Deciding this criteria will remain a challenge though; **(2)** After deciding the quasi-basic income criteria, the Government should leverage the potential of JAM trinity (biometric identification, financial inclusion, and mobile penetration) for directly transferring cash to household bank accounts; **(3)** Any initiative towards UBI must be embraced in **a deliberate and phased manner**. Gradualism can be adopted in following ways: **(a)** Giving choice to individuals between UBI and existing schemes; **(b)** UBI for women only; **(c)** Universalize UBI across some specific vulnerable groups only like for widows, pregnant mothers, the old and the infirm; **(d)** UBI in urban areas only which have good banking infrastructure and financial inclusion; **(e)** UBI for a class of sections like implementing for the poor at the bottom 25%; **(4)** Focus should be placed on **equitable access to education** and **creation of more jobs** along with a vision to attain a long-term growth rate. This would be more beneficial in poverty and inequality reduction rather than merely giving guaranteed incomes.

It may not be feasible to have a basic income that is universal or to substitute existing welfare subsidies. A UBI in India could be implemented as a **supplemental**, **unconditional**, **recurring cash transfer** to the target population while keeping the existing welfare infrastructure intact. UBI can be a potent **complement to broader poverty eradication programmes**.

General Studies Paper I

#1 International Labour Organization Recommendations on Inclusion of LGBTIQ+

> **News**: The ILO has released a document on 'Inclusion of Lesbian, Gay, Bisexual, Transgender, Intersex and Queer (LGBTIQ+) persons in the world of work. The document provides recommendations to ensure equal opportunities and treatment of LGBTIQ+ persons at work.

What are the recommendations on the inclusion of LGBTIQ+ community? - Around the world, LGBTIQ+ persons face harassment, violence and discrimination on the basis of sexual orientation, gender identity, gender expression and sex characteristics. This discrimination has an economic cost not just to LGBTIQ+ persons and their families but also to enterprises and national economies. So ILO has made some recommendations to enhance inclusion of LGBTIQ+ people: **(1) Launch social protection programmes**: The ILO recommended member countries, employers' organisations and representatives of workers to launch social protection programmes to remove barriers that LGBTIQ+ persons; **(2) Social dialogue with employers' and workers' organisations**: Consultation with LGBTIQ+ communities and social dialogue with employers' and workers' organisations will allow the identification of barriers faced by LGBTIQ+ persons. Especially when entering the labour market and accessing government schemes, including those on social protection; **(3) Focus on the informal economy**: The governments have to work with small and medium industry associations, sectoral unions and informal economy workers' associations to monitor discrimination in the informal economy and address stigma and discrimination related to gender and sexual identity; **(4) End sexual**

discrimination: Studies have shown that diversity in the workplace, including LGBTIQ+ persons, is better for business. It signals a creative environment that creates the right conditions for economic growth. Hence, Employers' organisations should encourage ending sexual discrimination in workplaces. Further, organisations can provide policy guidance to their members, to raise awareness on including LGBTIQ+ persons in workplaces; **(5) Role of Trade unions**: The ILO asked trade unions to help LGBTIQ+ workers to organise and exercise their right to freedom of association. Workers' associations should also ensure that issues affecting LGBTIQ+ workers are represented in collective bargaining agreements with employers and in workplace policies.

#2 The Utility of Urban Agriculture

News: Cities in India are facing multiple challenges including unbearable heat-waves due to climate change. Urban Agriculture can not only mitigate the impacts of climate change but has several additional benefits.

What are the problems being faced by India, especially urban areas? – **(1)** Cities in India face several challenges like: **(a)** High population density; **(b)** Unaffordable housing; **(c)** Improper waste disposal; **(d)** Water scarcity; **(e)** Flooding during the rains; **(f)** Pollution and attendant illnesses; **(g)** Food and nutritional insecurity; **(h)** Urban poverty among others; **(2)** More specifically, climate change is posing a big threat to cities. Global warming has raised the intensity and frequency of heat waves in Indian cities. Water crisis is become more severe in cities like Delhi; **(3)** Ill-conceived urbanization has only made the issue worse. India is estimated to host 50% of its population in cities by 2050. The urban planning in India is out of step with growth. It is ill-equipped to deal with the existing gaps including the upcoming climate change.

How can the problem be addressed? **– (1)** Environmentalists and urban city planners highlight the

Methods of Urban Agriculture

Backyard Gardens: This is the growing of food on home property. Backyard gardens are beneficial to communities as neighbours can share each other's backyard and employ different methods of farming leading to better yields.

Street Landscaping: This is the landscaping of streets for different uses such as community gardens, which are tended to by the people in the neighbourhood. Their added advantage is their capability of **reducing urban stormwater runoff**.

Forest Gardening: It pertains to the practice of having gardens grown within an urban forest. It is achieved by having different crops, vegetables, and fruits grown within urban settings. It can also be part of **afforestation efforts**.

Greenhouses: It involves the practice of agriculture in residential, commercial, and communal urban spaces in greenhouses. They require a substantial size of land. They give farmers the ability to **grow a crop all year round**.

Rooftop Gardens: Since urban areas have limited space, rooftop space can be utilized for cropping vegetables, fruits, and herbs. They also aid in **reducing urban heat island** as well as **improving the air quality**.

Greenwalls: It encompasses the growing of vegetation or food crops on the external/internal space of a wall. It does not use up a lot of space. It uses soil present on the walls. It is a good method for **reducing stormwater runoff**.

Vertical Farms: Vertical farming is the practice of growing crops in vertically stacked layers. It often incorporates **controlled-environment agriculture**, which aims to optimize plant growth, and **soilless farming techniques** such as **hydroponics**, **aquaponics**, and **aeroponics**.

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importance of **Green Infrastructure** (GI) in combating the impact of climate change in cities. The Union Government's 2015 AMRUT programme also included green spaces and parks as a thrust area; **(2)** In this context, Agriculture is a neglected aspect. Agriculture is seen as a predominantly rural activity. The **Urban and Regional Development Plans Formulation and Implementation** (URDPFI) guidelines mention Green Cities under the urban planning approach, with prevention of damage to 'productivity of agricultural land' listed as a key benefit. However, the Urban Agriculture is not part of the Urban Land Planning (ULP) exercise.

What is Urban Agriculture? – (1) Urban agriculture can be described as the growing of plants primarily for food and other domestic use within a city or a town and its environs; **(2)** It involves activities such as the production, processing, marketing, and delivery of farming products; **(3)** Urban agriculture consists of a number of production systems within the city peripherals. They vary from domestic production and household level processing to large scale agriculture; **(4)** The term also includes activities like animal husbandry, aquaculture, bee-keeping and horticulture.

What are the benefits of Urban Agriculture? - The Food and Agricultural Organisation (FAO) recognizes Urban Agriculture as a significant contributor to: **(a)** Food security; **(b)** Livelihood generation, especially for women; **(c)** Poverty alleviation; **(d)** Urban resilience and sustainability. Urban areas already house at least 55% of the world's population and consume 80% of the food produced globally. Urban Agriculture can address this challenge along with other benefits: **(1) Economic Benefits**: **(a)** Income Generation for the practitioners; **(b)** Revenues to Local Government through various activities; **(2) Environmental Benefits**: **(a)** Reduces stormwater run-off; **(b)** Reduction of local carbon footprint; **(c)** Lower use of pesticides, crop preservation and new crop development; **(d)** Lowers local temp and contributes to cooler urban micro-climate; **(3) Social Benefits**: **(a)** Community Participation; **(b)** Urban Employment opportunities, raises living standards; **(4) Health Benefits**: **(a)** Availability of fresh foods; **(b)** Enhances food security.

The role of **green infrastructure** (GI) is important for climate mitigation and adaptation as well as checking pollution. It also entails health and recreational benefits. There is a need for a paradigm shift in urban land-use planning and enhance to focus on urban agriculture. It will help in achieving **urban food security** and a **circular bioeconomy**. This can lead to developing healthy and sustainable cities for all.

#3 Water Crisis in India

News: India has 17% of the World's Population but possesses only 4% of the World's freshwater resources. The water crisis is becoming acute due to climate change and pollution. Urgent steps are required to address the crisis by rejuvenating the rivers and aquifers.

What is the current status of the water crisis? – (1) In the 75 years since Independence, the **annual per capita availability of water** has declined by 75% – from 6,042 cubic meters in 1947 to 1,486 cubic meters in 2021; **(2)** India is facing multidimensional challenges like depletion of groundwater together with pollution of surface water, and also vanishing water bodies – ponds, lakes, tanks, wetlands. Provisional data from the **first census of water bodies** show 2% of

PT BOX

Falkenmark Water Stress Indicator

The Falkenmark indicator relates the total freshwater resources with the total population in a country and **indicates the pressure that population puts on water resources**, including the need for natural ecosystems.

Water Stress: Water availability below **1700 m³/person/year**.

**Water Scarce**: Water availability below **1000 m³/person/year**.

Absolute Water Scarce: Water availability below **500 m³/person/year**.

water bodies i.e. 18,691 of 9.45 lakh water bodies, have been encroached; **(3)** According to the most recent Central Ground Water Board data, as many as 256 of 700 districts in India have reported **'critical' or 'over-exploited' groundwater levels**.

What are the reasons behind water crisis? – (1) Discharge of Pollutants: Untreated industrial chemicals and sewage water are discharged into rivers. This is due to lack of compliance with effluent norms. There is severe shortage of sewage treatment plants in cities. Improper mining activities also pollute the nearby aquifers and deplete water quality; **(2) Encroachment**: Water bodies are encroached to meet the **infrastructure needs of expanding cities**; **(3) Climate**

Trend of Per Capita Water Availability in India

Year	Cubic Meters
1951	5177
1961	4260
1971	3410
1981	2740
1991	2210
2001	1820
2011	1545
2021*	1350
2031*	1235

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Change: The rising temperatures have reduced water levels in many rivers and water bodies. It has made the monsoon more erratic in nature, which has impacted water levels; **(4) Wastage of Water**: Water is being overused and wasted due to excessive subsidies coupled with a lack of awareness. In Punjab and Haryana, indiscriminate use of water for irrigation and absence of any conservation efforts have pushed down the groundwater levels drastically. Over 10% of water bodies in rural areas have become redundant; **(5) Excessive dependence on groundwater**: Reports have flagged the use of ~85% fresh water in agriculture. It has led to a crisis in several states, including Punjab, Haryana and western UP, with excessive dependence on groundwater in cultivating water-guzzling crops such as paddy and sugarcane; **(6) Cropping patterns**: The Green Revolution triggered the water crisis. Farmers in Punjab switched to water-intensive paddy cultivation which is not suitable to the local climate and agro-ecology; **(7) Policy-related issues:** The National Water Policy is very irrigation-centric. Ever since independence, water governance has suffered from **hydro-schizophrenia**. The issue of water (Surface water, groundwater, drinking water and irrigation) has been governed by different departments independently, without any coordination (like the Central Water Commission (CWC) and Central Ground Water Board (CGWB)).
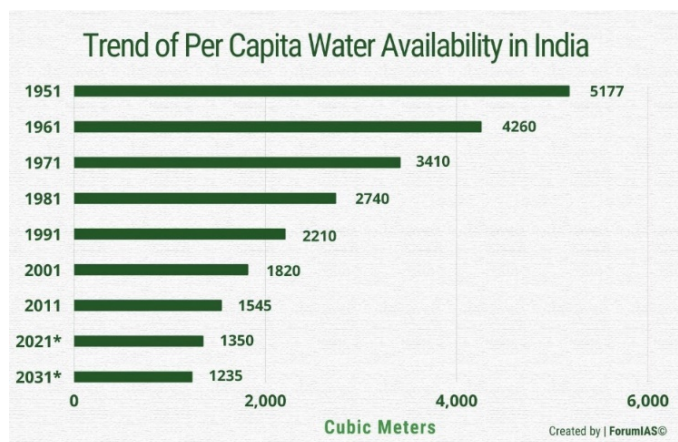
What are the adverse consequences of water crisis? – (1) Impact on Health: Presence of chemicals like fluoride, chloride, nitrate in water cause deformities in kids. It leads to premature greying of hair, along with skin related ailments. Traces of uranium in water causes cancer and other fatal diseases; **(2) Economic Loss:** Water scarcity, aggravated by climate change, could cost some regions **up to 6% of their GDP**, according to a World Bank report; **(3) Greater Hardships of women**: The household work is mainly managed by women. The burden of water collection due to scarcity falls primarily on women and young girls. Rural women in Rajasthan

54% of India Faces **High** to **Extremely High** Water Stress

Baseline Water Stress (withdrawals/available supply)
- Low (<10%)
- Low to Medium (10-20%)
- Medium to High (20-40%)
- High (40-80%)
- Extremely High (>80%)
- Arid & Low Water Use
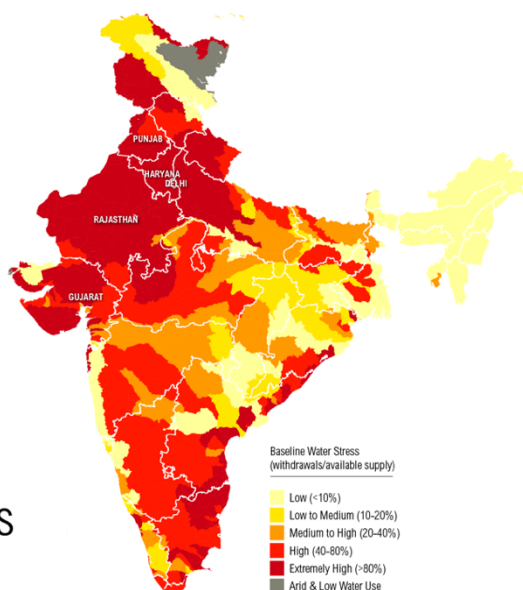
walk over more than 2.5 kilometers every day to reach a water source, according to a report by the National Commission for Women. Extreme water scarcity has led to **polygamy in one drought-prone village in Maharashtra**. This involves having more than one spouse to collect water. The arrangement is termed as '**water wives**'; **(4) Loss of Biodiversity**: A reduction in the number of lakes as well as excess pollution in water bodies causes the loss of pristine flora and fauna; **(5) Food Security**: Water scarcity will impact productivity of agriculture. This will impact food security amid rising pressure of population on farms; **(6) Inter-State Conflicts**: Inter-State water disputes have been going on since Independence without proper resolution. The scarcity of water will only intensify the crisis. Scarcity will cause water politics to get more vicious.

What steps can be taken going ahead? – (1) The focus should be on **enumerating, geo-tagging, and making an inventory** of all existing water bodies on priority under the JSA. All required steps should be undertaken to prevent encroachments; **(2)** The states must cooperate based on **Hydrological boundaries** rather than merely on

Steps Taken to Address the Water Crisis

- *Jal Shakti Abhiyan (JSA)*: It was started in 2019 as a movement for water conservation, recharge, and rainwater harvesting in 256 water-stressed districts. It now covers all 740 districts in the country.
- *Amrit Sarovars*: The Mission is aimed at developing and rejuvenating 75 water bodies in each district. The Union Government hopes to build 50,000 water bodies (*Amrit Sarovar*), across India by August 2023.
- *Atal Bhujal Yojana*: The programme is expected to lay emphasis on the recharge and better use of the groundwater resources. It seeks to strengthen the institutional framework and bring about behavioral changes at the community level for sustainable groundwater resource management;
- *Paani Bachao, Paisa Kamao (Save Water, Earn Money)*: It has been launched by Punjab Government. It incentivizes farmers to reduce groundwater and electricity usage. This has resulted in water savings of between 6-25% without any adverse effect on the yield.
- *Ganga Rejuvenation*: The World Bank has been supporting the Government of India's efforts to rejuvenate the Ganga River since 2011. Two World Bank projects, worth US$ 1 billion, are helping set up the institutions needed to manage the river and build the infrastructure to keep it clean.
- *Ministry of Jal Shakti*: The formation of the Ministry of *Jal Shakti* is an important step in the direction of overcoming hydro-schizophrenia. It will bring the irrigation and drinking water departments, together, within one ministry.

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administrative boundaries for better management of water and reduce inter-state water conflicts; **(3)** The masses **need to be sensitized** by taking support of public-spirited individuals like Rajendra Singh (Waterman of India). He built thousands of '*Johad*' (percolation ponds) for the revival of rivers in the Rajasthan Desert. He won the Stockholm water prize for water, river, and forest conservation; **(4)** Water Governance framework must be improved. The CWC and CGWB should be merged, and their capacities greatly expanded to form a brand new National Water Commission (NWC). It will improve the coordination and different sources of water would get the required expertise.

The Government needs to augment its efforts toward water conservation. The general public must also realize the severity of the crisis and take all possible steps to conserve water.

General Studies Paper II

#1 Judicial Accountability in India

News: The High Court of Odisha has published its annual report for 2021. Experts have called it one of the first step towards ensuring transparency and accountability in the Judiciary. However, there is room for lot of improvement.

What is the meaning of Judicial Accountability? – (1) Accountability: It means being **responsible** for decisions or actions **to any external body**. Transparency in the functioning and decision-making process is fundamental to ensure accountability; **(2) Judicial accountability** thus means that the judges be held accountable for their conduct and timely delivery of justice; **(3) Judicial Accountability vs Independence**: In India, the Judiciary is not subjected to the same level of accountability as the Executive or the Legislature. According to (former) Justice A P Shah, the reason is that the **principles of Judicial Independence and Accountability are sometimes regarded as fundamentally opposed to**

one another. Judicial independence is considered '*an essential pillar of liberty and the rule of law*'. Making the Judiciary accountable to the Legislature or Executive will impinge Judicial Independence. So unique arrangement is required to ensure judicial accountability.

What is the current framework of Judicial Accountability in India? – **(1) Removal of Judges**: The Judges of the Supreme Court (SC) and High Courts (HC) can be removed for **misbehaviour and incapacity**. The provisions of impeachment have been provided in **Article 124(4)** (SC Judge) and **Article 217(1)(b)** (HC

Annual Report, 2021 (High Court of Odisha): Salient Observations

The report outlines the performance of the High Court and the lower judiciary in the State. The Chapter '*Introspection and Challenges*' in the Report observes, "*For any institution, introspection is necessary to overcome the drawbacks and to enhance efficiency*."

- **Break-up of Pending Cases**: Detailed view of breakup of cases viz., cases pending at the start of the year, new cases during the year, disposed cases, cases pending at the end of the year, for each District Court.
- **Strength of Judges**: Details of sanctioned strength and available Judges for each Court.
- **Reasons for Delay**: A section explains the reasons for delays and backlog at the district level . The major reasons are:
  - Tendency of higher courts to 'stay' proceedings.
  - The uneven distribution of cases amongst judges in trial courts.
  - The non-availability of witnesses due to transfers.
- **New Initiatives**: Lists the initiatives undertaken by the Court, e.g., the initiatives to address the digital divide in the judiciary. **Order Communication Portal** (OCP) enables digital sending of High Court orders to subordinate courts thus reducing time for subsequent action.

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Judge) of the Constitution. Till date, only one impeachment proceeding was initiated against a SC Judge. Similarly, no HC Judge has been impeached so far; **(2) Judges (Inquiry) Act, 1968** was passed to regulate the investigation procedure and to find proof showing incapacity and misbehaviour on the part of the Judges (SC and HCs); **(3) Article 235 of the Constitution** provides for the **'control' of the HC over the subordinate judiciary**. It provides an effective mechanism to enforce accountability of the lower judiciary; **(4)** The SC and all the HCs adopted a Charter called the **Restatement of Values of Judicial Life** in 1997. The Charter contains guidelines for general behaviour of the Judges. However, it is not an instrument of judicial accountability in strictest terms; **(5) In-house Procedure**: A resolution of the SC in December 1999 declared that an 'in-house procedure' would be adopted to take action against judges who act against accepted values of judicial life. In case of a complaint against a judge, the procedure allows the Chief Justice of that Court to set up an inquiry with a 3-judge committee. If the allegations are serious, the committee may recommend initiating proceedings for removal.

Restatement of Values of Judicial Life, 1997

The Supreme Court had adopted the Charter in 1997. It has 16 points, the salient points include:

- The behaviour and conduct of members of the higher judiciary must **reaffirm the people's faith** in the impartiality of the judiciary. *Justice must not merely be done but it must also be seen to be done.*
- A Judge **should not contest the election** to any office of a club, society or other association.
- **Close association with individual members of the Bar**, particularly those who practice in the same court, shall be eschewed (avoided).
- A Judge should **not permit any member of his immediate family**, if a member of the Bar, **to appear before him** or even be associated in any manner with a cause to be dealt with by him.
- No member of his family, who is a member of the Bar, shall be permitted to use the residence in which the Judge actually resides or other facilities for professional work. A **Judge shall not hear and decide a matter in which a member of his family**, a close relation or a friend is concerned.
- A Judge shall not enter into public debate or express his views in public on political matters.
- A Judge shall not accept gifts or hospitality except from his family, close relations and friends.
- A Judge **shall not speculate in shares, stocks** or the like. A Judge **shall not hear and decide a matter in which a company in which he holds shares** is concerned unless he has disclosed his interest and no objection to his hearing and deciding the matter is raised.

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What is the need to enhance Judicial Accountability? – (1) It will induce the judges to **improve efficiency** and **deliver quality judgements** thereby **ensuring justice** in the society. In recent times, there have been some controversies regarding several '*shocking*' judgments e.g., a Bombay HC Judge ruled that groping a child without 'skin-to-skin contact with sexual intent' does not amount to the offence under the POCSO Act. Such Judgment shake faith in judiciary; **(2) Impartiality**: It will help in ensuring **an impartial functioning**. For instance, a major controversy erupted when a sitting Chief Justice of India was accused of sexual harassment by a junior employee of the SC. The CJI, set up an internal committee for enquiry and himself appointed the Judges. This raised conflict of interest. The CJI was absolved by the Committee, while the complainant was not allowed to be represented by a

lawyer; **(3) Applicability of RTI**: The **scope of information** which the Judiciary is willing to share **under the RTI Act is limited**. For instance, the Bombay HC ruled that its 'file notings' on administrative matters are not required to be disclosed under the RTI Act. On the issue of applicability of the RTI Act to the Office of Chief Justice, a former CJI remarked that "*The institution of Judiciary can't be destroyed in the name of transparency.*"; **(4)** Unlike the

Judgements Related to Judicial Accountability

- **S.P. Gupta v. Union of India**: The Supreme Court agreed that **Judiciary is accountable to the public** to answer queries related to the decisions they take for the interest of the public. This has been granted to the public by Article 19(1)(a) of the Constitution.

- **C. Ravichandran Iyer vs Justice A.M. Bhattacharjee**: The Supreme Court held that an **in-house "peer review" procedure** could be laid down for **correcting deviant behaviour**. Where the allegations do not warrant removal, the in-house mechanism could impose "minor measures".

- **K. Veeraswami v. Union of India**: The SC held that no Judge of superior court could be subjected to a criminal investigation **without the written permission of the Chief Justice of India**. Justice Veeraswami had assets vastly disproportionate to his income. Due to this judgment, it has been very rare that a judge has been subjected to investigation. Created by | ForumIAS©

Executive, the Judiciary is **not under any legal obligation to prepare annual reports** showing their work and table them before the Parliament or the State Legislature. Only the HCs of Madras, Himachal Pradesh and Tripura had published an annual report in the last two years; **(5) Review of Judgments**: There exists **no provision in the Indian Constitution which directs in reviewing the SC's decision**, except for the SC itself; **(6) Pendency of Cases**: In the **absence of any accountability** mechanism (to people or State), the **pendency of cases has reached unprecedented levels** (> 4 Crore cases in lower courts) and no concrete action has been undertaken to address this pendency. Judicial Accountability might have provided an element of external pressure on the Judiciary to reduce pendency; **(7) Appointment of Judges**: The **process of appointment of judges to higher judiciary lacks transparency**. There is no visibility about what importance is given to credentials of judges in their ideological adherence to the constitutional ideals of a secular, socialist democratic republic etc.; **(8)** A prominent news portal reported that in 2019, only 7 Judges of the SC voluntarily declared their assets; **(9) Shortcomings in the in-house procedure**: There is no statutory basis for the procedure. No judge (who faced such committee) has agreed to resign because there was an adverse report by the committee. In some cases, allegations requiring further investigation were dismissed by such committees.

What are the challenges in enhancing Judicial Accountability? – (1) Impact on Judicial Independency: Making the Judiciary accountable to the Legislature or Executive will make it susceptible to external pressure. It is **very difficult to balance the Judicial Accountability vis-a-vis Judicial Independence**; **(2) Power of the Judiciary**: The Judiciary is the **final interpreter of laws, policies, rules** etc. It can easily strike down anything that it considers is in conflict with Judicial Independence e.g., the National Judicial Appointments Commission Act was struck down in 2015. It also has the Power of Contempt that limits the power of other organs of the State; **(3) Complex Process of Removal**: Generally, accountability can be ensured by removing non-performing personnel. However, the process of removal of Judges is long and complex. Moreover, diluting the process of removal will impinge on judicial independence**.**

What steps can be taken to enhance Judicial Accountability? – (1) The Parliament **can enact a law that mandates Judiciary to publish an annual report**. This law should outline the expected content and establish timeline for its publication; **(2)** The **Judicial Standards and Accountability Bill** was presented in the Parliament in 2010, but eventually lapsed. A new Bill on setting judicial standards is necessary. As suggested by a former Chairperson of the Law Commission, the new Bill must address the concerns associated with the old lapsed Bill (e.g., responsibility of enacting Code of Conduct was given to the Parliament) and should avoid giving excessive control to the Legislature or the Executive; **(3)** A **permanent disciplinary committee** should be set up at the central level to deal with complaints

against judges. This committee should recommend further course of action based on the seriousness of misconduct (e.g., setting up a judicial inquiry committee under the Judges Inquiry Act for major misconduct); **(4)** The SC should **clarify the extent and scope of RTI applicability** to the judiciary. This will help in avoiding divergence in RTI response across the states; **(5)** The judiciary **can also be brought under the scope of Lokpal** to enhance accountability. In Sweden judiciary comes under the scope of the ombudsman; **(6)** A regular **performance evaluation system** for judges should be established. A mechanism of evaluation exists at lower judicial level. There is no performance evaluation for higher judiciary. It is difficult to create such a system. Best practices from global experience can be suitable adapted as a first step.

The fundamental challenge is to **grant as much judicial independence as is necessary to have cases adjudicated impartially and neutrally**. Maintaining this equilibrium between accountability and independence is the real task at hand. The Odisha High Court's step is the first step in this regard, however many more steps are required.

#2 The Right to Compensation (Against wrongful Prosecution, Incarcerations and

News: Wrongful prosecutions, incarcerations and convictions and the lack of a statutory Right to Compensation from the State to victims of such cases is one of the major issues in India's legal framework.

English jurist William Blackstone noted that '*It is better that ten guilty persons escape than that one innocent suffer*'. The principle has become a maxim in the modern jurisprudence. It highlights the importance of the protection of innocent people from wrongful legal actions.

What are the statistics related to under-trials in prisons? – (1) India has one of the highest number of under-trial prisoners in India. In 2020, India was ranked 15 out of 217 countries on the basis of its under-trial population as per the World Pre-trial/Remand Imprisonment List; **(2)** According to the National Judicial Data Grid there are approximately 30.8 million criminal cases proceeding in the district courts of the country. Out of these, 8.05 million cases have been pending for more than 5 years. This implies that

'Miscarriage of Justice'

The Law Commission in its 277th Report 'Wrongful Prosecution (Miscarriage of Justice): Legal Remedies' observes that the expression 'Miscarriage of Justice' is of wide amplitude:

- Errors in the interpretation, procedure, or execution of the law; typically, **errors that violate due process**, often resulting in the **conviction of innocent people**.

The Supreme Court has interpreted the term in multiple ways:

- '*Departure from the rules that permeates all judicial procedure*'.
- '*Misconception of law, irregularity of procedure, neglect of proper precaution*' leading to **some underserved hardship to individuals**.
- Lack of judicial approach, non-application of mind, non-consideration or improper consideration of material evidence.
- If a judgment is unreasonable, based on an erroneous understanding of the law and of the facts of the case.
- Non-compliance of the principles of Natural Justice.

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more than **25% criminal cases stay pending at the session's court level for more than 5 years**; **(3)** According to the NCRB (Prison Statistics India, 2020), out of India's total of 4,88,511 prisoners (December 2020); 371,848 persons **(76.1%) were under-trials** (persons who have been committed to judicial custody pending investigation or trial by a competent authority); **(4)** The **Law Commission in its 277th Report (Wrongful Prosecution (*Miscarriage of Justice*): Legal Remedies, 2018)** has dealt with the issue of wrong prosecution in detail. The report observed that **25.1% of the total under-trials spent more than a year in prison** (based on Prison Statistics India, 2015); **(5)** In addition, there are some people who are **wrongfully convicted by lower courts but are subsequently acquitted by a higher court** e.g., in February 2022, Allahabad High Court acquitted a murder convict 40 years after his conviction by a

lower court. The data from National Judicial Data Grid shows that **26.55% of appeals against convictions** have been pending before the HCs **for more than ten years**.

What remedies are available to a person against wrongful incarceration/conviction? – (1) The legal framework in India **does not have a law on the grant of compensation** to those maliciously prosecuted; **(2)**

Section 358 of the CrPC (1973) provides for a **compensation of INR 100** to a person wrongfully arrested. The compensation is to be recovered from a person on whose complaint the victim was wrongly arrested. Award of this compensation is **subject to the discretion of the Magistrate; (3)** The **Protection of Human Rights Act, 1993**, empowers the National Human Rights Commission to inquire into instances of illegal detentions, wrongful convictions, incarcerations, and other human rights violations. After conducting an inquiry, NHRC can recommend that the State pay compensation and initiate proceedings against erring officials; **(4)** The Law Commission in its 277th Report (2018), noted that '*the currently available remedies only create an ex-gratia obligation, and <u>not a statutory obligation on the State to compensate</u>*'. Thus, at present, the provision of compensation is subject to the discretion of the Judiciary (or NHRC), rather than a legal obligation of the Executive.

What are the global standards regarding Right to Compensation? – (1) The Right to Compensation (for wrongful prosecution, incarceration, and convictions) has been recognized by various international covenants. It has been enforced by various enactments, statutes, and acts in jurisdictions all over the globe; **(2)** The **International Covenant on Civil and Political Rights (1966)** lays down the basic commitments that State parties need to adhere to protect the civil and political liberties of the individual. The **Right to Compensation for Wrongful Convictions** is laid down in **Article 14(6) of the Covenant; (3)** Article 5(5) of the **European Convention for the Protection of Human Rights and Fundamental Freedoms** talks about Compensation for wrongful arrest.

What is the need for Right to Compensation against wrongful arrest? – (1) Violation of Fundamental Rights: A person experiences **extreme physical and mental discomfort** while being imprisoned. It **undermines Article 21** of the Constitution i.e., Right to a dignified life. This discomfort is exacerbated by the slow disposal rate of the judicial system. A wrongful arrest also violates Article 22 (protection against arbitrary arrests and illegal detention etc.);

Cases Related to Compensatory Jurisprudence

- *Rudal Sah v. State of Bihar (1983)*: The Supreme Court of India interpreted the Article 32, to include a **Right to Compensation for victims of unlawful imprisonment**. In this case, the petitioner was acquitted in June 1968, but was kept incarcerated in jail till October 1982 (14 years). The Court had granted INR 35,000 in compensation.

- *Bhim Singh, MLA vs. State of J&K and Ors. (1986)*: The Supreme Court awarded a sum of INR 50,000 as compensation for the illegal detention of an MLA who was deliberately prevented from attending a session of the Legislative assembly. The Court said illegal detention **violated the rights provided under Article 21 and Article 22(2)**.

- *Nilabati Behera v. State of Orissa (1993)*: The petitioner's son was taken into police custody and killed. The SC utilized Article 32 to grant monetary compensation.

- *S. Nambi Narayanan vs Siby Mathews & Others (2018)*: Former ISRO scientist Nambi Narayanan was awarded compensation of INR 50 lakhs, 24 years after he was unlawfully detained on charges of revealing official secrets to a spy network.

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(2) Psychological Impact: A study undertaken at the University of Cleveland (US) showed that long incarceration in jail leads to **feeling of loss of freedom, loss of identity and dignity** and a feeling of rage and anxiety. These effects eventually cause development of Post-traumatic Stress Disorder (PTSD), depression and paranoia. The consequences impact the ability of the victim to lead a normal life even after absolution; **(3) Loss of Opportunities**: The incarcerated person suffers from **damage to health, loss of income or earnings, loss of property** due to costs of legal fees, and other consequential expenses resulting from the wrongful prosecution. There is **loss of family life** and **loss of opportunities** (like education, future earning abilities); **(4) Social Impact**: A person and his family face **social boycott and harm to reputation** in society owing to the stigma attached with imprisonment. Acquittal at a later stage

doesn't completely restore the lost prestige; **(5)** A Right to Compensation will help in **reducing the quantum of malicious prosecution** by the State authorities. For instance, many people are wrongfully booked under **Section 66A** of the IT Act that has been declared unconstitutional by the SC.

Although the State cannot return the lost years, family life, opportunities, etc to the victim, it still can **help the victim to reintegrate back into the society** by providing pecuniary and non-pecuniary assistance for the same.

What should be the approach going ahead? – (1) The Parliament should **enact a law based on the various recommendations of the Law Commission** (277th Report). The law should create a **uniform compensatory framework**. The report recommends the creation of a statute laying down the conditions, amounts, procedure, etc. of awarding compensation to innocents. The report also recommended **creation of a special court in each district** for claims. This would ensure speedy and efficient disposal of cases; **(2)** A proactive role needs to be played by the **non-governmental organizations** to help the victims of such wrongful acts to approach the appropriate courts and claim their respective rights; **(3)** There should be an enhanced **focus on training of law enforcement officials** to reduce the cases of wrongful arrests. Prosecutors and judiciary can also play a positive role in reducing the quantum and duration of wrongful arrests; **(4)** Appropriate steps are required to reform the criminal justice system, reduce the pendency of cases and undertake judicial reforms.

The Indian legal system is overburdened with an excessive number of criminal cases; and in such a scenario it becomes all-the-more necessary for the State that it protects the rights of innocents. In this regard, a statutory framework for providing compensation to the victim and his/her family is an urgent need of the Indian legal system.

#3 Parliamentary Oversight over Government's International Deals

News: The Government of India recently signed trade deals with Australia and the UAE. However, there is no scrutiny of these trade treaties by the Parliament. This gives rise to the argument of democratic deficit in the treaty making process.

What is the Constitutional Arrangement? - (1) According to **Article 246**, Parliament has the legislative competence on all matters given in the Union list. **Entry 14** of the **Union list** notes '*Entering into treaties and agreements with foreign countries and implementing of treaties, agreements and conventions with foreign countries*'. Thus, Parliament has the power to legislate on international treaties; **(2)** This power includes: **(a)** Deciding how India will ratify treaties and thus assume international law obligations; **(b)** Parliament's competence to give effect to treaties within the domestic legal regime by enacting laws; **(3) Article 253** provides the power to the Parliament to enact a law on State subjects in order to implement international treaties.

What is the present status of Parliamentary oversight of international treaties? – (1) No specific law laying down the processes: The Parliament is yet to enact a law laying down the processes that needs to be followed before assuming international treaty obligations; **(2)** At present, a treaty comes under Parliament's scrutiny only if signing of a treaty requires change(s) in a domestic law (or enactment of a new law). Hence, the Parliament is exercising **limited post-facto basis oversight**; **(3)** In such a situation, the obligations under the Treaty have already been accepted by the Executive. The Parliament only deliberates how the international law obligations should be implemented domestically. Even if Parliament does not amend or make domestic laws to transform the treaty, the treaty will continue to be binding on India.

Thus, the Executive has been negotiating, signing and also ratifying international treaties and assuming international law obligations without much Parliamentary oversight. Concerns over the lack of

parliamentary oversight were also flagged by the **National Commission to Review the Working of the Constitution** (2002).

What is the status in other countries? – (1) The US: All important treaties signed by the President have to be approved by the Senate; **(2) Australia**: The Executive is required to table a '**national interest analysis**' of the treaty it wishes to sign in parliament. It is examined by a Joint Standing Committee on Treaties. The Australian parliament supervises the treaty-making process and acts as a check on the executive's power; **(3) Canada**: The Executive tables the treaties in Parliament.

Effective Parliamentary supervision will increase the domestic acceptance and legitimacy of international treaties. This is especially true for economic agreements, which are often critiqued for imposing undue restraints on India's economic sovereignty.

#4 The Judgment of Supreme Court Regarding Sex Workers

News: The Supreme Court has recognized sex work as a profession. The SC held that the practitioners of sex work are entitled to dignity and equal protection under the law.

What is the background to the SC Directions? – **(1)** In 2011, the SC had rejected the appeal of the convict in *Budhadev Karmaskar vs State Of West Bengal* case. The accused had murdered a sex worker for refusing to have sexual intercourse with him; **(2)** The SC appointed a panel asking it to study and make suitable suggestions on 'prevention of trafficking, rehabilitation of sex workers who wish to leave sex work'.

What were the findings of the Panel? - In its final report submitted on September 14, 2016, the panel noted that: **(1)** Sex workers found it difficult to acquire proofs of identity such as ration cards or voter cards because they lacked a

Definition of A Sex Worker

- The expression 'sex worker' has not been defined in the **Immoral Traffic (Prevention) Act (ITPA), 1956** or any other law.
- According to the ITPA (amended in 1978 and 1986), '**prostitution**' means the **sexual exploitation or abuse of persons for commercial purposes**.
- The expression 'prostitution' includes offering the body to a person for promiscuous sexual intercourse for hire.
- It also includes **taking unjust and unlawful advantage of trapped women for one's benefit** or sexual intercourse.

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proof of residence; **(2)** District authorities did not recognise the identities of sex workers and their children, and sex workers did not have access to schemes meant for their rehabilitation; **(3)** They also had no access to credit offered by States, because the lack of documents prevented them from opening bank accounts. The Committee recommended that amendments should be made to The Immoral Traffic (Prevention) Act, 1956.

What are the key highlights of the SC's directions? – (1) In May 2022, the SC noted that despite its assurances, the Government was still to bring a law on the subject. Therefore, the Court used its **extraordinary powers under Article 142**, and directed that some of the recommendations of the Panel be implemented by States and UTs; **(2)** The **SC recognized sex work as a 'profession'**. Every individual has a right to a dignified life under Article 21 of the Constitution. This also includes sex workers; **(2) Directions to Police**: "Sex workers are **entitled to equal protection of the law**. Criminal law must apply equally in all cases, on the basis of 'age' and 'consent'.". If the sex worker is an adult and is participating with consent, the police must refrain from interfering or taking any criminal action; **(3) Brothels unlawful**: The SC also observed that '**voluntary sex work is not illegal**' and 'only running the brothel is unlawful'; **(4) Protection for sex worker's child**: A child of a sex worker should not be separated from the mother merely on the ground that she is in the sex trade. The SC observed, "**Basic protection of human decency and dignity extends to sex workers and their children.**" If a minor is found living in a brothel or with sex workers, it should not be presumed that the child was trafficked. In such cases, if the sex worker claims that he/she is her son/daughter, tests can be done to determine if the claim is correct and if so, the minor should not

be forcibly separated; **(5) Legal protection to sex workers against abuse**: The SC ordered the police to not discriminate against sex workers who lodge a criminal complaint, especially if the offence committed against them is of a sexual nature. The SC held that the Sex workers who are victims of sexual assault should be provided with every facility including immediate medico-legal care.

What has been the response of the Union Government? - The Union Government said it had 'certain reservations' on some recommendations of the panel. These are: **(1)** No criminal action against a sex worker who is adult and participating with consent; **(2)** Arresting only the brothel owner and not sex workers during raid on brothels; **(3)** Role of sex workers in decision-making processes, including planning, designing and implementing policy

The Supreme Court's Directions Regarding Sex Workers

The Supreme Court has directed the implementation of some of the Recommendations of the Panel it had appointed in 2011.

1. Provision for **immediate medical assistance** for any sex worker who is a victim of sexual assault.
2. Direction to States to do a **survey of all Immoral Trafficking (Prevention) Act Protective Homes** so that cases of adult women who are detained against their will can be reviewed and processed for release in a time-bound manner.
3. **Sensitising police** and other law enforcement agencies to the **rights of sex workers** and to ensure that police treat them with dignity and do not abuse them verbally or physically or coerce them into any sexual activity.
4. Ask The **Press Council of India to issue appropriate guidelines** for the media to take utmost care **not to reveal the identities of sex workers** while reporting.
5. Direction that measures that sex workers employ for their health and safety must neither be construed as offences nor seen as evidence of commission of an offence.
6. Ensure that the legal service authorities of the Union and State governments **educate sex workers about their rights** vis-à-vis the legality of sex work.

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relating to sex work; **(4)** No child of a sex worker should be separated from the mother merely on the ground that she is in the sex trade. If a minor is living in a brothel or with sex workers, it should not be presumed that he/she has been trafficked. The law, at present, presumes trafficking if a child is found with any person in a brothel. Such a child or a minor after being rescued should be placed with any child care institute recognised under the Juvenile Justice Act.

The SC has asked the Union Government to file its response to the recommendations of the panel within 6 weeks.

The Court's general observations should help sensitise the police, media and society toward sex workers, who have generally been invisible and voiceless. The Government must draw up appropriate legislation to **free consenting sex workers from stigma**, and **grant them workers' rights**. The **women** in the sex work should be viewed more as **victims of adverse socioeconomic circumstances** rather than as offenders.

The law should appropriately define 'sexual exploitation' and 'abuse of persons'. The SC suggested that the Union and State Governments should **involve sex workers or their representatives to reform the laws**.

#5 The Role of ASHAs in India's Healthcare

News: India's Accredited Social Health Activists (ASHAs) have won the WHO's Global Health Leaders Awards, 2022. They were given the award in recognition of their work during the COVID-19 pandemic as well as serving a link between Communities and Health Systems. Despite their contribution, ASHA workers face several challenges. The Government must take steps to address their concerns.

What have been the major contributions of the ASHA workers? – (1) ASHAs have played a crucial role in improving access to **primary health-care services**; especially maternal and child health services; **(2)** They have served rural and urban populations and also difficult-to-reach habitations; **(3)** Their role has been instrumental in making India **polio free**, increasing routine **immunisation coverage**; reducing **maternal mortality**; improving **new-born survival** and in greater access to **treatment** for common illnesses.

They have become **pivotal** to nearly every **health initiative** at **the community level,** and are integral to **demand side interventions** for health services in India.

What are the salient features of the ASHA Programme? – (1) The key **village stakeholders** are involved in the process of selections of **ASHAs**. This ensures community ownership for the initiatives and forging a partnership; **(2)** ASHAs generally belong to the same village where they work. This ensures familiarity, better community connect and acceptance; **(3)** The **phrase activist** was joined in their name to reflect that they

Genesis of the ASHA Programme

- **Inspiration**: **(a)** 1975 WHO monograph titled 'Health by the people'; **(b)** 1978 International conference on primary health care in Alma Ata; **(c)** 2002 Mitanin initiative of Chhattisgarh in which all-female volunteers were available for every 50 households and 250 people.
- ASHA Programme was launched in 2005-06 as part of the **National Rural Health Mission**. It was **extended to urban areas** after the launch of the **National Urban Health Mission in 2013**.

Functioning of the ASHA Programme

- Each of the **women-only volunteers** work with a population of nearly 1,000 people in rural and 2,000 people in urban areas.
- ASHAs coordinate things within villages and with the health system, with the help of **Anganwadi workers** (AWW), **Auxiliary Nurse Midwife** (ANM), panchayat representatives and influential community members at the village level. The **A-A-A: ASHA, AWW and ANM, act as three frontline functionaries** at the village level and form the **all-women partnership** to provide the primary health-care services to the community.
- Platforms such as village **health, sanitation and nutrition committees** are created, for coordination and service delivery.

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are the **community's representative** in the health system; **(4)** They were called **volunteers** to avoid a slow process for government recruitment and to include elements of the **performance-based incentives** and some accountability. Another motive was to prevent governmentalisation and promote 'communitization'.

What are the challenges? – The ASHA volunteers face several challenges causing regular agitations and protests by ASHAs in many States: **(1)** Among the A-A-A (Anganwadi Workers (AWWs), Auxiliary Nurse Mid-wives (ANMs)), ASHAs do not have a fixed salary; **(2)** They don't have opportunities for **career progression**; **(3)** The total compensation received by ASHAs including performance-based incentives is low and often delayed.

What corrective steps can be taken? - The global recognition should be used as an opportunity to review and further strengthen the ASHA programme: **(1) Enhance Compensation**: The States must develop a mechanism for **higher remuneration** for ASHA workers; **(2) Capacity Building**: An **in-built institutional mechanism** should be created for their capacity-building and providing avenues for career progression. For example, they can move to cadres such as ANM, public health nurse and community health officers; **(3) Social Benefits**: The ASHAs and their family should be given the benefits of the **social sector services** like health insurance; **(4) Permanent Status**: The Governments should explore the possibility of regularizing the posts of ASHAs and make them permanent government employees; **(5) External Review**: An independent and external review of the programme can help improve the functioning of the programme.

#6 Issues in India's Higher Education Institutions and Universities

News: India's Universities have improved their performance in the latest QS World Universities Rankings, 2023. However, only 9 Indian Institutions (8 IITs and IISc) feature among top 500 Universities. Indian Universities face several challenges which drastically impact their performance.

What challenges are being faced by the Indian Universities? – (1) Financial crunch: Investments in university infrastructure are low. Most Indian universities and colleges have overcrowded classrooms, poor ventilation and sanitation, and unsatisfactory hostel accommodation; **(b)** The Higher Education Financing Agency (HEFA), which provides funding for all infrastructure loans to institutions, has seen its budget reduced from INR 2,000 crore in FY 20-21 to INR 1 crore in FY 21-22; **(c)** Stifled cash flow has led to delays in salary payments; **(d)** This has also led to cuts in discretionary spending – many colleges in Delhi are unable to afford subscriptions to basic databases and journals. **Spending on higher education** (*as a % of*

government expenditure) has stagnated at 1.3-1.5% since 2012; **(2) Poor Research**: India has over 1,040 universities, but just 2.7% offer PhD programmes, given paltry funding and poor infrastructure. The National Research Foundation (NRF), to improve research infrastructure in universities, has not yet been approved, and may have a limited budget ($5-6 billion spread over five years). In the absence of proper infrastructure, the research output from Indian Universities is dismal; **(3) Supply exceeds demand:** The total demand for **technical higher education is much less** than available seats. Therefore, a large number of technical institutions are unable to fill their sanctioned seats. Their **capacity utilisation** is falling and stands at 53.53% in 2020-21; **(4) Teacher-Pupil Ratio**: The AICTE prescribes a minimum specific **student-teacher ratio (STR)**, ranging from 7.5 to 20. However, the majority of the institutions are unable to admit students. Therefore, their **STR** has gone down from 5.5 in 2012-13 to 3.0 in 2020-21 due to inadequate admissions. On the other hand, many Universities have higher ratio than prescribed standards due to lack of faculty; **(5) Fall in standards**: Academic standards and processes are not properly maintained. In technical institutions, the admission criteria are relaxed to fill vacant seats. This reduces quality of input students. In many Universities, classes and examinations are not held regularly.

What corrective steps are required? – (1) There is an **urgent need for increased funding**, along with establishing **dedicated funding streams for infrastructure grants/loans** and financial aid. Universities can also be freed up to utilise other revenue streams such as start-up royalties and advertising; **(2) Funding for research needs to rise significantly**, with institutions like the NRF supplementing existing schemes (including those from the Ministry of Science). Funding should also be allocated to **enable course-based research experiences** for undergraduates; **(3)** Improving the sanctity of the examination process will require **a decentralised approach**, with universities allowed to take decisions on academic programmes, promotions, cohort size, etc.

#7 The Need for Vaccine Mandates: Arguments against Supreme Court's Judgment

News: The Supreme Court had recently held that a person can't be forced to get vaccinated against her wishes. The Court said the restrictions imposed by Governments on the unvaccinated people can't be termed as proportionate. However, there are some flaws in Supreme Court's reasoning.

What has been the SC's Ruling on Vaccine Mandates? – (1) The Governments have imposed partial or full vaccination of individuals as a precondition for accessing public spaces, services, or using public transportation, among others; **(2)** The SC held that the Governments' policies to put restrictions on

The Test of Proportionality

The Supreme Court had adopted the proportionality test proposed by **Aharon Barak, the former Chief Justice, Supreme Court of Israel** in the *Modern Dental College vs State of Madhya Pradesh* (2016) and reiterated it in the *K.S. Puttaswamy vs Union of India* (2017)

01	Legal Sanction	The State action must be sanctioned by law.
02	Purpose	The State action should have a legitimate aim.
03	Proportion or Balance	There needs to be a proper balance between the importance of achieving the purpose and the need to put the limitation on the constitutional right.
03a	No Alternative	Justice Aharon had put one more basis. No Alternative measures are available that help achieve the purpose with lesser degree of limitations.

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unvaccinated individuals cannot be said to be proportionate. Compulsory vaccine mandates seek to invade an individual's bodily integrity and personal autonomy under Article 21 of the Constitution; **(3)** The SC relied on the **Proportionality Test** as the basis of its judgement and used it to check on the **infringement** of **bodily integrity, personal autonomy and privacy of an individual** by the State. The test requires satisfaction of the following conditions: The State action **(a)** should be sanctioned by law; **(b)** should have a legitimate State aim; **(c)** The extent of interference should be proportionate to the need for such interference.

How do Government restrictions meet Proportionality Test? – (1) The State is empowered under **Entry 6** of the State List of Schedule VII of the Constitution, the **Disaster Management Act of 2005** and the **Epidemic Diseases Act of 1897** to take effective measures on issues concerning '**public health**'; **(2)** The **State's aim** is legitimate. Vaccination is necessary to prevent illness and reducing the number of deaths due to COVID-19. The Indian Council of Medical Research said that 92% of COVID-19 deaths in India in 2021 occurred in unvaccinated individuals. Mandatory vaccination helps achieve the aim of public health; **(3)** The extent of **State's interference** with the privacy and bodily autonomy of an individual is not disproportionate. The Governments are facing the challenge of preventing the transmission of COVID-19 and the **number of deaths**. In the absence of restrictive measures, the number of people undergoing vaccination might have been much lower. The COVID-19 virus has kept on mutating. The presence of a class of unvaccinated persons would have wide-ranging ramifications for an already **overburdened healthcare system**.

Moreover, the Right to bodily autonomy under Article 21 is based on the Right to Life itself, making it essential for the State to first safeguard the life and health of its citizens before individuals' decisional autonomies.

Judgments Related to Vaccine Mandates

- *Jacobson v. Massachusetts* **(1905, the U.S. Supreme Court):** A community has the right to protect itself against an epidemic of disease which threatens the safety of its members.
- *Zucht v. King* **(1922, the U.S. Supreme Court):** A State may exercise its police power to provide for compulsory vaccination.
- *Asha Ranjan v. State of Bihar* **(2017):** The Supreme Court of India said that **community interests take priority over individual interests**. The SC observed that the **community interest cannot be sacrificed** at the altar of individual interests especially in a situation where a fear psychosis is running through the community.

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India is a signatory to **the International Covenant on Economic, Social and Cultural Rights**. Thus, India is bound to take all possible measures to progressively realise the enjoyment of '**highest attainable standard of physical and mental health**' of its citizens under **Article 12**. Therefore, the State should **expedite inoculations** at a time when infection rates are relatively low.

The vaccination will alleviate the **burden** on the **healthcare syste**m during more difficult times. It will also ensure that the **State's healthcare policies** are proactive and not merely reactionary.

#8 The Indus Water Treaty

News: The 118th Meeting of the India-Pakistan Permanent Indus Commission was held recently. The role of India, as a responsible upper riparian abiding by the provisions of the treaty, has been remarkable. However, of late, there has been pressure on the Government to rethink the treaty given the political relations with Pakistan and its approach towards bilateral issues especially terrorism.

What are the main provisions of the Indus Water Treaty? – The Treaty was signed in 1960 under the aegis of the World Bank. **(1)** The Treaty gives **India control of 3 Eastern Rivers (Beas, Ravi and Sutlej)** with a mean annual flow of 33 million acre-feet (MAF). **Pakistan gets control of 3 Western Rivers (Chenab, Indus and Jhelum)** with a mean annual flow of 80 MAF; **(2)** The treaty gives **India 20%** of the water from the Indus River System and the rest **80% to Pakistan**; **(3)** The treaty allows India to utilize the waters of Western Rivers for **limited irrigation** and **non-consumptive use** for such applications as **power generation, navigation** etc. Thus, India can generate hydroelectricity through a **run-of-the-river projects (without the storage of waters)** on the western rivers, subject to specific criteria for design and operation. Further, Pakistan also has the **right to raise concerns** on the design of Indian hydroelectric projects on western rivers; **(4)** The treaty allows India to have a **minimum storage level on the western rivers** – meaning it can store up to 3.75 MAF of water for **conservation and flood storage purposes**; **(5)** A **Permanent Indus Commission** was set up by the United Nations for resolving any disputes that may arise in water sharing. Its functions include serving as a forum for exchange of information on the rivers, for continued cooperation and as a first stop for resolution of conflicts.

What is the mechanism to resolve conflicts under the Treaty? – (1) The treaty provides a **3-step dispute resolution mechanism**. The treaty classifies conflicts into 3 categories: questions, differences and disputes; **(2)** Questions on both sides can be resolved at the **Permanent Commission**, or can also be taken up at the inter-government level; **(3)** In case of unresolved questions or 'differences' (such as technical differences) either side can approach **the World Bank to appoint a Neutral Expert (NE)** for resolution; **(4)** If either party is not satisfied with the NE's decision or in case of 'disputes' in the interpretation and extent of the treaty, matters can be referred to a **Court of Arbitration**.

Pakistan has raised disputes on almost all of India's projects on Western Rivers. These include Baglihar Dam (on Chenab), Kishanganga Dam (on tributary of Jhelum River), Tulbul Project (on Jhelum River). The Baglihar Dam 'Difference' was resolved in 2007 through the World Bank-appointed expert, and Kishanganga Dispute was resolved through Court of Arbitration in 2013.

EASTERN RIVERS
Sutlej, Beas, Ravi
11 cubic km
Annual flow before entering Pakistan.
India has full rights on all waters. Pakistan can use whatever flows into its territory.

WESTERN RIVERS
Indus, Jhleum, Chenab
232.5 cubic km
Annual flow before entering Pakistan.
India can use only about 62.2 cubic km; 170.3 cubic km reserved for Pakistan.

TOTAL AREA OF INDUS BASIN:
11.65 lakh sq km
47% in Pakistan
39% in India,
8% in China,
6% in Afghanistan.
Source: India Water Resources Information system

What are the reasons behind calls for renegotiating the Treaty? – (1) The treaty has **unequal sharing of the waters**. Pakistan has been allocated ~80% of the Indus basin waters. Experts have termed this as world's **most generous water sharing treaty**, that compels upper riparian State to defer to the interests of the downstream State; **(2)** It **prevents India from building any storage systems** on the western rivers. Even though the treaty lays out that under certain exceptional circumstances storage systems can be built, Pakistan deliberately interferes in any such effort. The highly technical nature of the treaty allows Pakistan to stall legitimate Indian Projects; **(3)** The basin's size and volume is getting altered by **climate change** and this alteration is going to intensify in future, with more instances of high-intensity rainfall as well as long stretches of scanty rainfall. A change in the flow conditions may classify as 'change of circumstances' which can justify renegotiation or termination in the future; **(4)** The recent report of the Standing Committee of Water resources noted that canals in Punjab and Rajasthan (Rajasthan Feeder and the Sirhind Feeder) had become old and were not maintained properly. This had resulted in the lowering of their water carrying capacity. Thus, the water from the Harike Barrage on the confluence of the Beas and Sutlej in Punjab was usually released downstream into Pakistan. **Pakistan is getting more waters than its entitlement in the Eastern Rivers**.

Can the Indus Water Treaty be rejected by India on a unilateral basis? – (1) Article XII (4) of the Indus Water Treaty notes that, "*...provisions of this Treaty...shall continue in force until terminated by a duly ratified treaty concluded for that purpose between the two Governments.*" Thus the treaty doesn't allow for unilateral termination; **(2)** Article 62 of the **Vienna Convention on Law of Treaties (VCLT)**,

1969 provides that even a '*fundamental change of circumstances*' that are '*not foreseen by the parties*' at the time of conclusion of treaty is not a valid ground for termination of treaty unless certain conditions are fulfilled. Legal experts argue that terrorist attacks do not fall under this exception. Although, India is not a party to this convention, the Supreme Court of India has recognised the customary status of the Convention. (*Pakistan is a signatory, but hasn't ratified the Convention*). Thus, **unilateral termination will impact India's international standing as a responsible power that always supports a Rules based International Order**. This will weaken India's case for permanent representation at the UNSC; **(3)** India has water sharing agreement with Bangladesh. Termination of treaty will raise anxiety in Bangladesh and impact bilateral relations; **(4)** China, an 'all-weather ally' of Pakistan, will certainly use diversion of Brahmaputra waters to threaten India; **(5)** There is not enough infrastructure to store/divert waters of Western Rivers to starve Pakistan of water.

Area Utilized For Irrigation

The Treaty allows 1.3 million acres of irrigation. Actual irrigated area is only 0.8 million acres.

Un-utilized Area
38.5%

Actual Irrigated Area
61.5%
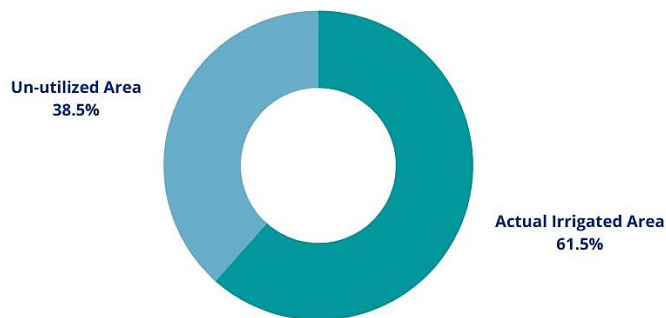
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Hydroelectric Potential

The Treaty allows for generation of 18,600MW of hydel power, Only 3,034MW has been developed, 8,372 MW is under-construction/planned and 7,194 MW is un-utilized.

Developed
16.3%

Un-utilized
38.7%

Under Construction or Planned
45%
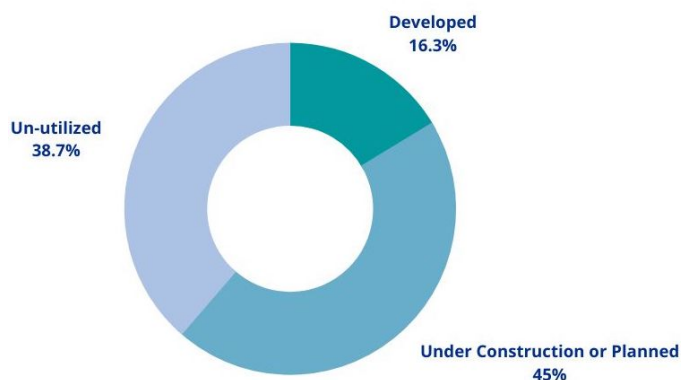
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What approach should India adopt going ahead? – (1) India should take steps to completely utilize its entitlement of waters of Western Rivers. The infrastructure to utilize the waters has remained under-developed in J&K; **(2)** Some experts suggest that in case of escalation of hostilities by Pakistan in future, India can **suspend the meetings of Permanent Commission**. If the first state of dispute redressal is not functional, the subsequent two steps of 3-tier dispute redressal don't kick in. Thus India can use this as a pressure tactic on Pakistan; **(3)** India should explore the possibility of using climate change as a 'change in circumstances' to initiate conversation on renegotiation of the IWT. This will also put pressure on Pakistan; **(4)** Experts in India and Pakistan should assess how much of the waters in the Eastern and Western rivers are snow or rain-fed within their respective territories. Such estimates would add to the accuracy of each side's dependence on the other in sharing the waters of these rivers; **(5)** As recommended by the Standing Committee of Water Resources, the canal systems in Punjab and Rajasthan should be repaired to increase their water carrying capacity.

#9 Indo-Pacific Economic Framework (IPEF)

News: The Indo-Pacific Economic Framework was launched at the QUAD Leader's Summit in Tokyo. IPEF is being seen as the US' response to other trade pacts in the region like CPTPP and the RCEP. IPEF is expected to enhance economic cooperation and establish rules-based order in the Indo-Pacific.

What are the proposed dimensions of IPEF? – (1) The **proposed economic bloc** has 13 members so far and more countries are expected to join; **(2)** Apart from the four Quad members, IPEF includes Brunei Darussalam, Indonesia, South Korea, Malaysia, New Zealand, the Philippines, Singapore, Thailand and

Vietnam; **(3)** The IPEF aims to facilitate fair and shock-proof trade, with e-commerce and supply-chain resilience as major aspects of it. The framework has 4 pillars: **(a)** Trade; **(b)** Supply Chain Resilience; **(c)** Clean energy and decarbonisation; **(d)** Tax and anti-corruption; **(4)** The member countries do not plan to begin negotiations for a trade pact immediately. They only promised to launch 'collective discussions towards future negotiations' with the ambitious wish list.

What is the significance of IPEF? - (1) Reduce Dependence on China: It is an attempt to allow countries to **decouple from over-dependence on China**. The framework will strengthen the existing free and open rules-based global order, which China has been targeting to upend; **(2) Strategic Importance to US**: It will help the **U.S regain its dominant position** in the geopolitics

which it has been losing to China. The aim is to reclaim economic leadership in East Asia and the ASEAN region; **(3) Economic Aspect**: It will help in **setting the rules of the road for the digital economy,** ensuring **secure and resilient supply chains**. It will also play a pivotal role in raising standards for transparency, fair taxation, and anti-corruption; **(4) QUAD+**: It **complements the "Quad Plus" process**. It brings together 7 critical countries of the Association of Southeast Asian Nations (ASEAN), all Quad states, and dialogue partners; **(5) Counter Regional FTAs**: IPEF will **counter the other regional groupings**; the Trans-Pacific Partnership (TPP), the Comprehensive and Progressive Agreement for TPP (CPTPP) and the Regional Comprehensive Economic Partnership (RCEP). None of them had India or the U.S as participants; **(6)** It will also improve mitigation and adaptation efforts towards **climate change** by helping in inducing major investments necessary in clean energy infrastructure and the clean energy transition.
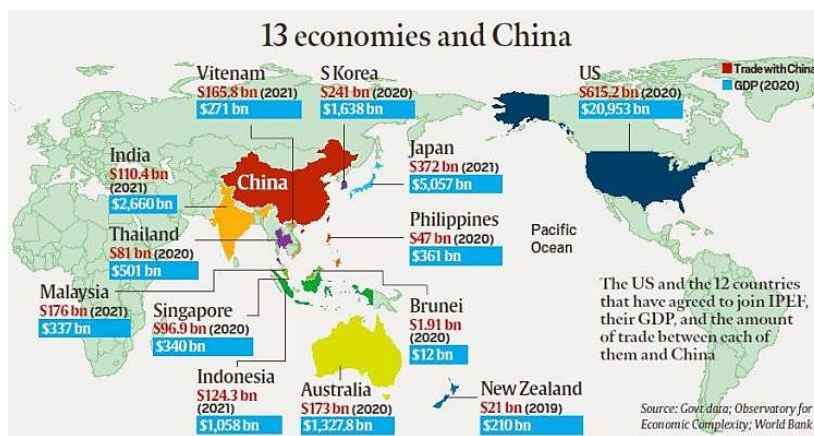
Will IPEF be beneficial for India? – (1) IPEF gives India an **opportunity to be part of the value chain** in the Asia-Pacific region after it exited the RCEP trade deal in 2019; **(2)** It also **takes care of India's concern of China** being part of RCEP. The IPEF by design excludes China; **(3)** It presents an opportunity to concretize India's position as **a responsible and robust economic power** in the world order.

Four Pillars of IPEF

- **Trade**: It will include digital economy and emerging technologies, labour commitments, environment, trade facilitation, transparency, good regulatory practices, corporate accountability, standards on cross-border data flows and data localisations.

- **Supply Chain Resilience**: Its purpose is to develop 'a first-of-its-kind supply chain agreement' that would **anticipate and prevent disruptions**.

- **Clean Energy and Decarbonization**: It will include agreements on 'high-ambition commitments' such as renewable energy targets, carbon removal purchasing commitments, energy efficiency standards, and new measures to combat methane emissions.

- **Tax and Anti-Corruption**: It includes commitments to enact and enforce 'effective tax, anti-money laundering, anti-bribery schemes in line with [American] values'

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What are the associated challenges? – (1) Data Localization: The US has said that India's proposed data localisation requirements will act as a hurdle to digital trade. However, India strongly supports data localization for protection of personal data and upholding national security; **(2) Environment and Labour standards**: The IPEF imposes stricter environment and labour standards that are way above the prevailing norms in India. Such strict measures may hamper investment flows into India thereby limiting the

benefits. Moreover, incorporation of such standards in Free Trade Agreements is against India's official stand; **(3) Different Stance over Russia -Ukraine Conflict**: India hasn't openly criticized Russia unlike Australia and Japan. Further, India has continued to purchase oil from Russia. India will be continuously pressurized to cut ties with Russia; **(4) China's Discontent**: China views the framework as a U.S led 'Anti-China' tool. China might try escalate border tensions along the Line of Actual Control (LAC); **(5) Lack of Clarity**: The U.S. has said that it is not a free trade agreement nor will it discuss tariff reductions or increasing market access, raising questions about its utility. The U.S.'s previous initiatives (the Blue Dot Network and the Build Back Better Initiative) have made little improvements in changing the region's infrastructural needs. Hence, the IPEF also faces a credibility challenge.

What lies ahead? – (1) India's Approach: India should identify areas where the negotiations require a departure from past practice. The Government should consider whether these departures are in the **national interest** in the light of **changed circumstances**. Exceptions can be carved out for **specially sensitive areas**. India can build in a suitable adjustment period to comply with these standards. Negotiations involve **multiple ministries**. Therefore, there should be **inter-ministerial consultations**. The Government should also consider establishing an **empowered trade negotiator** to consult with concerned ministries and report to the Prime Minister and key ministers with an assessment of pros and cons; **(2)** The 13 countries are yet to begin negotiations. The US hopes it will draw in more members as a reasonable degree of flexibility is provided in the agreement. According to the US Congressional Research Service, countries would have to sign up to all components within a pillar, but do not have to participate in all pillars; **(3) Inclusion of Taiwan**: IPEF is **likely to complement the other Indo-Pacific projects** like the Supply Chain Resilience Initiative that also seeks to build resilient and secure trade linkages by reducing dependence on China. There must be inclusion of key players like Taiwan into SCRI and IPEF as Taiwan enjoys a critical hold over semiconductor supply chain networks; **(4)** States must envision a **broad, all-embracing, and comprehensive framework** that can stand as a pillar for regional security and stability, multilateralism, and defence of global institutionalism. Establishing a stronger regional economic framework that promotes a resilient and secured supply-chain connect is just the beginning.

India is committed to a free, open, and inclusive Indo-Pacific region. It is keen to collaborate with partner countries under the IPEF and work towards advancing regional connectivity and integration for continued growth, peace, and prosperity.

#10 Nuclear Disarmament and India's Stance

News: The Stockholm International Peace Research Institute (SIPRI) has raised concern about the expected rise in the global nuclear arsenal over the next decade in its yearbook. This has reignited the debated regarding the need for nuclear disarmament.

What are the key findings of the SIPRI Report? – (1) Russia has the highest number of nuclear weapons with 5977 warheads, followed by the US. The US possesses 5428 nuclear weapons; **(2)** The US has the highest number of deployed warheads (1744) followed by Russia (1588); **(3)** The US and Russia are followed by China (350), France (290), the UK (225), Pakistan (165), India (160), Israel (90) and North Korea (20). Thus, the rest of the nuclear powers are way behind the US and Russia in terms of nuclear weapon stockpiles; **(4)** The **marginal downsizing observed in the nuclear arsenal has come mostly from the U.S. and Russia dismantling retired warheads**. But the Russian invasion of Ukraine has raised serious concerns because of the continuous rhetoric of not shying away from the use of nuclear weapons; **(5)** China's recent activities surrounding construction of 300 new nuclear missile silos has also raised concerns. In the subcontinent, India and Pakistan seem to be making gains over their nuclear arsenal (in absolute numbers); **(6)** The yearbook mentions low level border clashes between India and Pakistan, the civil war in Afghanistan, and the armed conflict in Myanmar as some of the worrying

indicators of an unstable system; **(7)** It has also highlighted 3 cause of concern trends: **(a)** Chinese-American rivalry; **(b)** Involvement of State and Non-state actors in multiple conflicts; **(c)** Challenge posed by climatic and weather hazards.

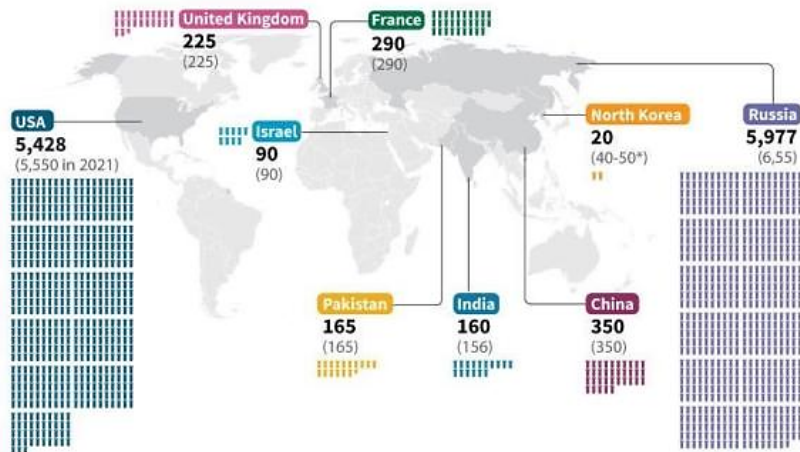**Why do countries value Nuclear Weapons? – (1) Deterrent Effect**: Nuclear weapons create a deterrent effect. This is because of **Mutual Assured Destruction Doctrine**. Many experts have said that Russia wouldn't have invaded Ukraine if the latter hadn't given up nuclear weapons in early 1990s; **(2) Symbol of modernization:** Adding nuclear weapons to the arsenal shows that the military is getting prepared for future emergencies and attaining

Nuclear weapons stockpiles
Warheads by country in 2022, according to the Stockholm International Peace Research Institute (SIPRI)

United Kingdom **225** (225)

France **290** (290)

USA **5,428** (5,550 in 2021)

Israel **90** (90)

North Korea **20** (40-50*)

Russia **5,977** (6,55)

Pakistan **165** (165)

India **160** (156)

China **350** (350)

Source: SIPRI estimates in 2022

*Estimates 2022 based on production of fissile material by the regime, the number of warheads being "extremely uncertain"

modern capabilities. Countries are focusing on development of newer and more efficient nuclear submarines, aircraft carriers, fighter jets, manned and unmanned aerial vehicles etc.; **(3) Regional Superiority**: Any country which desires to establish a steady control over its neighbourhood wishes to obtain/retain control of nuclear weapons. For instance, the U.S exercises substantial control over the American continent due to its huge arsenal of nuclear weapons.

What is the need for Nuclear Disarmament? – (1) Huge Magnitude of Destruction: The Nuclear Explosion at Hiroshima released energy equalling about 15 kilotons of chemical explosives. By one estimate, 225,000 people died in the 2 explosions (450,000 was combined population of Hiroshima and Nagasaki, thus ~50% of population died). The enormous toll in destruction, death, injury, and sickness produced by the explosions at Hiroshima and Nagasaki was on a scale never before produced by any single weapon; **(2) Against Rules of War**: Nuclear Weapons can't strictly obey the rule of **differentiating between combatants and civilians**. Even if the weapons are used over military establishments, the radiation will have disastrous impact on nearby civilian populations; **(3) Sovereign Equality:** At present, the world is divided between nuclear haves and have-nots. Disarmament is necessary to establish the sovereign equality of nations; **(4) Fake Triggers:** The U.S and Russia have a sufficient nuclear arsenal to completely destroy the earth. In such a scenario, any nuclear trigger due to misinformation or fake news can escalate into nuclear war and wipe out humanity. In fact, there have been some false alarms during the Cold War, that fortunately didn't lead to nuclear war; **(5) Non-state Actors**: The growing recruitment of educated youth in terrorist organizations raises a fear that they may attain nuclear prowess in future or steal from 'rogue states'. Such a situation can be disastrous for international peace.

What steps have been taken to prevent Nuclear Proliferation? – (1) Non-proliferation of Nuclear Weapons (NPT), 1968: It was put forward by the USA, UK and USSR. It was signed in 1968 and came into force in 1970; **(2) Treaty on the Prohibition of Nuclear Weapons, 2017:** It prohibits and makes it illegal to possess, use, produce, transfer, acquire, stockpile or deploy nuclear weapons. States are also prohibited from using or threatening to use nuclear weapons and other nuclear explosive devices. It came into force in 2021; **(3) Export Control Groupings:** Nuclear Suppliers Group (NSG) and the Missile Technology Control Regimes (MTCR) are some of the nuclear export control groupings. These ensure

that nuclear fuel export doesn't result in development of nuclear weapons; **(4) Conference on Disarmament** (CD): It is a multilateral disarmament forum established by the international community to **negotiate arms control** and disarmament agreements. The Conference was first established in 1979 as the Committee on Disarmament. It was renamed the Conference on Disarmament in 1984. The Conference succeeded three other disarmament-related bodies: **(a)** Ten-Nation Committee on Disarmament (1960); **(b)** Eighteen-Nation Committee on Disarmament (1962–68); **(c)** Conference of the Committee on Disarmament (1969–78).

India's Nuclear Doctrine

- Building and maintaining a **credible minimum deterrence**.
- A '**No First Use**' policy i.e. nuclear weapons to be used only in case of any nuclear attack on Indian territory or on Indian forces anywhere.
- **Non-use** of nuclear weapons against **non-nuclear weapon states**.
- Nuclear retaliatory attacks to be authorised only by civilian political leadership through the **Nuclear Command Authority**.
- Nuclear retaliation to a first strike will be massive and designed to inflict unacceptable damage.
- India may **retaliate with nuclear weapons** against attack by **biological or chemical weapons**.
- Strict controls on export of nuclear and missile related materials and technologies.
- A commitment to the goal of a **nuclear weapon-free world**.

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What is India's Stance regarding Nuclear Disarmament? – (1) India is fully committed to complete Nuclear Disarmament; **(2)** India supports complete disarmament **within a specified timeframe**. This distinguishes its stance from that of the Nuclear Weapon States (NWS) which have an **ambiguous stand regarding timeline for disarmament**; **(3)** India also insists that disarmament must be '**non–discriminatory**' and pursued '**on the basis of equality**' i.e., there must be no discriminatory provisions in favour of NWS as is the case with the Non-Proliferation Treaty (NPT). The NPT calls for ultimate elimination of nuclear weapons but hasn't put on timeframe for the same; **(4)** India calls for complete disarmament despite being a non-signatory of the NPT.

Three Pillars of the NPT, 1968

The Nuclear Non-proliferation Treaty has 3 pillars:

- **Non-proliferation**: Nuclear Weapon States (NWS) pledge not to transfer nuclear weapons and technology and Non-nuclear Weapon States pledge not to acquire nuclear weapons.
- **Disarmament**: All parties to pursue good-faith negotiations on effective measures to control nuclear arms race, and to general and complete disarmament.
- **Peaceful Use of Nuclear Energy**: The Treaty recognizes the right of all Parties to develop nuclear energy for peaceful purposes.

India considers the treaty as **discriminatory** as it creates a club of '**nuclear haves**' and a larger group of '**nuclear have-nots**' by restricting the legal possession of nuclear weapons to those states that tested them before 1967. **India hasn't signed the treaty**. Pakistan, Israel and South Sudan are other non-signatory countries.

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What lies ahead? – The recent geopolitical events transpiring around the world have made the global security climate more unstable. It is further aided by actions of authoritarian leaders of not just non-democratic systems but also of strongmen leaders of democratic systems.

The two largest nuclear weapons holding states need to take on a more engaging role in the international arena. SIPRI's yearbook should force the Governments to look critically at how the global disarmament project seems to be going.

Apart from this, clear and constant communication between Nuclear weapon states is desired in order to avoid the usage of a nuclear weapon based on fake news or misinformation.

The nations must come forward and prepare a road map for a **gradual phase down of nuclear weapons**. Completer disarmament will ensure global peace and must be pursued sincerely.

General Studies Paper III

#1 Supreme Court's Judgment on GST Council

News: The Supreme Court has recently ruled that the recommendations of the GST Council are not binding on the Union and State Governments (*Union of India vs Mohit Minerals Pvt Ltd.*). Some State Governments have said that this would provide them greater space to take decisions.

What was the case before the Supreme Court? – (1) Mohit Minerals had filed a writ petition before the Gujarat High Court. It challenged notification of the Union Government levying IGST on imports of coal. The petition argued that levying of both **customs duty** and **IGST** (levied on the component of supply of transportation service in the form of ocean freight) **would amount to double taxation**; **(2)** The Union Government argued that although tax is being paid twice on the value of ocean freight, it is not unconstitutional. The tax paid was on **2 different aspects of the transaction**, namely, the supply of service and import of goods; **(3)** In January 2020, the Gujarat High Court had quashed the notification levying IGST on importers for ocean freight paid by a foreign seller to a foreign shipping line; **(4)** The Union Government had challenged the Gujarat High Court's decision at the SC; **(5)** The SC dismissed the Special Leave Petition and upheld the decision of the High Court.

About the Goods and Services Tax (GST)

- GST is **a comprehensive indirect tax** on the manufacture, sale, and consumption of goods and services throughout India. It replaced the existing taxes levied by the Union and State Governments. It is a **single indirect tax for the whole nation**, which made India one unified common market.
- GST is a **destination-based tax** applied on goods and services at the place where **final/actual consumption happens**.
- GST is applied to all goods other than crude petroleum, motor spirit, diesel, aviation turbine fuel, and natural gas and alcohol for human consumption.
- There are **four slabs for taxes for both goods and services** – 5%, 12%, 18%, and 28%.
- Although GST aimed at levying a uniform tax rate on all products and services, four different tax slabs were introduced because the items of daily necessities could not be subject to the same rate as luxury items. Created by | **ForumIAS**©

What is the SC's Judgment on GST Council's Recommendations? – In addition to dismissing the appeal of the Union Government, the Court pointed out that: **(1) Article 246A** gives the power to make laws relating to GST to both the Parliament and the State legislatures ; **(2)** The Constitution has not specifically mentioned that all GST Council decisions will become law. If that was the intention, **Article 279A** would have included clarifications to this effect; **(3)** The recommendations of the GST Council are the **product of a collaborative dialogue** involving the Union and States. They are recommendatory in nature. **To regard them as binding would disrupt fiscal federalism** where both the Union and the States are conferred equal power to legislate on GST; **(4)** It concluded that the **GST Council decisions are only 'persuasive' and not binding**.

About the GST Council

Under the GST regime, both the Union and State Governments had to **surrender their tax autonomy** on goods and services. To ensure that every State could play a part in decisions involving GST, the GST Council was formed.
- The GST Council is responsible for recommending rates of tax, period of levy of additional tax, principles of supply, the threshold for exemption, floor level and bands of taxation rate, special provisions to certain States, etc.
- **Article 279A** of the Constitution enables the formation of the GST Council by the President to administer & govern the GST.
- The **Union Finance Minister of India is the Chairperson** of the GST Council. Ministers nominated by the State Governments are members of the GST Council.
- The decisions in the GST Council are taken by the 3/4th majority. The Union Government has 1/3rd voting power and the States have 2/3rd. So far, most of the decisions have been **taken through complete consensus**.
- A mechanism for resolving disputes arising out of its recommendations is also decided by the Council. Created by | **ForumIAS**©

What is the significance of the Judgment on GST? – (1) The order has enabled the States to reject decisions made by the GST Council and set different rates for GST in their jurisdiction; **(a)** This can open a new avenue for State Governments to harness more revenue; **(b)** However, some economists argue that this will **disrupt the current fiscal order as** States might **cherry-pick** on GST Councils recommendations; **(c)** It will also bring **more uncertainty in the business environment**; **(2)** The Judgment has **increased the bargaining power of State Governments**. It will prevent the Union Government from disregarding the interests of States. Many Opposition-ruled States have been criticising the functioning of the GST Council, stating that their concerns are not adequately addressed by the GST Council.

> **PT BOX**
> **Article 246A(1)**
> "Notwithstanding anything contained in articles 246 and 254, Parliament, and, subject to clause (2), the Legislature of every State, have power to make laws with respect to goods and services tax imposed by the Union or by such State".
> **Article 279A(4)**
> "The Goods and Service Tax Council shall make recommendations to the Union and the States on:…"
> The matters included under Article 279A(4)(a) to Article 279A(4)(h): Taxes, surcharges, cesses to be subsumed under GST; goods and services to be covered or exempted under GST; rates including floor rates; special provisions for certain States etc.

What has been response of the Union and State Governments? – (1) Union Government: The Government says that the SC has not said anything new. The GST law provides for recommendation and not a mandate. Article 279A(4) states that, '*The GST Council shall make recommendations to the Union and States on-…*'; **(2) States**: The Judgment clarifies all confusion regarding the GST Council recommendations. It is a verdict that upholds the federal rights of States and the people.

Will SC's Judgment on GST disrupt the GST regime? – The ruling does open an avenue for the States to opt for different tax rates than those taken by the GST Council. However, it is doubtful if any State will decide to legislate a different tax rate under GST as such a move will be myopic and **may be unfeasible**. There may be different scenarios: **(1) Scenario 1**: A State remains in the GST system, but **sets higher tax rates** on some goods and services; **(a)** This will mean that taxpayers will be unable to claim the input tax credit on the goods outside GST, **increasing their tax incidence**; **(b)** Taxpayers' compliance burden for return filing will also get very troublesome; **(c)** Higher tax rates will make the State a **less preferred destination** for domestic and foreign investments; **(2) Scenario 2**: If the **State moves out of the GST system completely**, there will be complete chaos; **(a)** Other States will not want to share their GST revenue with the breakaway State, thus **bringing down its revenue share from the Centre**; **(b)** Inter-State business with the breakaway State will collapse and FDI will move away from the State.
Moreover, till now almost all **decisions of the GST Council have been unanimous**. This indicates a **high level of fiscal maturity** and understanding. While some states have had divergent viewpoints on some issues, the Council however has been **effective in balancing the interests of the Union and the States**. Thus, it is unlikely that any State will break-away from the GST regime.

What can be done going ahead? – (1) The Council should strengthen the **dispute resolution mechanism. Article 279A(11)** requires the GST Council to establish a mechanism to adjudicate on any disputes arising out of its recommendations. This can be in the form of the GST Tribunal; **(2)** The Union and State Governments need to **keep the spirit of cooperative federalism going** so as to ensure that the GST system functions optimally. The concerns of the State Governments should be appropriately addressed; **(3)** The State Governments should also desist from making unreasonable demands and consider the challenges in Union Government finances. Estimates suggest that the Centre collects about 60% of the combined revenue but gets to spend only about 40% of the total. States collect 40% but spend 60%; **(4)** The Judgment would help the States pressurize the Union Government for extending the period of compensation for the loss of revenue. The 5-year period of compensation gets over at the end of June

2022. The tax regime is yet to stabilise and States have been demanding the extension of the compensation period; **(5)** Focus should also be placed on **increasing the revenue productivity of the tax** by reducing the list of exempted items, rationalizing the rates and taking administrative measures. This would help in reducing the tussle between the Union and State Governments.

The Supreme Court Judgment on GST sets the stage for a fundamental revision of GST implementation and functioning of the GST Council from the perspective of cooperative federalism. The Court's remarks open up the issues of federal flexibility in determining SGST rates and procedures.

#2 Ban on Export of Wheat by Government

News: The Government of India recently banned the export of wheat. The ban came amidst the concerns regarding high inflation and lower yield due to intense heat waves. While concerns related to food security are valid, experts have criticized the move as a knee-jerk reaction to inflation.

What are the reasons behind the ban on wheat exports? – (1) High Inflation: The retail inflation touched 7.8% in April 2022. The food inflation was 8.4% while wheat inflation touched 9.6%. This forced the Government to place a ban on wheat export. The prices of wheat have been rising since November 2021 and gained pace after the Russia-Ukraine war. The Food and Agriculture Organization's Food Index has been at its highest since the series began in 1990. The rise has been driven by inflation in edible oil and

Wheat Stock in Central Pool
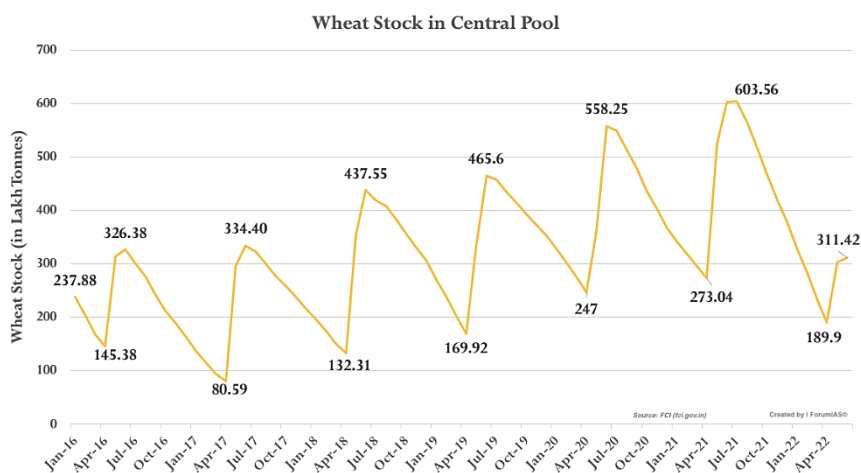
The above trend shows the cyclicity of wheat stocks with the FCI (Opening stock of each month). The stocks are generally lowest in the month of April, and recover once procurement begins after the harvest in April-May. The opening stocks are highest in the month of June, after the completion of procurement. As evident from the chart, the June stocks are lowest since 2016. In 2017, the stocks had plummeted to 80 lakh tonnes in April, but recovered to 334 lakh tonnes by June 2017. This year, the April stocks stood at 189 lakh tonnes, yet June stocks have recovered only to 311 lakh tonnes (much below last year's level of 603 lakh tonnes),

cereals; **(2) Domestic Food Security:** Heatwaves at the end of March impacted the production of food grains, especially in northwest India. The Government has revised the wheat production estimates. The Government had estimated a record production of 111 million tonnes. However, the actual production may be limited to 100 million tonnes. A restriction has been placed on exports to meet domestic wheat demand; **(3) Lower Procurement:** Food Corporation of India (FCI), also slashed its procurement target to less than half of the last year's target of 43 million tonnes. This was based on the premise that farmers were selling more to private traders than selling at MSP. Open market prices were higher at INR 2,400 a quintal compared to the MSP [Minimum Support Price] of around INR 2,100.
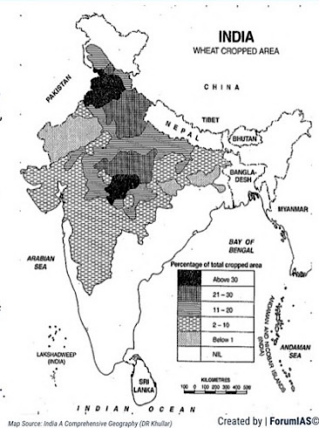
What is the criticism of Government's decision? – (1) Policy Uncertainty: In May 2022, the Government had announced the decision to send trade delegations to 9 countries (like Morocco, Tunisia, Indonesia and Thailand etc.) to explore opportunities for export of wheat. However, as soon as the inflation data were available, the decision was reversed and the Government announced a ban on

wheat export. Critics argue that this is a knee-jerk reaction, that reflects a **lack of understanding** of the domestic food and agricultural economy. Such sudden turns may also result in loss of faith in public policy; **(2) Loss of Income:** Indian wheat traders have lost the opportunity to gain from the global grain shortage. It will be a loss for farmers as

Some Facts About Wheat

- Wheat is the **2nd most important staple food** in India, after rice. It is consumed by ~65% of the population. It is the main food crop in the North/North-western India.

- **Types: (a) Bread Wheat** - Suitable for 'chapati'; cultivated in ~95% of the cropped area; **(b) Durum wheat:** Suitable for making macaroni, noodles, semolina and pasta products, cultivated in ~5% of the cropped area, predominantly grown in Central and Peninsular India.

- **Climate: Rabi crop**, requires a cool growing season and bright sunshine at the time of ripening. It requires 50-75 cm of annual rainfall evenly distributed over the growing season.

- **Wheat Growing Regions: (a)** The Ganga-Satluj plains in the North-west; **(b)** The black soil region of the Deccan. The major wheat-producing states are Punjab, Haryana, Uttar Pradesh, Bihar, Rajasthan and parts of Madhya Pradesh

- **Global Status:** India is the **second-largest producer of wheat** in the world. China is the top producer and Russia is the third-largest producer. Ukraine is the world's eighth-largest producer of wheat.

well because the market price of wheat had become higher than MSP. Many farmers were preferring to sell in the market. It led to the highest purchase of wheat by private traders in Punjab in the last 8 years; **(3) Global Response**: India is the world's 2ⁿᵈ-largest producer of wheat and many countries were expecting India to fill the gap created due to the Ukraine-Russia war. Agriculture ministers from the G7 condemned India's decision to withhold wheat exports amid a global grain shortage. Similarly, at a high-level ministerial meeting in New York on **'Global Food Security: Call to Action'**, India was reminded of its global responsibilities, especially in the context of its upcoming role as chair of the G-20.

What can be the approach of Government going ahead? - Agriculture experts and economists suggest: **(1)** A bonus over the **minimum support price** could be given. This would allow the Government to meet its procurement target on time and also provided better prices to farmers; **(2)** Under the PMGKAY and NFSA allocations, the Government can give the option of cash to beneficiaries. It will give beneficiaries an option to buy more nutritious food, be it pulses, milk, eggs, meat or fish; **(3)** The Government can **impose stock limits** to force traders to release their hoards. Further it could also **offload more rice than wheat** into the subsidized public distribution system. This could free up about 10 million tonnes of wheat for Government-to-Government supply deals such as with Egypt, as most of the Indians use both rice and wheat; **(4)** According to the IPCC report, every 1°C rise in temperature will reduce the yield of wheat by 5 million tonnes. This calls for **massive investments in agri-R&D** to find heat-resistant varieties of wheat and also create models for 'climate-smart' agriculture; **(5)** There is a need to focus on **diversification of staple crops**. The Government should enhance the procurement of millets which are cheaper and nutritious than wheat. This would reduce dependence on wheat and avoid panic export bans on the crop in future. Thereby **ensuring long term credibility of export policy**.

Ban on wheat exports is a temporary solution that can only provide a short term relief. In long term, focus should be on making food production more climate resilient and diversifying the consumption patterns in the country.

#3 Issues Related to ESG (Environmental, Social, Governance) Ratings

News: Corporates are adopting higher ESG norms and investors are preferring such investments. SEBI had recently brought out a consultation paper on the need to regulate the ESG Rating Providers.

What are ESG Measures? – (1) In recent years, climate change concerns and sustainable development have taken centre stage in global and national priorities. Businesses are also becoming conscious about their social and environment impacts. In this context, ESG measures are geared towards ensuring sustainability of business; **(2) 'E' or Environmental Measures**, look at the **impact of resource**

consumption of any business on the environment like carbon footprint and waste water discharge, among other environmental impacting activities; **(3) 'S' or Social Measures** look at how business interacts with communities where it operates. It also looks at internal policies related to **labour, diversity and inclusion policies**, among others; **(4) 'G' or Governance Measures** relate to internal practices and policies that lead to **effective decision making and legal compliance**.

What is the importance of ESG Measures? – ESG Measures facilitate top-line growth in the long run, attracts talent, reduces costs, and forge a sense of trust amongst consumers. The ESG investments lead to public good as well as make business sense. Investors are also becoming aware of the **financial implications of sustainability related risks and opportunities**. They are factoring in ESG Measures in their investment decisions.

Environmental (E), Social (S) and Governance (G) Measures

- Health and Safety
- Community Impact
- Labour Standards
- Customer Responsibility

E **S** **G**

- Climate Change
- Ecological Footprint
- Resource Use
- Pollution

- Tax Transparency
- Anti-Corruption
- Risk Management
- Shareholder Rights

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This has led to increased investor interest and demand for ESG reporting, ESG ratings and ESG related products. Just like Rating Agencies (like Moody's or CRISIL) provide ratings related to companies risk profile, ESG Rating Providers rate companies according to their ESG Measures.

What are the issues with ESG Ratings? - The **ESG Rating Providers (ERPs)** offer rating products in two categories: **(a) Risk ratings:** An assessment of a company's resilience to ESG related risks; **(b) Impact Ratings:** An assessment of the impact of a company's operations on the environment and society. There are several issues with these ratings: **(1) Lack of Uniform Standards**: There are no **universally recognized ESG reporting standards**. The investors and corporates have been using different frameworks like Global Reporting Initiative (GRI), Sustainability Accounting Standards Board (SASB), Task Force on Climate Related Financial Disclosures (TCFD) etc.; **(2)** Lack of uniformity in standards may lead to '**greenwashing**' and mis-selling. This poses potential risks to **investor protection, transparency and capital allocation in markets**, among others; **(3)** There is **no consistency in disclosures and transparency** of the methodology and rating process; **(4) Uniform ESG Standards Against Climate Equity**: There are concerns over the desirability or workability of the universal ESG standards. Different countries have different environmental standards based on their Nationally Determined Contributions (NDCs). These NDCs depend upon the stage of development of a country. To mandate environment standards' reporting under ESG framework that goes beyond a country's commitments would amount to negating the efforts made for equity and climate justice; **(5) Lack of Awareness**: ESG investing is in relatively nascent stage in India. Many investors do not understand the nuances of ESG investing. They are likely to suffer further due to absence of consistent and comparable ESG reporting standards and frameworks.

What steps have been taken towards creating uniform ESG Standards? – (1) A number of international bodies are working on the idea to develop the ESG framework. For example, the **International Financial Reporting Standards (IFRS) Foundation** had announced the setting up of the **International Sustainability Standards Board (ISSB)** at **Glasgow Summit** in 2021. This is an attempt to develop **universally acceptable reporting standards**; **(2)** SEBI has already developed and put in place **Business**

Responsibility and Sustainability Reporting standards (BRSR). This takes into account the viewpoint of stakeholders, domestic considerations and international best practices. The **BRSR reporting framework** is **inter-operable** with international frameworks like GRI, TCFD and SASB; **(3)** SEBI regulations mandate top 1,000 listed companies to compulsory report in accordance with the BRSR standards from the year 2022-23 onwards.

The **domestic ESG rating providers** industry is still at a stage of infancy in India. The demand is mostly met by the foreign ESG rating providers which are unregulated and following varying standards at present. Therefore, there is an urgent need that India put in place a **regulatory framework** to **accredit ERPs**.

#4 Open Network for Digital Commerce (ONDC)

News: The Government has launched the Open Network for Digital Commerce (ONDC). ONDC is expected to play the same role for e-commerce as UPI did for digital payments. It is expected to revolutionize the digital e-commerce sector in India.

What is the background to ONDC? – (1) The fast-expanding digital economy has been one of the major supporting pillars of India's growth in recent times. India has the world's highest fintech adoption rate of 87%, as compared with the global average of 64%; **(2) 3 of the largest public digital platforms in the world are from India**: **Aadhaar** (largest digital identity platform), **Unified Payments Interface** (UPI, largest digital payments ecosystem), and **Co-Win** (largest vaccination platform); **(3)** Realizing the potential of digital space, the Government of India has launched the Open Network For Digital Commerce (ONDC) as a **prospective alternative to dominant global giants** (like Amazon and Walmart) in its fast-growing e-commerce market; **(4)** The idea of ONDC was conceived during COVID when ensuring essential supplies across containment zones was found to be a challenge. Therefore a need was felt to alter the current digital commerce approach of 'scaling what works' to a new approach of 'what works at scale'; **(5)** On December 31, 2021, ONDC was incorporated as a **private sector, non-profit (Section-8) company** to **democratize e-commerce in India** and offer alternatives to proprietary e-commerce sites. It was incubated by the Department for Promotion of Industry and Internal Trade (DPIIT) at the Quality Council of India.

What is Open Network for Digital Commerce (ONDC)? – (1) The ONDC network will enable the display of products and services from all participating e-commerce platforms in search results across all apps on the network. For example, if both Amazon and

Open Source Software

The **Open Source Initiative** (OSI) provides a commonly accepted definition of what constitutes Open Source:
- A work has to **allow free redistribution**.
- The source code needs to be **made available to all**.
- It must be **possible to create further works** based on it.
- There must be **no limitations** of who may use the work or for what purpose (so conditions like 'no commercial use' won't classify as Open Source).
- The work must **not require an additional license** on top of the one it comes with.
- The license must not depend on a specific distribution format, technology or presence of other works.

Source: Open Source Initiative   Created by | ForumIAS©

Walmart's Flipkart integrate their platforms with ONDC, a user searching for a Bluetooth headset on Amazon would also see results from Flipkart on the Amazon app; **(2)** It is a globally first-of-its-kind initiative that aims to **democratize digital commerce**. The ONDC will **provide equal opportunities to all marketplace players**, including consumers. It moves from a platform-centric model (where the buyer and seller must use the same platform or application to be digitally visible and do a business transaction) to an open network; **(3)** It is based on **open-sourced methodology**, using open specifications and open network protocols, and is independent of any specific platform. It is a neutral

platform that will set protocols for cataloging, vendor match, and price discovery on an open source-basis, like the Unified Payments Interface (UPI).

What is the significance of ONDC? – (1) Boost E-Commerce transactions: It will help in enhancing the volume and value of e-commerce transactions. The Government estimates that India's e-commerce market was worth ~US$ 55 billion in gross merchandise value in 2021 and will grow to US$ 350 billion by 2030. This target seems much more achievable with ONDC; **(2) Promotes Competition**: The **existing e-commerce platforms work in silos** and are tightly controlled, keeping out many small players. Amazon and Walmart's Flipkart control more than 60% of the market. However, ONDC will increase competition and foster innovation by start-ups through the display of products and services from all participating e-commerce platforms. Further, it will **limit opportunities for some selected sellers to receive preferential treatment.** It will also help to **end predatory pricing**, especially in high-margin, high-value products; **(3) Freedom of Choice**: It is expected to **make e-commerce more inclusive and accessible** for consumers. They can potentially discover any seller, product or service by using any compatible application/platform, thus increasing their freedom of choice; **(4) Cost Reduction for Sellers**: ONDC would enable small businesses to use any ONDC-compatible applications instead of being governed by specific platform-centric policies. This will provide multiple options to small businesses to conduct business, **without having to pay deep cuts to aggregator platforms**; **(5) Attracts Investment**: Businesses are expected to benefit from **transparent rules**, lightweight investment, and lower cost of business acquisition. It is also expected that the time-to-market as well as time-to-scale shall also be substantially reduced. All this will help in attracting greater investment in the e-commerce space; **(6) Aid in Diplomacy**: The digital platforms are becoming an avenue for a new type of global diplomacy. India's identity and payments platforms are being looked at with interest across the world. Recently, the Co-Win platform was offered by India to interested countries.

What are the expectations going ahead? – (1) The **ONDC aims to raise e-commerce penetration** in the next 2 years to 25% of India's consumer purchases, from nearly 8% now; **(2)** It also **hopes to sign up 900 million buyers and 1.2 million sellers** on the shared network within the next 5 years, while achieving gross merchandise value of US$ 48 billion; **(3)** It also hopes to **bring in logistics firms and others** who can collaborate with sellers to deliver products to customers. The focus should be on small merchants and rural consumers, with **apps in Indian languages**; **(4)** ONDC aims mainly to tap millions of small businesses that often lack technological expertise, so the government will have to run a **massive awareness campaign** to get them on board; **(5)** The role of **Competition Commission of India would be crucial** in the success of ONDC as smaller businesses with low volumes lack the resources to match the discounts offered by heavyweights like Amazon and Flipkart. Their integration and sustenance could be done only when big players are effectively stopped from indulging in anti-competitive practices.
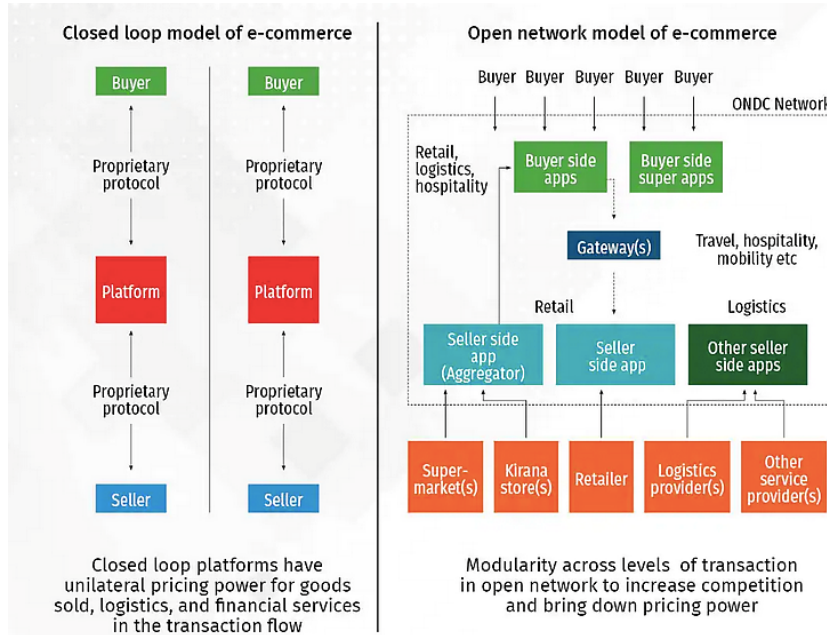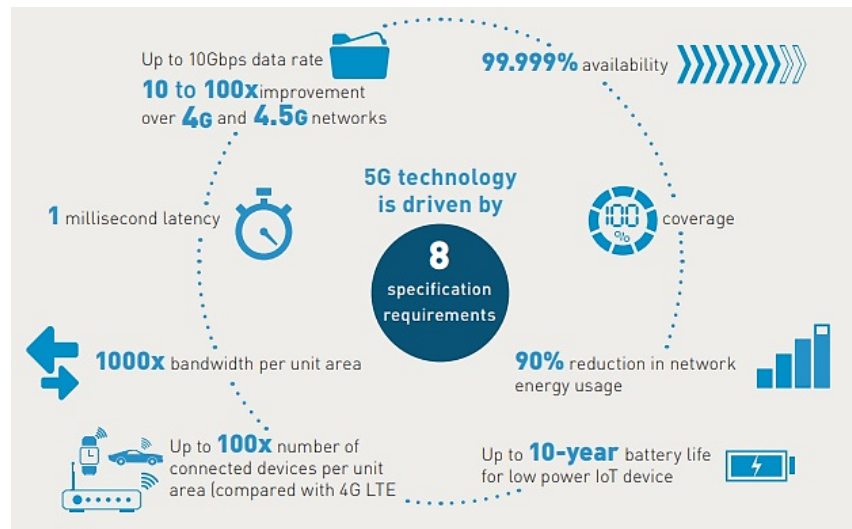
ONDC provides a technological platform to fulfil India's aspirations to become a middle-income economy that is digitally savvy and wired. It offers a vital global template for the harnessing of technology for and as a public good at population scale in an inclusive and equitable way.

#5 5G Technology in India

News: The Government has approved the auction of Spectrum for rolling-out 5G services in India. This is poised to bring revolutionary changes in the communications and technology spanning multiple sectors of the economy.

What is 5G-Network? – (1) 5G or 5th-Generation is the latest upgrade so far in the long-term evolution (LTE) mobile broadband networks. The 5G technology mainly works in 3 bands, (low, mid and high–frequency spectrum); **(2)** The important features of 5G include: **(a) Data Speed**: 5G services will provide up to One GBPS (Gigabit Per Second) of download speed. It is 100 times higher than the existing network speed; **(b) Efficiency and Stability**: The energy efficiency of devices and stability of network connections will improve further with the 5G technology; **(c) Reduce Network congestion**: 5G services work across the low, medium and high–frequency spectrums. This will avoid any network congestions; **(d) Low Latency**: 5G services will have ultra-low latency (**time taken by a network to respond**). Latency for is predicted to be below 10 milliseconds, and in best cases around 1 millisecond.

A government panel report expects the peak 5G data speeds are to be in the range of 2-20 Gbps.

3 bands of 5G and their characteristics:

5G band	Characteristics of Spectrum
Low-Band Spectrum	• **Higher coverage** with **low-speed internet**. • Maximum speed of low–band is limited to 100 Mbps (Megabits per second). • Generally used for commercial cell phone users. • This is not optimal for the specialised needs of the industry.
Mid-band Spectrum	• **Higher speed** but has **lower coverage area** and penetration of signals compared to the low band. • This may be used by industries and specialised factory units for **building captive networks**.
High-band Spectrum	• Offers **highest speed**, but has **extremely limited coverage** and signal strength. • Internet speeds has been tested to be as high as 20 Gbps (gigabits per second). • This is best suited for Enterprise use cases that utilise massive Internet of Things (IoT) with ultra-reliable, low-latency communications.

What is the importance of 5G Technology? – The 5G Technology is expected to have a major impact on wide range of sector and technologies including: **(1) Governance** e.g., **(a)** Service delivery and citizen-engagement efforts can be improved with faster and safer digital identity verification. This will in

Benefits of 5G Technology

5G Technology is set to revolutionize a wide range of sectore

1 Education
- **enhanced Mobile Broadband** (eMBB) feature will enable high-quality educational content through mobiles.
- Impetus to **Digital Universities**.
- Vocational training through '**phygital**' mode, enhance employability.

2 Healthcare
- **Ultra-reliable Low Latency Communication (URLCC)** will enable user-friendly point-of-care diagnostics.
- Improve access to remote medical advice.
- Enable medical staff to **monitor health records** and provide care to patients.

3 Banking/Financial Inclusion
- eMBB and URLCC will enable **simple, secure payments** like **1-tap payments**.
- Payment Banks model can be expanded towards **complete mobile formal banking** model.
- Secure access via **virtual banking**.

4 Transportation and Mobility
- **massive Machine Type Communication (mMTC)** will integrate initiatives across transit systems like FASTag, toll and entry taxes etc.
- mMTC and URLCC will reduce **waiting time** and **congestion** in ports.
- Real-time monitoring of traffic, **reduce congestion** and **enhance safety**.

5 Agriculture
- Diverse range of sensors to enable **real-time monitoring** of crop health.
- Enhance **irrigation efficiency** and **crop yields**.
- Better **Livestock Management**.
- Use of IoT to enable precision agriculture.
- Devices will provide information about **soil health, pests** etc., take corrective steps.

6 Industry/Manufacturing
- 5G Networks connect **array of IoT sensors, automate** scheduling of processes via **intelligent algorithms**.
- **Improve efficiencies** of industrial processes 2-4 times, **reduce carbon emissions**.
- Enhance safety, maintenance, tracking, smart packing, **energy management**.

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turn enable faster implementation of direct benefit transfers and other such schemes; **(b)** Deployment of IoT-based systems on similar networks, using the network function virtualisation feature of 5G, will improve the efficiency of projects under the Smart Cities Mission; **(c)** Better speed and connectivity will reduce the red–tapism and enhance speedy and better implementation of projects and policies; **(2) Renewable Energy**: Energy farms (like wind, solar) already deploy numerous sensors, but because they are in remote regions, the response is delayed. With 5G, their response time and efficiency can be radically improved; **(3) New Technologies**: It will open new horizon of opportunity for new device manufacturers and application developers. Thus, more job opportunities will be created.

Similarly, 5G will have profound impact on **Education**, **health-care**, **industrial**, **agriculture**, **financial** sectors among others.

What are the challenges in introduction of 5G technologies? – (1) Financial Status of Telecom Sector: Telecom operators are facing a financial crisis and have a combined debt of INR 4 lakh crore. They are still trying to fully monetise 4G services. The introduction of 5G will involve a **heavy upfront investment** and have a long payback period. Thus, the viability of 5G after the introduction is a major

Steps Taken To Ease Burden of Telecom Operators

The Government has changed several conditions in the auction to ease the burden of operators:

- **No Upfront Payment**: A mandatory requirement to make upfront payment by the successful bidders has been done away.
- **Payment in Instalments**: Payments for spectrum can be made in 20 equal annual instalments to be paid in advance at the beginning of each year.
- **Option to Surrender the License**: The bidders would also be given an option to surrender the spectrum after 10 years with no future liabilities with respect to balance instalments.
- **No Spectrum Usage Charge**: The Government will not collect any spectrum usage charge on airwaves auctioned in this round.
- **No Bank Guarantee**: The requirement for bank guarantees and financial guarantees has also been done away with.

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challenge; **(2) Pricing of the Spectrum**: The optimum pricing of the spectrum is a challenge. The Government must maximize its revenues, but too high price will put further fiscal burden on stressed telecom operators. TRAI in its April 2022 recommendation reduced the spectrum reserve price by more than 35% from its 2018 level. The demand from telecom operators was a cut by around 90%; **(3) Technological and Operational Challenges**: **(a) Extensive fiberisation requirement**: Most operators at present have about 20% to 25% fiberisation. But, 5G experience will require up to 80% fiberisation. This will entail heavy investments; **(b)** The infrastructure need to be upgraded at every site. It would also require an entirely new orchestration layer to achieve the critical feature of 5G network slicing; **(4) Threat to security:** China is preparing to dominate the world by rolling out its **5G technology warfare across** countries. By deploying the 5G in India without indigenisation of technology will make India vulnerable to China. This will make the data of individuals, groups and security agencies at risk; **(5) Diverting the traffic from 4G to 5G** is also a challenge. **AJ Paulraj committee** pointed out that older generation technologies will remain for almost 10 years after the 5G deployment.

What are the concerns regarding Private Captive Networks? – The government has allowed enterprises to run **captive private networks** with **direct allocation of spectrum** by the Department of Telecommunications. Enterprises have also been allowed to **lease spectrum**

Private Captive Networks

- Captive networks are isolated networks in which a spectrum is assigned to **enterprises to be utilized within a limited geographic area**.
- It is also referred to as a spectrum for localized or local use.
- The Government has decided to enable the development and setting up of Private Captive Networks to **spur a new wave of innovations in Industry 4.0 applications** such as machine-to-machine communications, the Internet of Things (IoT), and Artificial Intelligence (AI) across automotive, healthcare, agriculture, energy and other sectors.

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from telecom operators for their network. The operators are opposing this as they are set to lose their revenues. ~ 40% of 5G revenues accrue from the enterprise services. Most other countries are following a similar model of direct allocation of spectrum to enterprises. Every telecom service provider has to look at the enterprise opportunity, either on its own or in collaboration. The gains for the economy by allowing business enterprises to embrace 5G would be huge.

What are the solutions for faster implementation of 5G technologies in India? – (1) There is a need to create **an ecosystem capable of leveraging 5G**, like skilled manpower, technology, R&D investment etc.; **(2)** India must develop its **indigenous 5G technology**. This is necessary not only for military applications but also for civilian use to avoid any 5G warfare and data threat in the future; **(3)** The recommendations of **5G steering committee** must be implemented: **(a) Phased implementation** of 5G technology; **(b)** Early adoption of 5G technologies; **(c) Setting up of Standing Committee with a 5-year term** to advice on building Spectrum Technology Infrastructure.

The shift from 4G to 5G is not incremental, but transformational. The economic impact of 5G in India is expected to be over US$ 1 trillion by 2035 according to the report of KPMG. The sooner the deployment of 5G in India is the better for India.

#6 Proposed Amendments to the IT Rules, 2021

News: The Ministry of Electronics and Information Technology has released a fresh draft of amendments to Information Technology Rules, 2021. *(Refer EPIC June 2021 for detailed analysis of IT Rules 2021).*

What are the new amendments to the IT Rules, 2021? – (1) It requires the intermediaries to respect rights guaranteed to users under the **Constitution of India.** A number of intermediaries have acted in violation of the Constitutional rights of Indian citizens; **(2)** The Government has proposed the requirement by the intermediaries to address certain complaints regarding **the removal of content from a platform within 72 hours**. This is because there are chances of something becoming viral. Any other grievance will continue to be addressed within 15 days; **(3)** The Government has proposed to bring in a new *Grievance Appellate Committee*. It is aimed to give users an additional mechanism to appeal decisions made by grievance officers of intermediaries (e.g., the complaint may be related to removal of copyrighted content by a user, and the intermediary may not act/remove copyrighted content). The Committee has to resolve the appeal within 30 days. The users will also have the **right to directly approach a court of law** against the intermediary's decision.

Once enacted, digital intermediaries will have to ensure that the community standards to which they hold their users answerable comply with Indian law and India's Constitutional principles.

SSMIs need to adhere to these rules in order to be eligible for **safe harbour protections** mentioned in **Section 79 of IT Act**. Safe harbour protections are important for platforms that deal with user-generated content. These protections ensure that the **platform cannot be sued** for a post, message etc shared by a user using its services.

What are the concerns associated with the draft amendments? – (1) Government oversight of moderation could open the doors for **overreach and censorship**; **(2)** It may impact the free speech of users as Government will have final say regarding the content. Critics argue that it may be possible that an appeal is made by a government agency whose content removal notice has been rejected by the intermediary. In such case, it is likely that a Government-appointed appellate

About the IT Rules, 2021

- The Information Technology (Intermediary Guidelines and Digital Media Ethics) Rules were enforced in February 2021.
- The rules brought in **additional compliance requirements** for **Significant Social Media Intermediaries** (SSMIs). SSMIs are platforms with over 5 million subscribers.
- These measures included **appointment of Chief Compliance Officer**, **Nodal Person** for coordination and **Grievance Officer**.
- The rules also required SSMIs to **trace the first originator of information** on their platform.
- The IT Rules brought in a **3-tier system for handling grievances** pertaining to streaming services and online news business.
  - **First Level**: Grievances are handled within the organisation,
  - **Second Level**: A self-regulatory body, and
  - **Third Level**: A government-run committee which can **override any decision** taken by the other two bodies.

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committee will **rule in favour of its own agency**; **(3)** This will add another layer of complexity to the IT rules, 2021 and **another lever of Government control**. The IT rules have already given a leverage to the Government over digital channels in the name of '**soft-touch oversight mechanism**'; **(4) Challenges with IT rules, 2021**: Some of the provisions of IT Rules, 2021 were legally challenged. The Bombay and Madras High Courts have stayed provisions that asked digital news companies to comply with a 3-tier grievance redressal mechanism headed by the government.

What could be done? – Self-Regulation: As much as social media platforms are designed to enable free speech, they must also eliminate the harms that could arise from the unfettered speech. They need to arrive at a **balance** between the rights of persons who post and those they offend. Authorities worldwide have been trying to hold Google, Twitter, Facebook, YouTube, etc., accountable for the spread of fake information. Their self-regulation addresses only a fraction of disputes between users and moderators. India can have a **pan-industry panel** containing eminent Indian jurists and other such citizens known for their independence to **oversee an arbitration team**. Further, they should be equipped with resources and expertise to resolve a rising number of complaints.

In addition, the industry can establish a **self-regulatory appellate body** to which appeals from all content moderation decisions can be referred. It can be **staffed with experts from industry and the domain of law**, so that its decisions will be sufficiently robust. The government has already indicated that it is open to considering self-regulatory alternatives. This body as appellate forum should address complaints against all moderation decisions of **all platforms**. This will reduce the power of individual platforms they have in their internal grievance redressal systems.

#7 Amendments to the National Policy on Biofuels

News: The Government has made amendments to the National Policy on Biofuels and has advanced the target year of 20% ethanol blending (20% ethanol and 80% petrol) from 2030 to 2025.

What is the current status of Ethanol Blending? – According to the Ministry of Petroleum and Natural Gas, the all India average blending stands at 9.90% (as of May 2022). India's current ethanol production capacity consists of 426 crore litres from molasses-based distilleries, and 258 crore litres from grain-based distilleries. The major source of ethanol for blending is **sugarcane juice/sugar syrup** and **C heavy molasses**. The other source is **surplus rice and damaged food grains**. Around 16 lakh tonnes of sugar was subsumed to produce this ethanol.

What has been the history of ethanol blending in India? – (1) Since 2001, the Government has been testing the feasibility of ethanol-blended petrol. 5% ethanol blended petrol or E5 (95% petrol-5% ethanol) was supplied to retail outlets; **(2)** In 2002, India **launched the Ethanol Blended Petrol (EBP) Programme** and began selling 5% ethanol blended petrol in 9 States and 4 Union Territories. It was extended to 20 States in 2006; **(3)** In 2019, the Ministry **notified the E10 fuel** [blending 10% ethanol with 90% gasoline]. In 2020, the Government announced the 20% blending target (E20) by 2030.

What are the salient features of National Biofuel Policy, 2018? – (1) The Policy is aimed at reducing the dependence on oil imports by encouraging fuel blending; **(2)** The Policy categorizes biofuels as – **(a)** '**Basic Biofuels**' viz. 1st Generation (1G) bioethanol & biodiesel and **(b)** '**Advanced Biofuels**': 2nd Generation (2G) ethanol, Municipal Solid Waste (MSW) to drop-in fuels, 3rd Generation (3G) biofuels, bio-CNG etc.; **(3)** The Policy expands the scope of raw material for by allowing use of: **(a)** Sugarcane Juice, Sugar containing materials like Sugar Beet, Sweet Sorghum; **(b)** Starch containing materials like Corn, Cassava; **(c)** Damaged food grains like wheat, broken rice, rotten potatoes etc. that are unfit for human consumption; **(4)** The Policy indicates a viability gap funding scheme for 2G ethanol Bio refineries of INR 5,000 crore in 6 years. The Policy encourages setting up of supply chain mechanisms for biodiesel production; **(5)** The **National Biofuel Coordination Committee (NBCC)**, with the Union Minister for Petroleum and Natural Gas as its head, is the agency to coordinate this blending programme.

What are the advantages of Ethanol Blending? – (1) Reduce Import Bill: As per a NITI Aayog Committee report of June 2021, India's net import of petroleum was 185 million tons at a cost of US$ 55 billion in 2020-21. A successful 20% ethanol blending programme could save the country US$4 billion per annum, or about

Challenges to Ethanol Blending

- **Loss of Efficiency**: Blending leads to a loss of efficiency. For instance, when using E20, there is an estimated loss of 6-7% fuel efficiency for 4-wheelers which are originally designed for E0 and calibrated for E10, 3-4% for 2-wheelers designed for E0 and calibrated for E10.
- **Harmful Residual Products**: Ethanol Blended Petrol leaves residual by-products that can corrode and damage the vehicle.
- **Environmental concerns**: On average, a ton of sugarcane can produce 100 kg of sugar and 70 litres of ethanol. 1,600 to 2,000 litres of water is used to produce 1 kg of sugar. This implies that a litre of ethanol from sugar requires about 2,860 litres of water.
- **Exhausts**: Tests conducted in India have shown that there is no reduction in nitrous oxides with the use of ethanol blended petrol. Nitrous Oxide is one of the major environmental pollutants.

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INR 30,000 crore; **(2) Benefits to Rural Areas**: Ethanol blending helps improve farm incomes and benefit farmers. Moreover, setting up of 2G Bio-refineries will benefit rural infrastructure and generate employment; **(3) Environment Benefits**: Ethanol burns more completely than petrol, it avoids emissions such as carbon monoxide. One crore litres of E-10 save around 20,000 ton of CO2 emissions; **(4) Health benefits:** Prolonged reuse of Cooking Oil for preparing food, particularly in deep-frying is a potential health hazard and can lead to many diseases. Used Cooking Oil is a potential feedstock for biodiesel and its use for making biodiesel will prevent diversion of used cooking oil in the food industry; **(5) MSW Management:** It is estimated that, annually 62 MMT of Municipal Solid Waste gets generated in India. There are technologies available which can convert waste/plastic, MSW to drop-in fuels. One ton of such waste has the potential to provide around 20% of drop-in fuels. (Drop-in fuels are the fuels that can be used without major change in infrastructure. Ethanol blended petrol is a drop-in fuel).

What are the recent amendments to the National Policy on Biofuels? – (1) The Amendment has advanced the target year for 20% blending (E20, 20% Ethanol-80% Petrol) from 2030 to 2025-26; **(2)** There has been an **introduction of more feedstock for production of biofuels**; **(3)** Production of biofuels under the 'Make in India' programme in Special Economic Zones (SEZs), Export Oriented Units (EOUs) has been allowed; **(4)** Permission has been granted to allow export of biofuels in specific cases; **(5)** The NBCC has now been given the permission to change the policy which it earlier lacked.

Is the new target achievable? - Arguments in Favour: **(1)** Some Reports estimate that adoption of electric vehicles should partially offset demand for ethanol leading to a lesser requirement of 722-921 crore litres in 2025; **(2)** The test vehicles using E20 fuel have worked well in trials. There hasn't been much reduction in performance and capability which should encourage its adoption.

Arguments against: **(1) Slow Progress**: The 5% blending was started in 2002 and considerably expanded to various states and UTs in 2006. However, the progress has been very slow. e.g., the proportion of blending was 1.5% in 2013-14. It has reached 10% since then. Achieving 20% blending in 3 years seems difficult; **(2) High Prices**: The prices of ethanol produced in India are higher compared to the U.S. and Brazil, because of the minimum support prices. The cost of flex fuel vehicles (4-wheelers) could cost about INR17,000-25,000 more than the current generation of vehicles. The 2-wheeled flex fuel vehicles would be costlier by INR5,000-₹12,000 compared to regular petrol vehicles; **(3) Lack of Supply**: Various experts have said that in order to achieve 20% blending, India would require a consistent supply of 1,500 crores litres of ethanol annually. This is way beyond the current production capacity; **(4) Fund Crunch**: Many cooperative sugar mills have complained about a fund crunch as banks are reluctant to finance them given their weak balance-sheets.

What steps can be taken going ahead? – (1) Vehicles that run on ethanol need to be tuned accordingly so that they don't compromise on efficiency and usability; **(2)** To compensate the consumers for a drop in efficiency from ethanol blended fuels, tax incentives on E10 and E20 fuel may be considered; **(3)** A report by the Institute for Energy Economics and Financial Analysis (IEEFA) says that for India to meet its target, it will need to bring in additional 30,000 sq. km of land **under maize cultivation**; **(4)** In order to tackle the fund crunch, mills have asked for tripartite agreements between Oil Marketing Companies (OMCs), banks and cane suppliers to clear payments within 21 days.

The amended policy is expected to yield economic as well as environmental benefits. However, to realize the benefits, the policy must be implemented effectively and the prevailing bottlenecks should be removed.

#8 Air Quality Life Index (AQLI) and India's Poor Air Quality

News: The Air Quality Life Index (AQLI) has ranked India as the second most polluted country. It has also highlighted the detrimental impact of air pollution on life expectancy.

What is the Air Quality Life Index (AQLI)? – (1) The AQLI is released by the Energy Policy Institute at the University of Chicago (EPIC) every year; **(2)** It is a pollution index that **translates particulate air pollution** into **its impact on life expectancy**; **(3)** The AQLI is rooted in recent research that quantifies the causal relationship between long-term human exposure to air pollution and life expectancy; **(4)** The recently released report has considered 2020 as the base year and included the revised guidelines of WHO. In 2021, WHO had revised its guidelines and **reduced the safe limit for PM 2.5 from 10 micrograms (µg)/m³ to 5 micrograms (µg)/m³**; **(5)** The index presents an insight into the true **cost of particulate**

Average $PM_{2.5}$ Concentrations in India, 1998 to 2020

WHO $PM_{2.5}$ Guideline (last updated: 2021): 5µg/m³

North India   National Average   All other regions (excluding North India)
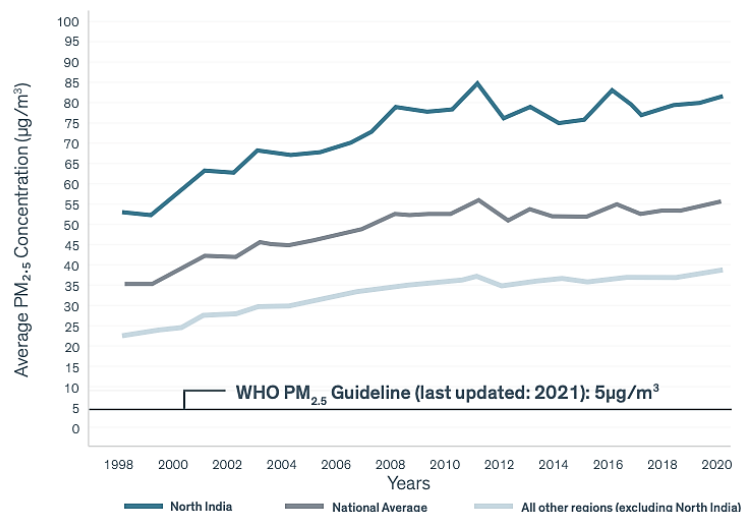
pollution. It shows **how policies addressing air pollution can increase life expectancy** when they meet the WHO's guidelines.

What are the key findings of Air Quality Life Index? – (1) India is the 2nd most polluted country in the world after Bangladesh. Nepal, Pakistan and Democratic Republic of Congo were placed at 3rd, 4th and 5th position; **(2) All of India's 1.3 billion people** live in areas where the annual average **particulate pollution level exceeds the WHO guideline of 5 µg/m³; (3)** More than 63% of the population live in areas that exceed the country's own national air
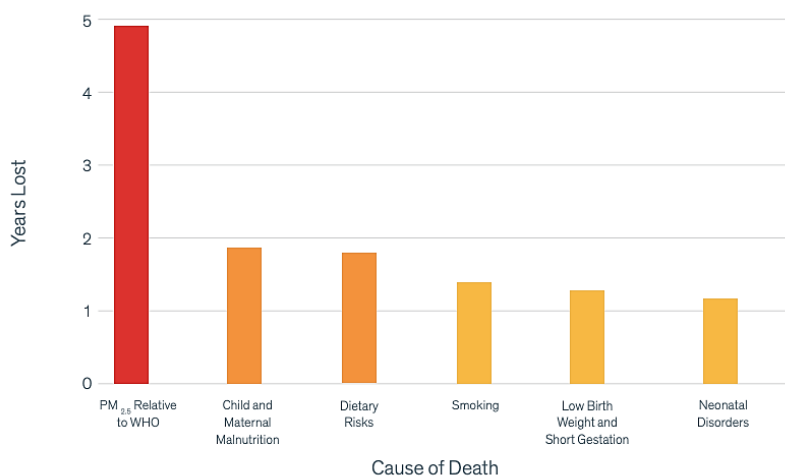
Life Expectancy Impact of Fine Particulate Pollution (PM$_{2.5}$) and Unassociated Causes/Risks of Deaths

quality standard of **40 µg/m³.; (4)** Particulate pollution is the greatest threat to human health in India, **reducing life expectancy by 5 years**. In contrast, child and maternal malnutrition reduces average life expectancy by about 1.8 years, while smoking reduces the average life expectancy by 1.5 years; **(5)** Since 1998, **average annual particulate pollution has increased by 61.4%**, leading to a further reduction in average life expectancy of 2.1 years. Since 2013, about 44% of the world's increase in pollution has come from India; **(6) Region Specific Findings**: In the Indo-Gangetic plains of Northern India, 510 million residents are on track to lose 7.6 years of life expectancy on average, if current pollution levels persist. Similarly, residents of Lucknow stand to lose 9.5 years of life expectancy.

How dangerous is Particulate Matter? – (1) In 2019, over 7 million deaths annually were linked to exposure of various pollutants in the world with analysts claiming that **around 80% of deaths attributed to PM2.5 exposure**; **(2)** Among all classes of air pollutants, inhalable PM2.5 is considered the most hazardous as it gets deposited in lungs through breathing and causes serious respiratory problems; **(3)** AQLI noted that the impact of air pollution on life expectancy is comparable to that of smoking, more than three times that of

Potential Gains in Life Expectancy through Permanently Reducing PM$_{2.5}$ from 2020 Concentration to the WHO Guideline

alcohol use and unsafe water, six times that of HIV/AIDS, and 89 times that of conflict and terrorism.
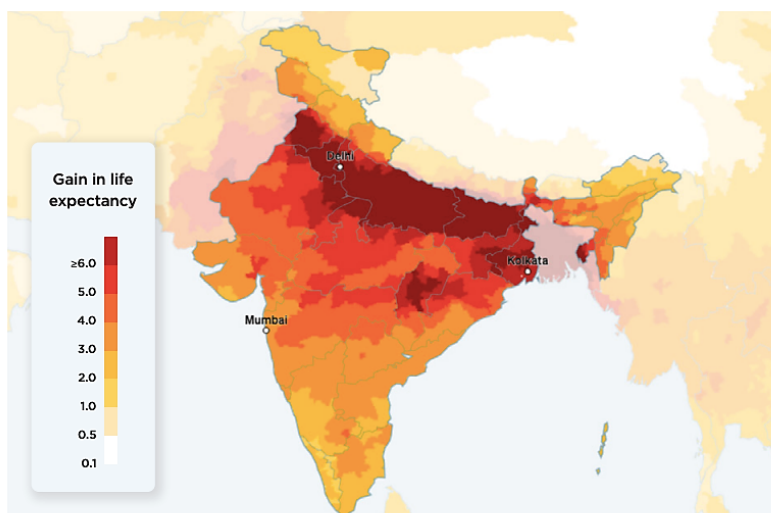
What are the reasons behind deteriorating air quality in India? – (1) Vehicular pollution mainly due to commercial and other diesel-run vehicles, negating the impact of cleaner fuel and emission

technology; **(2) Combustion** in power plants and industries using dirty fuels, like pet coke, Fuel Oil (and its variants), coal and biomass release hazardous air pollutants; **(3) Garbage burning**, both in landfills and other places where there is no collection, processing or disposal; **(4) Road dust**; dust due to construction sites etc. also adds to the particulate pollution; **(5) Use of insecticides, pesticides and fertilizers** in agricultural activities release ammonia which is a major air pollutant; **(6) Large-scale burning of crop residues** in the States of Punjab, Haryana and western Uttar Pradesh contributes significantly to the air pollution in the Delhi NCR Region every year. The **climatic conditions during winter aggravate** the condition.

What steps can be taken going ahead? – (1) The Government should **provide all forms of support** (money, staff and infrastructure) for timely achievement of NCAP targets. According to AQLI, a permanent, nationwide reduction of 25% would increase India's average national life expectancy by 1.4 years; **(2)** Emphasis should be laid on reducing emissions

Steps Taken to Address Air Pollution in India

- **National Clean Air Programme (NCAP)**: It aims to reduce particulate pollution by 20 to 30% by 2024, relative to 2017 levels. The NCAP targets are non-binding.
- **National Air Quality index (AQI)**: The AQI classifies air quality of a day considering criteria pollutants through colour codes and air quality descriptor. It links air quality with likely human health impacts. The index measures **8 major pollutants** like **(a)** Particulate matter (PM10 and PM2.5); **(b)** Nitrogen dioxide; **(c)** Sulphur dioxide; **(d)** Ozone; **(e)** Carbon monoxide; **(f)** Ammonia; **(g)** Lead.
- **The Air (Prevention and Control of Pollution) Act, 1981**: It provides for the prevention, control and abatement of air pollution. It calls for the establishment of Boards at the Central and State levels with a view to carrying out the aforesaid purposes.

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from thermal power plants and industry by instituting strong emissions standards. There should be a strong monitoring and enforcement system that ensures limits are met and excess emissions lead to punishments; **(3)** The Government should incentivise the **use of machines like happy seeders** to curb pollution from stubble burning. Further innovative methods should be adopted to reduce the magnitude of crop residue along with creation of a market for the use and management of stubble outside of the field (ex-situ management).

There is mounting evidence about the effects of air pollution on health. The important message from new studies and analysis is that is air pollution related deaths and illness are preventable by reducing pollution and meeting clean air targets. Given its widespread impact, combating air pollution should be one of the top agenda for the Union and State Governments

#9 Managing Construction and Demolition Waste in Urban Areas

News: The Urban Areas generate a lot of Construction and Demolition Waste (C&DW). However, there is very limited capacity to recycle the waste. Recycling the waste can help save on both economic and environmental costs.

How is Construction and Demolition Waste (C&DW) generated? – (1) C&DW is generated from: **(a)** Construction; **(b)** Renovation; **(c)** Repair; **(d)** Demolition of houses, large building structures, roads, bridges, piers, and dams; **(2)** C&DW comprises wood, steel, concrete, gypsum, masonry, plaster, metal, and asphalt etc.

What are the benefits of recycling C&DW? - (1) The C&DW comprising cement mortar, stone, red bricks and concrete blocks can be screened, crushed, washed and then processed to **produce usable building materials** such as fine and coarse aggregate, bricks/blocks, tiles, paver blocks, kerbstones and prefab slabs; **(2)** Aggregates made from this waste can substitute natural aggregates in a number of uses like road construction, landscaping and concrete production. This helps **save natural resources and minimize the waste** sent to landfills; **(3)** Effective management of C&DW helps in **curbing excessive**

consumption of natural resources like sand and contributes to sustainable development. The demand for sand has more than doubled between 2010 and 2020. In India, river sand is primarily used for construction. Increasing demand, constrained availability and limited government oversight have given rise to a thriving illegal trade in sand. Manufactured sand from C&DW provides an **environmentally sustainable alternative**.

Regulatory Framework to Manage Construction and Demolition Waste

- **Solid Waste Management Rules, 2016**: The Ministry of Environment, Forests and Climate Change had provided a regulatory framework for the management of municipal solid waste generated in urban areas of the country. These rules attempt to:
  - Improve the collection, regeneration, recycling, treatment and disposal of C&DW in an environmentally sound manner.
  - Emphasise the roles and accountability of waste generators and various stakeholders.
- **Construction and Demolition Waste Management Rules** were issued in 2016.
- In March, 2017, the Central Pollution Control Board followed this up with **detailed procedural guidelines** on environmental management of C&DW.

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Since almost 60% of the stock of buildings projected to be there in 2030 is yet to be built, effective management of C&DW, and therefore 'greener construction' assumes even greater significance.

What are the associated challenges? – (1) Insufficient recycling capacity: India generates an estimated 170 million tonnes of C&DW every year, according to the Building Material Promotion Council. The official recycling capacity is a meagre 6,500 tonnes per day or just about 1%. The processing and recycling of C&DW in India is limited to **only four operational plants**; **(2) Lax Implementation of Rules**: Construction and Demolition Waste Management Rules were notified in 2016. However the implementation is very poor e.g., the rules require state government and local authorities to procure and utilize 10-20% of material made from construction and demolition waste in municipal and government contracts. This is **not implemented at all**.

What steps need to be taken? – (1) To address appropriate C&DW utilisation, elements of the existing policy framework need to be revisited. The concrete and cement industry should **start embedding circularity within their operations** i.e. using recycled C&DW by reducing its dependence on natural aggregates and raw materials; **(2)** In order to increase higher utilisation of C&DW in concrete and cement, a **fresh set of norms** are needed. The Bureau of Indian Standards (BIS) needs to **review many of the current specifications** it mandates for C&DW usage in cement and concrete. In public works programmes too, usage can be allowed to increase from 20% to higher levels of 30-50%.

It is not the lack of official frameworks for managing C&DW. The challenge lies in removing the laxity in their implementation at operating levels.

#10 *Agnipath* Scheme: Need, Benefits and Challenges

News: The Government has unveiled a new '*Agnipath*' Scheme for recruiting soldiers for the 3 Services of the Armed Forces. The Scheme has been termed as a radical reform in the armed forces that will make the force leaner. However, several concerns related to the scheme has given rise to widespread protests, especially by the youth.

What is the *Agnipath* Scheme? – (1) It is a **short-service manpower model** under which ~45,000-50,000 soldiers **will be recruited annually. 75% will leave the service in four years.** 25% will be allowed to continue for another 15 years under permanent commission. The recruits will be called *agniveers*; **(2) Eligibility Criteria**: The system is only for **personnel below officer ranks** (those who do not join the forces as commissioned officers). Aspirants between **the ages of 17.5 years and 21 years** will be eligible to apply. The recruitment standards will remain the same; **(3) Post Selection Scenario**: Selected aspirants will go through training for 6 months. They will be deployed for 3.5 years. During this period,

they will get a starting salary of INR 30,000, along with additional benefits which will go up to INR 40,000 by the end of the four-year service; **(4)** *Seva Nidhi* **programme**: 30% of their salary will be set aside under a *Seva Nidhi* programme, and the Government will contribute an equal amount every month. It will also accrue interest. At the end of the 4-year period, each soldier will get INR 11.71 lakh as a lump sum amount, which will be tax-free; **(5) Other Benefits**: They will also get a **INR 48 lakh life insurance** cover for the 4 years. In case of death, the pay-out will be over INR 1 crore, including pay for the unserved tenure. There shall be **no entitlement to gratuity and pensionary benefits**.

What is the significance of the *Agnipath* **Scheme? – (1) Leaner and Younger Force**: The move will make the permanent force levels much leaner. Only 25% of the recruits will continue for the 15-year permanent commission. The average age in the forces is 32 years at present. It is expected to go down to 26 in the next 6-7 years with the implementation of the scheme; **(2) Rationalizing Defence Expenditure:** A leaner force and reduced benefits will considerably decrease the
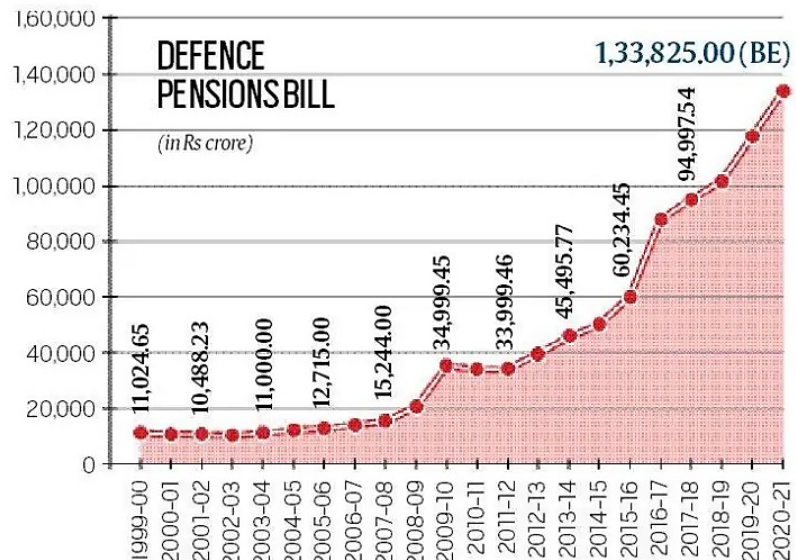
defence expenses, which has been a major concern for the Government. **Pensions (**INR 1,33,826 Crore) **made up 28.4% of this year's defence budget** and **4.4% of the total budget expenditure** (0.6% of the GDP). The saved money can be utilized for **technological upgradation of the armed forces** to equip them for modern warfare; **(3) All India, All Class (AIAC) Recruitment**: The scheme will ensure AIAC recruitment to the services. This is significant for the Army, where the regiment system has region and caste bases. These would be eliminated with time to allow anybody from any caste, region, class or religious background to become part of existing regiments. National unity, camaraderie and bonding should not be predicated on caste, community, religion or provincial affiliation; **(4) Adhoc Buffer Force:** The ex-*agniveers* could act as an adhoc buffer force who may be called to serve again for boosting national security in times of external/internal threats; **(5) Economic Benefits**: The skills and experience acquired during the 4-year service will allow the soldiers to get employment in various fields. This will lead to availability of a higher-skilled workforce to the economy which will be helpful in productivity gain and overall GDP growth; **(6) Global Parity**: All major militaries in the world are undergoing reform. There is a trend towards r**eduction in the number of personnel** and **emphasis on increasing capital expenditure on modern weapons and equipment**. China's People's Liberation Army underwent a massive demobilization from the 1980s onwards, bringing down total numbers from 4.5 million to about 2 million, with the focus on modernisation. In many modern armed forces around the world, the service period ranges from 2 to 8 years with options for active and reservist service. The Israeli army has service of 30 months and 22 months respectively for men and women.

What are the challenges associated with the *Agnipath* **Scheme? – (1)** Ex-*agniveers* may **face hardships in getting employment** after 4 years of service. Meaningful employment opportunities in adequate numbers eludes an ever-increasing number of graduates. Further, 'trained-to-kill' soldiers being demobilized every year **could prove dangerous** if they remain jobless and frustrated. Critics say that this may lead to militarization of society; **(2)** Many experts believe that shorter duration service **could**

compromise on training, morale and commitment in comparison to the permanent recruits. *Agniveers* may turn out of to be risk-averse with the bulk looking to secure an alternate career. Moreover, the Government should have tested this scheme as a pilot, before scaling it up further; **(3)** The Indian Army's experiments so far with diversity in closed regiments have yielded mixed results. There is a **probability that the new scheme may do more harm** than good in diversifying the static regiments; **(4)** The mix of long- and short-term soldiers will skew in favour of the latter and **affect battle readiness**.

India has more troops than China but far fewer aircraft and vessels

Country-wise comparison in 2021

	Ground forces (mn)	Naval vessels ('000 tonnes)	Combat aircraft
India	1.24	460	880
North Korea	1.10	110	550
China	0.97	2,120	2,900
US	0.67	7,290	3,520
Pakistan	0.56	100	440
Iran	0.50	160	340
South Korea	0.46	260	640
Russia	0.33	2,020	1,380
Japan	0.14	510	350
Israel	0.13	20	350

What lies ahead? – (1) The impact of changes such as hiring without the promise of lifelong benefits, the shortened training, and the opening out of regiments to AIAC **can only be assessed in the coming years**; **(2)** The Government should help **rehabilitate soldiers who leave the services after four years.** They can be provided with skill certificates and bridge courses that will help them in finding gainful employment; **(3)** Several Ministries of Union Government, State Governments and even leaders of Corporate Sector have come forward and extended efforts to support the *Agniveers* post service. The announcements must result in tangible action to absorb the relieved personnel. However, this will become clear only with time.

Radical reforms often suffer from teething troubles in the initial phase. Same can be expected in the *Agnipath* Scheme as well. However, the question here is of national security and defence. Hence, the Government will need to have a plan to anticipate and address the problems that lie beyond the reform.
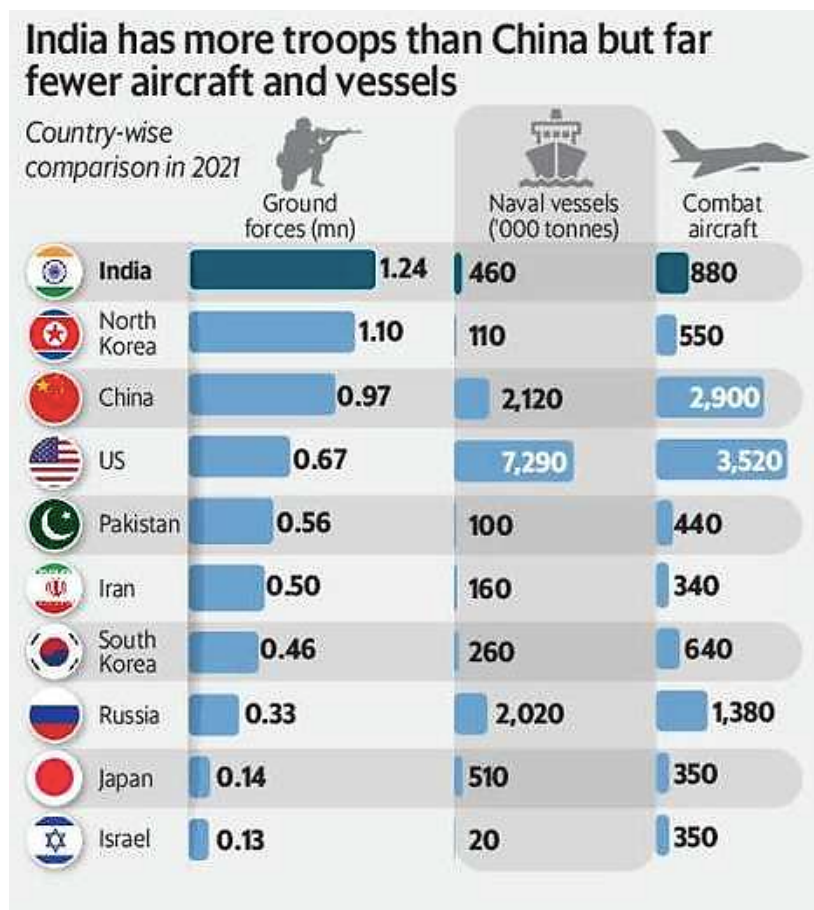
Factly

Polity

#1 Reconstitution of the Inter-State Council

News: The Union Government has reconstituted the Inter-State Council.

About the Reconstitution

The Inter-State Council has been reconstituted with Prime Minister as the Chairperson and Chief Ministers of all States and 6 Union Ministers as members. 10 Union Ministers will be the permanent invitees to the Inter-State Council.

The standing committee of the Inter-State Council has also been reconstituted with Union Home Minister as the Chairperson.

About the Inter-State Council

Article 263 of the Constitution of India provides for the establishment of an Inter-State Council. It is a constitutional body that has representatives of the Union government as well as the Chief Ministers of States. The President is empowered by the constitution to establish the Council at any time if it appears to him that the public interests would be served by the establishment of such a council. The Inter-state Council was established in 1990 through a Presidential Order, acting on the recommendations of **Sarkaria Commission.**

The mandate of the Council is to inquire and advise on inter-state disputes and to provide recommendations for better policy coordination. The Council is expected to create a strong institutional framework to promote and support **cooperative federalism** in the country.

The decisions on all questions dwelt upon in the council are made by consensus The Council is supposed to meet at least thrice a year. However, since its constitution in 1990, it has met only 11 times. A **standing committee** of the Inter-state council was set up in 1996 for continuous consultation and processing of matters for the consideration of the council. The Chairperson of this standing committee is Union Home Minister.

#2 Thiruvananthapuram Declaration

News: The First National Women Legislators Conference concluded with the adoption of Thiruvananthapuram Declaration.

About the First National Women Legislators Conference

The First National Women Legislators' Conference-2022 was held in Thiruvananthapuram. The Conference was hosted by the Kerala Legislative Assembly as part of **'Azadi ka Amrit Mahotsav'.**

Key Takeaways from the Conference

The conference adopted the **Thiruvananthapuram Declaration**. It demanded immediate steps to ensure the passage of the long-pending **Women's Reservation Bill**. The Bill envisages 33% reservation for women in the Lok Sabha and State legislatures. The declaration highlighted that the Bill which has been pending for 26 years is a blot on the democratic values and legislative traditions of the country.

#3 Remote Voting

News: The Election Commission has announced a pilot project to explore the possibility of remote voting for migrant workers.

Significance of Remote Voting

Internal migrants will benefit. According to 2011 Census, there were 450 million internal migrants in India. The number is expected to be 600 million at present, most of whom are unable to vote. Nearly 300 million citizens out of a total of 910 million electors didn't cast their votes in the 2019 Lok Sabha elections.

Challenges of Remote Voting

It will increase **complexity of election logistics**. Migrants will need to be mapped and enrolled for remote voting. Ensuring the vote cast on the EVM is channelled to the **correct booth and constituency**, verifying voter identities and preventing **bogus voting** could be challenging. Designated polling centres for migrants would create a **political distinction** and possibility of discrimination.

However, the Election Commission has a long experience in resolving logistical problems. With institutional and political will, difficulties can be overcome. For example, those listed for remote voting but turning up physically at domicile polling booths must be accommodated.

#4 National e-V*idhan* Application (NeVA)

> **News**: The National e-Vidhan Application is being deployed across State Legislatures.

About the National e-V*idhan* Application (NeVA)

It is aimed to make the functioning of all legislatures **paperless** on the theme of *'One Nation – One Application'* as a Mission Mode Project. It also aims to transform all state legislatures into **'Digital Houses'**. This will enable them to transact entire government business on digital platforms including information exchange with the State Government Departments in digital mode. This will eliminate the use of paper. The application has also enabled provisions for onboarding the two Houses of Parliament.

The Ministry of Parliamentary Affairs (MoPA) is the nodal ministry for implementation under the **Digital India Programme**. The funding for e-Vidhan is provided by the MoPA. It is on the pattern of Central Sponsored Scheme, i.e., 60:40 for share of Centre and State, 90:10 for North-eastern & hilly States and 100% central funding for UTs.

The Lok Sabha Speaker has said that the proceedings of all legislatures — both houses of Parliament and State Assemblies and Legislative Councils — will be available on one platform by 2023. **Nagaland** became the first state to successfully implement NeVA in March, 2022.

#5 Digital News Report, 2022

> **News**: The Reuters Institute for Study of Journalism has released the Digital News Report 2022.

Key Findings of the Digital News Report

The **trust of the people** in news content is **progressively getting down**. The consumption of traditional news media declined in nearly all the surveyed countries. The proportion of news consumers who say that they 'avoid news' has risen sharply across countries with the report describing the phenomenon as '**selective avoidance'**.

Despite small increases in the proportion of people willing to pay for **online news** (mostly in richer countries), the growth in digital subscriptions for news content seems to be levelling off. Smartphones have become the dominant mode for people to access to news in the morning. **Facebook** remained the most-used social network for news. But it is **TikTok** that has become the fastest-growing network with strong influence over younger news consumers. However, TikTok is currently banned in India.

Findings About India

India is a strongly mobile-focused market. 72% of the survey respondents accessed **news through smartphones** and 35% did so via computers. Around 84% of the Indian respondents sourced news online, 63% from social media, 59% from television, and 49% from print. YouTube (53%) and WhatsApp (51%) were the top social media platforms for sourcing news.

India registered a **small increase in the level of trust** with 41% trusting news overall. But only a minority of respondents – 36% and 35% – felt that media was free from undue **political influence** and **business influence**, respectively.

Policy

#1 National Achievement Survey, 2021

News: The Department of School Education and Literacy under the Ministry of Education has released the National Achievement Survey, 2021.

About the NAS

The objective of the Survey is to provide **a snapshot of learning outcomes** in key subjects. It covers essentially **'what students know and can do'** at the completion of Classes 3, 5, 8 and 10. These classes are generally seen to mark important stages in the development of a child's cognitive abilities. These inputs are used for policy planning and designing pedagogical interventions to improve quality and ensure equity in learning.

The first edition of NAS was carried out in 2001. Until 2015-16, the survey assessed the competency of students based on the core curriculum followed by states and UTs. In 2017-18, the focus shifted to mapping of the progress in learning outcomes listed under the **Right to Education Rules**.

The framework of the survey was designed by the National Council of Educational Research and Training (NCERT). It was conducted by the Central Board of Secondary Education (CBSE).

The survey was conducted in Language, Mathematics & Environmental Studies (EVS) for classes 3 and 5; Language, Mathematics, Science & Social Science for class 8; and Language, Mathematics, Science, Social Science and English for class 10.

Findings of the Survey

Higher the class, lower their achievements: The learning levels (achievements) of students drop as they progress to a higher class. E.g., the national average performance of a class 3 student in the language is 323 out of 500, but the same dips to 260 in Class 10.

Fall in performance over time: There is a fall of up to 9% points between 2017 and 2021 in the performance of students in subjects ranging from maths to social sciences.

Performance of States: Punjab was the best performer across all grades and subjects. States such as Kerala, Rajasthan, Maharashtra and Union Territories such as Chandigarh showed better results than the national average.

Burden during the pandemic: Nearly 80% students found learning at home during the pandemic 'burdensome' and felt that they learnt better in school. 24% of the students surveyed did not have **access to digital devices** at home. 38% said they faced difficulty carrying out learning activities at home during the pandemic.

Challenges in learning science: The survey found that out of a score of 500, students across various classes performed better at languages but lagged behind in subjects like mathematics and science e.g., in Class 3, students scored the highest in language (323), followed by EVS (307), and mathematics (306). **Backward classes faced struggle**: Across various subjects and classes, SC, ST and OBC students performed worse than general category students. For instance, while general category students in Class 8 scored an average of 260 marks in mathematics, OBCs scored 253 marks, SC students scored 249 marks and ST scored 244 marks. The survey also highlighted that **48% of the students commute to school on foot**.

#2 Potential Economic Impact of COVID-19 Related School Closures

News: A working paper titled 'Potential Economic Impact of COVID-19 related School Closures' has been published by the Asian Development Bank (ADB).

Key Findings of the Paper

Economies with a significant population of schoolchildren and college-going youth, especially from rural areas and the poorest and second wealth quintile, have been worst-hit.

Long-term decline in GDP: School closures lead to decline in global GDP and employment. The report found that the losses in global GDP and employment increase over time. For instance, decline in global GDP amount to 0.19% in 2024, 0.64% in 2028, and 1.11% in 2030.

Learning and earning losses are significant because a notable portion of the impacted population can end up as unskilled labour force. According to ADB, India's workforce is constituted primarily of unskilled workers (408.4 million unskilled, 72.65 million skilled).

The immediate challenge for governments is to help students recover 'lost opportunities' by conducting assessments among impacted children.

Findings related to India

India had one of the longest school closures during the COVID-19 pandemic. The GDP of India would see the highest decline in South Asia due to learning losses for the young.

Children enrolment: India has the highest number of children enrolled in primary and secondary education among the Asian economies, and was 2nd only to China at 36.39 million in tertiary education.

Alarming forecast: India may witness a US$ 10.5 billion dent in 2023, and the country's economy could take a nearly US$ 99 billion hit by 2030, translating into a 3.19% reduction in GDP from the baseline growth trends.

Highest GDP decline in South Asia: In absolute terms, India experiences the highest GDP decline in South Asia. In percentage terms, its GDP decreases by 0.34% in 2023, 1.36% in 2026, and 3.19% in 2030.

Recommendations of the Report

(a) Identify the learning gap and specific learning needs of individuals; **(b)** Effective learning programs should be devised to offer appropriate support such as tutoring or special classes and help them bridge the learning gap; **(c)** Governments need to direct adequate funding and resources to young populations.

#3 Road Accidents in India 2020 Report

News: The Road Accidents in India 2020 Report has been released by the Ministry of Road Transport and Highways (MoRTH).

About the Road Accidents in India — 2020 Report

The report provides information on various facets of road accidents in 2020. It has 10 sections and covers information in the context of road length and vehicular population. It has been prepared by the **Transport Research Wing (TRW)** of the Ministry of Road Transport and Highways (MoRTH).

Findings of the Report

Significant Decline: Road accident parameters registered a significant decline in 2020 compared to 2019. Total accidents decreased on an average by 18.46%, the number of persons killed decreased by 12.84% and the number of injuries decreased by 22.84% over the previous year's average. The number of road accidents has been on a decline since 2016 except for a marginal increase of 0.46% in 2018.

Fatalities and Injuries: About 3.6 lakh road accidents have been reported by States and Union Territories (UTs) during the calendar year 2020, which claimed more than 1.31 lakh lives and caused 3.48 lakh injuries.

Young people faced more accidents: For the third consecutive year in 2020, the fatal road accident victims largely constitute young people in the productive age groups. Young adults in the age group of 18 – 45 years accounted for 69% of victims in 2020. People in the working-age group of 18 – 60 years share 87.4% of total road accident fatalities.

#4 Guidelines on Prevention of Misleading Advertisements, 2022

News: Central Consumer Protection Authority (CCPA) under the Department of Consumer Affairs has notified 'Guidelines for Prevention of Misleading Advertisements and Endorsements for Misleading Advertisements, 2022'.

About the Guidelines

The guidelines have been released with the objective to **curb misleading advertisements** and **protect the consumers**. The guidelines have been released to ensure that consumers are not being misled by unsubstantiated claims, exaggerated promises, misinformation and false claims.

The **Central Consumer Protection Authority** (formed in 2020) is responsible for regulating misleading advertisements and punishing offenders. The function was earlier performed by the **Advertising Standards Council of India**.

Key Provisions of the Guidelines

Advertisements targeting children shall not feature any personalities from the field of sports, music or cinema for products that under any law require a health warning or cannot be purchased by children.

Prohibits Surrogate Advertising: It bans surrogate advertising. It is a practice where a seller promotes a product whose advertisement is not allowed by **disguising it as another product**. Liquor ads commonly indulge in such practices — under the guise of selling soda, CDs, and even holiday packages.

Free claims advertisements: A free claims advertisement shall not describe any goods, products, or service to be 'free', 'without charge', or use such other terms if the consumer has to pay anything

Bait Advertisements: The guidelines lay down conditions to be complied with while issuing bait

'ENDORSERS NEED TO DO DUE DILIGENCE'

Misleading advertisements are those, which:
➤ Falsely describes a product or service
➤ Gives a false guarantee to, or likely to mislead the consumers
➤ Deliberately conceals important information

Bait advertisements: Where goods, products or services are offered for sale at low prices to attract consumers

Surrogate or indirect advertising: Advertisements for goods, products or services whose advertisement is prohibited by law

Free claims advertisements: Only those where consumers need to pay only for collecting or paying for delivery of items

WHAT'S BANNED
➤ Misleading & surrogate advertisements
➤ Advertisements that condone or encourage practices detrimental to children's physical or mental wellbeing
➤ Claims that consumption of a product helps enhancing physical or mental ability

without valid scientific evidence
➤ Advertisements targeting children that develop negative body image
➤ Advertisements giving impression that advertised products are better than natural or traditional food

DISCLAIMERS BY MANUFACTURERS & ADVERTISERS
➤ Disclaimers must be in same language & font size as the main ads
➤ In audio-visual ads, voice over must be clear & not quick ones
➤ Owners/ promoter in companies need to disclose their stake

Responsibility of endorsers: Endorsers need to do due diligence to gain adequate information of the product

advertisements. Bait advertisement means an advertisement in which goods, products, or service is offered for sale at a low price to attract consumers.

Bars Deceptive Advertisements: The guidelines bar the omission of material information that makes advertisements deceptive and helps conceal their commercial intent.

The guidelines bar Indian citizens living abroad from endorsing such advertisements that have been barred for Indian professionals living in the country.

Penalty for Violations

CCPA can impose a penalty of up to INR 10 lakh on manufacturers, advertisers, and endorsers for any **misleading advertisement**. For subsequent contraventions, penalty may be up to INR 50 lakh.

The authority can prohibit the endorser of a misleading advertisement from making any endorsement for up to 1 year and, for subsequent contravention, prohibition can extend up to 3 years.

Challenges

The key challenge is to ensure **enforcement** of the guidelines. Tracking advertising in India's more than 10,000 print publications and 850-plus TV channels in multiple languages is going to be a big challenge for the Authority.

Even bigger challenge is the proliferation of **online advertising**. Moreover, not all online advertisements originate in India, making it difficult to regulate them. E.g., the issue of **equalisation levy.**

#5 State Food Safety Index

News: The Union Minister for Health has released the 4th State Food Safety Index.

About the State Food Safety Index

The Index is prepared by Food Safety and Standards Authority of India (FSSAI). Its aim is to measure the performance of states on parameters of food safety as a **competitive push for positive change** in India's food safety ecosystem.

The **5 parameters** for ranking are: **(a)** Compliance; **(b)** Human Resources and Institutional Data; **(c)** Food Testing: Infrastructure and Surveillance; **(d)** Training & Capacity Building; **(e)** Consumer Empowerment.

The Index is a dynamic quantitative and qualitative benchmarking model that provides an objective framework for **evaluating food safety across all States/UTs**.

TOP & BOTTOM IN EACH GROUP

RANK	STATE/UT	SCORE
LARGE STATES		
1	Tamil Nadu	82
2	Gujarat	77.5
3	Maharashtra	70
15	Telangana	34.5
16	Bihar	30
17	Andhra	26
SMALL STATES		
1	Goa	56
2	Manipur	44
7	Mizoram	22.5
8	Arunachal	21
UNION TERRITORIES		
1	J&K	68.5
2	Delhi	66
7	Dadra & NH & Daman & Diu	27.5
8	Lakshadweep	16

Key Findings of the Index

Larger States: Tamil Nadu has topped the index, followed by Gujarat and Maharashtra.

Smaller States: Goa stood first, followed by Manipur and Sikkim.

UTs: Jammu and Kashmir, Delhi and Chandigarh secured 1st, 2nd and 3rd rank respectively.

Economy

#1 Gap between GDP and GVA

News: According to the latest data released by the Government, the two measures of economy: Gross Domestic Product (GDP) and Gross Value Added (GVA) have grown at widely different paces.

Difference between GVA and GDP

GDP calculates national income by adding up **all expenditures in the economy**. On the other hand, GVA calculates the national income from the **supply side by looking at the value-added in each sector** of the economy.

The two measures of national income are linked as follows:

**GDP = GVA + *Taxes earned by the government — subsidies provided by the government***

If the government earned more from taxes than it spent on subsidies, GDP will be higher than GVA. But if the government provided subsidies in excess of its tax revenues, the absolute level of GVA would be higher than that of GDP. Hence, GDP provides the **consumption perspective** of the economy and GVA shows the **production perspective.**

The gap between GDP & GVA

Differences in growth of GDP and GVA reflect the factor of **fiscal policy. G**DP growth tends to be higher than GVA growth when tax collections increase in proportion with GVA growth or in higher amount with subsidies expanding at a lower growth due to need for fiscal profligacy.

In FY2020-21, GDP growth

The right measure

GDP and GVA growth rates have diverged since FY18, leading to questions about the right metric for the economy.

Source: CMIE, MoSPI, Nomura

lagged GVA growth as the Centre brought onto the books several years of dues owed to the **Food Corporation of India**. Food subsidy costs ballooned in one go in a year when tax collections were severely hit due to the lockdown. In FY2021-22, tax collections grew at a rapid pace (28%) due to a quick recovery in economic activity, while subsidies, despite remaining elevated, fell by over 33% due to high base effect. This resulted in **GDP growth (8.7%) exceeding GVA growth (8.1%)**.
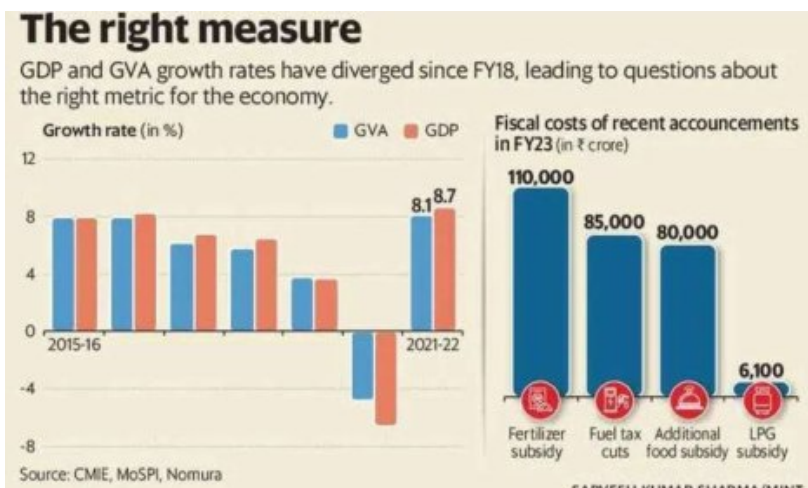
Recently, skyrocketing price pressures have forced the Union government to announce a slew of measures from tax cuts to additional subsidies, both of which will weigh on GDP in FY23. Moreover, additional subsidies worth INR 2 trillion would inflate GVA, while fuel tax cuts may pull GDP down unless tax revenue from other channels bridges the gap.

#2 FDI Inflows in India

News: The Department for Promotion of Industry and Internal Trade (DPIIT) has released the details of Foreign Direct Investment (FDI) inflow into India in FY2021-22.

Key Highlights

FDI Inflow: India has reported the highest FDI inflow to the tune of US$ 83.57 billion in the financial year 2021-2022. India's foreign investment inflows increased 20-fold since 2003-04 when it was US$ 4.3 billion.

Source of FDI equity Inflow: Among the top contributors to India's FDI inflow are Singapore which topped

Record Investments

in $ billion

62 | 74.39 | 81.97 | 83.57

FY19 | FY20 | FY21 | FY22

Singapore top investment source

Comp hardware & software, services attract most FDI

Karnataka top recipient, **38%** share on total FDI equity inflow

the charts with 27% share followed by USA (18%) and Mauritius (16%).

Sectors: The computer software and hardware remained the top sector with FDI inflow share of around 25%. It was followed by services sector and automobile sector getting 12% each.

States: Karnataka is the top recipient state with 38% share of the total FDI Equity inflow followed by Maharashtra (26%) and Delhi (14%).

#3 World Investment Report by UNCTAD

News: The United Nations Conference on Trade and Development (UNCTAD) has released the World Investment Report.

Key Findings of the Report

USA remained the top recipient of FDI (US$ 367 billion) in 2021. It was followed by China (US$ 181 billion) and Hong Kong (US$ 141 billion). FDI flows recovered to pre-pandemic levels in 2021 hitting nearly US$ 1.6 trillion.

However, the prospects for 2022 are grimmer as it will be impacted by the **security and humanitarian crises** caused by the Ukraine war, **macroeconomic shocks** set off by the conflict, **energy and food price** hikes and increased investor uncertainty.

MOVING UP THE LADDER

FDI inflows (in $ billion)

Rank 2021	(2020)	(2021)
1 US (1: Rank in 2020)	151	367
2 China (2)	149	181
3 Hong Kong (3)	135	141
4 Singapore (6) ▲	75	99
5 Canada (12) ▲	23	60
6 Brazil (9) ▲	28	50
7 India (8) ▲	64	45
8 South Africa (51) ▲	3	41
9 Russia (22) ▲	10	38
10 Mexico (10)	28	32

Source: UNCTAD, FDI/MNE database

Findings Related to India

India jumped one position to 7th among the top recipients of foreign direct investment (FDI) in 2021 despite a decline in the FDI inflows.

The FDI inflows into India declined to US$ 45 billion in 2021 from US$ 64 billion in the preceding year as large mergers and acquisitions, especially in the digital space were not repeated in 2021.

India's FDI inflows in 2021 were the lowest since 2018, outflows were up by 43% at around US$ 16 billion.
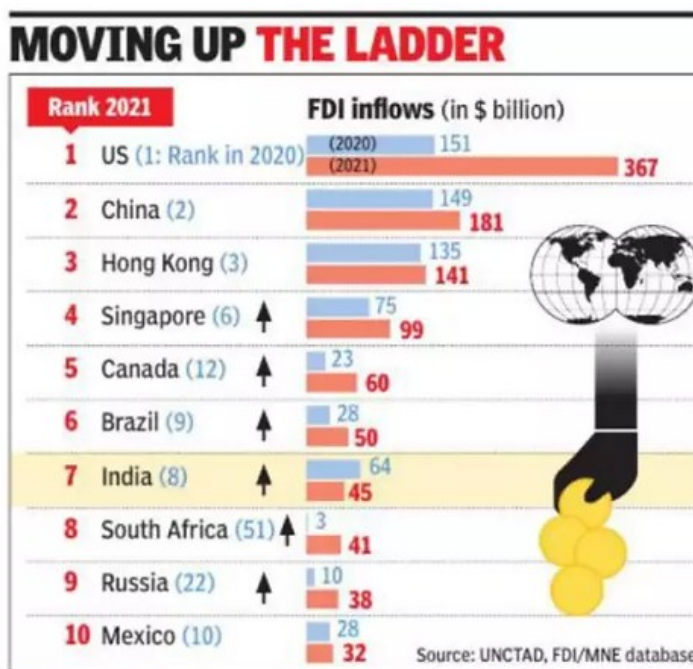
#4 Rising Bond Yields

News: Bond Yields have risen to their highest levels in the last 3 years.

About Bond and Bond Yields

A bond is a **fixed income instrument** that represents a loan from an investor to a borrower (typically a corporate or government). Bonds are used by companies, municipalities, and sovereign governments to finance projects and operations.

The movements of bond yields and prices are opposite to each other; when bond prices rise, yields fall and vice-versa.

Reasons behind Rising Bond Yields

The reasons include a surge in global oil prices, high inflation and a large government borrowing programme. Also, as the interest rates in USA rise, the investors take their money out of emerging economies like India. They sell government bonds causing their price to fall (and yield to rise).

Impact of the Rise in Bond Yields

Impact on Government: The rise in bond yield means that the government will have to pay more as a yield (or return to investors), leading to a **rise in the cost of borrowing**. This will put upward pressure on general interest rates in the banking system.

Impact on debt investors: Debt investors are set to get impacted. When yields rise and bond prices fall, net asset values of debt funds which hold a sizable chunk of government securities in their portfolios will also decline.

Impact on Equity Investors: Rising bond yields are generally not good news for equity investors as they raise the cost of funds for companies and start hurting their earnings. It leads to an outflow of funds from equities towards less risky investments.

#5 Annual Survey of Industries

News: The Ministry of Statistics and Programme Implementation has released the provisional results of the Annual Survey of Industries.

About the Annual Survey of Industries (ASI)

It is the principal source of industrial statistics in India and the most comprehensive data on organised manufacturing. It covers all factories employing ten or more workers using power and those employing 20 or more workers without using power.

Highlights of the Survey:

Number of factories increased by 1.7% year-on-year to 2.46 lakh in 2019-20, employing a total of 1.3 crore workers.

Increase in Gross fixed capital formation (GFCF): GFCF, an indicator of investment, grew 20.5% in the organised manufacturing sector in 2019-20 as against a growth of 10.2% in the previous fiscal.

Employment in the corporate sector which include public and private government and non-government companies has increased.

Tamil Nadu showed the highest number of employment of workers in 2019-20. This is followed by Maharashtra and Gujarat. The wages paid to workers grew 6.3% in 2019-20 as against a wage growth of 11.9% in the previous fiscal. Wages to factory workers in the corporate sector also has increased

#6 Front-running

News: Recently, there was a case of irregularities in a mutual fund, including Front-running of the transactions. SEBI is expected to take harsh action against the irregularities.

About Front-running

It is a dubious market practice in which a dealer, trader or employee gets information of a big order for buying/selling shares that will be placed by a big fund or investor. The dealer/trader than gets 'in front' of the trade and places the same order.

Large orders usually move a stock's price. By buying shares just before the big order hits the market and selling them once the price moves up, the front-runner pockets illegal gains from his advanced knowledge.

Modus Operandi
How front runners make their millions

01 Investment team of a fund identifies a stock and decides to buy.

02 Fund house staffer who knows this leaks this information to broker or other associates.

03 Broker or associate buys that stock in large quantity or takes leveraged position.

04 Fund house places buy order with broker.

05 Stock moves up due to large order from fund house.

06 Broker or associate sells stock, exits leveraged position with big profits.

A reverse strategy is used with sell trades to bring down the selling prices.

Concerns associated with Front-running

Front-running by insiders can adversely impact investors in a fund by bidding up the prices to buy stocks or hammering down the prices at which they get to sell.

Regulations against Front-running

SEBI (Prohibition of Fraudulent and Unfair Trade Practices Relating to Securities Market) Regulations, 2003 clearly define front-running and characterises it as a fraudulent and unfair practice. SEBI has invoked this section many times to pass orders against front-runners.

#7 e-Transmission Moratorium at the WTO

News: India has been opposing the moratorium on customs duties on e-commerce at the WTO.

About the e-transmission Moratorium

WTO members have agreed **not to impose customs duty on electronic transmission** since 1998 and the moratorium has been periodically extended at the successive Ministerial Conferences. The moratorium is on digitizable products like photographic films, cinematographic films, printed matter, music, media, software and video games..

Many WTO members are seeking a temporary extension of the moratorium till the 13th ministerial conference. India and other countries like South Africa have repeatedly asked the WTO to revisit the issue and have highlighted the adverse impact of the moratorium on developing countries.

Reasons for opposing the extension of the e-Transmission Moratorium

India is witnessing an exponential rise in imports of electronic transmissions, such as movies, music, video games and printed matter, some of which could fall within the scope of the moratorium. Removing the moratorium is important for developing nations like India to preserve policy space for their digital economy, to regulate imports and generate revenue through customs duties.

For instance, it has been argued that the percentage of customs revenue lost due to foregoing duty on e-transmission for developing nations is 4.35% while that of the developed countries is a mere 0.24%. Moreover, it has been estimated that **India loses about $500 million annually** due to the e-Transmission Moratorium.

#8 Status of Start-ups in India

News: The Prime Minister recently praised India's start-up ecosystem and highlighted that India has reached the landmark figure of 100 unicorns with a total valuation of more than US$ 300 billion.

About Unicorns

A Unicorn is a **privately held, venture-capital-backed** start-up that has reached a value of US$ 1 billion. The valuation of unicorns is not expressly linked to their current financial performance but is largely based on their growth potential as perceived by investors and venture capitalists who have taken part in various funding rounds. American venture capitalist Aileen Lee is credited with coining the term 'Unicorn' in 2013.

Status of Start-ups and Unicorns in India

India has become the 3rd largest start-up ecosystem in the world after the US and China. 44 Indian start-ups have achieved unicorn status in 2021, most of which are in the services sector. Currently, 1 out of every 10 unicorns globally has been born in India.

#9 Travel and Tourism Development Index

News: India has been ranked 54th in the Global Travel and Tourism Development Index. India was ranked 46th in 2019.

Findings of the Global Travel and Tourism Development Index (TTDI)

India is at the top place in South Asia. Japan has topped the list. USA, Spain, France, Germany, Switzerland, Australia, UK, Singapore and Italy are in the top 10.

About Global Travel and Tourism Development Index TTDI comprises 117 countries. It is published by **World Economic Forum (WEF)**. It was earlier known as the **Travel & Tourism Competitiveness Index (TTCI)**, which has been published biennially for the past 15 years. Its aim is to create healthy competition in the travel

and tourism sector of various economies, by ranking them based on performance, overall quality, and future potential.

The index consists of five subindices, 17 pillars, and 112 indicators, distributed among the different pillars.

5 Sub-indexes of TTDI include: **(a)** Enabling environment; **(b)** Travel and tourism policy and enabling conditions; **(c)** Infrastructure; **(d)** Travel and Tourism Demand drivers; **(e)** Travel and tourism sustainability.

#10 World Competitiveness Index, 2022

News: The World Competitiveness Index, 2022 has been released.

About the World Competitiveness Index

It is released by the Institute for Management Development (IMD) since 1989. Its purpose is to rank 63 economies and assess the extent to which a country promotes the prosperity of its people. It does so by measuring economic well-being via hard data and survey responses from executives. The index measures the prosperity and competitiveness of countries by examining 4 factors: **(a)** Economic performance; **(b)** Government efficiency; **(c)** Business efficiency; **(d)** Infrastructure.

Key Findings of the Index

Denmark has topped the index followed by Switzerland and Singapore. The important factors found to be impacting businesses in 2022 are inflationary pressures, geopolitical conflicts, supply chain bottlenecks and COVID-19.

Findings related to India

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India has been ranked 37ᵗʰ in the index. India has witnessed the sharpest rise among the Asian economies with a 6-position jump from 43ʳᵈ to 37ᵗʰ rank.

India has made a significant jump in ranking largely due to gains in economic performance (from 37ᵗʰ to 28ᵗʰ).

The top 5 attractive factors of India's economy for business are a skilled workforce, cost competitiveness, dynamism of the economy, high educational level, and open and positive attitudes.

Challenges for India: Managing trade disruptions and energy security, maintaining high GDP growth post the pandemic, skill development, and employment generation, asset monetization, and resource mobilization for infrastructure development.

#11 Liquid Nano-Urea

News: The Prime Minister recently inaugurated India's first liquid nano urea plant at Kalol, Gujarat.

About Liquid Nano Urea
It is urea in the form of **nanoparticles**. Urea is chemical nitrogen fertilizer which artificially provides nitrogen to plants. Nitrogen a major nutrient required by plants. Nano Urea has been developed to reduce the burden of urea subsidy, **reduce the unbalanced and indiscriminate use** of conventional urea, increase crop productivity and reduce soil, water, and air pollution.

It has been developed by Indian Farmers Fertilizer Cooperative (IFFCO)'s Nano Biotechnology Research Center (NBRC) at Kalol.

Advantages of Liquid Nano Urea over Conventional Urea
Higher Efficiency: While conventional urea has an efficiency of about 25%, the efficiency of liquid nano urea can be as high as 85-90%.

Direct absorption by plant: Conventional urea fails to have the desired impact on crops as it is often applied incorrectly and the nitrogen in it is vaporized or lost as a gas. On the other hand, liquid nano urea is sprayed directly on the leaves and gets absorbed by the plant.

Higher Shelf Life: Liquid nano urea has a shelf life of a year and farmers need not be worried about "caking" when it comes in contact with moisture.

No Burden of Urea Subsidy: Liquid nano urea produced by IFFCO comes in a 0.5 Litre bottle priced at INR 240, and carries no burden of subsidy currently. By contrast, a farmer pays around INR 300 for a 50-kg bag of heavily subsidized urea.

#12 World of Work Report by International Labour Organization

News: The World of Work Report has been released by the ILO.

Key Findings the Report
Job loss: About 11.2 crore jobs might have been lost during the first quarter of 2022.

Working hours: The number of hours worked globally dropped in the first quarter of 2022, to 3.8% below the pre-pandemic benchmark (4ᵗʰ quarter of 2019).

Reason for reduction of working hours: The fresh lockdowns in China, the conflict between Ukraine and Russia, and the global rise in the prices of food and fuel are the major reasons.

Financial turbulence, potential debt distress and global supply chain disruptions are growing risks of a further deterioration in working hours in 2022.

Findings related to India
Job loss: For every 100 women at work prior to the pandemic, 12.3 women would have lost their job as an average through the entire period. In contrast, for every 100 men, the equivalent figure would have

been 7.5. Hence, the pandemic seems to have **exacerbated the already substantial gender imbalances** in employment participation in the country.

Deterioration of the gender gap in work hours: India and lower-middle-income countries excluding India experienced a deterioration of the gender gap in work hours in the second quarter of 2020.

Working standards: The report mentions that there is no decent employment in India. This is because; **(a)** Most people are on contract without any social security; **(b)** The **Code on Wages** passed in 2019 has not been implemented yet; **(c)** Provisions related to Minimum Wages has not been implemented in India.

Suggestions provided by the Report

(a) The purchasing capacity of the workers should be improved; **(b)** Countries have to take a humane approach to address the worker's situation; **(c)** The Government of India has to find ways to create more jobs.

#13 Railway Innovation Policy

News: The Union Minister for Railways has launched a Railway Innovation Policy titled 'Start-ups for Railways'.

About the Railway Innovation Policy

The aim of the policy is to promote Indian innovators and entrepreneurs through a series of innovative start-ups in the ecosystem and services of the railways.

Under phase 1 of the policy, 11 problem statements involving rail fracture and headway reduction will be taken up out of over 100 problem statements received from different divisions and field offices of Railways. These problem statements will be presented before the start-ups to find innovative solutions.

Support to Start-ups

Innovators will be selected in a transparent and fair manner through an online portal.

The selected innovators will be provided grants of up to Rs. 1.5 Crore. The trials of prototypes will be done on Railways. Railways will also provide enhanced funding to scale up deployment on the successful performance of prototypes. Moreover, the Intellectual property rights (IPR) will remain with innovators only.

Significance of the Policy

This policy will bring scale and efficiency in the field of operation, maintenance and infrastructure creation through the participation of a very large and untapped start-up ecosystem.

The policy will help leverage innovative technologies developed by Indian Start-ups, MSMEs, Innovators and Entrepreneurs to improve operational efficiency and Safety of the Indian Railways

It will promote an 'Innovation Culture' in the country for co-creation and co-innovation in the Railway sector.

International Relations

#1 Bridge on Pangong-Tso by China

News: China is building a second bridge on the Pangong Tso lake. The site is near the location of border stand-off between India and China.

Status of bridges built by China

The **first bridge** seemed to have been built to facilitate work on the new one. After completion, this second bridge will allow swift movement of armoured vehicles between the north and the south banks of Pangong Tso. The construction site is just east of an old ruin called Khurnak Fort, where China has major frontier defence bases. China calls it Rutong Country.

About Pangong Tso

Pangong Tso is a 135-km long landlocked lake. India has around 45 km of Pangong Tso under its control, while China has the rest. The site of the new bridge is near the halfway mark of the boomerang-shaped lake.

The site of the bridge is around 20 km east of Finger 8 on the lake's north bank – which is where the Line of Actual Control (LAC) passes.

Although the bridge is being built in territory that is under China's control since 1958, the exact point is just west of India's claim line, which means India considers it its own territory. The Ministry of External Affairs last week stated that it **considers the area as illegally occupied by China**.

Choice of Location

The Indian Army during the recent standoff conducted an operation in this region. Indian troops outmanoeuvred the People's Liberation Army to occupy the heights of Kailash Range in the Chushul sub-sector on the south bank of Pangong Tso. The positions allowed India to dominate the strategically significant **Spanggur Gap**.

The Spanggur Gap could be used to launch offensive manoeuvres as China had done in 1962. Also, India got a direct view of China's Moldo Garrison. This was a cause of immense concern for the Chinese.

The new bridge will allow Chinese troops to reduce travel time from around 12 hours at the moment to around 4 hours.

The bridges help in the faster movement of troops, including mechanised forces, heavy weapons, and military vehicles. The bridges are at one of the narrowest points on the lake, close to the LAC.

#2 Rail Links between India and Bangladesh

News: India and Bangladesh are rebooting their rail links by launching several rail services.

Rail Links Between India and Bangladesh
Passenger Trains

Bandhan **Express:** It was resumed by rebooting a long-forgotten rail link between **Kolkata and the industrial hub of Khulna**, the 3rd-largest city of Bangladesh. In 1965, this route was served by the Barisal Express which was stopped due to the India-Pakistan war.

Maitree **Express:** It runs between Kolkata and Dhaka Cantonment.

Mitali **Express:** It will connect New Jalpaiguri in North Bengal with Dhaka. This train was announced by PM during his visit to Dhaka in March 2021.

Freight Trains

Haldibari-Chilahati Rail Link: In August 2021, India and Bangladesh inaugurated a railway link between Haldibari in India and Chilahati in Bangladesh. This rail link was part of the Broad Gauge main route from Kolkata to Siliguri. However, the war of 1965 effectively cut off all the railway links.

The other rail links which are operational between India and Bangladesh are — Petrapole (India) – Benapole

(Bangladesh); Gede (India) – Darshana (Bangladesh); Singhabad (India)-Rohanpur (Bangladesh); and Radhikapur (India)–Birol (Bangladesh).

#3 Mutual Logistics Agreement with Vietnam

News: The Union Minister for Defense visited Vietnam. India signed Logistics Agreement with Vietnam.

Key Highlights of the Visit

Mutual Logistics Agreement

India and Vietnam signed a Logistics Agreement to allow the militaries of the two sides to use each other's bases for repair and replenishment of supplies.

This is the **first such major agreement that Vietnam has signed with any country**. India and Vietnam share a **Comprehensive Strategic Partnership** since 2016. Defense cooperation is a key pillar of this partnership. Vietnam is also an important partner in India's Act East policy and the Indo-Pacific vision.

About Logistics Agreements

Logistics agreements are administrative arrangements. They facilitate **access to military facilities** for the exchange of fuel and provisions. These agreements simplify logistical support and increase the operational turnaround of the military when operating away from India.

India has signed several logistics agreements with QUAD nations, France, Singapore, and South Korea beginning with the Logistics Exchange Memorandum of Agreement with the U.S. in 2016.

#4 Outcomes of QUAD Summit

News: The 2ⁿᵈ in-person and 4ᵗʰ meeting of QUAD Leaders happened recently.

Key Outcomes of Quad Summit

Regarding terrorism: QUAD leaders denounced the use of terrorist proxies and emphasised the importance of denying logistical, financial or military support to terrorist groups which could be used to launch or plan terror attacks, including 'cross-border attacks'.

Infrastructure funding: The QUAD will seek to extend more than US\$ 50 billion of infrastructure assistance and investment in the Indo-Pacific, over the next 5 years.

IMPORTANT TAKEAWAYS Photo: AFP
➤ **\$50 billion** of infrastructure assistance and investment in the Indo-Pacific over five years
➤ Launch of **'Quad Climate Change Adaptation and Mitigation Package (Q-CHAMP)'** for tangible climate action
➤ Quad Fellowship that will bring **100 students from the 4 countries** to the US each year to pursue graduate studies in STEM fields
➤ Launch of **Indo-Pacific Partnership for Maritime Domain Awareness (IPMDA)** for combating illegal fishing
➤ Quad partnership on **Humanitarian Assistance and Disaster Relief (HADR)** in the Indo-Pacific
Albanese, Biden, Modi & Kishida in Tokyo on Tuesday

Launched QUAD Climate Change Adaptation and Mitigation Package (Q-CHAMP): Q-CHAMP includes: **(a)** Ongoing activities under the QUAD Climate Working Group such as, green shipping and ports, clean energy cooperation in clean hydrogen and methane emissions, etc.; **(b)** New cooperation in clean fuel ammonia, CCUS/Carbon Recycling, cooperation and capacity-building support to advance high integrity carbon markets under Article 6 of the Paris Agreement, etc.

Indo-Pacific Partnership for Maritime Domain Awareness (IPMDA) initiative: It is designed to work with regional partners to respond to humanitarian and natural disasters, and combat illegal fishing.

QUAD Partnership on Humanitarian Assistance and Disaster Relief (HADR) in the Indo-Pacific: It will further strengthen the collaboration to effectively respond to disasters in the region.

Promote debt sustainability: China's Belt and Road Initiative (BRI) faces international scrutiny for irresponsible lending. Hence, the QUAD will **strengthen the capacities of the countries** in need to cope

with debt issues by promoting debt sustainability and transparency. This is achieved through the **'QUAD Debt Management Resource Portal'**.

Cyber Security: The QUAD partners will initiate the first-ever **QUAD Cybersecurity Day** to help individual internet users across the 4 nations, the Indo-Pacific region, and beyond to better protect themselves from cyber threats.

Science and Technology

#1 Use of Drones in Healthcare Sector: ICMR Guidelines

News: The Indian Council of Medical Research (ICMR) has released guidelines for use of drones in the healthcare sector. The use of drones will improve access to medicines and vaccines, especially in the geographically difficult terrain.

Use of drones in the Healthcare Sector

Only 30,000 government-run primary healthcare centres cater to nearly 1.4 billion people in India. 5-10% of these are not accessible to the suppliers and patients because of difficult terrain. This highlights the need to ensure last-mile delivery of essential treatments, vaccines and other medical supplies. Drones have a tremendous potential to deliver vital goods to vulnerable populations, overcoming access barriers and enabling faster delivery of life-saving medicine.

Guidelines for Drone Use in Healthcare Sector

The guidelines have been issued in compliance with the **New drone Rules-2021** which highlight the ways of selecting drones and choosing take-offs and landing sites.

According to the guidelines, temperature-sensitive medical supplies and vaccines with a storage temperature between 2°C and 8°C are allowed to be transported by drones.

Tablets, capsules, syrups, surgicals, blood bags and diagnostic biological tissues can also be transported following the guidance.

Medicine from the Sky project

Medicine from the Sky project is a collaboration of the Telangana government, World Economic Forum, HealthNet Global and NITI Aayog. Its purpose is to deliver medicines, vaccination and units of blood to the remote, rural areas by means of drones.

#2 Electric Vertical Take-off and Landing (eVTOL) Aircraft

News: The Union Minister for Civil Aviation has said that the Government is exploring the possibility of inviting manufacturers of eVTOL Aircraft to set-up base in India.

About the Electric Vertical Take-off and Landing (eVTOL) Aircraft

eVTOL Aircraft is one that uses electric power to hover, take off, and land vertically. Most eVTOLs use the **distributed electric propulsion technology**. This technology integrates a complex propulsion system with

the airframe. This technology has grown on account of successes in electric propulsion based on progress in motor, battery, fuel cell and electronic controller technologies. The development is also fuelled by the need for new vehicle technology that ensures **urban air mobility (UAM)**.

Significance of eVTOL

eVTOL is being seen as a runway independent technological solution for the globe's transportation needs. It opens up new possibilities that aircraft with engines cannot carry out in areas such as manoeuvrability, efficiency and even from the environmental point of view.

eVTOLs have also been likened to a **third wave in an aerial revolution**; the first being the advent of commercial flying and the second the age of helicopters.

Challenges with eVTOL
(a) As the technology so far is a mix of unpiloted and piloted aircraft, the areas in focus include 'crash prevention systems'. These use cameras, radar, the Global Positioning System (GPS) and infrared scanners; **(b)** Ensuring safety in case of a power plant or rotor failure; **(c)** Aircraft protection from cyberattacks; **(d)** Navigation and flight safety and the use of technology when operating in difficult terrain, unsafe operating environments and bad weather.

Bringing eVTOL aircraft to India
For this, the Confederation of Indian Industry (CII) Taskforce for Urban Air Mobility has suggested policy and regulation changes to better integrate EVAs. It has advised: **(a)** Formulating regulations for pilotless vehicles; **(b)** Airworthiness vehicles; **(c)** Implementing efficient energy management systems; **(d)** Onboard sensors; **(e)** Collision detection systems; **(f)** Advanced technologies such as artificial intelligence; **(g)** Charging station; **(h)** Robust air traffic management system.
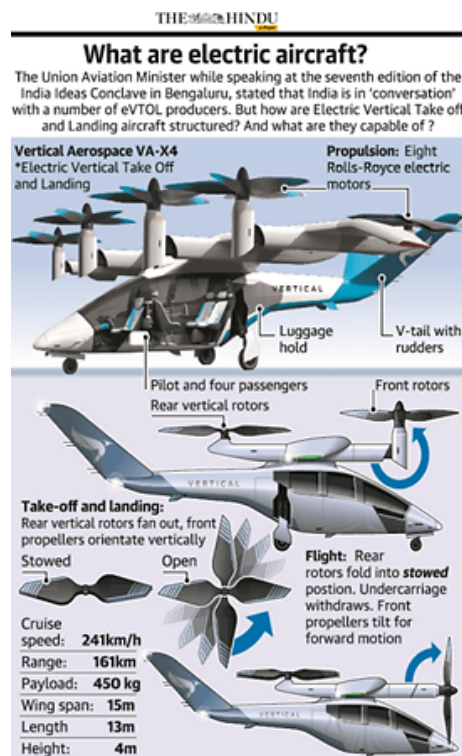
#3 Samudrayaan Mission

News: The Minister for Earth Sciences has said that India will achieve the unique distinction of simultaneously launching the first manned Human Ocean Mission '*Samudrayaan*' as well as the first Human Space Mission '*Gaganyaan*' in 2023.

About the *Samudrayaan* Mission
The *Samudrayaan* mission is India's first manned ocean mission. It is a part of the **Deep Ocean Mission**. Its aims is to **send men deep into the ocean in a submersible vehicle** for **deep-ocean exploration and rare mineral mining**. As a part of the mission, in 2023, Sea trials of a 500-meter rated shallow water version of the manned submersible will be done.

The trial will be followed by a mission that will send 3 people to a depth of 6,000 meters in the sea in a manned submersible vehicle called **MATSYA 6000** for deep underwater studies.

National Institute of Ocean Technology (NIOT) is the Implementing Agency for the mission.

Significance of the Mission
With this unique Ocean Mission, India will join the elite club of nations such as the US, Russia, France, Japan, and China to have niche technology and vehicles to carry out subsea activities.
It will be helpful in exploring the minerals and thermal energy in the depth of the ocean.
It will provide employment to 40 million people in the ocean-based industries by 2030.

#4 Cure for Cancer

News: 12 patients in the US were completely cured of rectal cancer without requiring any surgery or chemotherapy. The trial used a monoclonal antibody called dostarlimab every 3 weeks for 6 months for the treatment.

About Dostarlimab

Dostarlimab is a type of **monoclonal antibody.** It blocks proteins called checkpoints which are made up of immune system cells such as T cells, and some cancer cells.

Monoclonal antibodies are laboratory-produced molecules. They serve as **substitute antibodies** that can restore, enhance, modify or mimic the **immune system's attack on unwanted cells**.

Each monoclonal antibody is designed in a way that it binds to only one antigen.

These checkpoints help keep immune responses from acting too strong and may prevent T cells from killing cancer cells. When these checkpoints are blocked, T cells are free to kill cancer cells more efficiently.

Examples of checkpoint proteins found on T cells or cancer cells include PD-1, PD-L1, CTLA-4, and B7-1. According to experts, drugs like dostarlimab can be used only in patients with the **genetic property of mismatch repair (MMR) deficiency**.

About Mismatch Repair Deficiency

'Mismatch repair deficient' cancer is most common among colorectal, gastrointestinal, and endometrial cancers. Patients suffering from this condition lack the genes to correct typos in the DNA that occur naturally while cells make copies.

Availability of treatment in India

Cost is believed to be a major hurdle. For instance, an immunotherapy treatment can cost around INR 4 lakh per month, with patients needing the treatment for 6 months to a year.

Hence, experts have said that precision medicine such as immunotherapy drugs for particular types of cancers is still at a nascent stage in India. It would take at least 10 years for it to become commonplace.

#5 Direct-to-Mobile (D2M) Broadcasting Technology

News: The Department of Telecommunications (DoT) and Prasar Bharti are exploring the feasibility of a 'Direct-to-Mobile' Broadcasting Technology. It will allow to broadcast video and other forms of multi-media content directly to mobile phones, without needing an active internet connection.

About the Direct-to-Mobile (D2M) Broadcasting Technology

The technology is based on the convergence of broadband and broadcast using which mobile phones can **receive terrestrial digital TV**. It would be similar to how people listen to FM radio on their phones where a receiver within the phone can tap into radio frequencies. Using D2M, multimedia content can also be beamed to phones directly.

Applications of D2M Technology

It can possibly be used to directly broadcast content related to citizen-centric information and can be further used to **counter fake news**, **issue emergency alerts** and **offer assistance in disaster management** among other things.

It can be used to broadcast live news, sports etc. on mobile phones.

Impact on Consumers and Businesses

Consumers: They would be able to access multimedia content from Video-on-Demand (VoD) or Over-The-Top (OTT) content platforms without having to exhaust their mobile data, and at a nominal rate. The technology will also allow people from rural areas, with limited or no internet access, to watch video content.

Businesses: It can enable telecom service providers to offload video traffic from their mobile network onto the broadcast network. This will help them to decongest mobile spectrum. This will also improve the usage of mobile spectrum and free up bandwidth which will **help reduce call drops**, **increase data speeds** etc.

Steps Taken by the Government to facilitate D2M Technology

The Department of Telecommunications (DoT) has set up a committee to study the feasibility of a spectrum band for offering broadcast services directly to users' smartphones.

Challenges to the rollout of D2M Technology

Bringing key stakeholders like mobile operators on board will be the biggest challenge in launching D2M technology on a wide scale.

A mass rollout of the technology will entail regulatory and infrastructural changes.

#6 International Science Council Report

News: The International Science Council has released a report titled 'Unprecedented and Unfinished: COVID-19 and Implications for National and Global Policy'. The Report says that the COVID-19 pandemic may prevent the world from achieving NET ZERO emissions by 2050.

About International Science Council

It was formed in 2018. It is an international non-governmental organization that unites scientific bodies at various levels across the social and natural sciences. It is headquartered in Paris, France.

Key Highlights

The report considered three potential scenarios through the year 2027:

First: It is the most likely scenario. COVID-19 will have worsened inequalities in health, economics, development, science and technology, and society.

Second: COVID-19 will have become an endemic disease worldwide and low-income states may face risk of health system collapse and growing food insecurity. Mental health concerns will grow even further.

Third: It is the most pessimistic scenario. The world faces high levels of harm to social wellbeing — with long-term school closures, unemployment and increased gender-based violence. Growing nationalism and polarization will inhibit cooperation on global vaccinations and trade and give rise to conflict.

Recommendations given by the Report

Increase adoption of the One Health approach to minimize environmental impacts and future pandemic risks.

Increase investment and knowledge sharing from high-income states.

Address the challenges of disinformation and strengthen diverse scientific advice systems to increase trust in science thereby protecting societies from acute health risks and the breakdown of social cohesion.

National and global policy considerations should address widening global inequalities not only in vaccine distribution but also related to inclusive governance, economic recovery and the digital and educational divide.

Environment

#1 Ban on Endosulfan

News: The Supreme Court has slammed the Government of Kerala for failure to provide relief to the victims of exposure to Endosulfan pesticide. In 2017, the SC had ordered the State to pay INR 5 Lakhs to each victim.

About Endosulfan

Endosulfan is a widely-banned pesticide with hazardous effects on human genetic and endocrine systems.

It is sprayed on crops like cotton, cashew, fruits, tea, paddy, tobacco etc. for control of pests such as whiteflies, aphids, beetles, worms etc.

Effects of Endosulfan

Environment: Endosulfan in the environment gets accumulated in food chains leading to higher concentration. If Endosulfan is released into water, it is expected to absorb into the sediment and may bioconcentrate in aquatic organisms.

Humans And Animals: Ingestion of Endosulfan results in diseases ranging from physical deformities, cancer, birth disorders and damage to the brain and nervous system.

Ban on Endosulfan

In 2011, the Supreme Court had banned the manufacture, sale, use, and export of Endosulfan throughout the country, citing its harmful health effects.

It is also listed under the **Rotterdam Convention on the Prior Informed Consent**.

The use of Endosulfan is also banned by **Stockholm Convention on Persistent Organic Pollutants**.

#2 Lancet Planetary Health Report

News: The Lancet Commission on Pollution and Health has published the 'The Lancet Planetary Health Report'

Key Highlights

Global findings

Pollution was responsible for 9 million premature deaths in 2015 making it the **world's largest environmental risk factor** for disease and premature death. Ambient air pollution accounted for nearly 75% of all deaths with fatalities in China the highest at 1.8 million.

Reductions have occurred in the number of deaths attributable to the types of pollution associated with extreme poverty. However, these reductions in deaths from household air pollution and water pollution are offset by increased deaths attributable to ambient air pollution and toxic chemical pollution.

More than 90% of pollution-related deaths occur in low-income and middle-income countries.

HIGHEST TOLLS

ALL POLLUTION*

India	2.4m
China	2.2m
World	9m

AIR POLLUTION*

| China | 1.8m |
| India | 1.7m |

* In 2019

Findings related to India

Pollution led to over 2.3 million premature deaths in India in 2019, accounting for over a fourth of the nine million such fatalities worldwide. Economic losses from modern forms of pollution — including ambient air and toxic chemicals —now amount to at least 1% of the country's GDP.

India continued to account for the world's largest estimated pollution-related deaths in 2019 — ahead of China. Ambient air pollution alone may have led to nearly 1.7 million deaths in India in 2019. But fatalities attributed to traditional sources of pollution — indoor air and water — have dropped to less than half of the number compared to 2000.
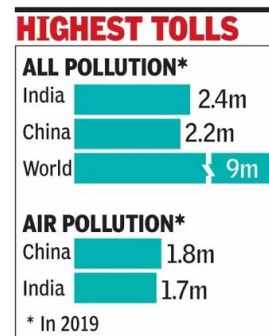
#3 Circular Economy in Municipal Solid and Liquid Waste

News: The Ministry of Housing and Urban Affairs has released a report titled 'Circular Economy in Municipal Solid and Liquid Waste'.

The circular economy is a model of production and consumption that involves sharing, reusing, repairing, refurbishing, and recycling existing materials/products as long as possible.

Purpose of the Report

The report provides a comprehensive, implementable and forward-looking action plan for the management of municipal solid & liquid waste. It also aims to promote India's transition from a **linear 'take-make-waste' mindset to a 'multi lifecycle circular' approach**.

Key Findings of the Report

India generates approximately 1.45 lakh tonnes of solid waste daily and 35% of this Is dry waste and the major share of dry waste is plastic. Out of 26,000 tonnes of plastic waste generated daily, only 15,600 tonnes are recycled and the rest goes to landfills and water bodies.

Treatment of municipal solid, wet, and construction wastes can generate nearly INR 30,000 crore revenue per annum and create employment opportunities.

Recommendations Given by the Report

(a) Government should reduce GST and other taxes on products that are made out of recycled materials to 5% from 18%; **(b)** State pollution control boards and urban development and industry departments can introduce a tax for the dumping of all municipal waste in landfills; **(c)** Mandatory use of 25% recycled materials in non-food grade packaging to ensure recycling; **(d)** Cement kilns must use 25% RDF (non-recyclable combustible dry waste) to replace coal.

#4 People's Biodiversity Register

News: Kolkata has become first major metropolitan city in India to prepare a registry of biodiversity. Chandigarh and Indore also have such registries.

About People's Biodiversity Register (PBR)

The People's Biodiversity Register (PBR) entails complete documentation of biodiversity such as flora, fauna medicinal sources, land use and human activities etc. within a particular place.

The **Biological Diversity Act (BDA)** has made it mandatory for every local self-governing institution in rural and urban areas to constitute a **Biodiversity Management Committee (BMC)** within their area of jurisdiction. Once constituted, the BMC must prepare a Peoples' Biodiversity Register (PBR) in consultation with local people.

A PBR comprehensively documents traditional knowledge of local biological resources. The BMC is the custodian of these resources, and any industry that extracts biological resources from these areas has to share part of its revenue with the local community.

Advantages of PBR

(a) Aid in tracing the changes in habitats; **(b)** Help in conservation and sustainable development of biodiversity; **(c)** Since it is a bottom-up exercise, PBR will help in understanding the overlap of cultural and natural biodiversity.

Kolkata's PBR documented 399 plant and 283 animal species.

#5 Community Forest Rights

News: The Government of Chhattisgarh has recognized the Community Forest Resource (CFR) Rights of tribals living in Gudiyapadar, a hamlet inside Kanger Ghati National Park in Bastar. Chhattisgarh has become the 2nd State to recognize CFR Rights of a village inside a National Park.

About the Community Forest Resource (CFR)

The Community Forest Resource area is the common forest land that has been traditionally protected and conserved for sustainable use by a particular community. The community uses it to access resources available within the traditional and customary boundary of the village and for seasonal use of landscape in the case of pastoralist communities.

About Community Forest Resource (CFR) Rights

These rights are recognised under **Section 3(1)(i) of the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act** (commonly referred to as the Forest Rights Act or the FRA).

They provide for recognition of the **right to 'protect, regenerate or conserve or manage' the community forest resource**. These rights allow the community to formulate rules for forest use by itself and others and thereby discharge its responsibilities under Section 5 of the FRA.

Significance of CFR Rights

CFR rights along with Community Rights (CRs) which include *nistar* rights and rights over non-timber forest products ensure sustainable livelihoods of the community.

These rights give the **authority to the Gram Sabha to adopt local traditional practices of forest conservation** and management within the community forest resource boundary.

These rights also underline the integral role that forest dwellers play in the sustainability of forests and in the conservation of biodiversity.

#6 Eco-sensitive Zones Around Protected Forests: Order by the Supreme Court

News: The Supreme Court has directed that every protected forest, national park and wildlife sanctuary across India should have a mandatory eco-sensitive zone (ESZ) of a minimum 1 km.

About Eco-Sensitive Zones (ESZ)

Eco-Sensitive Zones (ESZ) are areas notified by the Ministry of Environment, Forests and Climate Change (MoEFCC) around protected areas such as national parks and wildlife sanctuaries. The objective of declaring an area as ESZ is to create 'shock absorbers' to the protected areas by regulating and managing the activities around such areas. ESZs also act as the buffer zones from areas of high protection to areas accorded relatively milder protection.

Though Environment Protection Act, 1986 does not mention the word "Eco-Sensitive Zones", the Government uses section 3(2)(v) of the Environment Protection Act, 1986 and rule 5(1) of the Environment (Protection) Rules, 1986 to declare ESZs and EFAs.

Guidelines issued by the Supreme Court

Every protected forest, national park, and wildlife sanctuary across the country should have a mandatory eco-sensitive zone (ESZ) of a minimum of 1 km from their demarcated boundaries. In case any national park or protected forest already has a buffer zone extending beyond 1 km, that would prevail.

Mining within the national parks, wildlife sanctuaries and the ESZ shall not be permitted.

No permanent structure will be allowed within the ESZ.

The Principal Chief Conservator for each State and the Union Territory has been directed to make a list of subsisting structures within the ESZs and submit reports to the Supreme Court within three months.

#7 Contribution of Non-CO$_2$ Pollutants to Global Warming

News: According to a new study, the share of non-CO$_2$ pollutants in contribution to global warming is almost as much as CO$_2$ (Carbon dioxide).

Potential of non-CO$_2$ Pollutants on Climate Change

IPCC Working Group reports have shown that the contribution of CO$_2$ and non-CO$_2$ greenhouse gases to global heating was 52-57% and 43-48%, respectively.

Some aerosols released from fossil fuel sources are known to warm the planets, while others have the opposite effect. Cooling aerosols include sulfates, nitrates and organic carbon primarily.

Though decarbonisation efforts will lower the levels of CO_2, the warming caused will not go down in the next 25 years. Hence, global temperatures will likely exceed $1.5°C$ over pre-industrial levels by 2035 and $2°C$ by 2050 if the focus is merely on decarbonisation efforts (and non-CO_2 pollutants are ignored).

Status of non-CO_2 Pollutants in Global Policy Decisions

Government's focus only on CO_2: The ill impacts of the non-CO_2 counterparts are well-known. But the Governments' climate mitigation efforts target only CO_2 emissions.

Neglection from International Agencies: The Working Group III report of the Intergovernmental Panel for Climate Change (IPCC), which deals with mitigating climate change, focuses on CO_2 and a few greenhouse gases, but excludes other non-CO_2 pollutants.

Hence, there is a need to urgently **bend the emission curve of methane, HFCs, black carbon** and a few other precursor gases that increase lower atmosphere ozone.

Averting non-CO_2 Pollutants

The Governments have to simultaneously devise strategies targeting CO_2 and **non-CO_2 pollutants like methane, black carbon, hydrofluorocarbons (HFC), tropospheric ozone** and **nitrous oxide**.

Combining decarbonisation measures with targets can provide net cooling by 2030, bring down the rate of warming from 2030 to 2050 by roughly 50%, and avoid the $2°C$ level.

Oil and gas-consuming countries, Coal-consuming and rice-producing countries should also reduce methane levels.

#8 Draft Notification for Electronic Waste Management

News: The Ministry of Environment has released the draft notification for electronic waste management for public feedback. The Rules are expected to come into effect by August 2022.

Key Provisions of Draft Notification for Electronic Waste Management

Targets: Consumer goods companies and makers of electronics goods have to **ensure at least 60% of their electronic waste is collected and recycled by 2023** with targets to increase them to 70% and 80% in 2024 and 2025, respectively.

The rules bring into effect a **system of trading in certificates**, akin to carbon credits, that will allow companies to **temporarily bridge shortfalls**.

The **extended producer responsibility (EPR) certificates** certify the quantity of e-waste collected and recycled in a particular year by a company. An organisation may **sell surplus quantities** to another company to help it meet its obligations.

Companies will have to register on an online portal and specify their annual production and e-waste collection targets.

Monitoring authority: Central Pollution Control Board (CPCB) is the chief entity that coordinates the trade of EPR certificates and monitors if companies are meeting their targets. A steering committee to be headed by the Chairman of the CPCB will oversee the overall implementation of these regulations.

Non-Compliance: Companies that don't meet their annual targets will have to pay a fine or an '**environmental compensation**', but the draft doesn't specify the quantum of these fines.

Provisions to comply at later date: Companies that fall short of the annual target can meet a year's target, even after three years. Those that meet their targets with a year's delay will be refunded 85% of their fine, and 60% and 30% after the second and third year, respectively.

Role of State governments: (a) The responsibility of earmarking industrial space for e-waste dismantling and recycling facilities; **(b)** Establishing measures for protecting the health and safety of workers engaged in the dismantling and recycling facilities for e-waste.

Significance of the New Regulation

The earlier rules stressed collection targets. Now the government is emphasising the EPR, recycling and trading. This follows the government's objective to **promote a circular economy**.

About the generation of e-waste in India

According to the Global e-Waste Monitor 2017, **India generates about 2 million tonnes of e-waste annually** and ranks 5th among e-waste producing countries, after the U.S., China, Japan and Germany. Most of India's e-waste is recycled by the informal sector and under hazardous conditions and a thrust of the e-waste rules is to have more of this waste handled by the formal sector.

#9 State of Environment Report, 2022

News: The State of Environment Report, 2022 has been released by the Center for Science and Environment (CSE).

Key Findings of the Report

The report is an annual compendium of environment-development data and is derived from public sources.

Heavy Pollution in Rivers: 3 out of every 4 river monitoring stations in India posted alarming levels of **heavy toxic metals** such as lead, iron, nickel, cadmium, arsenic, chromium and copper.

Poor Wastewater Treatment: Of the 588 water quality stations monitored for pollution, total coliform and biochemical oxygen demand were high in 239 and 88 stations respectively across 21 States. This is an indicator of poor wastewater treatment from industry, agriculture and domestic households. According to the Central Pollution Control Board (CPCB), **72% of the sewage waste is dumped without treatment**. 10 States do not treat their sewage at all.

Coastal Erosion: Over a third of India's coastline saw some degree of erosion between 1990 and 2018. West Bengal is the worst hit with over 60% of its shoreline under erosion. The reasons for coastal erosion include an **increase in the frequency of cyclones**, **sea-level rise** and **anthropogenic activities** such as the construction of harbours, beach mining and building of dams.

Total Forest Cover: India's total forest cover has registered a little over a 0.5% increase between 2017 and 2021. But most of the increase has taken place in the **open forest category** which includes commercial plantations. This has happened at the **cost of moderately dense forest** which is normally the area closest to human habitations. At the same time, very dense forests, which absorb maximum carbon dioxide from the atmosphere occupy just 3% of total forest cover.

#10 Environmental Performance Index, 2022

News: The Environmental Performance Index, 2022 has been released. It has ranked India at the bottom of 180 countries. The Index has become controversial due to its methodology. The Government has also disputed the findings of the Index.

About the Environmental Performance Index

The EPI is an international ranking system of countries based on their environmental health. It is a **biennial index,** first started in 2002 as the Environment Sustainability Index by **the World Economic Forum**. It is prepared by the **Yale Center for Environmental Law and Policy** in collaboration with **Columbia University Center for International Earth Science Information Network**.

It uses **40 performance indicators** to assess and rank 180 countries. The indicators 'measure how close countries are in meeting internationally established sustainability targets for specific environmental issues'.

The 40 indicators are under the broad categories of **(a)** Climate Change Performance; **(b)** Environmental health; **(c)** Ecosystem vitality.

The 2022 EPI has included **new parameters to its earlier assessments**: **(a)** Projections of progress towards net-zero emissions in 2050 (Climate Change); **(b)** New Air quality indicators (Environmental Health); **(c)** Sustainable pesticide use (Ecosystem Vitality).

Key Findings of Environmental Performance Index, 2022

India has been ranked 180 (out of 180) with a score of 18.9. India's rank was 168 (score 27.6) in 2020. **Denmark tops the list** with a score of 77.9.

India ranks close to the bottom on all the 3 categories: Climate Change (165th), Environmental Health (178th), Ecosystem Vitality (178th). On several indicators India's performance is dismal like biodiversity (179th), biodiversity habitat index (170th), species protection index (175th), air quality (179th), PM 2.5 (174th), heavy metals such as lead in water (174th), waste management (151st) etc.

It suggests that China, India, the U.S., and Russia **will account for over 50%** of residual global greenhouse gas emissions in 2050.

Objections raised by India regarding the Environmental Performance Index, 2022

As per the Environment Ministry, some of the indicators used for assessing performance are extrapolated and based on unscientific methods.

Shifting of weightage on many indicators has resulted in India's low ranking.

(a) For black carbon growth, India's score actually improved from 32 in 2020 to 100 (the top score) in 2022. However, the weightage of this indicator has been reduced to 0.0038 (0.38%) in 2022 from 0.018 (1.8%) in 2020;

(b) Climate Change has been given very high weightage (38% or 0.38) and tends to neglect the development needs of poorer countries;

(c) Similarly, the low weightage given to **per-capita GHG emissions** automatically reduces the ranks of countries like India and China.

Faulty Methodology

(a) Projection for GHG emissions has been **computed based on the average rate of change in emission of the last 10 years**. It is not based on modelling that takes into account a longer period, extent of renewable energy capacity and use, additional carbon sinks etc.

(b) Crucial carbon sinks that mitigate GHG, such as forests and wetlands, have not been taken into account.

(c) India's low emissions trajectory, unlike high historical trajectories of developed countries, has been ignored. The US and the EU should have the highest burden considering their historic emissions.

(d) The EPI assumes every country is in the same position economically, developmentally and environmentally, therefore all have to achieve net zero emissions by 2050.

(e) The index emphasizes **the extent of protected areas rather than the quality of protection** that they afford. The computation of biodiversity indices does not factor in management effectiveness evaluation of protected areas.

(f) Indicators such as **agro biodiversity, soil health, food loss and waste** are not included even though they are important for developing countries with large agrarian populations.

INDIA: KEY INDICATORS

Country	Rank	Score	10-yr change
Ecosystem vitality	**178**	**19.30**	**-2.10**
Biodiversity	179	5.80	-0.50
Species protection	175	0.30	NA
Tree cover loss	75	17.20	-7.80
Wetland loss	60	62.00	-38.00
Pesticide management	47	45.30	NA
Health	**178**	**12.50**	**2.90**
Air Quality	179	7.80	NA
PM2.5	174	NA	-5.10
Household solid fuels	129	18.60	7.10
Sanitation & drinking water	139	19.50	9.6
Lead	174	20.6	4.3
Waste management	151	12.90	0.60
Climate policy	**165**	**21.70**	**-0.90**
Carbon dioxide growth rate	136	17.60	-5.70
Black carbon growth rate	1	100.0	44.7
Projected GHG emissions, 2050	171	0.00	NA
GHG per capita	53	66.80	-6.20

Dr Navroz Dubash, one of the authors of the latest report of the International Report on Climate Change (IPCC), has criticized the Index, "*The EPI 2022 is neither ethically correct nor reflects the political reality.*"

Despite the inconsistencies in the Environmental Performance Index, the Government should not ignore the fact that India was at 168th rank in 2020 and has never been in the top 150 countries since the index was started. This shows that there are severe environmental issues in India (especially air pollution) that need to be addressed urgently for attaining sustainable development.

#11 Microplastics found in Antarctica

News: Scientists have found presence of microplastics in fresh snow in Antarctica. This is the first time microplastics have been found in Antarctica.

About the Findings
Researchers from the University of Canterbury (New Zealand) have found 13 different types of micro-plastics in samples collected from 19 sites in Antarctica. The most common was polyethylene terephthalate (PET) mostly used in soft-drink bottles and clothing. This was found in 79% of the samples.

About Microplastics
Microplastics are tiny plastic debris that is smaller than 5 mm in length, and tinier than a grain of rice. There are two types of microplastics:
Primary microplastics: These are tiny particles that are purposely designed as such for commercial use, like in cosmetics, nurdles-plastic pellets used in industrial manufacturing and in fibres from synthetic textiles like nylon.
Secondary microplastics: These are formed through the degradation of larger plastic items like bottles, fishing nets and plastic bags. This occurs through exposure to the environment, like radiation from the sun, wind and ocean waves.

Presence of Microplastics
Microplastics may have travelled thousands of kilometres through the air, however, it is likely that the presence of humans in Antarctica has established a microplastic 'footprint'.

Impact of the Findings
Harmful Species can enter Antarctica: Microplastics can have harmful substances stuck onto their surfaces such as heavy metals, and algae. So they can provide a way in which harmful species can make it into some remote and sensitive areas.
Impact on local species: Ingestion of microplastics by various life forms in the region, from microorganisms like zooplankton to larger predators like king penguins can disrupt their usual biological processes and negatively impact the entire Antarctic food chain.
Increase Impact of Global Warming: Microplastics may also increase the impact of global warming. Scientists say dark-coloured microplastics deposited can absorb sunlight and enhance local heating.
Scavenging: When snow travels in the atmosphere, it binds itself to airborne particles and pollutants, which are then deposited on Earth's surfaces. This phenomenon is called '**scavenging**' Hence, this is a significant way in which microplastics are able to travel and further pollute land and water.
Increase Landslides and Avalanches: Fast-melting glaciers on mountain ranges in different parts of the world are increasingly becoming hazards, leading to landslides and avalanches and causing glacial lakes to burst their banks.

History, Art and Culture

#1 Antiquities Retrieved from Australia and the US

News: 10 antiquities (sculptures) retrieved from Australia and the US were handed over to the Government of Tamil Nadu.

Important Sculptures Recovered from Australia and the US

Dvarapala: This stone sculpture belongs to the Vijayanagar dynasty dating to the 15th–16th century. It is holding a *gada* in one hand and has another leg raised up to the level of his knee.

Nataraja: It is a depiction of *Shiva* belonging to the 11th–12th century. He is in *tribhanga* posture, standing on the lotus pedestal. Possibly, *ananda tandava* or the Dance of Bliss is portrayed here.

Kankalamurti: *Kankalamurti* is depicted as a fearsome aspect of Lord *Shiva* and *Bhairava*. The sculpture is four-armed, holding *ayudhas* such as *damaru* and *trishula* in the upper hands and a bowl and a trefoil shaped object, as a treat for the playful fawn, in the lower right hand. The idol is dateable to the 12th–13th century.

Nandikeshvara: It is a bronze image of *Nandikeshvara* dateable to the 13th century. It is shown standing in *tribhanga* posture with folded arms, holding an axe and a fawn in the upper arms with his forearms in *namaskara mudra*.

Four-armed Vishnu: It is dateable to the 11th century and belongs to the later Chola period. The sculpture has Lord *Vishnu* standing on a *padma* pedestal holding attributes such as *shankha* and *chakra* in two hands; while the lower right hand is in *abhaya* mudra.

Goddess Parvati: The image depicts a Chola-period sculpture dateable to the 11th century. She is shown holding a lotus in her left hand whereas the right is hanging down near her *kati.*

Standing child Sambandar: *Sambandar*, the popular 7th-century child saint, is one of the *Muvar*, the three principal saints of South India. It is said that after receiving a bowl of milk from Goddess *Uma*, the infant *Sambandar* devoted his life to composing hymns in praise of Lord Shiva.

The sculpture displays the saint's childlike quality while also empowering him with the maturity and authority of a spiritual leader.

#2 Lord Buddha's Relics taken to Mongolia

News: 4 Holy Relics of Lord Buddha were taken from India to Mongolia for an 11-day exposition as part of celebrations of Mongolian Buddha Purnima.

Display in Mongolia

The Holy Relics will be displayed at the Batsagaan Temple within the premises of Gandan Monastery in Mongolia. In India, these Holy Buddha Relics are currently housed in the **National Museum**. These relics are known as the '**Kapilvastu Relics**' since they are from a site in Bihar first discovered in 1898, which is believed to be the ancient city of Kapilvastu.

About the Sacred Relics of Buddha

At the age of 80, Lord Buddha attained salvation in Uttar Pradesh's Kushinagar district.

The **Mallas of Kushinagar cremated his body** with ceremonies befitting a universal king.

His relics from the funeral pyre were collected and divided into **eight shares** to be distributed among the **Ajathsatrus** of Magadha, **Licchavis** of Vaishali, **Sakyas** of Kapilavastu, **Mallas** of Kushinagar, **Bullies**

of Allakappa, **Mallas** of Pava, **Koliyas** of Ramagrama and **a Brahmana of Vethadipa**. The purpose was to erect stupas over the sacred relics.

Stupas erected over the bodily relics of Buddha (*Saririka* stupas) are the earliest surviving Buddhist shrines. It is also said that Ashoka (272–232 BC) opened up seven of these eight stupas and collected a major portion of the relics for enshrinement within 84,000 stupas built by him in an effort to popularize Buddhism as well as the cult of the stupas.

About Kapilavastu

Kapilavastu was an ancient city on the Indian subcontinent which was the capital of the clan of the Shakyas. Buddhist texts such as the Pāli Canon claim that Kapilavastu was the childhood home of Gautama Buddha, and the capital of the Shakyas.

#3 Restoration of *Anang Tal, Delhi*

News: The Government is going to restore the 11ᵗʰ century grand water reservoir, *Anang Tal*, in Delhi.

About the *Anang Tal* Lake

It is a water reservoir built by the founder **King of Delhi, Anang Pal Tomar** in 1052 CE. It was built behind the famous 27 Hindu-Jain temples in the Mehrauli area. The *Vishnu Garud Dhwaj* (popularly known as the Iron pillar) was a dharmic flag standard in front of Anang Pal's Vishnu Temple.

Later these temples were razed to the ground by **Qutubuddin Aibak** and the ruins were used to build Jami mosque, which later became known as **Quwwatul Islam mosque**.

The detailed survey map of the area reveal the information regarding the beautiful staircase leading to the Tal and its precise measurements. The millennium-old *Anang Tal* signifies the beginning of Delhi.

A detailed survey of the area found several encroachments besides sewage drains emptying in the 1200-year-old historic mini-lake.

About Anangpal Tomar

Anangpal II was popularly known as Anangpal Tomar. He belonged to the Tomar dynasty. He was the founder of Dhillika Puri, which eventually became Delhi.

This is revealed by the stone inscriptions excavated by **Lord Cunningham**. The inscriptions and coins suggest that Anangpal Tomar was the ruler of present-day Delhi and Haryana between the 8ᵗʰ-12ᵗʰ centuries. He was succeeded by his grandson Prithviraj Chauhan.

#4 History of Kolkata

News: Recent excavations by the Archaeological Survey of India at a mound outside the Robert Clive House in Dum Dum have revealed evidence of settlements in Kolkata that can be 2,000 years old. This has provided further evidence of human habitation in Kolkata centuries before Job Charnock is said to have founded the city.

About Kolkata

Kolkata is widely considered to be a colonial city with its grand colonial structures like Victoria Memorial, Town Hall, Metcalfe Hall, and St. John's Church.

Job Charnock, an English administrator who landed in the city in the mid-17th Century is considered the founder of the city as he took control of three villages Sutanuti, Gobindapur and Kalikata.

However, a 2003 judgment of the Calcutta High Court ruled that the English administrator cannot be called the 'founder of Kolkata'.

High Court Ruling

The Court ruling is based on a report from an academic committee. The committee found that a "highly civilized society" and "an important trading centre" had existed on the site long before Charnock established his settlement. The committee also found that a place called Kalikatah was an important

religious center adjacent to Kalighat village with its Kali temple. The site is mentioned in Bipradas Pipilai's Manasa Mangala (1495) and Abul Fazl's Ain-I-Akbari (1596).

Further, the excavations at Chandraketugarh about 25 km from the present demarcations of Kolkata had also provided some evidence in the 1950s and the 1960s.

About Clive House

Clive House is one of the oldest buildings in Kolkata. It is named after Robert Clive, the first British Governor of Bengal Presidency who used it as a country house. Some records mention a treaty between Nawab Siraj ud-Daulah and Robert Clive in this building on February 6 or 9, 1757.

#5 Gifts for QUAD Leaders

News: The Prime Minister of India travelled to Tokyo to attend the QUAD Summit. He presented unique gifts to the President of the US and the Prime Ministers of Australia and Japan showcasing India's rich cultural heritage and art forms.

Sanjhi Art Panel for the President of the USA Joe Biden

The intricate **sanjhi panel** is based on the theme of **Thakurani Ghat**. It is one of the most famous ghats on the banks of the holy river of Yamuna in Gokul.

The traditional art form involves creating stencils based on incidents from the life of the deity (Lord Krishna) and then hand-cutting these on thin sheets of paper using scissors. *Radha*, according to Hindu mythology, used to paint sanjhi patterns on the walls for her beloved Krishna and later the gopis of Vrindavan followed suit.

Later, the form was used to make **ceremonial rangolis in temples dedicated to Lord Krishna.** In fact, the term '*sanjhi*' is derived from '*sanj*' or dusk and is related to the practice of **making rangolis in temples at dusk**.

In the form of painting, *sanjhi* was popularised in the 15th and 16th centuries by the **Vaishnava temples** and was practiced by **Brahmin priests.** During the Mughal period, **contemporary themes were added**. Several families have continued to practice the form to this day. During the 2010 Commonwealth Games, the pictograms were inspired by traditional *Sanjhi* art.

Gond art painting for Australian PM Anthony Albanese

The art in its visual form is often traced to **Jangarh Shyam**, who in the 1970s-80s began drawing the largely oral myths and legends of the tribe onto the walls of homes in the village of Patangarh.

The art form told the tale of their **gods and goddesses** and as well as the **flora and fauna** of the deep forests in Madhya Pradesh.

As the form received global recognition, several Gond artists have gained prominence and recognition. The prominent names include Bhajju Shyam, Venkat Shyam, Durgabai Vyam, Ram Singh Urveti and Subhash Vyam, among others.

Wooden hand-carved box with a *Rogan* painting for Japanese PM Fumio Kishida

The PM gifted PM Kishida a hand-carved deep brown wooden box with a gold and white *Rogan* painting on a green cloth as its central motif.

Rogan is a form of **cloth painting** that is considered to be **more than 4 centuries old** and is primarily practised in Kutch district of Gujarat.

The word '*rogan*' comes from Persian, meaning varnish or oil.

The craft uses paint made from **boiled oil and vegetable dyes**, where castor seeds are hand-pounded to extract the oil and turned into a paste by boiling.

Usually, only half the fabric is painted, and it is folded to create a mirror image. While originally only men used to practice the art form, now **several women in Gujarat also pursue it**.

The PM had also gifted a *Rogan* painting to the Queen of Denmark, Margrethe II, during his three-day visit to Europe earlier in May 2022.
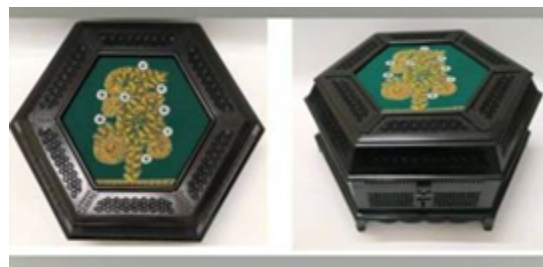
Miscellaneous

#1 Rock Zone Beneath the Surface of Earth

News: Scientists have scanned a rock structure that is located 3,000 km beneath the island of Hawaii. It is known to slow down earthquake waves.

About the Findings

Scientists have found a rock structure that is located 3,000 kilometres beneath Hawaii.

This structure is known to slow earthquake waves. They found that the speed of the earthquake waves travelling through the base could be 40% slower than the surrounding regions.

Formation of ultra-low-velocity zones

The Rock Structure's origins can be traced to around 4 billion years ago when the Earth was in an infant stage. Around this time, scientists believe a Mars-sized rock crashed into the earth raising the planet's temperatures and creating a magma ocean.

At some point, the iron materials likely descended deep into the interiors forming pockets called the ultra-low-velocity zones.
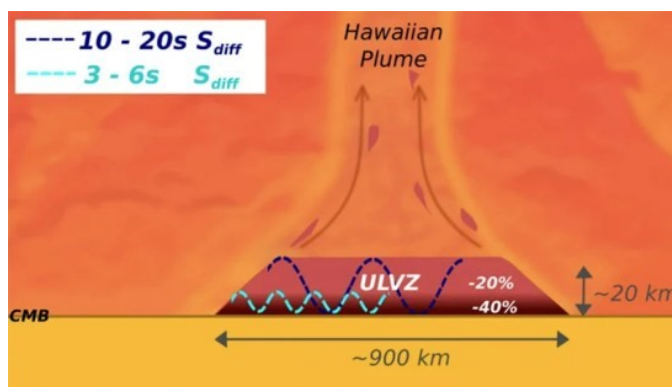
#2 Avulsion: Change of Course by Rivers

News: According to a new study, rivers lining tropical and desert regions are more likely to change directions. These rives expose the surrounding areas to floods as they change their route.

Avulsion

Avulsion means a sudden cutting off of land by flood or change in course of a body of water. Avulsions are rare, occurring only once a decade or century, or even less. Avulsions are infrequent in nature compared to more frequent extreme weather events and the effect of sea-level rise.

Key Findings of the study on Avulsions

The study documented satellite imagery from 1973-2020 and historical maps of 113 avulsions worldwide and categorized them into three types.

Type 1: According to the study, in 33 instances, rivers changed routes in the bases of mountains while descending onto unconfined valleys or open oceans. For example, the Kosi river belongs to this category.

Type 2: Along backwater zones, part of the river flows differently because of the effects of the downstream sea. They documented 50 such instances occurring on low sloping deltas along some of the world's largest waterways, like the Orinoco, Yellow, Nile and Mississippi Rivers.

Type 3: Occurs in rivers with extreme sediment load.
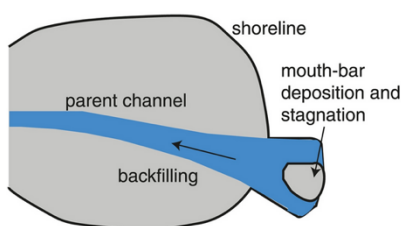
Reasons for Avulsions

The findings of the study predicted various factors for avulsions. The study found a common factor in all three categories as sediments. **Sediments are known to fill up river beds, forcing rivers to seek new channels during floods**.

Kosi-like systems bring a lot of sediments from the Himalayas. **After embankments** were made on either side of the river in the 1950s, it became **much more unstable**. Before the embankment, the river could distribute sediments along the 200-kilometre stretch. Now that has been reduced to 10 km. Hence, the area available for its movement has gone down.

(a) Avulsion setup
(b) Avulsion trigger
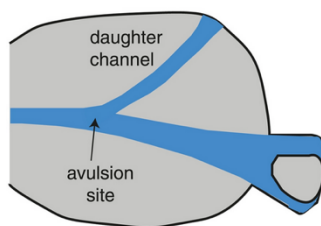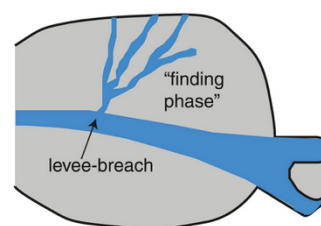(c) Flow path selection
(d) Channel abandonment

Rising sea levels can push avulsions farther inland in the backwater zone.

Temporary solutions like embankments exist. Such temporary solutions contribute to a false sense of protection and even **amplify degradation by limiting natural sediment dispersal**. This distributes the flow of the water and sediments across channels, dissipating floods and avulsion.
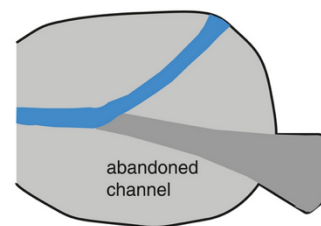
Significance of the Findings

Around 330 million people live on river deltas worldwide, and many more live along river corridors. It is essential to understand how river mobility will change in response to climate change and anthropogenic interference. In India, the Kosi River abandon its established channel for an older one in 2008. This resulted in displacing 3 million people and claiming more than 250 human lives.

#3 Sustainable Development Report, 2022

News: The Sustainable Development Report, 2022 has been released.

About the Report

The Report has been release by the Sustainable Development Solutions Network (SDSN).

It is a global assessment of countries' progress towards achieving the Sustainable Development Goals (SDGs). It is a complement to the official SDG indicators and the voluntary national reviews.

Key Findings related to India

India's Rank: India's rank in the report has slipped for the 3rd consecutive year. It has been ranked 121 out of the 163 countries in 2022. India ranked 117 in 2020 and 120 in 2021.

India is not placed well to achieve the SDG goals and its preparedness has worsened over the years in comparison with other countries.

India continues to face major challenges in **achieving 11 of the 17 SDGs** which has pushed down its ranking.

The progress in around 10 of these goals has been almost static. These include SDG 2 on ending hunger, SDG 3 on good health and well-being and SDG 6 on clean water and sanitation. Ensuring decent work (SDG 8) has become even more challenging. However, **India is on track to achieving SDG 13 on climate action**.

#4 Life Expectancy in India

News: The Abridged Life Tables Report for the period 2015-19 has been released by the Sample Registration System (SRS).

Key Findings from the Report

India's Life Expectancy: India's life expectancy at birth has increased to 69.7 in the 2015-19 period. This is well below the estimated global average life expectancy of 72.6 years.

Life Expectancy over 45-year Period: India's life expectancy at birth increased from 49.7 in 1970-75 to 69.7 by 2015-19. Odisha has had the highest increase of over 24 years from 45.7 to 69.8 years followed by Tamil Nadu, where it increased from 49.6 to 72.6 years.

Difficulty in Raising Life Expectancy: It has taken almost 10 years for India to add 2 years to life expectancy.

The data suggest that **high infant** and under-5 mortality could be the reason India finds it difficult to raise life expectancy at birth faster.

Huge Rural-Urban Variations: Within India, there are huge variations across states and between urban and rural areas. **Kerala is the only state where rural life**

C'GARH HAS LOWEST LIFE EXPECTANCY

	Male	Female	Total (in %)
Delhi	74.3	77.5	75.9
Kerala	72.3	78	75.2
J&K	72.6	76.1	74.2
Himachal Pradesh	69.9	77.1	73.1
Punjab	71.1	74.7	72.8
Maharashtra	71.6	74	72.7
Tamil Nadu	70.6	74.9	72.6
West Bengal	71	73.2	72.1
Uttarakhand	67.6	73.9	70.6
Andhra Pradesh	68.9	71.8	70.3
Gujarat	67.9	72.8	70.2
Haryana	67.7	72.6	69.9
Odisha	68.5	71.1	69.8
Karnataka	67.9	71.3	69.5
Jharkhand	70.2	68.8	69.4
Bihar	69.6	68.8	69.2
Rajasthan	66.8	71.3	69
Assam	66.8	68.3	67.5
Madhya Pradesh	65.2	69.1	67
Uttar Pradesh	65	66.2	65.6
Chhattisgarh	63.7	66.9	65.3
India	**68.4**	**71.1**	**69.7**

Source: SRS abridged life tables 2015-19

expectancy was higher than urban life expectancy for both men and women. In Uttarakhand that was the case among women.

Bihar and Jharkhand remained the only states where male life expectancy was higher than for women in both urban and rural areas.

Global Trends

As per UN's Human Development Report, 2019

In the neighbourhood, Bangladesh and Nepal now have a higher life expectancy at birth of 72.1 and 70.5 respectively. Japan has the highest life expectancy of 85. Norway, Australia, Switzerland and Iceland had a life expectancy of 83.

#5 Severe Malnutrition in India: UNICEF Report

News: UNICEF has released a report titled '*Severe Wasting: An Overlooked Child Survival Emergency*'.

About Severe Wasting

Wasting is defined as **low weight-for-height**. It is the most visible and lethal type of malnutrition. It affects over 45 million children under age 5. Severe wasting (also known as severe acute malnutrition) is its most deadly form. It is caused by a **lack of nutritious food** and **repeated bouts of diseases** such as diarrhoea, measles and malaria, which compromise a child's immunity.

Severe wasting in a child can increase the risk of dying by pneumonia by 11 times and essentially makes otherwise common diseases fatal.

Key Findings of the Report

Severe Wasting: Globally, 1 in 5 deaths among children under age 5 is attributed to severe wasting making it one of the top threats to child survival.

Region-wise: South Asia remains the hub of severe wasting with figures worse than sub-Saharan Africa. At least 7.7 million children in the region are affected.

Country-wise: **India** has 57,72,472 children below five years affected by severe wasting — the **most in the world**. Indonesia ranked second with 812,564 children suffering from severe wasting.

Ready-to-use therapeutic food (RUTF) saved some 5 million children's lives in 2020, but 10 million severely wasted children went without it.

RUTF is considered the 'gold standard' for wasting treatment. It consists of a paste of peanuts, sugar, oil and milk powder. It can be consumed directly from the sachets it is packed in with or without mixing with milk to lower the chances of contamination.

Pointly

1. **I2U2**

   I2U2 is the grouping formed by 4 nations: **India, Israel, the UAE and the US.** The 1st summit of I2U2 nations will be held in a virtual mode in July 2022. Issues like food security and other areas of cooperation will be discussed at the summit. The group members met for the first time under a new framework in October 2021. At that time, the grouping was called **'International Forum for Economic Cooperation'.** The Ambassador of UAE to India had referred to the new grouping as the '**West Asian Quad'.**

2. **Test of Agni-IV Missile**

   India has conducted a "routine user training" launch test of its Nuclear-Capable Agni-IV missile. Agni-IV is an Intermediate Range Ballistic Missile (ICBM). It has been developed by DRDO. It has a range of around 4,000 km. It can carry a 1,000-kg payload and can go as high as 900 km. The successful test reaffirms India's policy of having a '**Credible Minimum Deterrence**' Capability.

3. **Credible Minimum Deterrence**

   Credible Minimum Deterrence is **the principle on which India's nuclear strategy is based**. It underlines No-First Use (NFU) with an assured second-strike capability and falls under **minimal deterrence** as opposed to **mutually assured destruction**.

4. **Prithvi-II Missile**

   The night trial of Prithvi-II has been conducted successfully. It is a **Surface-to-Surface short-range ballistic missile (SRBM)**. It has been developed by DRDO under the **Integrated Guided Missile Development Program** (IGMDP). Its range is 350 kms. It is capable of carrying 500-1,000 kg of warheads. The missile is capable of striking targets with a very high degree of precision. The missile is powered by liquid propulsion twin engines. The missile also uses an **advanced inertial guidance system** with manoeuvring trajectory to hit its target.

5. **Astra Mk-1 Missile**

   The Astra Mk-1 is a **beyond visual range (BVR) air-to-air missile (AAM)**. BVM missiles are capable of engaging beyond the range of 20 nautical miles or 37 kilometres. AAMs are fired from an airborne asset to destroy an airborne target. It has been designed and developed by DRDO for **deployment on fighter jets** like Sukhoi-30 MKI and Tejas of the IAF and the Mig-29K of the Navy. Its range is 110 kms. The missile can travel at **speeds more than four times that of sound**. AAMs with BVR capability provides large stand-

off ranges to fighter aircraft. This can neutralize adversary airborne assets without exposing themselves to adversary air defence measures. **Stand-off range** means the missile is launched at a distance sufficient to allow the attacking side to evade defensive fire from the target.

6. **High Mobility Artillery Rocket Systems (HIMARS)**

   The United States has announced that it is sending its High Mobility Artillery Rocket Systems known as **HIMARS** to Ukraine. It is a multiple launch rocket system or MLRS – a mobile unit that can simultaneously launch multiple precision-guided missiles.

7. **Exercise Khaan Quest 2022**

   It is a multinational peacekeeping exercise **hosted annually by the Mongolian Armed Forces.** The exercise saw participation from military contingents from 16 countries. India was one of the participating countries.

8. **Exercise *Sampriti***

   It is joint military exercise between India and Bangladesh. The exercise is hosted alternately by both countries. The aim is to strengthen the military relations between the two countries.

9. **Exercise Bongosagar**

   The 3rd edition of Indian Navy (IN) – Bangladesh Navy (BN) Bilateral Exercise 'Bongosagar' was held at Port Mongla, Bangladesh. It is a maritime exercise. Its first edition was held in 2019.

10. **'Wargame Research and Development Centre (WARDEC)**

    WARDEC will be a first-of-its-kind simulation-based training center in India that will **use artificial intelligence (AI) to design virtual reality wargames**. The centre will be used by the Army to train its soldiers and test their strategies through metaverse-enabled gameplay. Soldiers will test their skills in the metaverse where their surroundings will be simulated using a combination of virtual reality (VR) and augmented reality (AR). It will be developed by Gandhinagar-based Rashtriya Raksha University (RRU).

11. **5G Testbed**

    The 5G testbed has been developed as a multi-institute collaborative project by 8 institutes led by IIT Madras. It will enable start-ups and industry players to test and validate their products locally and reduce dependence on foreign facilities.

12. **PARAM PORUL Supercomputer**

    PARAM PORUL supercomputing facility has been established under Phase 2 of the National Supercomputing Mission (NSM) at NIT Tiruchirappalli with 838 TeraFlops Supercomputing Facility. The majority of the components used to build this system have been manufactured and assembled within the country, along with an indigenous software stack developed by C-DAC, in line with the Make in India initiative. The system is based on **Direct Contact Liquid Cooling technology** to obtain a high power usage effectiveness and thereby reducing the operational cost.

13. **PARAM ANANTA**

    PARAM ANANTA supercomputing facility has been established under Phase 2 of the NSM at IIT Gandhinagar with 838 TeraFlops Supercomputing Facility. It is also based on Direct Contact Liquid Cooling technology. With Param Ananta, India now has 15 supercomputers with a combined performance capability of 24 petaflops.

14. International Liquid Mirror Telescope (ILMT)

The International Liquid Mirror Telescope (ILMT) has been commissioned in **Devasthal, Uttarakhand**. It has been built by India, Belgium and Canada. It is located at an altitude of 2450 meters at the Devasthal Observatory campus of **Aryabhatta Research Institute of Observational Sciences** (ARIES). It is the first liquid mirror telescope in the country and the largest in Asia.

15. Blazars

Blazars are **super massive black holes** (SMBH) feeding on gas in the heart of a very distant galaxy. They are among the most luminous and energetic objects in the Universe. When the jet, composed of ionized matter travelling at nearly the speed of light, is pointed towards an observer, it is called a blazar.

16. Killer Asteroids

Killer asteroids are the asteroids that are capable of killing thousands or millions of humans, if they were to hit the Earth. It does not necessarily mean that they are on a collision course for Earth. NASA has developed a tool that could help in identification of killer asteroids. The tool looks at older images stored in the digital archives at the National Optical-Infrared Astronomy Research Laboratory (NOIRLAB). The algorithm then identifies the possible killer asteroids (from over 68 billion dots of cosmic light showcased in the images). Thus it helps to discover what has already been seen but not noticed.

17. West Nile Virus

It is a **mosquito-borne**, **single-stranded RNA virus**. It is a member of the *flavivirus* **genus** and belongs to the Japanese encephalitis antigenic complex of the family *Flaviviridae*. Currently, the virus is found commonly in Africa, Europe, the Middle East, North America, and West Asia. **Culex species of mosquitoes act as the principal vectors for transmission**. It is transmitted by infected mosquitoes between and among humans and animals, including birds, which are the reservoir host of the virus. To date, **no human-to-human transmission of WNV through casual contact** has been documented. A man in Thrissur (Kerala) died recently due to West Nile Virus.

18. Monkeypox

Monkeypox is a **viral zoonotic disease (a disease that is transmitted from infected animals to humans)** that occurs primarily in tropical rainforest areas of Central and West Africa. It is occasionally exported to other regions. Monkeypox belongs to the **orthopoxvirus,** (same genus as that of variola virus which causes smallpox). **Human-to-human transmission is very limited**. Transmission can be through contact with bodily fluids, lesions on the skin or on internal mucosal surfaces, such as in the mouth or throat, respiratory droplets and contaminated objects. There is no safe, proven treatment for monkeypox yet. According to the WHO, the proportion of patients who die has varied between 0 and 11% in documented cases, and has been higher among young children.

19. First Movers Coalition

India has joined a public-private partnership initiative called First Movers Coalition. It was launched by the President of the USA and the World Economic Forum (WEF) at COP26 in Glasgow in November 2021. The aim of the initiative is to **decarbonise the heavy industry** and **long-distance transport sectors** that are responsible for **30% of global emissions**. The target sectors include aluminium, aviation, chemicals, concrete, shipping, steel and trucking. Without any urgent progress on clean technology innovation, these sectors might witness over 50% of global emissions by mid-century.

20. Lifestyle for the Environment – LiFE Movement

The Prime Minister has launched a global initiative 'Lifestyle for the Environment – LiFE Movement'. The idea of LiFE was introduced by the **Prime Minister during the 26th United**

Nations Climate Change Conference of the Parties (COP26) in Glasgow in 2021. Its aims is to promote an environment-conscious lifestyle that focuses on '**mindful and deliberate utilization**' instead of '**mindless and destructive consumption**'. It promotes a lifestyle that is in tune with the planet and does not harm it and those who live such a lifestyle are called Pro-Planet People.

21. Sela Macaque

A new species of old world monkey (Sela macaque) recorded from **Arunachal Pradesh** has been named after Sela mountain pass. Sela Macaque belongs to the **sinica species group of Macaca**. But it differs from all other members of this group through attributes such as brown collar hair and muzzle, and the absence of chin whiskers.

The Sela macaque was **geographically separated from the Arunachal macaque** (Macaca Munzala) by Sela mountain pass. This mountain pass acted as a barrier by restricting the migration of individuals of these two species for approximately 2 million years. Sela macaque is a major cause of crop loss in the West Kameng district of Arunachal Pradesh. Hence, it faces threats due to man-wildlife conflicts.

22. Cantor's Giant Softshell Turtle

Cantor's giant softshell turtle (*Pelochelys cantorii*) is known commonly as the Asian giant softshell turtle and the frog-faced softshell turtle. It is a species of **freshwater turtle** in the family Trionychidae. The turtle gets its name from Theodore Cantor, a Danish zoologist who worked for the British East India Company. Its extent **ranges from Malaysia to India**. Its presence in India has been recorded only a dozen times in 20 years, with sightings being reported anecdotally from Odisha, Tamil Nadu, and West Bengal. Its IUCN Status is **Critically Endangered**. The turtle can grow up to a meter in length and weigh 100 kg. It is one of the few **freshwater species** which is **at home in saline waters too**. The turtle inhabits inland rivers and is thought to keep to deep depths.

23. *Posidonia Australis*: World's Largest Plant

It is also known as ribbon weed is a species of seagrass. It was discovered in the shallow waters of the World Heritage Area of **Shark Bay in Western Australia**. The plant is estimated to be at **least 4,500 years old**. It stretches across **180 km in length**. The plant appears to be extremely resilient without successful flowering and seed production. This plant is unique from others as it has twice as many chromosomes as its relatives. This makes it what scientists call a '**polyploid**'. Polyploids instead of taking half-half genome from both parents, take 100% genome of each of their parents, something not unheard of in plants.
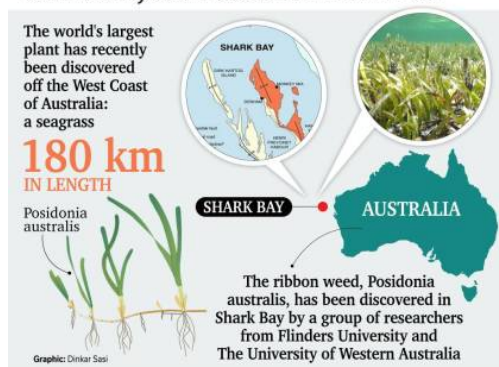
24. Money Spiders

Money spiders are commonly found in **European meadows**. They have been **reported for the first time in the country from the Muthanga range of the Wayanad Wildlife Sanctuary**. Money Spider belongs to the family of dwarf spiders (Linyphiidae) under the genus Prosoponoides. The male and the female money spiders are typically 3 mm and 4 mm long respectively. Females build triangular webs in between dry tree twigs and feed on small insects, while males prefer to hide beneath dry leaves. Only 6 species of spiders belonging to this

genus have been identified from across the world so far. It is the first report of this genus from India. Hence, there might be more such findings in future.

25. *Neeli Jheel* as Ecotourism Hub

The Government of Delhi has given permission to develop the area near Neeli Jheel in Asola Bhatti Wildlife Sanctuary as an ecotourism hub. It is a large lake hidden in the thick scrub forests of the **Asola Bhatti Wildlife Sanctuary**. It will get a natural stepped seating facility, amphitheater, selfie point, toilets, 3D animal exhibits, and parking. The bamboo and other eco-friendly products would also be used for the beautification of the place. e-vehicles would be used to ferry a limited number of people inside the sanctuary.
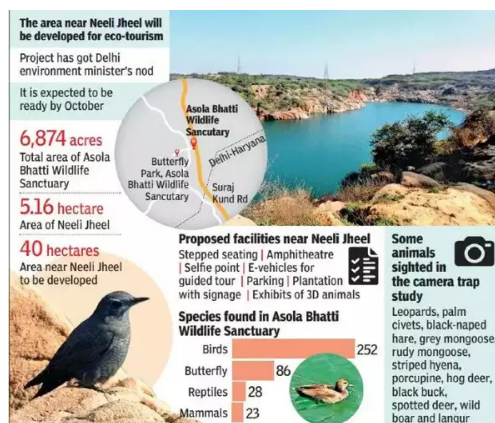
26. Asola Bhatti Wildlife Sanctuary

It is situated in the **South Delhi Ridge section of the Aravalli range** on the **Delhi-Haryana border**. The sanctuary contains one of the last surviving remnants of the Delhi Ridge hill range, its **semi-arid forest habitat** and its dependent wildlife. The sanctuary has 23 species of mammals, 252 bird species, 28 reptile species, and 86 butterfly species. Animals sighted here include leopards, jackals, palm civets, black-naped hare, grey mongoose, rudy mongoose, striped hyena, porcupine, hog deer, black buck, spotted deer, wild boar and langur. Historical places around the sanctuary are Surajkund and Anangpur Dam (both in Haryana), Tughlaqabad Fort and Adilabad ruins (both in Delhi), Chhatarpur Temple (in Delhi).

27. Coal Gasification

The Ministry of Coal has prepared a National Mission document to achieve 100 MT Coal Gasification by 2030. Coal gasification is a process in which coal is partially oxidised with air, oxygen, steam or carbon dioxide to form a fuel gas. This gas is then used instead of piped natural gas, methane and others for deriving energy. China has the biggest number of coal gasification projects in the world. 5% of China's total coal consumption is from its gasifier. It can be used in the production of electricity and making chemical products such as fertilisers. Coal gasification is one of the more water-intensive forms of energy production. There are concerns about water contamination, land subsidence and disposing of wastewater safely.

28. *Jan Samarth* Portal

The Portal was launched by the Prime Minister. It is a unique digital portal linking 13 credit-linked Government Schemes on a single platform. **The portal will be an 'end-to-end delivery platform'** and more people will come forward to avail of loans because of the ease of compliance. The portal will help reduce turnaround time and facilitate faster sanction of loans to beneficiaries.

NOTE : *With effect from 1st February, 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.*