

**JANUARY 2021**

# IAS GOOGLE

REDEFINING YOUR GOOGLE

A Magazine by

**RAJA SIR'S**  
Cracking IAS Academy  
*Since 2005 - Feel The Pulse of UPSC*

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### Neurodiversity 'the new frontier of inclusion'

Tahira, a **single mother of a child with autism**, shared with me that the **society's obsession** with normality had convinced her that her four-year-old child was “damaged” and she, as a mother, was a “failure”. **Her words made me reflect on our compulsive need** to compare, categorise and label children. The further the child is from that **benchmark of “normality”**, the more they are ranked as deficient and measures taken to fix them.

**Neurodivergence: Each child is wired and inspired differently.** Some might struggle with the acquisition of skills like reading, writing, sustaining effort, awareness and responding to their social environment. These might pose **difficulties for some children as they don't meet society's expectations**, leading to typical diagnoses psychiatrists or psychologists might assign to them: **dyslexia, attention-deficit hyperactivity disorder (ADHD), autism**, etc. It's important to highlight that in spite of the struggles, **neurodivergence is not a problem**, as long as there is no accompanying stigma and underlined conclusion of the child being “**disordered**”, “**deficient**”, with restricted possibilities or hopes for the future.

**Neuronormativity:** It **perpetuates the problematic notion of a neurohomogenous** world where all the neurodivergent children are seen as not “normal” and have to be “fixed” and treated to fit in, be compliant and obedient. Their parents, typically mothers, feel blamed and shamed for not doing enough or being at fault for having children who have flawed neural circuitry. Tahira said, “**The pandemic has been a blessing**, as I don't have to take my child out and face society's harsh judgements for having a damaged child.”

**Neurodumping:** I have come up with this word in exasperation at the **one-size-fits-all approach**. A typical example is “**special children**” which many schools use for **neurodivergent children**. Many times, when I've asked teachers, how many children do they have in their class, they'd reply with something like, “25 +3!” Three being the “special children”, of course! I wonder if anybody has asked these children how they feel about being called “special”? A 10-year-old girl once

told me vehemently, “I hate being special. I’m teased in my school and carpool for being special. How do I become non-special?”

**Neuroconceal:** It is a **concept introduced by narrative practitioner David Denborough** to throw light on how, by locating the “deficits” in the child, we invisibilise and obscure issues of **social justice**. Of how it robs them of simple experiences of life that we take for granted – getting admission in schools, being invited to birthday parties, getting acknowledged for their skills and achievements (and not in the “special” section category), being respected by their teachers and other adults and not sniggered at, bullied, ridiculed for minor lapses and ostracised as being “weird”. What strikes me constantly is the day-to-day injustice that neurodivergent children and their families have to face, which becomes a larger problem than their atypical wiring.

**Neurodiversity:** The term was introduced by activist Judy Singer, who’d said, “**I was interested in the liberatory**, activist aspects of it – to do for neurologically different people what feminism and gay rights had done for their constituencies.” **Neurodiversity culture has a huge global following now**, and their basic belief is that being **neurodivergent is not a disorder or an illness** but a way of being.

### **Human rights on the spectrum**

The biggest problem with the notions of **neuronormativity and neurodumping** is that it propagates one “normal” kind of mind, thereby stigmatising anything which is atypical. Like the **LGBTQ+ movement**, we need to question this – who does it serve, benefit and privilege? Who gets invisibilised, obscured and rejected?

The person is not the problem; the problem is the problem and the **problem is mostly social**: This narrative practice mantra locates the problem where it belongs – not in the child but in the **sociocultural context** where these normalising judgements decide a child’s worthiness of being valued, respected, included, or to be discarded. In our organisation, we work with children where it’s not the neurodivergence which poses a problem but the consequent struggles with

depression, anxiety, addictions, trauma and abuse resulting from a society that robs them of their **dignity, safety and basic human rights**.

**People are multistoried:** We have to move away from **neurodumping and single-story accounts**, whether in terms of labels or in the way we describe children in rigid binaries of good or bad, smart or dumb, obedient or rebellious with not much room for anything in between. **A child might prefer to play on her own**, building castles with boxes; another might like to fiddle with his fingers as he jumps merrily and recites complex math formulae; and yet another may awe you with her **in-depth knowledge of marine life** but be completely confused by societal complexities.

**People are people through other people:** Desmond Tutu's words remind me, the way we talk to our children becomes their inner voice, and the way we talk about them become their life stories. Children build their sense of self or identity on what stories are being circulated about them at home, in schools. A sobbing child once told me, "I'm a human being, not a disorder". We need to build communities of concern for our children where they are valued and welcomed for who they are and not stigmatised for who they are not.

**Personal commitment:** I always have a sense of wonder at the **parents' commitment** to do whatever it takes to do the best for their children. But is this just their responsibility? Don't we all need to play a role in ensuring that our children are not being deprived of their basic human rights? We need to stop apologising for our neurodivergent children and instead practice advocacy – for and with them. Temple Grandin, herself on the spectrum and an advocate for people with autism, had remarked, 'I am different, not less'. So, the next time, a relative rolls his/her eyes at your "badly-behaved child" or a teacher tells you your child isn't capable of learning, take a deep breath, smile and tell them, "He experiences life differently. Let me know if you want to learn more about it."

**Children live in a world that fails them in so many ways.** We need to be better, do better and ensure we're working towards a more just world which honours all kinds of minds.

## ECONOMY

### 1.1 India's Gross Domestic Product (GDP) contracted 7.5%

- India's Gross Domestic Product (GDP) contracted 7.5% in the second quarter of 2020-21, following the record 23.9% decline recorded in the first quarter, as per estimates released by the National Statistical Office.
- The country has now entered a technical recession with two successive quarters of negative growth.
- Agriculture, which was the only sector to record growth between April and June this year, grew at the same pace of 3.4% in the second quarter.
- Manufacturing gross value-added (GVA) staged a sharp recovery to record 0.6% growth between July and September after collapsing 39.3% in the first quarter.
- Electricity, gas, water supply and other utility services also recorded 4.4% growth in the second quarter, recovering from a 7% contraction in Q1.
- But it remained a bleak quarter for several sectors, including mining, services such as retail trade and hotels, construction and financial services.
- While the 7.5% contraction in GDP came as a positive surprise, there are concerns about a decline in government spending and the worsening fate of two key sectors compared to the first quarter.

### 1.2 Indian Economy Growth Story

Recently, the Indian growth story continues to expand as is demonstrated by the trends in **FPI, FDI and Corporate Bond Market flows** that indicate and underline the **beliefs of investors in the strength and resilience** of Indian economy.

- COVID-19 has drastically affected the **investment climate in all economies** of the world, causing a sharp decline in the demand and supply equilibrium everywhere.
- The investment sentiment in the Indian economy has been buoyed by the **frequent and active intervention of the Government of India** despite being hit by a world-wide pandemic.

#### **Role of Foreign Portfolio Investment**

- The October and November 2020 have witnessed a **significant resurgence in FPI inflows** driven primarily by equity inflows resulting in the **highest ever FPI inflows** for a month for India.
- The inflow in November 2020 is the **highest amount of money invested** ever since FPI data has been made available by the National Securities Depository Ltd.
- FPI flows are known to be **less resilient and more sensitive** to changing market conditions.
- The investments through the FPI route are therefore **gauged through the metric of net inflow and outflow**.

### **Role of Foreign Direct Investment**

- The total **Foreign Direct Investments (FDI) inflows into India** during the second quarter of financial year 2020-21 have been US\$ 28,102 million, out of which **FDI equity inflows** were US\$ 23,441 million or Rs. 174,793 crore.
- It takes the **FDI equity inflows** during the financial year 2020-21 upto September 2020 to US\$30,004 million which is **15% more** than the corresponding period of 2019-20.
- Both FDI equity inflows and total FDI inflows into India have shown a **secular rise over the years**, with 2019-20 the year with the highest FDI in the last six years.
- The measures taken by the government on the fronts of **FDI policy reforms, investment facilitation and ease of doing business** have resulted in increased FDI inflows into the country.

### **Role of Bond Market**

- In the first half of the 2020-21, the total **corporate bond issuances** amounted to Rs. 4.43 lakh crore, 25% higher than Rs. 3.54 lakh crore in the same period last year.
- The narrowing spread with **G-Secs (Government Securities)** stands testimony to the **improved risk perception** of corporate bonds.
- The cost of funds also **moderated for both the Government and the corporate**, on the back of RBI's monetary easing and liquidity infusion.

### **1.3 Purchasing Managers' Index (PMI)**

Recently, the latest **Purchasing Managers' Index (PMI)** has indicated that nation's manufacturing sector lost momentum in November.

- The seasonally adjusted Purchasing Managers' Index (PMI) highlighted a **strong improvement in business conditions**.
- All three broad areas of the **manufacturing industry recorded expansion**, with growth led by consumer goods which was the only sector to see a stronger rate of increase.
- The activities in November **could not keep pace** with October, but that was still **higher than pre-Covid activities**.
- India's manufacturing sector activity **lost momentum** and fell to a three-month low in November amid **slower increases in factory orders, exports and buying levels**.

#### **Purchasing Managers' Index (PMI)**

- It is an **economic indicator** that is calculated from **monthly surveys of purchasing managers and supply** executives from specific companies.
- The Purchasing Managers' Index (PMI) data are **compiled by IHS Markit** for more than 40 economies worldwide.
- The PMI dataset features a **headline number**, which indicates the **overall health of an economy**, and **sub-indices**, which provide insights into other key economic drivers such as **GDP, inflation, exports, capacity utilization, employment and inventories**.
- The Purchasing Managers' Index is based on five major indicators are **new orders, inventory levels, production, supplier deliveries and the employment environment**.

#### **Significance of Purchasing Managers' Index (PMI)**

- The PMI Manufacturing gives an **indication of the economic health** of the manufacturing sector.
- The investors use PMI surveys as **leading indicators of economic health**, given their insight into **sales, employment, inventory, and pricing**.
- The purchasing managers' index is an extremely **important indicator for international investors** looking to form an opinion on economic growth.

### 1.4 India's Q2 GDP data contracts

Recently, **India's gross domestic product (GDP) contracted by 7.5%** during the second quarter of 2020-21.

- The contraction implies that in Q2 of 2020-21 **India produced 7.5% fewer goods and services** when compared to what India produced in Q2 of 2019-20.
  - In the process, India's economy has now **formally entered into a technical recession** because India has had two consecutive quarters when GDP growth rate has declined.
- **Economic recovery is fairly broad-based:** The GVA data provides a measure of national income by looking at the value-added by different sectors of the economy in that quarter.
  - The most surprising aspect of Q2 data is the positive growth **registered by India's manufacturing industry**.
- The **exports and imports have shrunk** but imports have shrunk relatively more than exports and, as such, net exports have improved marginally.
- The importance of **nominal GDP** especially from the point of view of India's forthcoming Budget.
  - The experts now expect that by Q4, the **nominal GDP growth rate will recover** so far that even after subtracting inflation rate; India would **register positive real growth** in at least the fourth quarter.

### 1.5 International Association of Insurance Supervisors (IAIS)

Recently, the **International Financial Services Centres Authority (IFSCA)** obtained membership of **International Association of Insurance Supervisors (IAIS)**.

- It is a **voluntary membership organization of insurance supervisors and regulators** from more than 200 jurisdictions, constituting 97% of the world's insurance premiums.
- It is established in **1994** with its headquarter in **Switzerland**.
- It is the **international standard-setting body responsible for developing and assisting** in the implementation of principles, standards and other supporting

material for the supervision of the insurance sector.

- It provides a forum for Members to share their experiences and understanding of **insurance supervision and insurance markets**.
- The **leading members** of IAIS are:
  - **United Kingdom**-Financial Conduct Authority (FCA),
  - **USA**-National Association of Insurance Commissioners (NAIC) and Federal Insurance Office of the Insurance of the United States Department of Treasury (FIO),
  - **Singapore**-Monetary Authority of Singapore (MAS),
  - **India**-Insurance Regulatory and Development Authority of India (IRDAI)

### **Significance of IAIS Membership**

- The IFSCA would have **access to IAIS's global network** and would be able to exchange ideas and information with other global regulators.
- It would help in **developing a vibrant global Insurance hub** in IFSC at GIFT City.
- The membership would go a long way in **connecting IFSC with global insurance institutions** and would facilitate IFSCA in joint development of global insurance business with other global centres.

### **1.6 Municipal Bond – Stock Exchange**

Recently, Rs. 200 crore municipal bonds of the **Lucknow Municipal Corporation (LMC)** were listed at **Bombay Stock Exchange**.

- Lucknow has become the **9th city in the country to have raised municipal bonds**, which has been incentivized by the Ministry of Housing & Urban Affairs under the mission AMRUT (Atal Mission for Rejuvenation and Urban Transformation).
- The bonds issue will ensure that the **LMC will get ₹26 cr to subsidise** its interest burden.
- It will help in **improving financial & municipal governance**, make city move on the path of self-dependence and provide necessary support for developing civic infrastructure.
- The bond issue from Lucknow Municipal Corporation is rated '**AA**' by **India Ratings** and '**AA (CE)**' by **Brickwork Ratings**.

- The tenure of the Lucknow Municipal Corporation bond is **10 years** and it is structured as a 'strip' bond with 7 STRRPs (A to G) and principal repayment to happen in 7 equal annual payments from the 4th year to the 10th year.

### Municipal Bonds

- Municipal bonds are **debt securities** issued by states, cities, counties and other governmental entities.
- It aims to **fund day-to-day obligations** and to **finance capital projects** such as building schools, highways or sewer systems.
- Municipal bonds in India **enjoy tax-free status** if they conform to certain rules and their interest rates will be market-linked.
- Municipal bonds exist in India since the year 1997 and **Bangalore Municipal Corporation is the first urban local body** to issue municipal bonds in India.
- The municipality should meet the **following eligibility criteria** to issue municipal bonds in India:

- The municipality must not have a negative net worth in each of the three previous years.
- The municipality must have no default in the repayment of debt securities and loans availed from the banks or non-banking financial companies in the last year.
- The municipality, promoter and directors must not be enlisted in the wilful defaulters published by the Reserve Bank of India (RBI).
- The municipality should have no record of default in the payment of interest and repayment of principal with respect to debt instruments.

### Advantages of Municipal Bond

- **Transparency:** Municipal bonds that are issued to the public are rated by renowned agencies such as CRISIL, which allows investors transparency regarding the credibility of the investment option.
- **Minimal risk:** Municipal bonds are issued by municipal authorities, implying involvement of minimal risk with these securities.

### Disadvantages of Municipal Bonds

- **Long maturity period:** Municipal bonds come with a lock-in period of three years, imposing a burden on the liquidity requirements of investors.
- **Low-interest rates:** Even though interest rates on municipal bonds, in some cases, are higher than other debt instruments, these rates are considerably low when compared to returns from market-linked financial instruments such as equity shares.

### 1.7 Guidelines for dematerialisation of re-lodged physical shares

Recently, the markets regulator **Securities and Exchange Board of India (SEBI)** came out with operational **guidelines to credit physical shares** in demat account of investors following re-lodged transfer request.

- The shares in demat form would help in **maintaining a transparent record of shareholding of companies** amid rising concerns over beneficial ownership of entities.
- The subsequent to processing of re-lodged transfer request, the RTA (registrar to an issue and share transfer agent) would retain physical shares and intimate the investor about the **execution of transfer through a letter of confirmation.**
- The investor would have to **submit the demat request, within 90 days of issue** of letter of confirmation, to depository participant along with the letter of confirmation.
- The RTA would also issue a **reminder at the end of 60 days of issue** of letter of confirmation, informing the investor to submit the demat request.
- In case of shares that are **required to be locked-in, the RTA**, while confirming the demat request, will also **intimate the depository about the lock-in and its period.**
- In case of non-receipt of demat request from the **investor within 90 days of the date of letter of confirmation**, the shares will be credited to suspense escrow demat account of the company.

### 1.8 Dedicated Export Promotion Council for Technical Textiles

Recently, the Ministry of Textiles has invited proposals for constitution of a **Dedicated Export Promotion Council (EPC)** for **Technical Textiles.**

- The Cabinet Committee on Economic Affairs gave its approval to set up a **National**

### Technical Textiles Mission in February 2020.

- The Mission would have a **four year implementation period** from FY 2020-21 to 2023-24.
- The constitution of an **Export Promotion Council for Technical Textiles** is part of one of the components of the National Technical Textiles Mission.
- The Exporter Association and Trade bodies registered under **Companies Act or Society Registration Act** have been asked to submit proposal for constitution of a dedicated EPC for Technical Textiles.
- The Council shall **abide by all directions of the Central Government** in respect of promotion and development of international trade.
- The Council would be **responsible to promote ITC (HS) lines** identified and Notified by Directorate General of Foreign Trade from time to time.

### Technical Textiles

- Technical textiles are **textiles materials and products manufactured primarily for technical performance** and functional properties rather than aesthetic characteristics.
- Technical Textiles products are divided into **12 broad categories** (Agrotech, Buildtech, Clothtech, Geotech, Hometech, Indutech, Mobiltech, Meditech, Protech, Sportstech, Oekotech, Packtech) depending upon their application areas.
- India shares nearly **6% of world market size of 250 Billion USD** and the annual average growth of the segment is 12%, as compared to 4% world average growth.
- Technical Textiles are **futuristic and nice segment of textiles**, which are used for various applications ranging from agriculture, roads, railway tracks, sportswear, health on one end to bullet proof jackets, fire proof jackets, high altitude combat gear and space applications.

### 1.9 Smuggling in India Report 2019-20

Recently, the Union Minister of Finance released the **Smuggling in India Report 2019-20** on the occasion of 63rd Founding Day Celebrations of the Directorate of Revenue Intelligence (DRI).

- It detected **412 cases of smuggling** resulting in the **seizure of contraband** worth

₹1,949 crore in 2019-20.

- It **arrested 837 economic offenders** and also unearthed 761 complex cases of Customs duty evasion amounting to ₹2,183 crore.
- In 2019-20, the **DRI spearheaded the operations against the trafficking** of narcotic drugs and psychotropic substances.
- The **agency cracked down on smugglers and seized** 174.50 metric tonne of red sanders apart from rescuing endangered animals and birds.
- The DRI also **busted an international drug smuggling racket** with the seizure of 3.3 kg of cocaine under the 'Operation Calypso'.

### 1.10 United Nations Investment Promotion Award

Recently, **Invest India** has won the **2020 United Nations Investment Promotion Award**.

- It is the most coveted award for **Investment Promotion Agencies** given by **United Nations Conference on Trade and Development (UNCTAD)**.
- It recognizes **outstanding achievements and best practices** of Investment Promotion Agencies (IPAs) across the globe.
- It is **presented annually** to make the investment community and general public aware of exceptional contributions by investment promotion agencies to the realization and advancement of national development strategies.

### 1.11 Currency Manipulation

Recently, the United States has once again **included India in its monitoring list** of countries with potentially **"questionable foreign exchange policies"** and **"currency manipulation"**.

- The monitoring list comprises **China, Japan, Korea, Germany, Italy, Singapore, Malaysia, Taiwan, Thailand, and India**.
- It is a label given by the US government to countries it feels are engaging in **"unfair currency practices"** by deliberately devaluing their currency against the dollar.
- The practice would mean that the country in question is **artificially lowering the value of its currency** to gain an unfair advantage over others.

- The devaluation of currency would **reduce the cost of exports from that country** and artificially show a reduction in trade deficits as a result.

### Parameters used to declare Currency Manipulator

- An economy meeting two of the **three criteria in the Trade Facilitation and Trade Enforcement Act of 2015** is placed on the Monitoring List which includes:
  - A **“significant” bilateral trade surplus** with the US — one that is at least \$20 billion over a 12-month period.
  - A **material current account surplus** equivalent to at least 2 percent of gross domestic product (GDP) over a 12-month period.
  - **“Persistent”, one-sided intervention** — when net purchases of foreign currency totalling at least 2 percent of the country’s GDP over a 12 month period are conducted repeatedly, in at least six out of 12 months.
- Once on the Monitoring List, an **economy will remain there for at least two consecutive reports** “to help ensure that any improvement in performance versus the criteria is durable and is not due to temporary factors.
- The administration will also add and retain on the Monitoring List any major US trading partner that accounts for a **“large and disproportionate”** share of the overall US trade deficit.

### Why US put India on currency manipulators monitoring list?

- **India breached the first and the third benchmarks** and on the second, on a four-quarter basis, the country’s current account surplus remained below the threshold level.
  - India, which has for several years maintained a **“significant” bilateral goods trade surplus** with the US, crossed the \$20 billion mark.
  - The **bilateral goods trade surplus totalled \$22 billion** in the first four quarters through June 2020.
- According to the central bank’s intervention data, **India’s net purchases of foreign exchange accelerated** notably in the second half of 2019.
- India sustained net purchases for much of the first half of 2020, which pushed **net purchases of foreign exchange to \$64 billion** (or 2.4% of GDP) over the four

quarters through June 2020.

### 1.12 Positive Pay System

Recently, the Reserve Bank of India (RBI) has announced that it will introduce the '**Positive Pay System**' for cheques transactions above Rs 50,000 in a bid to **enhance safety and eliminate frauds**.

#### What is Positive Pay System?

- Under this process, the **issuer of the cheque submits electronically** (through channels like SMS, mobile app, Internet banking and ATM) certain minimum details of that cheque to the drawee bank, details of which are cross-checked with the presented cheque by **Cheque Truncation System (CTS)**.
- The **National Payments Corporation of India (NPCI)** will develop the facility of Positive Pay in CTS, and make it available to participant banks.
- The Positive Pay System will be **implemented from January 1, 2021**.
- The Positive Pay system is to **augment customer safety in cheque payments and reduce instances of fraud** occurring on account of tampering of cheque leaves.

#### Types of Cheque under Positive Pay System

- The banks will **enable the new system for all account holders** issuing cheques for amounts of **Rs 50,000 and above**.
- While availing of this facility is at the **discretion of the account holder**, banks may consider making it **mandatory** in case of cheques for amounts of **Rs 5,00,000 and above**.

#### New dispute redressal mechanism under PPS

- Only those cheques that are **compliant with the new system** will be accepted under the dispute resolution mechanism at the CTS grids.
- The member banks may implement **similar arrangements for cheques cleared or collected outside CTS as well**.
- The RBI has already told banks to **create adequate awareness among their**

customers on features of the Positive Pay System through SMS alerts, displays in branches, ATMs, as well as through their websites and Internet banking.

### Share of Positive Pay in overall cheque transactions

- The new measure will cover approximately **20 per cent and 80 per cent of total cheques** issued in the country by volume and value, respectively.
  - The Cheque Truncation System (CTS) for clearing cheques is **operational pan-India**, and presently covers 2 per cent and 15 per cent of total retail payments in terms of volume and value respectively.
- The CTS-2010 standard specifying minimum security features on cheque leaves acts as a **deterrent against cheque frauds**, while **standardisation of field placements** on cheque forms enables straight-through-processing by use of optical or image character recognition technology.

Raja Sir's

### 1.13 Instant loan apps case

Recently, a woman employee of Telangana Agriculture Department and a software engineer died by suicide after they were humiliated and blackmailed by tele-callers and recovery agents of a **mobile app instant loan company**.

- It is a racket in which **instant personal loans are offered through mobile apps** at exorbitant interest rates by unauthorised lenders.
- It is highlighted that most of the **instant loan apps do not have any tie-up** with any bank or Non-Banking Financial Institution.
- The rate of interest offered by instant loan apps is as **high as per cent with exorbitant fees**.
- A few of the apps named by the police include **Cash Mama, Loan Zone, Dhana Dhan, Cash Era, Cash Lion, Mastermelon, Lucky Wallet and Coco Cash**.

### What is the modus operandi of Mobile Apps involved?

- After a customer downloads an app and uploads the documents demanded, the **loan amount is credited into the bank account**.
- The **phone numbers of the customer** as well as numbers of his family members are shared by the app company with others.

- The customers have end up **borrowing more to repay a previous instant loan** and got caught up in a vicious cycle of debt trap.

#### **Precautions to be taken against Instant Loan Apps**

- The individual **should not trust any app** or platform that is not approved by RBI.
- The borrowers **should not panic and reach out to the concerned authorities** whenever he/she is being threatened by the lender.
- The RBI has also **cautioned individuals and small businesses against falling prey** to unauthorised digital lending platforms and mobile apps that promised hassle-free loans.

#### **1.14 Zero Coupon Bond**

Recently, the government has used financial innovation to recapitalize Punjab & Sind Bank by issuing the lender Rs 5,500-crore worth of **Zero Coupon Bond** valued at par.

- The zero-coupon bond is a bond that **pays no interest and trades at a discount to its face value.**
  - It implies that the investor purchasing a zero coupon bond **profits from the difference between the buying price and the face value**, contrary to the usual interest income.
- It is also called a **pure discount bond** or **deep discount bond.**
- A Zero Coupon Bond is a **non-interest bearing, non-transferable special Government of India securities** which has a maturity of 10-15 years.
- The Zero Coupon Bond is issued by the **Central Government** specifically to a **particular institution.**

#### **Significance of Zero Coupon Bond**

- The market participants term it both a **'financial illusion'** and **'great innovation'** by the government where it is using Rs 100 to create an impact of Rs 200 in the economy.
- The lender has kept the **Zero Coupon Bond in the Held-to-Maturity (HTM) bucket**, not requiring it to book any mark-to-market gains or losses from these

bonds because these bonds are not tradable.

- The government has found an **innovative way to capitalise banks**, which **does not affect the fiscal deficit** while at the same time provides much needed **equity capital to the banks**.
- The funds raised through issuance of Zero Coupon Bond can **deployed to capitalise the state-run bank**.

### Concerns associated with Zero Coupon Bond

- Zero coupon bonds are **subject to interest rates risk** if sold prior to the date of maturity.
- The value of **zero coupon bonds is inversely related to the rise in the interest rates** i.e. with rising in interest rates there is a decline in the value of these bonds in the secondary market.
- The sensitivity of long-term zero-coupon bonds to interest rates **exposes them to duration risk** which implies that higher a bond's duration, the greater will be its sensitivity to interest rate changes.

### Zero Coupon Bonds issued by Private Firms

- The zero coupon bonds issued by **private companies are normally issued at discount**, but the zero coupon bonds of the government are special bonds which are not tradable as these can be issued at par.

### 1.15 Maintaining Inflation target at 4%

Recently, an RBI Paper has said that **maintaining 4 per cent inflation is appropriate for India** as targeting a lower rate could impart deflationary bias to the monetary policy.

- The study highlighted that the **weighted average trend inflation declined** from above 5 per cent until Q2 of 2008 to around 5 per cent by 2009.
  - It eased steadily thereafter and **remained at 4.3 per cent** in Q1 of 2020.
- The concept of **trend or steady state inflation**, the level to which **actual inflation outcomes are expected to converge after short run fluctuations** from a variety of sources, including shocks, die out.
- It is worthwhile to note that **trend inflation still remains above the target** under

flexible inflation targeting (FIT), although it is on a **declining trajectory**.

- It indicates that **inflation expectations are not yet fully anchored** to the target but convergence is underway.
- The report said that the **decline in the inflation persistence indicates** that households and businesses in India are becoming more forward looking than before as credibility associated with monetary policy increases.
- The study added that understanding persistence or the **tendency of inflation to converge slowly** to its trend is critical to fashioning appropriate monetary policy responses in terms of the size and timing of policy actions.
- The target set below the trend **imparts a deflationary bias to monetary policy** because it will go into overkill relative what the economy can intrinsically bear in order to achieve the target.
- The target that is fixed above **trend renders monetary policy too expansionary** and prone to inflationary shocks and unanchored expectations.

### What is Trend Inflation?

- Trend inflation can be thought of as the **rate of inflation that would be expected to prevail** if there were no temporary factors, such as a level of economy activity below the economy's potential, influencing the inflation rate.
- Trend inflation provides **key insights for monetary policy committee** in at least three important ways:
  - First, the level and variability of trend inflation indicate **how anchored inflation expectations are**.
  - Second, it is a valuable gauge of the **appropriateness of the monetary policy stance** and the necessity or otherwise of additional monetary policy actions to achieve steady state inflation.
  - Third, trend inflation provides a **centering point for the evaluation of inflation** forecasts over various time periods and can usefully inform the setting of monetary policy.

### 1.16 India to become fifth-largest economy in 2025

Recently, an annual report of **Centre for Economics and Business Research (CEBR)** has

said that **India will again overtake the United Kingdom** to become the **fifth-largest in 2025** and race to the third spot by 2030.

- India had **overtaken the United Kingdom in 2019** to become the fifth-largest economy but India has been knocked off course somewhat through the impact of the pandemic.
- The **United Kingdom overtakes India again** in this year's forecasts and stays ahead till 2024 before India takes over again.
  - The U.K. appears to have **overtaken India again during 2020** as a result of the **weakness of the rupee**.
- The CEBR forecast that the **Indian economy would expand** by 9% in 2021 and by 7% in 2022.
  - The growth will naturally slow as **India becomes more economically developed**, with annual GDP growth expected to sink to 5.8% in 2035.

#### Concerns associated with Indian Economy

- The rate of **GDP growth sank to a more than the ten-year low of 4.2 percent in 2019**, down from 6.1 percent the previous year and around half the 8.3 percent growth rate recorded in 2016.
- The slowing growth has been a consequence of a confluence of factors including fragility in the **banking system, adjustment to reforms, and a deceleration of global trade**.
- The **COVID-19 pandemic** has been a human and an economic catastrophe for India, with more than 140,000 deaths recorded as of the middle of December.

#### Recommendations of Think Tank for Indian Economy

- With the majority of the Indian workforce employed in the agricultural sector, the reform process requires a **delicate and gradual approach that balances the need for longer-term efficiency gains** with the need to support incomes in the short-term.
- India is better placed than many other developing countries to **roll out the vaccines successfully and efficiently next year** with a 42-year-old vaccination programme that targets 55 million people each year.

- The infrastructure bottlenecks that exist in India mean that **investment in this area has the potential to unlock significant productivity gains.**
  - The outlook for the economy going forwards will be closely related to the **government's approach to infrastructure spending.**

### 1.17 Dedicated Freight Corridor

Recently, the Prime Minister has inaugurated the section between Khurja and Bhaupur in Uttar Pradesh for commercial operations of the **Dedicated Freight Corridor (DFC).**

- The **Ministry of Railways**, under the direction of the Indian Government, had taken up the **dedicated freight corridor (DFC) project.**
- The project involves the **construction of six freight corridors** traversing the entire country.
- The purpose of the project is to provide a **safe and efficient freight transportation system.**
- In 2006, the Government of India established a dedicated body to implement the project, called the **Dedicated Freight Corridor Corporation of India (DFCCIL).**

#### Why Dedicated Freight Corridor (DFC) is important?

- Around **70% of the freight trains currently running on the Indian Railway network** are slated to shift to the freight corridors, leaving the **paths open for more passenger trains.**
- The tracks on DFC are **designed to carry heavier loads** than most of Indian Railways.
- The DFC will get **track access charge from the parent Indian Railways**, and also generate its own freight business.
- The **objectives** of DFC are:
  - To create world-class rail infrastructure with advanced technology and knowledge to carry higher throughput per train.
  - To improve overall transport efficiency.
  - To offer customer guaranteed, faster transit, energy efficient,

environment-friendly transport.

- To encourage total supply chain management.
- Reduce the unit cost of transport logistics.
- Increase Rail share in the freight market.

### 1.18 Post COVID push for Indian Economy

Recently, the former governor of Reserve Bank of India (RBI) has said that **India can potentially build upon** three positive aspects i.e. **rural push, federalism** and **consumer base**.

- The **COVID-19 pandemic and the subsequent lockdown** left a trail of economic devastation on most countries.
- The challenge for the government is to **put the economy back on a healthy growth trajectory** and ensure that growth is inclusive.

#### Key Highlights

##### Push in the rural economy

- The **expanded MNREGA provided a lifeline** when most needed, and the frontloaded transfer payments to women, pensioners and farmers have put money in the hands of households and have helped revive demand.
- The **brisk procurement by the FCI (Food Corporation of India)** has buttressed farmers' incomes while it helped the government extend the food security programme.

##### Stronger Federalism

- **India's federalism has withstood the test of vigorous democracy** during the tensions between the Centre and the states on some issues such as GST compensation.

##### Huge Consumption Base

- The third positivity is the **India's huge consumption base with 1.35 billion people** and a per capita income of just over \$2,000.

- The increase in **income of the bottom half** will quickly turn into consumption, which in turn will spur production.
- The consumption-production cycle can potentially put **India on a virtuous cycle of growth and jobs.**

### Additional Information

#### V-shaped Economic Recovery

- The V-shaped recovery is a **type of economic recession** and recovery that resembles a “**V**” **shape in charting.**
- The V-shaped recovery **represents the shape of a chart of economic measures** economists create when examining recessions and recoveries.
- The V-shaped recovery is **characterized by a quick and sustained recovery** in measures of economic performance after a sharp economic decline.

## INDIA AND WORLD

### 2.1 India-Suriname Joint Commission Meeting

Recently, the **7th India-Suriname Joint Commission Meeting** was held.

- The meeting underscored the importance of the mechanism in **deepening political dialogue, reviewing bilateral ties, and exchanging views on regional and multilateral cooperation.**
- The meeting highlighted that India-Suriname relations, which have **strong cultural and historical bonds**, are marked by cordiality and a high degree of understanding and convergence of views on a range of issues.
- The Ministers acknowledged the **importance of undertaking developmental projects** under concessional conditions, including through Lines of Credits, in the spirit of South-South cooperation.

### 2.2 Intellectual Property Cooperation

Recently, a Memorandum of Understanding (MoU) on **Intellectual Property**

Cooperation was signed between India and USA.

### Objectives of MoU on Intellectual Property Cooperation

- The MoU **aims at increasing IP co-operation** between the two countries by way of:
  - Facilitating **exchange and dissemination of best practices, experiences and knowledge on IP** among the public, and between and among the industry, universities, research and development (R & D) organizations, and Small and Medium-sized Enterprises through participation in programs and events organized singly or jointly by the Participants;
  - Collaboration in **training programs, exchange of experts, technical exchanges and outreach activities**;
  - Exchange of **information and best practices on processes for registration and examination of applications** for patents, trademarks, copyrights, geographical indications, and industrial designs, as well as the protection, enforcement and use of IP rights;
  - Exchange of **information on the development and implementation of automation and modernization projects**, new documentation and information systems in IP and procedures for management of IP Office services; and
  - Cooperation to understand various issues related to traditional knowledge, and the exchange of best practices, including those related to **traditional knowledge databases and awareness raising on the use of existing IP systems** for the protection of traditional knowledge;

### Significance of Intellectual Property Cooperation

- The two sides will draw up **Biennial Work Plan to implement the MoU** which will include the detailed planning for carrying out of the co-operation activities including the scope of action.
- The MoU will go a long way in **fostering the cooperation between India and USA**, and provide opportunities to both countries to learn from the experience of each other.
- It will be a landmark step forward in **India's journey towards becoming a major**

**player in global innovation** and will further the objectives of National IPR Policy, 2016.

### 2.3 SCO Young Scientist Conclave

Recently, the **SCO Young Scientist Conclave** was concluded by the Union Minister of for Science and Technology, Earth Sciences and Health & Family Welfare.

#### SCO Young Scientist Conclave

- The **first SCO-Young Scientists Conclave** is being held in India in 2020, as an integral part of **SCO Young Scientists Forum (SCO YSF)**.
- The SCO YSF with the objective of **providing a unique opportunity to the youth in their Member States** to interact, network and collaborate with their counterparts to address pertinent challenges in emerging areas of science and technology.
  - It has accepted the proposal of India to **host and organize the 1st SCO-Young Scientists Conclave** in India.
- It is aimed at **harnessing the intrinsic ability of unconventional and lateral thinking, ideology and innovative caliber** of the young minds and make their scientific and technological presence felt in today's world.
- The Conclave proposes to **bring together the innovative young minds from SCO Member States** on to a common platform in virtual mode to discuss issues like ways and means to bring in transformative changes to address the societal challenges.
- The areas included **agriculture and food processing; sustainable energy and energy storage; biotechnology and bioengineering; combating COVID-19 and emerging pandemics** through research and innovation; environmental protection and natural resource management.

#### Scope of SCO Young Scientist Conclave

- **The conclave facilitates:**
  - **Creation of connectivity and networking among the SCO youth** to harness their knowledge for addressing common societal challenges through research and innovation and strengthen advancement of

complementary skills.

- **Creation of consortia of young scientists, professionals, innovators and entrepreneurs** to conduct joint R&D activities.
- **Preparation of next generation scientific leadership** in Science, Technology and Innovation (STI) and future readiness among Science, Technology, Engineering and Mathematics (STEM) Professionals.
- **Building SCO scientific identity** in STI through creative youth.
- **Provide access to large scale research infrastructure** and unique analytical facilities.
- **Create internship and training opportunities** for young researchers.

#### Participants and Eligibility of SCO Young Scientist Conclave

- **22 participants** were expected to participate at the Conclave from **each of the SCO Member States**.
  - **15 young scientists** – three for each thematic area
  - **Five Mentors** – one for each thematic area
  - **One Head of Delegation**-representative of the STI Ministry
  - **One liaison officer** from each SCO nation
- **Eligibility:** Young bright academicians/ scientists/ engineers/ technologists/ innovators/ technoentrepreneurial start-up professionals working in the above mentioned thematic areas with age not exceeding 35 years as on 1st November 2020.

#### 2.4 Passage Exercise (PASSEX)

Recently, the **Indian Navy (IN)** is undertaking a **Passage Exercise (PASSEX)** with **Russian Federation Navy (RuFN)** in the Eastern Indian Ocean Region (IOR).

- The exercise involves participation of **RuFN guided missile cruiser Varyag, large anti-submarine ship Admiral Panteleyev** and medium ocean tanker Pechenga.
- Indian Navy is being represented by **indigenously constructed guided missile frigate Shivalik** and **anti-submarine corvette Kadmatt** alongwith integral

helicopters.

- The exercise is aimed at **enhancing interoperability, improving understanding and imbibing best practices** between both the friendly navies.
- It would involve **advanced surface and anti-submarine warfare exercises, weapon firings, seamanship exercises and helicopter operations.**
- PASSEXs are conducted regularly by IN with **units of friendly foreign navies**, whilst visiting each other's ports or during a rendezvous at sea.

### 2.5 India-Uzbekistan Virtual Summit

Recently, the Prime Minister Shri Narendra Modi addressed the **India-Uzbekistan Virtual Summit.**

- Both India and Uzbekistan have been involved in the **Afghan Peace process**, with a focus on connectivity with the country.
- India, via **Chabahar Port** in Iran and the **India-Afghanistan air corridor** and Uzbekistan via a planned rail project are connecting the 2 countries.
- India and Uzbekistan have been engaging under various formats including **India Central Asia Dialogue** at the foreign minister's level.
- The bilateral summit revolved around **Afghanistan and counter-terrorism.**
- It is the **first-ever bilateral summit** of India with any of the **Central Asian country.**
- India will **provide expertise in according to country's development needs** like in infrastructure, IT, training, capacity building, education, health.
- **India's western Gujarat state** and **Uzbekistan's Andijan** already have cooperation and now the focus is on cooperation between the **Haryana and Fergana.**

### Trade, Economic and Investment Cooperation

- Both leaders emphasized on the need for **bilateral and global cooperation to continue the fight against the COVID-19 pandemic** including development and distribution of effective vaccines and other medicines.
- India and Uzbekistan have a **mutually identified target of USD 1 billion for bilateral trade** and the leaders stressed on the importance of making concerted

efforts to achieve the target.

- The leaders agreed that **both sides should work towards an early conclusion of Bilateral Investment Treaty** which shall facilitate investment promotion and protection for further improvement of trade and economic cooperation.
- The leaders agreed to **strengthen mutual cooperation in the field of science, technologies and innovation** by enhancing direct cooperation between government organizations, research institutes, innovation centres and technological enterprises of two countries.

### Development Cooperation

- The Indian side confirmed the approval of USD 448 million of **Line of Credit to be extended by India** for four developmental projects in Uzbekistan in the fields of road construction, sewerage treatment and information technology.
- The Uzbek side conveyed its **desire to explore the possibility of implementing priority developmental projects** in Uzbekistan as part of the USD 1 billion Line of Credit offered by India for Central Asian countries.

### Defence and Security

- The leaders appreciated the **enhanced pace of bilateral defence cooperation** since the convening of the first meeting of Joint Working Group on Defence Cooperation in 2019.

### Civil Nuclear Energy

- Both Sides welcomed the **deepening of their bilateral civil nuclear cooperation**, in particular, the conclusion of the bilateral agreement between the Global Centre for Nuclear Energy Partnership, India and the Agency for Development of Nuclear Energy, Uzbekistan.

### Connectivity

- The Sides reiterated their **continued commitment for enhancing connectivity** between India and Uzbekistan and in the larger Central Asian region to bolster trade and investment.
- The Indian side welcomed the Uzbek proposal to hold trilateral dialogue among **India, Iran and Uzbekistan** to promote connectivity through the Chabahar

port.

### Culture, Education and People- to-People Contacts

- The Sides expressed their appreciation for the 25 successful years of functioning of the **Lal Bahadur Shastri Centre for Indian Culture** in Tashkent and the role it has played in strengthening India-Uzbekistan cultural relations.
- The Indian side invited the Uzbek side to avail of **increased scholarship opportunities** provided by the Indian Council for Cultural Relations (ICCR) and training and capacity building under the Indian Technical and Economic Cooperation (ITEC) programme.

### 2.6 Swadhinata Sarak

Recently, Bangladesh Foreign Minister has said that the ‘**Swadhinata Sarak**’ between **Bangladesh and India** will be opened on 26 March 2021.

- The road remains **functional on the Indian side** while it will be connected through **Mujibnagar, Meherpur district in Bangladesh**.
- The **Chilahati-Haldirbari rail link** which was active till 1965 will be inaugurated during the summit meeting between the two Prime Ministers.

### 2.7 Vijay Diwas: 50 Years of Indo-Pak War

India will celebrate **50 Years of Indo-Pak War**, also called **Swarnim Vijay Varsh** on **16<sup>th</sup> December 2020**.

- Inaugural event of the celebration will be held at the **National War Memorial (NWM)** in **New Delhi** which will be attended by the Prime Minister.
  - The **National War Memorial** is a **tribute to the soldiers** who laid down their lives defending the nation, post-independence it also **commemorates the soldiers** who participated and made the supreme sacrifice in **Peacekeeping Missions, and Counter Insurgency Operations**.
- **Vijay Diwas** is observed on 16<sup>th</sup> December every year to **mark India’s victory over Pakistan in the 1971 war**.
- The Government of India decided on **3<sup>rd</sup> December 1971**, that India would go for

war with Pakistan to **save Bengali Muslims and Hindus.**

- This war was fought between India and Pakistan for **13 days.**
- On **16<sup>th</sup> December 1971**, the chief of the Pakistani forces with **93,000 soldiers** had **surrendered unconditionally** to the allied forces consisting of Indian Army and Mukti Bahini in Dhaka.
  - **Mukti Bahini** refers to the armed organizations that fought against the Pakistan Army during the Bangladesh Liberation War. It was a guerrilla resistance movement.
- Bangladesh was born on this day. Hence, **Bangladesh celebrates its independence day (Bijoy Dibos)** on 16<sup>th</sup> December every year.

## **2.8 Protection of India's poor and vulnerable from the impact of COVID-19**

Recently, the **Government of India** and the **World Bank** have signed a **\$400 million project** to protect India's poor and vulnerable from the impact of COVID-19.

- The COVID-19 crisis has brought to the fore the **risks that migrants and the urban poor face** and the need for governments to strengthen preparedness for future disasters of this nature.
- The **early results from tracking the first operation** through a representative household survey across India have highlighted the strengths and challenges of India's social protection system.
- The **Second Accelerating India's COVID-19 Social Protection Response Programme** signed will **build on the shifts that the first operation has achieved.**
- The programme was prepared in collaboration with the **Asian Development Bank (ADB)**, **Agence Française de Développement (AFD)** and **Kreditanstalt Fur Wiederaufbau (KfW).**
- The \$400 million credit is from the **International Development Association (IDA)** which is the World Bank's concessionary lending arm.

### **Significance of Agreement**

- The project aims to **support India's efforts at providing social assistance to the poor and vulnerable households**, severely impacted by the COVID-19 pandemic.

- The programme will **strengthen the capability of state and national governments** in India to provide coordinated and adequate social protection to the poor and vulnerable.
- It will help further **expand and deepen the coverage of India's social protection systems** by helping these vulnerable groups in urban and peri-urban areas across the country.
- The second operation will **complement the expansion of India's safety net programmes** to create a portable social protection platform ensuring food and cash support for poor households, urban migrants, and unorganised sector workers across state boundaries.
- The new operation will **allow flexibility for state governments to cater to their contexts**, while ensuring that the needs of migrants, informal workers and the urban poor are addressed.
- The proposed reforms will **allow states to access flexible funding from disaster response funds** to design and implement appropriate social protection responses to COVID-19 and future disasters.

### 2.9 New Development Bank (NDB) supporting India's economic recovery from COVID-19

Recently, the Government of India and the **New Development Bank (NDB)** have signed a loan agreement for **lending \$1,000 million** for 'supporting India's economic recovery from COVID-19'.

- The country-wide restriction on movement of people, coupled with additional stringent restrictions imposed by State Governments and intermittent localized lockdowns to contain the spread of COVID-19, **affected domestic supply and demand**, resulting in slowed down economic activity.
- It resulted in **loss of employment and income of workers** especially those employed in the informal sector, including rural areas.

#### Highlights

- It is aimed at **supporting expenditures on rural infrastructure** related to natural resource management (NRM) and rural employment generation under Mahatma

Gandhi National Rural Employment Guarantee Scheme (MGNREGS).

- The programme will support Government in **mitigating the adverse economic impact of COVID-19 pandemic** and enable economic recovery in the rural areas through:
  - **natural resource management works** which will facilitate economic activity and
  - **employment generation** to stimulate rural demand, to combat the decline in economic activity due to outbreak of COVID-19
- The programme proposes **creation of durable rural infrastructure assets** relating to NRM and generation of employment opportunities for rural poor.

#### **Significance of the NDB's Assistance**

- The programme will improve the **livelihood of rural poor along with providing income opportunities** to migrant workers who has returned from urban areas because of job loss caused by COVID-19 pandemic.
- The NDB's timely assistance will help the Government in **combatting the economic disruptions caused by COVID-19 pandemic** and creating employment opportunities in rural areas to stimulate demand.
- The programme will support the Government of India's efforts in **mitigating the adverse economic impact of COVID-19 pandemic** and enable economic recovery in the rural areas through NRM works and employment generation.
- The funding under NDB's Policy on fast-track emergency response to COVID-19 will help **preserve rural income and sustain rural expenditure**, resulting in increased demand that aids economic recovery.

#### **New Development Bank (NDB)**

- It is a **BRICS Development Bank** established in 2014.
- It was established based on the **Inter-Governmental agreement among the BRICS countries** (Brazil, the Russian Federation, India, China and South Africa).
- The purpose of the Bank is to **mobilise resources for infrastructure and sustainable development projects** in BRICS and other emerging market economies and developing countries.

- It is building a **robust and diversified portfolio of sustainable infrastructure projects**, in order to fulfill its mandate and achieve strategic objectives.

## 2.10 India-Bangladesh Virtual Summit

Recently, the Prime Ministers of **India and Bangladesh** participated in a virtual summit which held **comprehensive discussions on all aspects of bilateral relations** and exchanged views on regional and international issues.

### India-Bangladesh partnership

- The summit expressed **satisfaction over the current state of bilateral relations** based on shared bonds of history, culture, language, and other unique commonalities that characterize the partnership.
- It emphasized that relations between Bangladesh and India are based on **fraternal ties and reflective of an all-encompassing partnership** based on sovereignty, equality, trust and understanding that transcends a strategic partnership.

### Cooperation in Health Sector

- The summit reiterating the highest priority India attaches to Bangladesh under **India's Neighbourhood First Policy**, Prime Minister Narendra Modi assured that vaccines would be made available to Bangladesh as and when produced in India.
- India also offered **collaboration in therapeutics** and partnership in vaccine production.

### Cultural Cooperation-Joint Celebration of Historical Links

- The two Prime Ministers jointly unveiled a **commemorative postal stamp issued by the Government of India** on the occasion of birth centenary of Bangabandhu Sheikh Mujibur Rahman.
- Bangladesh Prime Minister requested the Indian side to consider Bangladesh's proposal to name the historic road from Mujib Nagar to Nodia on Bangladesh-India border as "**Shadhinota Shorok**".
- Both sides reiterated to continue regular exchanges of groups to **promote culture, education, science and technology, youth and sports and mass media**.

### **Border Management and Security Cooperation**

- Both sides agreed to hold an early meeting of the **Joint Boundary Conference** to prepare a new set of strip maps along the stretch of **Ichhamati, Kalindi, Raimongol and the Hariabhanga Rivers** from Main Pillar 1 to Land Boundary terminus.
- Bangladesh side reiterated the request for 1.3 km Innocent Passage through river route along **River Padma** near Rajshahi District.

### **Trade Partnership for Growth**

- The Prime Minister of Bangladesh appreciated the **Duty Free and Quota Free access given to Bangladeshi exports** to India under SAFTA since 2011.

### **Connectivity for Prosperity**

- The two Prime Ministers noted with satisfaction the continued progress made towards the **restoration of pre-1965 railway linkages** between both nations.
  - They jointly inaugurated the newly restored railway link between **Haldibari (India) and Chilahati (Bangladesh)** and noted that this rail link will further strengthen trade and people to people ties between the two sides.
- The summit welcomed the recent initiatives including the signing of the second addendum to the **Protocol on Inland Water Transit and Trade (PIWTT)**, trial run of trans-shipment of Indian goods from Kolkata to Agartala via Chattogram and operationalization of Sonamura-Daudkandi Protocol route under the PIWTT.

### **Cooperation in Water Resources, Power and Energy**

- The two leaders underscored the need for early conclusion of **Framework of Interim Agreement on sharing of waters** of six joint rivers, namely, **Manu, Muhuri, Khowai, Gumti, Dharla and Dudhkumar**.
- Bangladesh side requested the Indian side to inform its concerned border authorities to allow excavation work of the remaining portion of the Rahimpur Khal for utilization of **Kushiyara River** waters for irrigation purposes.

### **Forcibly Displaced Persons from the Rakhine State of Myanmar**

- The Indian Prime Minister appreciated the generosity of Bangladesh in sheltering and **providing humanitarian assistance** to the 1.1 million forcibly displaced persons from the Rakhine State of Myanmar.

### **Partners in the Region and the World**

- India thanked Bangladesh for supporting India in its **election to the United Nations Security Council**.
- Both countries agreed to continue working together towards achieving early reforms of the **UN Security Council, combating climate change, attainment of the Sustainable Development Goals (SDGs) and protection of the rights of migrants**.

### **Signing of Bilateral Documents and Inauguration of Projects**

- Framework of Understanding (FOU) on Cooperation in Hydrocarbon Sector;
- Protocol on Trans-boundary Elephant Conservation;
- MOU regarding Indian Grant Assistance for Implementation of High Impact Community Development Projects (HICDPs) through Local Bodies and other Public Sector Institutions;
- MOU on Supply of Equipment and Improvement of Garbage / Solid Waste Disposal Ground at Lamchori Area for Barishal City Corporation;
- Terms of Reference of India-Bangladesh CEOs Forum;
- MoU between Father of the Nation Bangabandhu Sheikh Mujibur Rahman Memorial Museum, Dhaka, Bangladesh and the National Museum, New Delhi, India; and
- MoU on Cooperation in the field of Agriculture.

### **Protocol on Inland Water Transit and Trade (PIWTT)**

- It was first **signed in 1972** and renewed periodically.
- Indo-Bangladesh **Protocol on Inland Water Transit & Trade** exists between India and Bangladesh under which **inland vessels of one country can transit through the specified routes** of the other country.
- The existing protocol routes are:

- **Kolkata-Pandu-Kolkata**
- **Kolkata-Karimanj – Kolkata**
- **Rajshahi-Dhulian-Rajshahi**
- **Pandu-Karimanj-Pandu**

## 2.11 India-Vietnam Summit

Recently, the Prime Minister of India inaugurated the **India-Vietnam virtual summit** with his Vietnamese counterpart.

### Joint Vision for Peace, Prosperity and People

- The '**Joint Vision for Peace, Prosperity and People**' document was adopted to guide the future development of the India-Vietnam Comprehensive Strategic Partnership.
- Both leaders also welcomed the signing of a **Plan of Action for period 2021-2023** to implement the Joint Vision.

### Enhancing bilateral cooperation in all areas of engagement

- Both leaders agreed to **support each other's national development priorities** and work together towards the shared objective of a peaceful, stable, secure, free, open, inclusive and rules-based Indo-Pacific region.

### Strengthen cooperation against common global challenges

- They agreed to maintain **active cooperation** for ensuring access to vaccines against the pandemic.
- The leaders decided that India and Vietnam would coordinate closely at multilateral forums, including at the **UN Security Council**, where they will serve concurrently in 2021.

### Geopolitical Management

- The Prime Ministers agreed to explore new and practical **collaborations in the maritime domain**.
  - It is based on convergence between **India's Indo-Pacific Oceans**

**Initiative and the ASEAN's Outlook on Indo-Pacific** to achieve shared security, prosperity and growth for all in the region.

### **Development and capacity building partnership**

- The Prime Minister reaffirmed **India's commitment to its development and capacity building partnership** with Vietnam, through initiatives such as Quick Impact Projects, ITEC and e-ITEC initiatives, PhD fellowships, digital connectivity and heritage conservation efforts.

### **Defence Partnership**

- Both Prime Ministers appreciated the successful implementation of the **US\$ 100 million Defence Line of Credit** extended by Government of India to Vietnam.
- The summit welcomed the completion of **seven Development Projects** with Indian 'Grant-in-Aid' Assistance for the benefit of local community in Vietnam's Ninh Thuan province.

### **Cultural Partnership**

- The Prime Minister expressed special satisfaction about the restoration and conservation work of the **My Son temple complex** in Vietnam carried out by Archaeological Survey of India (ASI).

## **2.12 Legion of Merit Award**

Recently, the US government has awarded the '**Legion of Merit Award**' to Prime Minister of India Narendra Modi. The Legion of Merit was **instituted in 1942** by former **US president Franklin D Roosevelt**.

- It is the **only US military decoration** that has distinct ranks, and the **first US medal** to be awarded to citizens of other nations.
- The Legion of Merit, in the **highest degree of the Chief Commander**, is a prestigious award conferred by the President of the United States.
- The award is conferred to members of the **US military and foreign military members** and political figures who have displayed exceptionally meritorious conduct in the performance of outstanding services and achievements.
- It is awarded for **outstanding service, fidelity, and loyalty** in either combat or non-

combat positions.

- The previous Indian recipients of the award include **Field Marshal KM Cariappa (1950)** and **Satyawant Mallana Srinagesh (1955)**.

### Criteria for Legion of Merit Award

- Under the criteria outlined in **Army Regulation 672-7**, this award is awarded to the degrees of Chief Commander, Commander, Officer, and Legionnaire of armed forces of foreign nations and is based on the relative rank or position:
  - **Chief Commander:** Some Allied World War II theater commanders, usually for joint amphibious landings or invasions, are awarded this degree.
  - **Commander:** Equal of a US military head of staff or higher position, but not to a chief of state.
  - **Officer:** General below the equal of a US military chief of staff; colonel or equal rank for service in assignments equal to those held by a general or flag officer in US military service; or military attaches.
  - **Legionnaire:** All recipients not included above.

### 2.13 Green National Highways Corridors Project

Recently, the **World Bank** and **Government of India** have signed a \$500 million agreement for the **Green National Highways Corridors Project**.

- The National Highways of India carry about **40 percent of road traffic** and several sections of these highways have inadequate capacity, weak drainage structures and black spots prone to accidents.
- The \$500 million loan from the **International Bank for Reconstruction and Development (IBRD)** has a maturity of 18.5 years including a grace period of five years.

### Green National Highways Corridors Project

- It aims to build **safe and green national highway corridors** in the states of **Rajasthan, Himachal Pradesh, Uttar Pradesh** and **Andhra Pradesh**.
- The ultimate objective of **transport infrastructure** is to provide seamless

connectivity and reduce logistics costs.

- The project will support analytics to **map the freight volume and movement pattern** on the National Highway network, identify constraints, and provide innovative logistics solutions.
- The project has three components:
  - The **Green Highway Corridor Improvement and Maintenance** includes upgradation and maintenance for five years of about 783 kilometers of selected existing National Highways.
  - The **Institutional Capacity Enhancement** has the following subcomponents:
    - **Development and implementation of a Climate Adaptation Policy** and guidelines and mainstreaming climate resilience in National Highways design and construction processes;
    - Development and implementation of policy for **reducing emissions from transport services**;
    - Research and Development and **mainstreaming green technologies in National Highways** design and construction processes;
    - Development and implementation of guidelines and model documents for **mainstreaming safety and green technologies**;
    - Mainstreaming safety and green technologies in the **development of highways**; and
    - **Implementing Enterprise Resource Planning (ERP)** solution in Ministry of Road Transport and Highways (MoRTH) and its implementing agencies.
  - The **Road Safety** has the following subcomponents:
    - Support to **improve road safety data analytics** and highway safety monitoring and implementation;
    - Support for **operationalization of the National Road Safety Board**; and
    - **Strengthening highway patrol and emergency response** along

the project highway

### Significance of Green National Highways Corridors Project

- It will support Ministry of Road Transport & Highways (MoRTH) construct 783 km of highways in various geographies by **integrating safe and green technology designs**.
- The project will help **reduce GHG emissions** in the construction and maintenance of highways.
- The project will also **enhance the capacity of the MoRTH** in mainstreaming safety and green technologies.
- The project will support the ministry with an **in-depth analysis of gender-related issues** in the transport sector along with help in creating jobs for women.
- The project will **strengthen and widen existing structures; construct new pavements, drainage facilities and bypasses; improve junctions; and introduce road safety features**.

### 2.14 Permanent Court of Arbitration ruling against India

Recently, the **Permanent Court of Arbitration at The Hague** has ruled that the Indian government was wrong in applying **retrospective tax** on Cairn.

#### Dispute between Cairn and India

- The dispute between the **Indian government and Cairn** also relates to **retrospective taxation**.
  - The Cairn ruling is the **second arbitral setback to India** over its position on retrospective taxation.
- In 2006-07, as a part of internal rearrangement, **Cairn UK transferred shares of Cairn India Holdings** to Cairn India.
- The Income Tax authorities then contented that **Cairn UK had made capital gains** and slapped it with a tax demand of Rs 24,500 crore.
- The **company refused to pay the tax**, which prompted cases being filed at the Income Tax Appellate Tribunal (ITAT) and the High Court.

### Permanent Court of Arbitration ruling on Retrospective Taxation

- In its judgment, the Permanent Court of Arbitration at The Hague said **Cairn Tax Issue was not just a tax related issue** but an **investment related dispute**.
- The PCA at The Hague has once again ruled that the Indian government's retrospective demand was **in breach of the guarantee of fair and equitable treatment**.
- It has noted that **Cairn UK's argument** that the demand on them was made after the **Vodafone retrospective tax demand**, which has since been set aside by Indian courts.

### Retrospective Taxation

- It is a combination of “retrospective” and “tax” where **“retrospective” means taking effect from a date in the past** and **“tax” refers to a new or additional levy of tax** on a specified transaction.
- It effectively allows a **country to pass a rule on taxing** certain products, items or services, and deals, and charge companies from a time before the date on which the law is passed.
- The retrospective tax is **not so easily welcomed by taxpayers** as it creates an additional levy on the transaction which is already concluded when the provisions of law were different.

### Permanent Court of Arbitration (PCA)

- It was **established in 1899** to facilitate arbitration and other forms of dispute resolution between states.
- It is an **intergovernmental organization** dedicated to serving the international community in the field of dispute resolution.
- The PCA has a **three-part organizational structure** consisting of:
  - **Administrative Council** that oversees its policies and budgets,
  - Panel of independent potential arbitrators known as the **Members of the Court**, and
  - **Secretariat**, known as the International Bureau, headed by the Secretary-General.

## 2.15 Mission Sagar

Recently, the **Indian Naval Ship (INS) Kiltan** has arrived at **Vietnam's Nha Rong Port**, Ho Chi Minh City as part of the **Mission Sagar III**.

- India and Vietnam signed **seven agreements in areas ranging from defence to petrochemicals**.
- The India-Vietnam summit unveiled a **joint vision for enhanced security cooperation** to ensure stability in the Indo-Pacific.
- The developments came against the backdrop of concerns in both countries about **China's aggressive actions**.
- The Prime Minister has described **Vietnam as an important pillar of India's Act East policy** and an important ally of our Indo-Pacific vision.

### Mission Sagar

- The Mission Sagar was launched in line with Prime Minister Narendra Modi's vision of **SAGAR or security and growth for all in the region**.
- The mission reiterates **India's position as a dependable partner** and the Indian Navy as the preferred security partner and first responder
- Under Mission Sagar III, **15 tonnes of humanitarian relief supplies for people affected by floods in central Vietnam** as part of New Delhi's efforts to assist countries in the region amid the Covid-19 pandemic.

### INS Kiltan

- It is an **indigenously-built anti-submarine warfare stealth corvette**.
- It is the third of the four **Kamorta-class corvettes** being built under Project 28.
- It is designed by Directorate of Naval Design and built by **Garden Reach Shipbuilders & Engineers (GRSE)** in Kolkata.
- It is **India's first major warship to have a superstructure of carbon fibre composite material** resulting in improved stealth features, lower top weight and maintenance costs.

## 2.16 Challenges to India's Neighbourhood First Policy in 2020

India faced a trifecta of **challenges in its neighbourhood** from China i.e. the COVID-19 pandemic, the growing competition for influence in South Asia and aggressive actions at the Line of Actual Control (LAC) by China's People's Liberation Army (PLA).

### Challenges to India's Neighbourhood First Policy in 2020

- **COVID-19 Challenge:** The COVID-19 pandemic that originated in China has led to one of the biggest health challenges, causing heavy economic damage in South Asia.
  - **India ranks second after the United States** in terms of number of cases, and the worst-hit economy among G20 nations.
- **China doubled down on territorial claims** and its transgressions along its borders with South Asia i.e. from Ladakh to Arunachal Pradesh, leading to violent clashes.
- **China also laid claim to Bhutan's Sakteng natural reserves** and pushed along the boundary lines with Nepal, all of which changed India's strategic calculations along its Himalayan frontiers.
- India and Nepal saw their worst tensions in decades over the **construction of a road to Lipulekh**, leading to Nepal amending its constitution and map to claim Indian Territory.
- A **new defence pact between China and Pakistan** vis-à-vis a sharp rise in ceasefire violations along the Line of Control (LoC) with Pakistan to the highest levels since 2003, has made it clear that India must factor in among its military challenges at the LAC.

### Measures adopted by India to tackle Challenges to Neighbourhood First Policy

- India's military ran a **series of missions to SAARC countries** and the **Indian Ocean Region (IOR)** with supplies of food and medicines, and India's 'Vande Bharat' mission flew home nationals from neighbouring countries.
- The government's response to the challenges has been to assert its **Neighbourhood First and SAGAR (Security and Growth for All in the Region)** strategies as foreign policy priorities.
- India has also upped its game on **infrastructure delivery, particularly for**

regional connectivity in the past year, including completing railway lines to Bangladesh and Nepal, riverine projects, ferry service to the Maldives, identifying other services to Sri Lanka and IOR islands.

### 2.17 India and Bhutan on Peaceful Use of Outer Space

Recently, Union Cabinet approved **Memorandum of Understanding (MoU)** between the Government of the Republic of **India** and the Royal Government of **Bhutan** on **Cooperation in the peaceful users of outer space**.

- India and Bhutan have been discussing on **establishing formal space cooperation**.
- The template for **Inter-Governmental MoU for Space cooperation** was shared with Ministry of External Affairs (MEA) in 2017 for further taking up with Bhutan.
- In November 2020, the **MoU was signed** between the leaders of India and Bhutan.

#### Key Highlights

- The MoU shall enable India and Bhutan to **pursue cooperation in potential interest areas** such as:
  - Remote sensing of the earth;
  - Satellite communication and satellite-based navigation;
  - Space science and planetary exploration;
  - Use of spacecraft and space systems and ground system; and
  - Application of space technology
- The MoU would lead to **concluding specific Implementing Arrangement** on specific areas of cooperation and **setting up of Joint Working Group**
  - The working group will **aim to work out the plan of action** including the time-frame and the means of implementing this MoU.
- The MoU would lead to **develop a joint activity in the field of application of space technologies** for the benefit of humanity.

## INTERNATIONAL RELATIONS

### 3.1 Australian Defence Force (ADF) has sent notices

- The Australian Defence Force (ADF) has sent notices of likely dismissal to 13 Special Forces soldiers following last week's damning report on the murder of 39 Afghan civilians and prisoners.
- They are suspected of being accessories or witnesses to the killings, or of being dishonest in testifying.
- They are separate from the 19 Special Air Service troops who could face prosecution for the murders.
- Australia's prime minister and top military commander have apologised.
- Afghanistan called the murders unforgivable but welcomed last week's report as a step towards justice.
- The report blamed the murders of "prisoners, farmers or civilians" in 2009-13 on an unchecked "warrior culture" among some soldiers.
- It said 25 special forces soldiers had taken part in unlawful killings directly or as "accessories", across 23 separate incidents.
- It recommended that 36 incidents in total be investigated by federal police.
- Australian Defence Force chief Gen Angus Campbell said none of the incidents could be "described as being in the heat of battle".
- It also found evidence that:
  - Junior soldiers were told to get their first kill by shooting prisoners, in a practice known as "blooding"
  - Weapons and other items were planted near Afghan bodies to cover up crimes
  - An additional two incidents could constitute a war crime of "cruel treatment"

### 3.2 Zero-Carbon Act

- The parliament passed the Zero-Carbon Act, which commits New Zealand to zero

carbon emissions by 2050 or sooner.

- New Zealand's government will decide next week if a climate emergency should be declared in the country or not.

As prime minister, Ardern has been vocal about climate change and last November, the parliament passed the Zero-Carbon Act, which commits New Zealand to zero carbon emissions by 2050 or sooner.

- In its ongoing online petition, Greenpeace New Zealand is urging the government to declare a climate emergency since people are “facing more extreme weather events, catastrophic loss of wildlife and a crisis over access to freshwater and food”.
- In 2019, the Oxford dictionaries declared “climate emergency” to be the word of the year, a word that reflects “the ethos, mood, or preoccupations of the passing year, and have lasting potential as a term of cultural significance”.
- It defines climate emergency as “a situation in which urgent action is required to reduce or halt climate change and avoid potentially irreversible environmental damage resulting from it”.
- But even before the New Zealand government planned to declare a climate emergency, some of the regions in the country had already started declaring it since last year.
- Even so, such a declaration is only symbolic and does not have any legal weight because of which critics have said that such announcements don't do enough and are, in fact, “hollow”.
- Some of the countries that have declared a climate emergency in recent years include the UK, Portugal, Canada, France and, most recently, Japan.

### **3.3 Cannabis removed from ‘most dangerous drug’ category**

Recently, the **United Nations Commission on Narcotic Drugs (CND)** has voted to **remove cannabis** and cannabis resin from ‘most dangerous drug’ category.

- The cannabis has been removed from **Schedule IV** of the **1961 Single Convention on Narcotic Drugs**.
- The **53-member CND** has chosen to affirm a World Health Organisation (WHO) recommendation from 2019 to **remove cannabis from its ‘most dangerous’**

category.

- In January 2019, the WHO made **six recommendations related to scheduling of cannabis** in UN treaties.

### India's stand on Cannabis

- India was part of the **voting majority**, along with the US and most European nations whereas China, Pakistan and Russia were among those who voted against.
- In India, the **Narcotic Drugs and Psychotropic Substances (NDPS) Act, 1985**, illegalises any mixture with or without any neutral material, of any of the two forms of cannabis i.e. charas and ganja or any drink prepared from it.
- India is a signatory of the **United Nations Convention Against Illicit Traffic in Narcotic Drugs and Psychotropic Substances** in 1990, the **Single Convention on Narcotic Drugs, 1961** and the **Convention on Psychotropic Substances** of 1971.

### Cannabis Plant

- According to the WHO, cannabis is a **generic term used to denote the several psychoactive preparations** of the plant Cannabis sativa.
- The major psychoactive constituent in cannabis is **Delta-9 tetrahydrocannabinol (THC)**.
- The Mexican name **marijuana** is frequently used in referring to cannabis leaves or other crude plant material in many countries.
- Most species of cannabis are **dioecious plants** that can be identified as **either male or female**.
- The WHO says that cannabis is by far the most **widely cultivated, trafficked and abused illicit drug** in the world.

### International Law on Cannabis

- The **Vienna-based CND**, founded in 1946, is the UN agency mandated to **decide on the scope of control of substances** by placing them in the schedules of global drug control conventions.
- Cannabis has been on Schedule IV (the most dangerous category) of the **1961 Single Convention on Narcotic Drugs** for as long as the international treaty has existed.

- Currently, over 50 countries **allow medicinal cannabis programs**, and its recreational use has been legalised in Canada, Uruguay and 15 US states.

### 3.4 Havana Syndrome

Recently, a report by the **National Academies of Sciences (NAS)** has found directed **microwave radiation** to be the “plausible” cause of the **Havana Syndrome**.

#### Havana Syndrome

- In 2016, US diplomats and other employees stationed in Havana reported felt **ill after hearing strange sounds** and experiencing odd physical sensations in their hotel rooms or homes.
- The symptoms included **nausea, severe headaches, fatigue, dizziness, sleep problems, and hearing loss**, which have since come to be known as “**Havana Syndrome**”.

#### NAS Report on Havana Syndrome

- The NAS report, titled “**An assessment of illness in US government employees and their families at overseas embassies**” examined four possibilities to explain the symptoms i.e. Infection, chemicals, psychological factors and microwave energy.
- The report concluded that directed **pulsed RF energy appears to be the most plausible mechanism** in explaining these cases among those that the committee considered.
- The report mentions that the immediate symptoms that patients reported i.e. **sensations of pain and buzzing sound** which apparently emanated from a particular direction, or occurred in a specific spot in a room.
- The report also mentions that the **committee cannot rule out other possible mechanisms** and considers it likely that a multiplicity of factors explains some cases and the differences between others.
- The report also warns about the **possibility of future episodes** and recommends that the State Department establish a response mechanism for similar incidents.

### 3.5 Bangladesh signs first Preferential Trade Agreement (PTA)

Recently, **Bangladesh** has signed the **first Preferential Trade Agreement (PTA)** since its independence.

- In 1971, **Bhutan was the first country in the world**, followed by India as the second, to recognise Bangladesh as an **independent country**.
- The **trade volume** between the two countries is approximately 50 million dollars with 7.56 million of export and 42.09 million import into Bangladesh.
- Bangladesh is expected to **sign 11 more PTAs and Free Trade Agreements (FTAs)** with countries like Indonesia and Nepal by June 2021.
- **Bangladesh** has signed its **first Preferential Trade Agreement (PTA)** with **Bhutan**.
- The PTA will **allow duty free access** to a range of goods between the two countries.
- The agreement was signed on the occasion marking the **50 years of diplomatic ties** between the two countries.
- Under the PTA **100 Bangladeshi products** will get duty free access to Bhutan and **34 items from Bhutan** will get duty free access into Bangladesh.

#### Preferential Trade Agreement (PTA)

- A free trade agreement is a **preferential arrangement** in which members **reduce tariffs on trade** among themselves while maintaining their own tariff rates for trade with non-members.
- The PTAs or Generalized System of Preferences (GSP) is a **special status** given in trade by various countries.
- India has **signed bilateral FTAs** with Sri Lanka (1998), Afghanistan (2003), Thailand (2004), Singapore (2005), Bhutan (2006), Nepal (2009), Korea (2009), Malaysia (2011) and Japan (2011).

### 3.6 Bangabandhu Sheikh Mujibur Rahman

Recently, the United Nations Educational, Scientific and Cultural Organisation (UNESCO) has decided to launch an **international prize** in the field of **'creative economy'** in the name

### of **Bangabandhu Sheikh Mujibur Rahman.**

- According to UNESCO, the international award will create a **knowledge-sharing mechanism** by capturing, celebrating and communicating best practice in the development of creative entrepreneurship.
- The UNESCO has quoted that the award will **recognise exceptional initiatives** taken by cultural workers and organizations in the **development of the creative economy.**
- The award will create an opportunity to **spread the ideology of Bangabandhu in the world** and inspire the cultural workers to develop the creative economy.

### **Creative Economy**

- Creative Economy refers to an economic activity that **depends on the individual's creativity for its economic value** whether the result has in it any form of cultural value or not.
- The Creative Economy only occurs wherever the **person's creativity is the major source of value** as well as the main cause of a transaction.
- The large **entertainment sector and diverse cultural traditions** form a strong backbone of creative capital.
- The **commercialization and monetization of creative works generate a chain of economic activity**, and drive the production and consumption of goods and services.

### **Bangabandhu Sheikh Mujibur Rahman**

- He was a **Bangladesh politician and statesman** and is also called the '**Father of the Nation**' in Bangladesh.
- He served as the **first President of Bangladesh** and then later as the **Prime Minister of the country.**
- He is credited as a significant figure for gaining **political autonomy for East Pakistan.**
- UNESCO has declared **2021 as 'International Year of Creative Economy for Sustainable Development'**.
- Currently, there are **23 UNESCO International Awards** in the name of

international celebrities and organisations.

### 3.7 San Isidro Movement

Recently, in **Cuba**, a country under an authoritarian communist regime for more than six decades, a campaign by artists and activists demanding **greater freedom of expression** is fast grabbing the limelight.

- The **Movimiento San Isidro**, or the **San Isidro Movement (MSI)**, started in 2018 to **protest state censorship** of artistic works.
- The movement started when the Cuban government sought to enforce **Decree 349**, a law that would have given **powers to the nation's Culture Ministry to restrict cultural activity** it did not approve of.
- The landmark 2015 deal between Cuba and the US gave **crucial firepower** to the movement.



- It provided provisions which stipulated that the **Cuban regime should allow its people greater internet freedoms** in exchange for opening bilateral relations with Washington.

#### Cuba

- Cuba, country of the **West Indies**, is the **largest single island of the archipelago**, and one of the more-influential states of the Caribbean region.
- Cuba is situated just south of the **Tropic of Cancer** at the intersection of the **Atlantic Ocean (north and east)**, the **Gulf of Mexico (west)**, and the **Caribbean Sea (south)**.

### 3.8 Human Development Index

Recently, the **United Nations Development Programme (UNDP)** has released the **Human Development Index (HDI)**.

- The UNDP introduced a **new metric** to reflect the impact caused by each country's per-capita carbon emissions and its material footprint.
  - It measures the amount of **fossil fuels, metals and other resources** used to make the goods and services it consumes.

- The indigenous children in **Cambodia, India and Thailand** show more **malnutrition-related issues** such as stunting and wasting.
- The report highlighted that **Norway topped the index**, followed by Ireland, Switzerland, Hong Kong, and Iceland.
- It stated that **Pakistan (154), Nepal (142), Bangladesh (133), India and Bhutan (129)** stand among countries with **medium human development**.
- It also provided that **Life expectancy of Indians at birth in 2019 was 69.7 years**, while Bangladesh had a life expectancy of 72.6 years and Pakistan 67.3 years.
- **Singapore** was ranked 11, **Saudi Arabia** 40, and **Malaysia** was at 62 in the global index, representing the top bracket among the Asian countries with “**very high human development**”.
- In the BRICS grouping, **Russia was 52** in the human development index, **Brazil 84, and China 85**.

#### **Performance of India in HDI 2020**

- India has **dropped two ranks** in the United Nations’ Human Development Index 2020, standing at **131 out of 189 countries**.
- **India’s gross national income per capita fell** to \$6,681 in 2019 from \$6,829 in 2018 on purchasing power parity (PPP) basis.
  - The purchasing power parity or PPP is a measurement of prices in different countries that **uses the prices of specific goods to compare the absolute purchasing power** of the countries’ currencies.
- The report said evidence from Colombia to India indicates that **financial security and ownership of land improve women’s security** and reduce the risk of gender-based violence, clearly indicating that owning land can empower women.
- In India different responses in parent behaviour as well as some **disinvestment in girls’ health and education** have led to higher malnutrition among girls than among boys.
- The report said that under the Paris Agreement, **India pledged to reduce the emission intensity** of its GDP from the 2005 level by 33-35% by 2030 and to obtain 40% of electric power capacity from non-fossil fuel sources by 2030.

## Human Development Index (HDI)

- The HDI is the **measure of a country's health, education, and standard of living** and ascertains a nations' average achievement in three basic scales of human development – education, life expectancy, and per capita income.
- The index **monitors nations' long-term progress** and considers factors such as their citizens' ability to lead a long and healthy life, access to knowledge and a decent standard of living.

## 3.9 Human Freedom Index

Recently, the **Human Freedom Index 2020** was released by the **Cato Institute** in the United States and **Fraser Institute** in Canada.

- The Human Freedom Index 2020, which **uses data from 2008 to 2018**, noted a decrease in personal freedoms since 2008 globally.
- This sixth annual index uses 76 distinct indicators of **personal and economic freedom** in the following areas:
  - **Rule of Law**
  - **Security and Safety**
  - **Movement**
  - **Religion**
  - **Association, Assembly, and Civil Society**
  - **Expression and Information**
  - **Identity and Relationships**
  - **Size of Government**
  - **Legal System and Property Rights**
  - **Access to Sound Money**
  - **Freedom to Trade Internationally**
  - **Regulation of Credit, Labor, and Business**
- **New Zealand** was ranked one in the index, followed by **Switzerland** and **Hong**

### **Kong.**

- The index put **China at 129, Bangladesh at 139 and Pakistan at 140.**
- The report highlighted that the level of **global freedom has decreased slightly** (-0.04), with 70 countries in the index increasing their ratings and 70 decreasing.
  - **Only 15%** of the world's population lives in the top quartile of countries in the HFI, and **34% live in the bottom quartile.**
- The gap in human freedom between the **most free and the least free countries has widened** since 2008, increasing by 6% when comparing the top and bottom 10% of nations in the HFI.
- The report added that out of 10 regions, the regions with the **highest levels of freedom** are **North America** (Canada and the United States), **Western Europe and East Asia.**
- **Women-specific freedoms** are strongest in North America, Western Europe, and East Asia and are least protected in the Middle East and North Africa, sub-Saharan Africa, and South Asia.

### **India's performance in Human Freedom Index 2020**

- India was ranked **111th out of the 162 countries** under personal, civil and economic freedom.
- India was ranked **110 in terms of personal freedom** and **105 on economic freedom**, with an overall score of 6.43 out of 10.
- India ranks above neighbours **Pakistan (140), Bangladesh (139) and China (129)** but below **Bhutan (108), Sri Lanka (94) and Nepal (92).**

### **Human Freedom Index**

- It presents the state of human freedom in the world based on a **broad measure** that encompasses **personal, civil, and economic freedom.**
- Human freedom is a social concept that **recognizes the dignity of individuals** and is defined here as negative liberty or the absence of coercive constraint.
- It is a resource that can help to **more objectively observe relationships** between freedom and other social and economic phenomena.

### 3.10 UNESCO 'Intangible Heritage'

Recently, the **Street Hawker Culture of Singapore** has been designated as an **Intangible Cultural Heritage** by the UNESCO.

- The list was established in 2008 when **Convention for Safeguarding of the Intangible Cultural Heritage** came into effect.
- The intangible cultural heritage is an important factor in **maintaining cultural diversity** in the face of growing globalization.
- The importance of **intangible cultural heritage is not the cultural manifestation itself** but rather the wealth of knowledge and skills that is transmitted through it from one generation to the next.
- The intangible cultural heritage is:

**Traditional, contemporary and living at the same time:** Intangible cultural heritage does not only represent inherited traditions from the past but also contemporary rural and urban practices in which diverse cultural groups take part.

**Inclusive:** Intangible cultural heritage does not give rise to questions of whether or not certain practices are specific to a culture.

• It contributes to **social cohesion, encouraging a sense of identity and responsibility** which helps individuals to feel part of one or different communities and to feel part of society at large.

• **Representative:** intangible cultural heritage is not merely valued as a cultural good, on a comparative basis, for its exclusivity or its exceptional value.

• It thrives on its basis in communities and depends on those whose knowledge of traditions, skills and customs are passed on to the rest of the community.

• **Community-based:** intangible cultural heritage can only be heritage when it is recognized as such by the communities, groups or individuals that create, maintain and transmit it.

#### Street Hawker Culture

- The Singapore's street hawkers are an **indelible part of the city-state's local life**.
- These hawker stalls are a **huge tourist attraction, drawing millions of tourists** for dishes like nasi lemak, chilli crab, kaya toast, laksa, and roti prata.
- The hawker centres are **representative of Singapore's multiculturalism**, with stalls selling cheap, delicious food of Chinese, Malay, Indian origins, among others.
- The Singapore government, under its **National Environment Agency**, has implemented many steps to keep the hawker culture alive, including:
  - Setting up the **Incubation Stall Programme** for aspiring street hawkers.
  - The **Hawkers' Development Programme** equips aspiring and existing street hawkers with relevant skills, such as social media marketing.
  - The **Hawker's Productivity Grant** offers funding to individual stall owners to encourage them to be more productive by using automated equipment.
- The Intangible Cultural Heritages from India added into the **UNESCO 'Intangible Heritage'** list include:
  - **Tradition of Vedic chanting**
  - **Ramlila**, the traditional performance of the Ramayana
  - **Kutiyattam**, Sanskrit theatre
  - **Ramman**, religious festival and ritual theatre of the Garhwal Himalayas.
  - **Mudiyettu**, ritual theatre and dance drama of Kerala
  - **Kalbelia folk songs** and dances of Rajasthan
  - **Chhau dance**
  - **Buddhist chanting of Ladakh**: recitation of sacred Buddhist texts in the trans-Himalayan Ladakh region, Jammu and Kashmir.
  - **Sankirtana**, ritual singing, drumming and dancing of Manipur
  - **Traditional brass and copper craft** of utensil making among the Thatheras of Jandiala Guru, Punjab
  - **Yoga**
  - **Nawrouz**

- **Kumbh Mela**

### 3.11 Coronavirus in Antarctica

Recently, atleast 36 people at a **Chilean research station in Antarctica** have been found infected with the **novel coronavirus**.

- The **Council of Managers of National Antarctic Programs** had decided early in the pandemic to **cut team sizes** and limit the number of people at the stations.
- All major **research projects were halted, tourism was cancelled**, and several facilities were shut.
- The US sent **only about a third of its usual staff strength** while the British Antarctic Survey said it was **scaling back its research**.
- Antarctica is uninhabited except for those **manning the nearly 60 permanent stations** established by several countries, including India, for carrying out scientific research.
- The infected people were stationed at the **General Bernardo O'Higgins Riquelme**, located on the **northernmost tip of Antarctica**.
- The infections were possibly passed on by **people on board a ship** that recently delivered supplies to the research station.

#### Indian Stations in Antarctica

- The two Indian permanent stations, **Maitri and Bharati**, are at least 5,000 km away from the Chilean base and the Indian contingent in Antarctica is not worried about the virus spreading.
- The **National Centre for Polar and Ocean Research (NCPOR)** is the nodal agency for India's scientific expeditions in Antarctica and the Arctic.

#### Council of Managers of National Antarctic Programs (COMNAP)

- It is the **international association**, formed in 1988, which brings together its Members, who are the **National Antarctic Programs**.
- National Antarctic Programs are those organizations that have **responsibility for delivering and supporting scientific research** in the Antarctic Treaty Area on

behalf of their respective governments.

- COMNAP's purpose is to **develop and promote best practice** in managing the support of scientific research in Antarctica by:
  - **Serving as a forum to develop practices** that improve effectiveness of activities in an environmentally responsible manner;
  - **Facilitating and promoting international partnerships;**
  - **Providing opportunities and systems for information exchange;** and
  - **Providing the Antarctic Treaty System** with objective and practical, technical and non-political advice drawn from the National Antarctic Programs' pool of expertise.
- COMNAP consists of **30 National Antarctic Program Members.**
- The headquarters for COMNAP is the COMNAP Secretariat, hosted by the **University of Canterbury in Christchurch, New Zealand.**

### **Indian Antarctic Programme**

- The **first Indian expedition** to Antarctica i.e. the Indian Antarctic Programme, landed on the ice continent in **1982.**
- The programme was **initiated in 1981** with a selected team of 21 members under the leadership of Dr S Z Qasim.
- Under the environmental protocol of the Antarctic Treaty (1959), India has set up **three research stations** up till now:

### **Dakshin Gangotri**

- The **first Indian scientific research base station** was established in Antarctica as part of the third Antarctic programme.
- It was the first time an **Indian team spent a winter in Antarctica** to carry out scientific work.
- It was established in **1983-84.**

### **Maitri**

- In 1988, an ice-free, rocky area on the **Schirmacher Oasis** was selected to build the

second research station named Maitri.

- The building was erected on steel stilts, and has stood the test of time in **conducting experiments in geology, geography and medicine.**

#### **Bharati**

- Located beside Larsmann Hill, about 3000 km east of Maitri, **Bharati was established in 2015.**
- It is located between **Thala Fjord & Quilty bay**, east of Stornes Peninsula in Antarctica.

### **3.12 Shaheen Exercise**

Recently, **Pakistan** has welcomed combat pilots and military aircraft from **China** as they arrived for **Shaheen-IX Exercise** in Pakistan.

#### **Shaheen Exercise**

- It is joint air force drill between **Pakistan Air Force (PAF)** and **People's Liberation Army Air Force (PLAAF).**
- The exercise offers opportunity to further **enhance interoperability of both the air forces**, thereby fortifying brotherly relations between the two countries.
- The air drills, also known as **Xiongying (or Eagle)**, is the ninth in the series of joint air exercises, conducted each year in both countries on an alternate basis.

### **3.13 Link between Mediterranean diet and South Asia**

Recently, the researchers have found **evidence of foods from South Asia**, including bananas, sesame and turmeric, going back to at least the **second millennium BCE.**

#### **Key Highlights**

- The new finding shows the Levant, the **eastern Mediterranean region** which includes present-day Syria, Lebanon, Jordan, Israel, Palestine and Turkey, had been **trading with South Asia.**
- The South Asia region was the region where **bananas, sesame and turmeric were**

widely cultivated, as early as 3,500-4000 years ago.

- The findings force us to rethink the **complexity and intensity of Indo-Mediterranean trade** during the Bronze Age as well as the degree of globalisation in early Eastern Mediterranean cuisine.
- The study implies that the **development of certain crucial elements of modern Levantine cuisine**, such as the sesame seed paste known as tahini and ras el-hanout, a spice mix that includes turmeric, can be traced back to this early period.
- The **archaeological evidence drawn from ancient skeletons** suggests that bananas had become popular enough in the region that they were accessible to the common people.

#### Evidence of Mediterranean diet and South Asia

- The evidence on which the study is based comes from the **dental calculus** i.e. tooth tartar or calcified dental plaque which was drawn from the teeth of 14 skulls.
- Dental calculus has been found to trap a lot of evidence, from **DNA to food molecules to bacteria**, and helps shed light on a number of different things.



### NATIONAL

#### 4.1 Bureau of Indian Standards (BIS)-certified helmets

- The government said only Bureau of Indian Standards (BIS)-certified helmets would be manufactured and sold in India for two-wheelers.
- This would help in avoiding sale of low-quality two-wheeler helmets in the country, which would help in protecting persons involved in accidents from fatal injuries, the Ministry of Road Transport and Highways said in a statement.
- “The Ministry of Road Transport and Highways...has issued the ‘Helmet for riders of Two Wheelers Motor Vehicles (Quality Control) Order, 2020’.
- “Protective helmets for two-wheeler riders have been included under compulsory BIS certification and the publication of the Quality Control Order,” it said.
- Following the directions of the Supreme Court Committee on Road Safety, a committee was formulated to consider lighter helmets in India suiting the country’s climatic conditions and that for ensuring compliance among citizen to wear the

helmets.

- The committee had experts from different fields, including expert doctors from AIIMS and also from BIS.
- The committee in March 2018, after detailed analysis in its report, recommended lighter helmets in the country, and the ministry accepted the report.
- According to the recommendations of the committee, the BIS has revised specifications through which it is expected to make lighter helmets.
- The total number of two-wheelers being manufactured in India annually stands at about 1.7 crore.
- The International Road Federation, a Geneva-based global road safety body working for better and safer roads worldwide, welcomed the road transport ministry's move to bring helmets for two-wheeler riders under the mandatory BIS regime.

#### **4.2 Motor Vehicle Aggregator Guidelines 2020**

- Ride-hailing aggregators such as Ola and Uber have been brought under the Centre's regulation, implying greater scrutiny and stringent penalties for any non-compliance related to passenger fare and labour rules like working hours of drivers.
- Government control over the cab tariff structure tops the list of regulations.
- The new norms, as per the Motor Vehicle Aggregator Guidelines 2020, have mandated a cap on surge price, preventing aggregators from charging more than 1.5 times of the base fare.
- The new legal framework would also mean a driver working with Ola, Uber or similar aggregator companies cannot be logged in for more than 12 hours in a day.
- There has to be a mandatory 10-hour break after working for 12 hours.
- For cancellation of bookings, either by the driver or the rider, the penalty has been fixed at 10 per cent of the fare, but it cannot exceed Rs 100.
- The cab aggregator stares at the suspension of licence on multiple grounds —if it fails to ensure safety of its riders, if it charges higher rates repeatedly and in case it fails to comply with the contractual obligations towards drivers.
- If the aggregator receives more than three suspensions in a financial year, its licence

will be cancelled and the aggregator will be forced to stop operations with immediate effect.

- Aggregators may provide pooling facilities to only those riders whose KYC (know your customer) details are available and who will travel along the same route but with varied stoppages under a virtual contract through the app.

### 4.3 Ramayana Cruise Service

Recently, the Minister of Ports, Shipping and Waterways today chaired a review meeting for the implementation of '**Ramayana Cruise Service**'.

- It will be the **first-ever luxury Cruise service** on the **Saryu river** (Ghagra/National Waterways-40) in **Ayodhya, Uttar Pradesh**.
- It aims to give mesmerizing experience to devotees with **one-of-its-kind spiritual journeys** while cruising through the famous ghats of the holy river Saryu.
- The cruise will be **equipped with all luxury comfort and facilities** along with all essential safety and security features at par with the global standard.

### 4.4 NRIs to vote by post

Recently, the Election Commission (EC) approached the Law Ministry to **permit NRIs to cast their votes from overseas** through postal ballots.

- The EC began to look for options to **enable NRIs to vote from overseas** after it received several requests from the Ministry of External Affairs.
- The 12-member committee appointed by the EC had **consulted national political parties** and the **Ministry of External Affairs (MEA)** on the options being considered for NRIs to cast their vote abroad.

#### Viewpoint of ECI on Postal Ballots for NRIs

- The EC told the government it had **received representations from the Indian diaspora** about facilitating voting through postal votes since travelling to India only for this purpose is a "costly affair".
- The **NRIs cannot leave the country of their residence** owing to

specific **compulsions** of employment, education or other engagements.

- The Commission informed the government that it is “technically and administratively ready” to extend the **Electronically Transmitted Postal Ballot System (ETPBS)** to voters abroad for elections next year in Assam, West Bengal, Kerala, Tamil Nadu and Puducherry.

#### **Current process of voting for NRIs**

- An NRI can **vote in the constituency** in which her place of residence, as **mentioned in the passport**, is located.
- She can **only vote in person** and will have to **produce her passport in original at the polling station** for establishing identity.
- The voting rights for NRIs were **introduced in 2011** through an amendment to the **Representation of the People Act 1950**.
- According to a UN report of 2015, **India's diaspora population** is the largest in the world at 16 million people.
- The registration of NRI voters is **little over one lakh overseas Indians registered** as voters in India.

#### **Proposal for NRIs Postal Ballots**

- According to the EC proposal, **any NRI interested in voting through the postal ballot** in an election will have to inform the Returning Officer (RO) not later than five days after the notification of the election.
- On receiving such information, the **RO will dispatch the ballot paper electronically**.
- The NRI voters will **download the ballot paper, mark their preference on the printout and send it back along with a declaration attested by an officer** appointed by the diplomatic or consular representative of India in the country where the NRI is resident.

#### **4.5 Operation Trident**

Recently, India celebrated December 4 as Navy Day to commemorate **Operation Trident**.

- The Navy plans to celebrate 2021 as ‘Swarnim Vijay Varsh’ as part of commemorating the 50th anniversary of the victory in the 1971 war.
- Under Operation Trident, the **Indian Navy sank three vessels** near the Pakistani port city of Karachi.
- The stars of the mission were the then-recently acquired **Soviet Osa missile boats**, fitted with 4 SS-N-2 (P-15) Styx missiles.
- **INS Kiltan, Katchall, Nipat, Nighat** and Veer sank PNS Khaibar killing 222 Pakistani sailors, and PNS Muhafiz killing 33 Pakistani sailors.
- Operation Trident resulted in the **first use of anti-ship missiles** in the region as well as the **first sinking of naval vessels** during hostilities in the region since World War II.

#### 4.6 Himachal Pradesh wants GI status for five products

Recently, the Himachal Pradesh government is trying to obtain **Geographical Indication for five products** i.e. **Karsog Kulth, Thangi of Pangi, Chamba Metal Crafts, Chamba Chukh, and Rajmah of Bharmour.**

#### Geographical Indication

- The World Intellectual Property Organisation defines a GI as a **sign used on products** that have a **specific geographical origin** and possess qualities or a reputation that are due to that origin.
- The GIs are typically used for **agricultural products, foodstuffs, handicrafts, industrial products, wines and spirit drinks.**
- Internationally, GIs are covered as an element of intellectual property rights under the **Paris Convention for the Protection of Industrial Property.**
- The GIs are also covered under the **Trade Related Aspects of Intellectual Property Rights (TRIPS) Agreement.**

#### Five Products from Himachal Pradesh

- **Karsog Kulth:** Kulthi or Kulth (horse gram) is a **legume grown as a Kharif crop** in Himachal Pradesh.
  - Kulth grown in the Karsog area of Mandi district is believed to be

particularly **rich in amino acids**.

- **Pangi ki Thangi:** It is a type of hazelnut which grows in Pangi valley located in the northwestern edge of Himachal.
  - It is known for its unique **flavour and sweetness**.
- **Chamba metal crafts:** These include items such as metal idols and brass utensils which, historically, were made by skilled artisans in the courts of kings of Chamba.
  - There are efforts to **revive the trade, and a plate made from a brass-like alloy** and having carvings of gods and goddesses is still popular.
- **Chamba Chukh:** It is a **chutney made from green and red chillies** grown in Chamba, and prepared in traditional and unique ways.
  - The practice has largely **declined in rural households of Chamba**, but survives to some extent at the small-scale industrial level.
- **Bharmouri Rajmah:** It is more specifically called the Kugtalu Rajmah, since it grows in the area around Kugti Pass in the Bharmour region of Chamba district. It is rich in proteins and has a unique flavour.

#### 4.7 Operation Nigha

Recently, the officials of the **Special Enforcement Bureau (SEB)** and the police have conducted raids under '**Operation Nigha**'.

- It is an operation to **check sand, liquor and ganja smuggling**, and arrack manufacturing units, besides checking the vehicles at the borders.
- The operation was carried out by **Andhra Pradesh police** in support from **Special Enforcement Bureau (SEB)**.
- Under Op Nigha, the police conducted **raids in villages, mangrove forests, island villages** and some lodges.

#### 4.8 UNESCO World Heritage Cities

Recently, two Indian cities i.e. **Gwalior** and **Orchha** have been included in the list of **UNESCO World Heritage Cities**.

- The United Nations Educational, Scientific and Cultural Organization (UNESCO) is an agency of the United Nations.
  - It aims at promoting **world peace and security through international cooperation** in education, the sciences, and culture.
- The UNESCO seeks to **encourage the identification, protection and preservation of cultural and natural heritage** around the world considered to be of outstanding value to humanity.
- It is embodied in an international treaty called the Convention concerning the **Protection of the World Cultural and Natural Heritage**, adopted by UNESCO in 1972.

#### **Mission of UNESCO World Heritage City**

- Encourage countries to sign the World Heritage Convention and to **ensure the protection of their natural and cultural heritage**;
- Encourage States Parties to the Convention to **nominate sites within their national territory for inclusion** on the World Heritage List;
- Encourage States Parties to establish management plans and set up reporting systems on the state of conservation of their World Heritage sites;
- Help States Parties **safeguard World Heritage properties** by providing technical assistance and professional training;
- Provide emergency **assistance for World Heritage sites** in immediate danger; and
- Support States Parties' **public awareness-building activities** for World Heritage conservation.

#### **Criteria for selection under UNESCO World Heritage City**

- The criteria are explained in the **Operational Guidelines for the Implementation of the World Heritage Convention**.
- With the adoption of the revised Operational Guidelines for the Implementation of the World Heritage Convention, one set of **ten criteria** exists:
  - to represent a **masterpiece of human creative genius**;
  - to exhibit an **important interchange of human values**, over a span of time or within a cultural area of the world, on developments in architecture or technology, monumental arts, town-planning or landscape design;
  - to bear a unique or at least **exceptional testimony to a cultural tradition** or to a civilization which is living or which has disappeared;

- to be an outstanding example of a type of **building, architectural or technological ensemble or landscape** which illustrates (a) significant stage(s) in human history;
- to be an outstanding example of a **traditional human settlement, land-use, or sea-use** which is representative of a culture (or cultures), or human interaction with the environment especially when it has become vulnerable under the impact of irreversible change;
- to be **directly or tangibly associated with events or living traditions**, with ideas, or with beliefs, with artistic and literary works of outstanding universal significance.
- to contain **superlative natural phenomena** or areas of exceptional natural beauty and aesthetic importance;
- to be outstanding examples **representing major stages of earth's history**, including the record of life, significant on-going geological processes in the development of landforms, or significant geomorphic or physiographic features;
- to be outstanding examples **representing significant on-going ecological and biological processes** in the evolution and development of terrestrial, fresh water, coastal and marine ecosystems and communities of plants and animals; and
- to contain the most important and significant natural habitats for **in-situ conservation of biological diversity**.

#### 4.9 INS Kalvari

Recently, the Indian Navy celebrated **Submarine Day** on December 8th to mark the **unfurling of the first submarine** i.e. **INS Kalvari**, to be inducted in the Indian Navy.

- It was a **diesel-electric submarine** of the Foxtrot Class from the erstwhile USSR.
- Kalvari is the Malayalam name for **Tiger Shark**, a predator in the Indian Ocean.
- It was **decommissioned in 1996** after 29 years of service.
- It had a **range of 32,000 km at a speed of 8 knots** when on surface and a submerged range of 610 km at a speed of 10 knots.

#### Present Kalvari Class submarines

- INS Kalvari, a **diesel-electric submarine of Scorpene-class**, was inducted into

service in 2017 after having being built at the **Mazagon dock in Mumbai.**

- It has been **designed by French company DCNS.**
- **INS Khanderi** is the other submarine of Kalvari class currently in service.
  - The other submarines slated to join service under this class are **Vela, Karanj, Vaghir and Vaghsheer.**

#### 4.10 Submarine Optical Fibre Cable Connectivity

Recently, the Union Cabinet has given its approval for provision of **Submarine Optical Fibre Cable Connectivity** between Mainland (Kochi) and Lakshadweep Islands (KLI Project).

- The Project envisages provision of a **direct communication link** through a dedicated submarine **Optical Fibre Cable (OFC)** between Kochi and Islands of Lakshadweep.
  - The 11 islands of Lakshadweep are **Kavaratti, Kalpeni, Agati, Amini, Androth, Minicoy, Bangaram, Bitra, Chetlat, Kiltan and Kadmat.**
- The estimated cost of implementation is about Rs. 1072 crore including **operational expenses for 5 years.**
- The Project would be funded by **Universal Service Obligation Fund.**

#### Impact of KLI Project

- It is evident that the **growth of telecom infrastructure** is closely linked with the economic and social development.
- The telecommunication connectivity plays vital role in **employment generation.**
- The present approval for Provision of Submarine Optical Fibre Cable Connectivity will vastly **improve telecommunication facility in the Lakshadweep Islands** by providing large bandwidth.
- The submarine connectivity project will have **vital role for delivery of e-Governance services** at the doorstep of citizens, potential development of fisheries, coconut based industries and high-value tourism.
- It will help in **establishment of numerous businesses, augment e-commerce activities** and provide adequate **support to educational institutes** for knowledge

sharing.

### Implementation Strategy and Targets of KLI Project

- The **Bharat Sanchar Nigam Ltd. (BSNL)** has been nominated as **Project Execution Agency** and **Telecommunications Consultant India Ltd. (TCIL)** as the **Technical Consultant** of the Project.
- The **ownership of the asset** under the project will rest with USOF, the funding agency, under DoT.
- The project is targeted to be completed by **May 2023**.

### Submarine Optical Fibre Cable Connectivity

- A submarine communications cable is a **cable laid on the seabed** between land-based stations to transmit telecommunication signals across stretches of ocean and sea.
- In August 2020, the government of India has inaugurated the **submarine optical fibre cable (OFC)** connecting Andaman and Nicobar to the rest of the country.
- The inauguration of the submarine Optical Fibre Cable in Andaman and Nicobar Islands ensures:
  - **High-speed broadband connectivity,**
  - **Fast and reliable mobile and landline telecom services,**
  - **Big boost to the local economy,**
  - **Delivery of e-governance, and**
  - **Telemedicine and tele-education**

### 4.11 Universal Service Obligation Fund Scheme

Recently, the Union Cabinet has approved the provision of **Universal Service Obligation Fund (USOF) Scheme** for providing **Mobile Coverage** in Arunachal Pradesh and two Districts of Assam.

- The provision for providing Mobile Coverage is approved under the **Comprehensive Telecom Development Plan (CTDP) for North Eastern**

### **Region (NER).**

- The project envisages providing **mobile coverage to 2374 uncovered villages** at an estimated cost of implementation about Rs.2029 crore including **operational expenses for five years.**
- The project would be funded by **Universal Service Obligation Fund.**
- The project is targeted to be completed by **December, 2022.**
- The work related to provision of 4G mobile services in identified uncovered villages will be awarded through **open competitive bidding process** as per extant USOF procedures.

### **Universal Service Obligation Fund Scheme**

- The **New Telecom Policy (NTP) 1999** of Department of Telecom had Universal Service as one of its main objectives.
- The NTP 1999 provided that the **resources for meeting the Universal Service Obligation (USO)** were to be generated through a Universal Access Levy (UAL).
- The NTP 1999 envisaged the **implementation of USO Obligation for rural and remote areas** would be undertaken by all fixed service providers.
- The **Indian Telegraph (Amendment) Act, 2003** giving **statutory status** to the Universal Service Obligation Fund (USOF) was passed by both Houses of Parliament in December 2003.
  - As per the Indian Telegraph Act 1885 (as amended in 2003, 2006), the Fund is to be **utilized exclusively** for meeting the **Universal Service Obligation.**

### **4.12 Indus Valley Civilisation diet had dominance of meat**

Recently, a new study published in the 'Journal of Archaeological Science' has found out that **diet of the people of Indus Valley civilisation** had a **dominance of meat**, including extensive eating of beef.

- The study, titled "**Lipid residues in pottery from the Indus Civilisation in northwest India**" highlighted the food habit of the people of that era on the basis of **lipid residue analysis** found in pottery from Harappan sites in Haryana.

- It finds dominance of animal products such as **meat of pigs, cattle, buffalo, sheep and goat**, as well as **dairy products**, used in ancient ceramic vessels from rural and urban settlements of Indus Valley civilisation in northwest India.
- The study revealed that the **high proportions of cattle bones** may suggest a cultural preference for beef consumption across Indus populations, supplemented by consumption of mutton/lamb.
- It says that at Harappa, **90% of the cattle were kept alive** until they were three or three-and-a-half years, suggesting that females were used for dairying production, whereas male animals were used for traction.

#### 4.13 Handicraft and GI Toys exempted from Quality Control Order

Recently, the **Department for Promotion of Industry and Internal Trade (DPIIT)** has released the **Toys (Quality Control) Second Amendment Order, 2020**.

- It **exempts goods manufactured & sold by artisans** registered with Development Commissioner (Handicrafts), from use of Standard Mark under licence from Bureau of Indian Standards, as per Scheme 1 of Schedule-II of BIS (Conformity Assessment) Regulations, 2018.
- The Amendment Order 2020 also **exempts products registered as Geographical Indications** from following Indian Toy Standards & compulsory use of Standard Mark licence from Bureau as per Scheme 1 of Schedule-II of BIS (CA) Regulations, 2018.
- The notification issued by the department says that nothing in this Order shall apply to **goods or articles manufactured and sold by Registered proprietor and Authorised user** of a product registered as Geographical Indication by the Registrar of Geographical Indications, Office of Controller General of Patents, Designs and Trademarks (CGPDTM).

#### Significance of exemption of Handicraft and GI Toys

- It is aimed at **framing a comprehensive plan** in order to **boost production & sale of indigenous toys** across the country.
- The order aims to bring forward the **synergized efforts of the GoI, states and the stakeholders** to promote 'Team up for toys' vision keeping quality standards of

the indigenous toys as the priority.

### Quality Control Order for toys

- The Quality Control Order shall apply to **(Toys) Product or material designed or clearly intended for use** in play by **children under 14 years of age** or any other product as notified by the Central Government from time to time.
- The order shall apply to Toys as they are **initially received by the children** and, in addition, this shall apply after a **toy is subjected to reasonably foreseeable conditions** of normal use and abuse unless specifically noted otherwise.

### 4.14 Prime Minister's Special Scholarship Scheme (PMSSS)

Recently, **All India Council for Technical Education (AICTE)** has decided to release the instalment of Rs. 20,000/- as maintenance allowance under **Prime Minister's Special Scholarship Scheme (PMSSS)**.

- An Expert Group was constituted by the Prime Minister for **enhancing employment opportunity** among youths of J&K and Ladakh and formulates job opportunities in public and private sectors.

#### Features

- It is being implemented by the **All India Council for Technical Education (AICTE)**.
- Under the PMSSS Scheme, the youths of J&K and Ladakh are supported by way of **scholarship in two parts** namely the **academic fee & maintenance allowance**.
  - The academic fee is paid to the institution where the **student is provided admission after on-line counselling process** conducted by the AICTE.
  - The academic fee covers tuition fee and other components as per the **ceiling fixed for various professional, medical and other undergraduate courses**.
- The main objectives of the Scheme are as under:
  - Evolving guidelines for **proper implementation of the scheme** to fulfil the objectives
  - To **Conduct Awareness Workshops** about the Scheme

- To **Conduct Counselling for admission of candidates** to different programs/courses
- **Disbursal of Scholarship** for the eligible Candidates
- **Redressal of Grievances** of PMSSS Candidates
- The **J & K cell is responsible for proper implementation of the scheme** to fulfil the objectives of Prime Ministers Special Scholarship Scheme to J&K Students.

#### **Eligibility under PMSSS**

- Candidates having **domicile** of Union Territories of **Jammu & Kashmir and Ladakh**.
- Students must have **passed 12th examination from JKBOSE or CBSE affiliated schools** located in J&K and Ladakh in academic year 2018-19 or 2019-20 only.
- Family income of **Rs. 8.00 Lakh or less per annum**.

#### **Significance of PMSSS**

- The Scheme aims to **build the capacities of the youths of J&K and Ladakh** by Educating, Enabling and Empowering them to compete in the normal course.
- It facilitates **access to quality education** with an aim to equip youth with knowledge, skills, experience and training for higher academic level/profession.

#### **All India Council for Technical Education (AICTE)**

- It was set up in **November 1945 as a national-level apex advisory body** to conduct a survey on the facilities available for technical education.
- It aims to **promote development in the country** in a coordinated and integrated manner.
- The AICTE Act was constituted to **provide for the establishment of an All India Council for Technical Education** with a view to proper planning and co-ordinated development of a technical education system throughout the country.
- The purview of AICTE (the Council) **covers programmes of technical education** including training and research in Engineering, Technology, Architecture, Town Planning etc. at different levels.

#### 4.15 Golden Peacock Environment Management Award

Recently, the **Steel Authority of India Limited (SAIL)** has been awarded with the prestigious **Golden Peacock Environment Management Award** for the year 2020 in the Steel Sector.

- It is the **coveted and prestigious recognition** that an organization could strive to win for environment management.
- It was instituted in **1998** by **World Economic Forum (WEF)**.
- It is presented at the Annual '**World Congress on Environment Management**', to organisations adjudged to have attained significant achievements in the field of Environment Management.

#### Golden Peacock Award

- It is instituted by the **Institute of Directors (IOD)**, India in 1991.
- Its purpose is to create a **competition for raising overall performance standards** and recognise the achievements of the best performing organisations.
- All institutions whether **public, private, non-profit, government, business, manufacturing and service sector** are eligible to apply.
- The Awards are bestowed annually and are designed to **encourage total improvement in each sector** of our business.

#### 4.16 National Hydrology Project

Recently, the Union Minister of Jal Shakti reviews progress made under **National Hydrology Project**.

- It was started in the year 2016 as a **Central Sector Scheme** with **100% grant to Implementing agencies** on pan India basis.
- It is a **World Bank supported initiative** of Ministry of Jal Shakti.
- The project aims at **improving the extent, reliability and accessibility of water resources information** and to strengthen the capacity of targeted water resource management institutions in India.

- NHP is facilitating **acquisition of reliable information efficiently** which would pave the way for an effective water resource development and management.

#### **Progress under National Hydrology Project**

- It has made significant progress in the fields of **Water resource monitoring system, water resource information system (WRIS), water resource operation and planning systems** and institutional capacity enhancement.
- Under the NHP, a nationwide repository of water resources data i.e. **National Water informatics Centre (NWIC)** has been established.
- The NHP is focusing on establishment of **real time data acquisition system (RTDAS)** on pan India basis.
- The major success has been **bringing all the states on board for sharing of water resources** data on a centralized platform.

Raja Sir's

#### **4.17 Mission Purvodaya**

Recently, the Union Minister of Steel has emphasized the role of SAIL steel plants in **Mission Purvodaya** to drive development of eastern India.

- The Steel Ministry has said that the **eastern belt has the potential to add over 75 percent** of the country's incremental **steel capacity** envisioned by the National Steel Policy.
- It is expected that out of the **300 Million Tonne capacity by 2030-31**, over 200 Million Tonne can come from this region alone.
- The **Eastern India is a focus area for the government** and about half of aspirational districts are in this region which is becoming hotspots of socio-economic development.
- The programme is aimed at **accelerated development of eastern India** through establishment of integrated steel hub.
- Under the mission, the government said it will **enhance capacity through easing the setup of greenfield steel plants**, develop steel clusters near integrated steel plants as well as demand centres.
- The focus will be on eastern states of India (**Odisha, Jharkhand, Chhattisgarh**

and West Bengal) and the northern part of Andhra Pradesh which collectively holds 80% of the country's iron ore, 100% of coking coal and a significant portion of chromite, bauxite and dolomite reserves.

- **Japan** is the **partner country** who will guide India in making Indian steel ecosystem bigger both in qualitative and quantitative terms.

### Significance of Mission Purvodaya

- The mission will drive **India's march towards five trillion dollar economy** set by the government.
- Through this programme, the government aims to **transform logistics and utilities infrastructure** which would change the socio-economic landscape in the eastern India.

### National Steel Policy 2017

- The policy is nested within the **government's overall aspirational target** of more than doubling the domestic steel capacity to 300 MTPA by FY2031
- It envisages investment to the tune of **₹10-lakh crore to scale up crude steel production capacity** to 300 MT by 2030-31.
  - To achieve the **NSP target of 300 MT of steel capacity** by FY2031, India would need to set up fresh capacities of 12 million tonnes (MT) every year till 2031.

### 4.18 Yogasana as a Competitive Sport

Recently, the Ministry of AYUSH (MoA) and Ministry of Youth Affairs and Sports have announced the formal recognition of **Yogasana as a competitive sport**.

- The Government of India traced the **origins of Yogasana competitions to the Indian Yoga tradition**, where such competitions have been held for centuries.
- The Government decision to **recognise Yogasana as a competitive sport comes after 3-4 years of wide consultations** with the stakeholders of the Yoga sector.
- The **National Board for Promotion and Development of Yoga and Naturopathy (NDPDYN)** of MoA, in its 5th meeting held in July 2019 recommended to recognise Yogasana as a competitive sport.

### Significance of recognizing Yogasana as a Competitive Sport

- Yogasana is an **integral and important component of Yoga**, which is psycho-physical in nature and popular across the globe for its efficacy in fitness and general wellness.
- Yogasana becoming a sport will also **ensure new technologies and new strategies** being inducted into the disciplines, to benefit our athletes and officials towards building fruitful and fulfilling careers in this field.
- The competitions that will arise out of the recognition of Yogasana as a sport will **enhance interest in Yoga** among people around the globe.
- The government is planning to include **Yogasana as a Sport discipline in Khelo India** and in the University Games and we will also pitch it at the National Games.

### Roadmap for implementing Yogasana as a Competitive Sport

- The proposed events for both men and women include **Traditional Yogasana, Artistic Yogasana (Single), Artistic Yogasana (Pair), Rhythmic Yogasana (Pair), Free Flow/Group Yogasana, Individual All Round.**
- The also informed the following steps or activities will form part of the **road map and the future development** of Yogasana Sport:
  - A pilot Yogasana Competition named as **“National Individual Yogasana Sports Championship”** (Virtual Mode) to be held in early 2021
  - Launching of an **Annual Calendar of competitions, events and programs** of Yogasana sport
  - Development of **Automated Scoring System** for the Yogasana Championship
  - **Courses for Coaches, Referees, Judges and Directors** of competitions
  - **Coaching camps for players**
  - Launch of a League of Yogasana, to **ensure a career and social status for performers, experts and practitioners**, to create Sports Stars among Yogasana athletes.
  - To introduce **Yogasana as a Sport discipline** in National Games, Khelo India and international sports events.

- Steps to **create job opportunities** for Yogasana athletes.

#### 4.19 National Rail Plan

Recently, the Indian Railways has issued the **National Rail Plan**.

- The **objectives** of the Plan are:
  - To create capacity ahead of demand by 2030, which in turn would **cater to growth in demand right up to 2050**.
    - The plan also aims to **increase the modal share of Railways from 27% currently to 45%** in freight by 2030 as part of a national commitment to reduce Carbon emission and to continue to sustain it.
  - To **assess the actual demand in freight and passenger sectors**, a yearlong survey was conducted over hundred representative locations by survey teams spread all over the country.
  - **Forecast growth of traffic in both freight and passenger** year on year up to 2030 and on a decadal basis up to 2050.
  - **Formulate strategies based on both operational capacities and commercial policy initiatives** to increase modal share of the Railways in freight to 45% by 2030.
  - **Reduce transit time of freight substantially** by increasing average speed of freight trains from present 22Kmph to 50Kmph.
  - **Reduce overall cost of Rail transportation** by nearly 30% and pass on the benefits to the customers.
  - **Map the growth in demand** on the Indian Railway route map and simulate the capacity behaviour of the network in future.
- The **Vision 2024** of the National Rail Plan has been launched for accelerated implementation of certain critical projects by 2024 such as:
  - **100% electrification,**
  - **Multitracking of congested routes,**
  - **Upgradation of speed to 160 kmph** on Delhi-Howrah and Delhi-

Mumbai routes,

- **Upgradation of speed to 130kmph** on all other Golden Quadrilateral-Golden Diagonal (GQ/GD) routes and
- **Elimination of all Level Crossings on all GQ/GD route**

### Significance of National Rail Plan

- It is the first time that the **business plan and the infrastructure development plan of the Railways** is jointly planned and developed on a single platform.
- It is a long term strategic plan which has been developed to **plan infrastructural capacity enhancement** along with strategies to increase modal share of the Railways.
- Post 2030, the **revenue surplus generated would be adequate to finance future capital investment** and also take the burden of debt service ratio of the capital already invested.
- The National Rail Plan will be a **common platform for all future infrastructural, business and financial planning** of the Railways.
- The plan also proposes to **eliminate waiting lists in passenger trains** by running more trains.

### 4.20 India's First Hypersonic Wind Tunnel Test Facility

Recently, the Union Minister of Defence has inaugurated **India's First Hypersonic Wind Tunnel (HWT) Test Facility** at DRDO.

- The state-of-the-art HWT Test facility is **pressure vacuum driven enclosed free jet facility** having nozzle exit diameter of 1 meter and will simulate Mach No 5 to 12.
- India is the **third country to have such a large facility** in terms of size and operating capability after US and Russia.
- It is an **indigenous development** and an outcome of synergistic partnership with Indian industries.
- The facility has the capability to **simulate hypersonic flow over a wide spectrum** and will play a major role in the realisation of highly complex futuristic

aerospace and defence systems.

### Application of Hypersonic Wind Tunnel

- **Air-directly-heated hypersonic wind tunnel:** It can be operated in a continuous mode for long test time and are broadly used in aerodynamic tests for hypersonic vehicles.
- **Light-gas-heated high-enthalpy shock tunnel:** For shock tunnels, the shock theory indicates that the incident shock Mach number increases with the increase of the pressure and the sound speed of the driver gas and the total temperature of the test gas depends on the incident shock Mach number.
- **Free-piston driven high-enthalpy shock tunnel:** In a free-piston driven high-enthalpy shock tunnel, the high pressure driver gas is generated by a rapidly-moving piston.
  - During shock tunnel operation, a heavy piston is first accelerated to a high speed in a shock tube, and then compresses the driver gas in front of its nose.
- **Detonation-driven high-enthalpy shock tunnel:** A detonation driver is established based on high pressure and temperature detonated products from which the required incident shock wave is generated.

### 4.21 Sixth Schedule Areas

Recently, the members of the Khasi Students' Union (KSU) have declared **all Bengalis in Meghalaya as Bangladeshis**.

- The **entire state of Meghalaya** except a tiny area within the capital Shillong is covered by the **Sixth Schedule** to the Constitution of India.

### Constitutional Provisions of Sixth Schedule Areas

- It is mentioned under **Article 244** of the Constitution of India.
- The Sixth Schedule applies to the **Tribal Areas of Assam, Meghalaya, Tripura and Mizoram**.
- Passed by the Constituent Assembly in 1949, it seeks to **safeguard the rights of tribal population** through the formation of Autonomous District Councils (ADC).

- The **governors** of states under Sixth Schedule Area are empowered to **reorganise boundaries of the tribal areas**.
  - The governor can choose to **include or exclude any area, increase or decrease the boundaries and unite two or more autonomous districts** into one.

### Implications of Sixth Schedule

- It provides for **autonomy in the administration of these areas** through Autonomous District Councils (ADCs) and the Regional Councils empowered to make laws in respect of areas under their jurisdiction.
  - In all, there are **10 areas in the Northeast that are registered as autonomous districts** i.e. three in Assam, Meghalaya and Mizoram and one in Tripura.
- It covers **land, forest, cultivation, inheritance, indigenous customs and traditions of tribals**, etc. and also to collect land revenues and certain other taxes.
- The **ADCs are like miniature states** having specific powers and responsibilities in respect of all the three arms of governance i.e. legislature, executive and judiciary.

### Concerns associated with Sixth Schedule

- The Sixth Schedule **discriminates against the non-tribal residents** in various ways and infringes upon their fundamental rights, like the right to equality before law (Article 14), right against discrimination (Article 15), and the right to settle anywhere in India (Article 19).
- The special constitutional protections are indeed required for marginalised sections to ensure that historical wrongs done to them are reversed and not repeated, but it has **denied justice to the non-tribals**, who have lived in Meghalaya for generations but ended up marginalised.
- The existence of the Sixth Schedule in a full-fledged state with all powers is thus not only **unnecessary but also illogical** because it **undermines social harmony, stability and economic development** of the state and the region.

### 4.22 Year End Review 2020-Ministry of Consumer Affairs, Food & Public Distribution

Recently, the **Year End Review 2020** of the Ministry of Consumer Affairs, Food & Public

Distribution was published which provided major highlights of the Department of Consumer Affairs during the year 2020.

## Key Highlights

### Consumer Protection

- The **Consumer Protection Act, 2019** which has replaced the Consumer Protection Act, 1986 were notified in July 2020.
- The relevant Rules and Regulations, including the **E-Commerce Rules**, which specify the **duties and obligations of sellers and e-commerce entities**, were also notified.
- In pursuance of Rule 8 of the Consumer Protection (Consumer disputes Redressal Commission) Rules, 2020, an **online portal 'eDaakhil'** was launched for electronic filing of consumer cases in the National Consumer Disputes Redressal Commission.

### COVID-19 related initiatives

#### Under the Essential Commodities Act

- **Masks (2 ply & 3 ply surgical marks, N95 marks) and Hand sanitizers** were added in the list of Essential commodities under the **Essential Commodities Act** to ensure their availability and stop hoarding / short supply.
- The ceiling prices of masks (2 ply & 3 ply), Melt blown non-woven fabric and hand sanitizers were **fixed to ensure their easy availability**.

#### Pradhan Mantri Garib Kalyan Anna Yojana

- It is a special package which included provision of **one kg per family of NFSA beneficiaries, of pulses like moong, tur, chana and urad** was approved for 3 months from April to June to ensure adequate availability of protein to the poor.
- The PMGKAY package was **extended beyond the initial period of 3 months** until the end of November, 2020.

#### Atma Nirbhar Bharat package

- Under the Atma Nirbhar Bharat package, a provision was made for **supply of 2 kg of whole chana from Government buffer stocks** per migrant worker family who

were not covered under the National Food Security Act.

### **Ease of Doing Business**

- An online system of **registration and renewal of jewelers** and online system of recognition and renewal of recognition of Assaying and Hallmarking centres was launched.
- The BIS gave temporary relaxations in the provisions of **BIS Regulations, Schemes and Guidelines** including providing special benefits of approximately 54.38 crores for the licensees of BIS from MSME manufacturing sector.

### **Price Stabilization Fund (PSF)**

- Under PSF, **building buffer stock of pulses up to 20 lakh MT** was approved for effective market intervention and about 8.5 Lakh farmers were benefitted through purchase of pulses at MSP for the buffer.
- The pulses from buffer were utilised for **Public Distribution System, Mid-day Meal scheme and Integrated Child Development Scheme.**

### **Bureau of Indian Standards (BIS)**

- BIS has actively progressed towards **automating all its activities through development** and implementation of software applications/online portals under the e-BIS project.
  - The e-BIS has been **envisaged encompassing all activities of BIS** and with advanced features like data analytics, artificial intelligence, better MIS for effective monitoring, user-friendly interfaces, etc.
- A Standards Portal has been developed for **digitization of the Standards formulation process.**

### **National Test House**

- The National Test House which **works in the field of testing, evaluation and quality control of various engineering materials** and finished products created high technology test facilities in its regional offices.
- It has also **procured new instruments** such as Power Quality Analyzer, Cement Autoclave, Thermal Endurance Chamber, DC High Voltage Insulation Tester etc.

#### 4.23 Electricity (Rights of Consumers) Rules 2020

Recently, the Union Ministry of Power has promulgated rules laying down the rights of power consumers in the country through **Electricity (Rights of Consumers) Rules, 2020**.

##### Need for Electricity Rights of Consumers

- The Rules emanate from the conviction that the **power systems exist to serve the consumers and the consumers have rights** to get the reliable services and quality electricity.
- The Distribution Companies across the country are **monopolies** and the **consumer has no alternative**.
  - Therefore it was necessary that the **consumers' rights be laid down in Rules** and a system for enforcement of these rights be put in place.
- The implementation of these Rules shall **ensure that new electricity connections, refunds** and other services are given in a time bound manner.
- The Rules will **benefit about 30 crores existing and the prospective consumers** in the country.
- The States and DISCOMs are being advised to **provide wide publicity to these highly consumer friendly Rules** of the Government while stressing upon the need for awareness of all consumers especially in rural areas/villages.

##### Key Highlights of Electricity (Rights of Consumers) Rules, 2020

- The rules would provide for **rights of consumers and obligations of distribution licensees, release of new connection and modification** in existing connection, metering arrangement, billing and payment.
- An **automatic compensation mechanism** will be put in place which will include no supply to a consumer beyond a particular duration and certain number of interruptions in supply, which will be specified by the regulatory commission.
- The distribution licensee shall **supply 24×7 power to all consumers**.
- The rules stated it is the **duty of every distribution licensee to supply electricity on request** made by an owner or occupier of any premises in line with the provisions of the Act.

- The new connection has to be given within a **maximum time period of seven days in metro cities, 15 days in other municipal areas, and 30 days in rural areas.**
- The rules stated that the **state electricity regulatory commissions (SERCs) can specify stricter timelines** and service quality parameters, but cannot relax these rights to consumers.
- The rules recognise **consumer as a prosumer as well**, where prosumers will maintain consumer status and have the same rights as a general consumer.
- The rules allow **net metering for loads up to 10 kilowatt (kW) and for gross metering for loads above 10 kW.**
- Electricity is a **concurrent subject** and the Centre has the power to make rules that have to be enforced by all.

#### 4.24 SEHAT-Health Insurance Scheme

Recently, the Government of India has decided to launch the **SEHAT-Health Insurance Scheme** on December 26.

- It is a Health Insurance Scheme for the **entire Union Territory** of Jammu and Kashmir.
- It aims to **cover the remaining One crore population** which was **not covered** under Ayushman Bharat Scheme.
  - Under Ayushman Bharat PM Jan Arogya Yojana (PMJAY), **eligible beneficiaries were covered** under Health Cover of Rs 5 Lakh.
  - Under PMJAY scheme, **30 lakh people are being covered in J&K.**
- With the launch of 'SEHAT' Scheme, J&K will be among the **first in the country to achieve Universal Health Coverage.**

#### 4.25 Spectrum Auction

Recently, the Union Cabinet has cleared the much-awaited **auction of radio spectrum** in various bands for commercial mobile services.

- The **total reserve price of spectrum put on auction in 2016** was about \$90 billion while the realised value was just about one-tenth of that, with none of the 700 MHz

spectrum band being sold.

- The India IT Minister said that telecoms providers **mandated to use new devices designated as trusted products** and a national security panel on telecoms will be constituted.

### Key Highlights of Spectrum Auction

- The auction will use the well-proven methodology of **Simultaneous Multiple Round Ascending (SMRA) Auction** that will be the seventh of its type and is being held four years after the last one.
- The government is planning to **auction spectrum in the sub GHz bands of 700, 800 and 900 MHz** along with mid-band frequencies in bands of 1800, 2100, 2300, and 2500 MHz across the 22 Licensed Service Areas (LSAs) of the country.
- The total spectrum to be **auctioned is about 2,251 MHz**, compared to about 2,355 MHz put on the block in 2016.

### Factors responsible for success of Spectrum Auction

- **Reserve Price:** The research on a cross-country spectrum database shows that the reserve price significantly and positively correlated to the winning bid price.
  - The **higher reserve price also inhibits bidders** from bidding for more spectrum blocks, resulting in lower amounts of spectrum sold.
- **Willingness to pay:** The willingness to pay by the telcos depends on their position vis-à-vis Over the Top (OTT) providers who are providing substitute goods such as Voice over Internet Protocol (VoIP) and capturing a greater mind share of customers.
  - The **erosion of the position of telcos vis-à-vis OTTs** in the context of their relationship in the overall digital value network of devices, connectivity and apps, could result in a lower willingness to pay.
- **Allocation of unlicensed spectrum for Wi-Fi:** By off-loading mobile data, Wi-Fi supplements the carrier network and reduces the demand for mobile network capacity.
  - Wi-Fi 6 that operates in the 2.4/5 GHz unlicensed band requires additional unlicensed spectrum allocation to provide Gigabit speeds.
  - The more the unlicensed spectrum allocation, the **lower will be the**

**demand** for licensed spectrum.

- **Visibility of spectrum:** While there is an indication by the government that the spectrum for 5G auction, namely 3.4-3.6 GHz, will be held in late 2021, the amount of spectrum that will be made available is not clear.

### Steps for successful implementation of Spectrum Auction

- A **re-visit of reserve prices** and lower it further, especially that of 700 MHz which is the “golden band” for covering the hinterlands of the country.
- The **releasing of more unlicensed spectrum** in 2.4/5/60 GHz for proliferating Wi-Fi as a suitable complement to carrier network will augment the deployments of the Public Wi-Fi project.
- The government should provide **visibility of future auctions**, especially the quantum of spectrum that can be put on the block in 3.3/3.6/26/28 GHz.
- The government should **release guidelines on how OTT firms will be regulated** and what will be regulated so that the telcos and OTTs can join hands to provide superior services for the benefit of the consumers.



### 4.26 National Startup Award

Recently, the Department of for Promotion of Industry and Internal Trade (DPIIT) has invited application for **National Startup Awards 2021**.

- It seeks to **recognize and reward outstanding startups and ecosystem** enablers that are contributing to economic dynamism by spurring innovation and injecting competition.
- The **first-ever** National Startup Awards (NSA) were concluded in **October 2020**.
- It aims to **cover flagship schemes** launched by the Government of India through innovations in corresponding areas, thereby solving community problems at large.

### Eligibility under National Startup Award

- The entity should be a **DPIIT-recognized startup**.
- The entity must have **hardware or software product** or a process solution that is present in the market.

- The entity must have all **applicable trade-specific registrations**.
- There **should not have been any default** in the last three years (FY17-18, 18-19, 19-20) by the entity or any of its promoters or any of their group entities.
- The entity must **submit Audited Financial Statements** (Balance Sheet, Profit & Loss Account) for the last three financial years.

#### **Conditions required under National Startup Award**

- Participation in the National Startup Awards is **voluntary**
- **Startups/Incubators/Accelerators** who have won in their respective category in **National Startup Awards 2020 will not be eligible** to apply for National Startup Awards 2021.
- One startup can nominate itself in a **maximum of two categories**.
- The application form is to be **filled in English only**.
- DPIIT reserves the right at its **sole discretion to cancel, terminate, modify, or suspend** the National Startup Awards or not award any entity in any sector or sub-sector.

#### **Startup India Initiative**

- It is a flagship initiative that aims to build a **strong eco-system for nurturing innovation**.
- It was launched in 2016 with the objective of **supporting entrepreneurs, building a robust startup ecosystem and transforming India** into a country of job creators instead of job seekers.
- Startups in the country will **drive sustainable economic growth** and generate large-scale employment opportunities.

#### **4.27 Year End Review 2020: Department of Animal Husbandry & Dairying**

Recently, the Ministry of Fisheries, Animal Husbandry & Dairying has released the **Year End Review 2020** of the Department of Animal Husbandry & Dairying.

#### **Animal Husbandry Infrastructure Development Fund (AHIDF)**

- The Prime Minister has announced for setting up of Rs. 15000 crore **Animal Husbandry Infrastructure Development Fund** under AtmaNirbhar Bharat Abhiyan stimulus package.
- It has been approved for **incentivizing investments** by individual entrepreneurs, private companies, MSME, Farmers Producers Organization (FPOs) and Section 8 companies to establish:
  - **Dairy processing** and value addition infrastructure,
  - **Meat processing** and value addition infrastructure and
  - **Animal Feed Plant.**
- The interest subvention is provided @ **3% to all eligible entities.**

#### **Nationwide Artificial Insemination Programme (NAIP)**

- The **Nationwide Artificial Insemination Programme** for 20,000 bovines per district for 600 districts in the country was launched by the Government in September, 2019.
- It is one of the largest such programmes with **100% central assistance** for undertaking breed improvement.
- Under “Nationwide Artificial Insemination Programme” Phase I, **76 lakh bovines have been covered**, 90 lakh AIs performed and more than 32 lakh farmers have been benefitted.

#### **Interest subvention on working capital loans for dairy sector**

- The Department of Animal Husbandry and Dairying has introduced a new component “**interest subvention on Working capital loans for Dairy sector**”.
- It is one of the components under its scheme “**Supporting Dairy Cooperatives and Farmer Producer organizations engaged in dairy activities**” (SDC&FPO).
- The modified scheme envisages a **budgetary provision of Rs 100 Crore** earmarked for the component “Interest Subvention on Working Capital Loans for Dairy sector” during 2020-21.

#### **Kisan Credit Card (KCC) for Animal Husbandry & Dairying Farmers**

- It is a special drive which has been undertaken to provide **concessional credit to**

#### PM-KISAN beneficiaries.

- The **Animal Husbandry & Dairying farmers** have been included in this drive.
- It will enable such farmers to **gain access to institutional credit** at concessional interest rate. 2.5 crore farmers will be covered and will benefit from credit flow of about Rs 2 lakh crores.

#### 4.28 Parliamentary Standing Committee Review of COVID-19 Management

Recently, the **Parliamentary Standing Committee** on Home Affairs has reviewed the **Covid-19 management** in the country.

- The sudden imposition of lockdown resulted in “**unprecedented disruptions**” in the country but acknowledged that the Gross Domestic Product (GDP) has shown signs of recovery in Q2.
- The panel said the **sudden imposition of lockdown** caused stoppage of intra-state and inter-state movement of people, goods, shutdown of factories, hotels, eateries, tourism, etc.
- The National Health Policy 2017 has set a **target of government expenditure on healthcare** up to 2.5% of GDP by 2025 from just 1.15% in 2017.

#### Key Recommendations on Management of COVID-19

- It has recommended the government to set up a **database of the migrant workers** and prepare a comprehensive **healthcare legal framework** to tackle any future pandemic.
- It called for seeking to **update the Epidemic Act** and **reducing reliance on the National Disaster Management Act** to deal with a pandemic-like situation.
- The panel called for a “**national plan**” for coordination between the Centre and states and a public health safety law that keeps a control on private hospitals that looks at commercial opportunity during a pandemic.
- The panel emphasised the need for having **proper data on migrant labourers** because the task of identifying the location and disbursing relief measures to them became “very difficult”.
- The panel said more funds should be **allocated for public hospitals to strengthen**

**the public health infrastructure** to equip them appropriately to handle such pandemics in future.

- It recommended that **good quality and affordable medicines** should be provided to everyone at a cheaper or subsidised rate to the marginalised sections of the society.
- It strongly recommends the government to **increase its investments in the public healthcare system** and make consistent efforts to achieve the National Health Policy targets of expenditure up to 2.5% of GDP.

#### 4.29 Kisan Diwas or National Farmers' Day

Recently, the **National Farmers' Day or Kisan Diwas** was celebrated across the country on **December 23rd**.

- **Choudhary Charan Singh**, who briefly served as prime minister between 1979 and 1980, is widely regarded as one of the **country's most famous peasant leaders**.
- He was known for his pioneering work to **promote the welfare of farmers and the agricultural sector**.
- While serving as agriculture minister in 1952, he led UP in its efforts to **abolish the zamindari system**.
- On 23 December, 1978, he founded the **Kisan Trust as a non-political, non-profit making body** with the aim of educating India's rural masses against injustice, and fostering solidarity among them.

#### Kisan Diwas

- It is celebrated to **honour India's farmers** and mark the birth anniversary of the nation's fifth Prime Minister, Choudhary Charan Singh.
- In 2001, the government decided to **recognise Choudhary Charan Singh's contribution** to the agriculture sector and welfare of farmers by celebrating his birth anniversary as Kisan Diwas.
- It is aimed at **organising awareness campaigns and drives** across the country to educate people on the role of farmers and their contribution to the economy.

### 4.30 Aero India-21

Recently, the Union Ministry of Defence has reviewed the planning of the 'Aero India-21'.

- Aero India exhibition is **organized every alternate year**.
- It is one of the major **exhibition for aerospace and defence industries** with a public air show.
- It enables **industry professional to gain market insights**, announce new developments and gain media coverage.
- Aero India 2021 is the **13th edition** of Aero India which will be organised at **Bengaluru, Karnataka**.
- Aero India 2021 provides **opportunity to demonstrate products** to the potential customer and investors.
- The logo for Aero India is inspired by the **Tejas Light Combat Aircraft (LCA)**.

### Significance of Aero India-21

- It promises to showcase **India's Aerospace and Defence manufacturing capabilities**.
- It aims to **seek investments in India** owing to a series of policy initiatives in Defence such as:
  - **Increase in FDI to 74%** through automatic route,
  - **Defence Acquisition Procedure-2020**,
  - **Revised Offset guidelines** to promote Investment in India for co-development and co-production, and
  - **Draft Defence Production and Export Promotion Policy 2020 (DPEPP 2020)**
- It is a **symbolic of India's will** to be a leader amongst leaders.
- It will reaffirm India's resolve to be among the **top five countries of the world** in Aerospace and Defence manufacturing.

### Tejas Light Combat Aircraft (LCA)

- The Tejas LCA together with its variants is the **smallest and lightest Multi-Role Supersonic Fighter Aircraft** of its class.
- The **single engine, Compound-Delta-Wing, Tailless Aircraft** is designed and developed to meet diverse needs of the Indian Air Force (IAF) and Indian Navy (IN).
- It has **quadruplex digital fly-by-wire Flight Control System (FCS)** with associated advanced flight control laws.
- The aircraft with delta wing is designed for **'air combat'** and **'offensive air support'** with **'reconnaissance'** and **'anti-ship'** as its secondary roles.
- The **Aeronautical Development Agency** is the designated project manager for the development of LCA.

#### 4.31 Electronic-Human Resource Management System (e-HRMS)

Recently, the Ministry of Personnel, Public Grievances & Pensions has released the progress report of **Electronic-Human Resource Management System (e-HRMS)**.

- The **Expenditure Management Commission (EMC)** has recommended to put in place a Human Resource Management System (HRMS) across all offices of the Government of India.
- The DoPT was tasked to expeditiously **roll-out e-Service Book in respect of all the central government employees** in a time bound manner with the support of NIC and involvement of Cadre Controlling authorities.

#### What is e-HRMS?

- The **DoPT (Department of Personnel and Training)** has introduced the e-HRMS to **facilitate a digital working environment**, and streamline Human Resource services for Government employees.
- The **National Informatics Centre (NIC)** is the technical partner of DoPT for designing, development and implementation of e-HRMS.
- The e-HRMS will provide **analytics to the Senior Administration** in Policy formulation and implementation.
- The e-HRMS can be adopted by State Governments and other Government Units providing a **single window access for hiring-to-retiring** of Government

employees.

### Significance of e-HRMS

- **Automated Clearances:** Automated clearances when implemented will save resources in terms of time money and efforts both on part of administration and employee.
- **Retirements:** The e-HRMS can eliminate employees' time spent to fill up various forms (such as NOC, No Dues Certificate, etc.) from various offices/sections, resulting in ease of living for Government employees post-retirement.
- **Learning and learning record management:** Integration with iGOT Karmayogi (Online Training Portal for employees) will enable digitization of learning records of officials.

### Key Highlights of Progress of e-HRMS

- The report stated that the application of **Artificial Intelligence tools will greatly help in policy making** and in handling of matters related to personnel.
- Through e-HRMS, Government employees are accessing their service related information and it has **digitized HR processes** in the Government of India.
- The employees will be able to not only **see all their details** such as service book, leave, GPF, Salary etc., but also **apply for different kind of claims/reimbursements, loan/advances, leave, LTC advances, Tour etc.** on a single platform.

### Mission Karmayogi-National Program for Civil Services Capacity Building

- It is a **new capacity-building scheme for civil servants** aimed at upgrading the post-recruitment training mechanism of the officers and employees at all levels.
- It will be delivered by setting up a **digital platform called iGOTKarmayogi.**
- The iGOT platform will act as a launchpad for the **National Programme for Civil Services Capacity Building (NPCSCB)**, which will enable a comprehensive reform of the capacity building apparatus at the individual, institutional and process levels.
- NPCSCB will be governed by the **Prime Minister's Human Resource Council**, which will also include state Chief Ministers, Union Cabinet ministers and experts.

- A wholly-owned **Special Purpose Vehicle (SPV)** will be set up under Section 8 of the Companies Act, 2013 to govern the iGOT-Karmayogi platform.
  - The SPV will be a “**not-for-profit**” company and will own and manage iGOT-Karmayogi platform.
- A sum of Rs 510.86 crore will be **spent over a period of 5 years from 2020-21 to 2024-25** in order to cover 46 lakh central employees.

#### 4.32 E-Sampada Web Portal

Recently, the Union Minister of Housing & Urban Affairs has launched the ‘**E-Sampada web portal**’.

- The new Web Portal and Mobile App have been developed by **National Informatics Centre (NIC)**.
- The new application **provides a single-window** for all these services including an allotment for over one lakh government residential accommodations, office space allotment to government organisations in 45 office complexes in 28 cities etc.
- E-Sampada equips users with much specialised features like the **personalised dashboard, service usage archive** and **real-time status on licence fees/dues**.
- The portal provides online facility to users across India to **lodge complaints, submit documents and appear for the virtual hearing**.
  - It will **reduce administrative cost** and will save time and resources by reducing visits to Directorate of Estate.

#### Significance of E-Sampada Portal

- It is a significant step towards **promotion of e-governance to boost transparency and accountability** in providing various Estate Services like allotment, retention, regularisation, no dues certificate etc.
- The E-Sampada is developed to **simplify processes and bring uniformity** in the system across India.
- It will **promote ease of living** for Government of India officers / Departments as all services can be availed online on a single window with live tracking of applications.
- The automated processes will **minimize human intervention** and will lead to greater transparency.

### 4.33 Monpa Handmade Paper

Recently, the committed efforts of the Khadi & Village Industries Commission (KVIC) have brought the **Monpa Handmade Paper** back to life once again.

#### Monpa Handmade Paper

- It is a **1000-year old heritage art** of **Arunachal Pradesh**.
- It is a **fine-textured handmade paper** which is called **Mon Shugu** in the local dialect.
- It is integral to the **vibrant culture of the local tribes** in Tawang in Arunachal Pradesh.
- The paper has great historic and religious significance as it is the paper used for **writing Buddhist scriptures and hymns in monasteries**.
- The Monpa handmade paper will be made from the **bark of a local tree called Shugu Sheng** which has medicinal values too.

#### KVIC's efforts to revive Monpa Handmade Paper

- The KVIC has commissioned a **Monpa handmade paper making unit in Tawang** which not only aims at reviving the art but also engaging the local youths with this art professionally and earn.
- The KVIC has **deputed a team of scientists and officials** of Kumarappa National Handmade Paper Institute, (KNHPI) at Tawang to set up the unit and training the locals.
- The Monpa handmade paper unit will also **serve as a training center for the local youths**.
- The KVIC will provide **marketing support and explore markets** for the locally manufactured handmade paper.

#### Monpa Tribe

- It is one of the most prominent **tribes of Arunachal Pradesh** in northeastern India.
- The traditional dress of the Monpa is based on the **Tibetan Chugba**, although people generally wear woolen coats and trousers as well.

- The Monpa are an **ancient ethnic group of descent in the Indian territory of Arunachal Pradesh** located in the districts of Tawang and West Kameng.
- The Monpa society is **patriarchal** i.e. the man is the head of the family and is the one who takes all decisions.

#### 4.34 Thoubal Multipurpose Project

Recently, the Union Home Minister has inaugurated the e-office and **Thoubal Multipurpose Project (Thoubal Dam)** in Imphal.

- The Thoubal Multipurpose Project on **River Thoubal** is located near the village Phayang in **Manipur**.
- The sanctioned project envisaged construction of **1120 m long earth dam** across the river Thoubal.
- The Thoubal River Valley Multipurpose project, now known as **Mapithel Dam**, is a mega dam.
- The project is **implemented in Mapithel area in Phungyar subdivision of Ukhrul district** targeting to irrigate 21,000 hectares of cultivable land.
- The main purpose of the project is to **utilize the water resource of the Yangwui Kong River** which originates in the western hill slopes of Shiroi Hills and Hoomi in the Ukhrul District.
- The project has been undertaken by the **Government of Manipur's Irrigation and Flood Control Department (IFCD)**, with assistance from the central government.

#### Thoubal River

- Thoubal River is one of the **major tributaries of the Imphal River** that originates from the **hill ranges of Ukhrul**.
- It passes through **Yairipok and Thoubal** before joining the Imphal at Irong near Mayang Imphal.
- The **Imphal River** rises in the hills of **Senapati district** and flows south.

#### 4.35 National Common Mobility Card (NCMC)

Recently, while inaugurating the first-ever driverless Metro operations, the Prime Minister also launched the expansion of **National Common Mobility Card** to the Airport Express

### Line of Delhi Metro.

- The national common mobility card, also known as the **‘One Nation One Card’**, is an **inter-operable transport card**.
- It is launched for passengers to **pay multiple kinds of transport charges**, including metro and bus services, through a common card.
- The idea of NCMC was floated by the **Nandan Nilekani committee** set up by the Reserve Bank of India.
- NCMC will allow **passengers with RuPay debit card**, issued in the last 18 months by 23 banks, including SBI, UCO Bank, Canara Bank, Punjab National Bank etc. to be swiped for Metro travel.
- The NCMC facility will become **available on the entire Delhi Metro network** by 2022.
- The NCMC card has 2 instruments on it i.e. a **regular debit card** which can be used at an ATM and a **local wallet** (stored value account), which can be used for contactless payments.

### Need for National Common Mobility Card (NCMC)

- The **Public Transport is extensively used across India** as the economical and convenient mode of commuting for all classes of society.
- Cash continues to be the **most preferred mode of fare payments** across the public transport but there are multiple challenges associated with the cash payment e.g. cash handling, revenue leakages, cash reconciliation etc.
- In order to ensure a **seamless travel across metros and other transport systems** in addition to retail shopping and purchases, the Ministry of Housing & Urban Affairs (MoHUA) came out with the National Common Mobility Card (NCMC) Program.

### Significance of National Common Mobility Card (NCMC)

- The NCMC is an **automatic fare collection system** which will turn smartphones into an inter-operable transport card that commuters can use eventually to pay for Metro, bus and suburban railways services.
- The national common mobility card also **allows cardholders to pay their parking**

**charges, toll taxes, retail shopping, as well as withdraw money.**

- The NCMC Ecosystem offers the **value proposition for customers** as they need not to carry multiple cards for different usage.
- The **super quick contactless transactions** will improve the seamless experience in the post-COVID world.
- It will also help in **higher digital payments penetration, savings on closed loop card lifecycle management cost** and reduced operating cost.
- NCMC Ecosystem will further help government in **digitization of low value payments** and reduced cost for the entire ecosystem.

### **Strengthening of Ek Bharat Shrestha Bharat**

- **One Nation, One Fastag:** It has made travel seamless on highways across the country and has saved commuters from jam and delays.
- **One Nation, One Tax:** GST has ended the complications in the tax system and has brought uniformity in indirect tax system.
- **One Nation, One Power Grid:** It is ensuring adequate and continuous power availability in every part of the country.
- **One Nation, One Gas Grid:** Seamless Gas Connectivity is being ensured of the parts where gas-based life and economy used to be a dream earlier.
- **One Nation, One Health Insurance Scheme:** Ayushman Bharat supports millions of people from India who can take advantage of the scheme anywhere in the country.

### **4.36 Adopt a Heritage: Apni Dharohar, Apni Pehchaan Project**

Recently, the Minister of State for Tourism & Culture has undertaken a review meeting of the **Adopt a Heritage: Apni Dharohar, Apni Pehchaan Project.**

- It is a collaborative effort by the **Ministry of Tourism, Ministry of Culture, Archaeological Survey of India** and **State/ UTs Government.**
- The project was launched by the President of India on **27th September 2017** on the occasion of **World Tourism Day.**
- It is aimed at **developing tourism amenities at heritage/ natural/ tourist sites** spread across India for making them tourist friendly, in a planned and phased

manner.

- The project aims to **encourage companies from public sector, private sector, trusts, NGOs, individuals** and other stakeholders to become **‘Monument Mitras’**.
- The successful bidders selected for **adopting heritage, natural, tourist sites / monuments by the Oversight and Vision Committee** shall be called as Monument Mitras.
- The **Private and Public Sector Companies, Trusts, NGOs and Individuals are eligible** for adopting heritage site (s)/ monument (s) under this project.

### Significance of Adopt a Heritage Project

- It is a **well-conceived initiative** and by leveraging CSR, the project would help in **providing the basic amenities** such as cleanliness, safe drinking water, light, and sounds in the lesser-known monuments.
- It provides that **stakeholders should take up the responsibility of developing and upgrading the basic and advanced tourist amenities** at heritage sites as per their interest and viability in terms of a sustainable investment model under CSR.
- The **objectives** of the project are:
  - **Developing basic tourism infrastructure** in and around heritage sites, monuments, natural sites and tourist sites.
  - **Develop facilities and amenities** to improve the tourist experience at heritage sites, monuments, natural sites and tourist sites.
  - **Promote cultural and heritage value of the country** and develop avenues to create awareness about the heritage/natural/tourist sites in the country
  - **Develop and promote sustainable tourism infrastructure** and ensure proper Operations and Maintenance therein.
  - **Develop employment opportunities** and support livelihoods of local communities at the heritage, natural and tourist sites.

### 4.37 Digital Ocean Platform

Recently, the Ministry of Earth Sciences has launched the **Digital Ocean Platform**.

- It is a **web-based application** developed by **Indian National Centre for Oceanic**

### Information Services (INCOIS).

- It is a **first of its kind digital platform** for Ocean Data Management.
- The Digital Ocean will be promoted as a platform for capacity building on **Ocean Data Management** for all **Indian Ocean Rim countries**.
- It includes a set of applications **developed to organize and present heterogeneous oceanographic data** by adopting rapid advancements in geospatial technology.
- It facilitates an **online interactive web-based environment** for:
  - Data integration,
  - 3D and 4D data visualization,
  - Data analysis to assess the evolution of oceanographic features,
  - Data fusion and multi-format download of disparate data from multiple sources,
  - Remote sensing and model data
- The **User Management component** of Digital Ocean allows:
  - Authentication of users, their roles and privileges of access to different data sets;
  - Categorization of data as per the data sharing guidelines;
  - Metadata management, mail management, usage statistics and system statistics; and
  - Monitoring of observing platforms and addition of new data streams

### Significance of Digital Ocean Platform

- Digital Ocean is a big step towards **Prime Minister's vision of Digital India** i.e. to transform India into a digitally empowered society and knowledge economy.
- The nation will be powerful which has the **gold mine of data management** and the capacity to process and interpret it meaningfully.
- Ocean is a **storehouse of infinite knowledge** and '**Digital Ocean**' helps to share **this knowledge** with a wide range of users including research institutions, academic community, maritime industry and policy makers.
- It will play a central role in sustainable management of oceans and

expanding India's 'Blue Economy' initiatives.

## INCOIS

- ESSO-INCOIS was established as an **autonomous body** in 1999 under the **Ministry of Earth Sciences (MoES)**.
- It is a unit of the **Earth System Science Organization (ESSO)**.
- It is mandated to provide the **best possible ocean information and advisory services to society, industry, government agencies** and the scientific community through sustained ocean observations and constant improvements through systematic and focussed research.
- It is a **permanent member** of the Indian delegation to **IOC of UNESCO** and a founding member of the **Indian Ocean Global Ocean Observing System (IOGOOS)**.

## POLITICAL ISSUES, HUMAN RIGHTS AND GOVERNANCE

### 5.1 J&K's Roshni Act

The Jammu & Kashmir administration has recently released a series of lists of alleged beneficiaries of the **Roshni Act of 2001** which gave **ownership rights to the unauthorized occupants of state land** against payment of a premium.

- The Roshni Act was targeted to **earn ₹25,000 crore by transferring 20 lakh kanals of State land** to existing occupants against payment at market rates.
- It was implemented with the aim of boosting the farming sector and **“generating substantial revenue”** for funding power projects.
- The land-related law, popularly known as the Roshni Act, was **brought into force in 2001**.
- The law aimed to grant **ownership rights of public land to occupants**.
- The Act also sought the **conferment of proprietary rights** of around 20.55 lakh kanals of land (1250 hectares) to the occupants.
- The law initially set 1990 as the **cut-off year for encroachment on State land**, based on which ownership would be granted.

**Why Roshni Act is scrapped?**

- The Roshni Act declared “**unconstitutional**” by the Jammu and Kashmir High Court which fell prey to corruption over the course of the last decade.
- The CAG report pointed to irregularities in the implementation of the Act as the cause of its **failure to generate the expected revenue**.
- The report listed irregularities such as “**arbitrary**” **reduction in prices of the land** and said that the reduction was aimed to benefit politicians and other affluent people.
- In the past, politicians, businessmen, and bureaucrats have been accused of **misusing the Act by transferring public land** under their name and that of their family members.
- In 2009, the Jammu and Kashmir vigilance organisation registered an FIR against public officials for **alleged criminal conspiracy to illegally possess and vest ownership of state land** to occupants who didn't satisfy the criteria under the Roshni Act.
- The details of the applications received under the Act, the valuation of land, amounts paid by the beneficiary, **the orders passed under the act**, and the persons in whose favour the vesting was done.

## 5.2 Imparting technical education in Mother Tongue

Recently, the Union Education Minister has set up a task force for preparing a **roadmap on imparting technical education in Mother Tongue**.

- The task force set up under the **chairmanship of Secretary, Higher Education** will take into consideration the suggestions made by various stakeholders.
- The **Indian Institutes of Technology (IITs)** and the **National Institutes of Technology (NITs)** will start offering engineering courses in mother tongue from next academic year.
- The task force is part of the **National Education Policy (NEP)** which suggests teaching in **regional language till class 8** and enabling teaching the curriculum in a language which a student is comfortable in.

### Constitutional Provisions on use of Language

### **Article 29 Protection of interests of minorities**

- Any section of the citizens residing in the territory of India or any part thereof having a **distinct language, script or culture of its own** shall have the right to conserve the same.
- No citizen shall be **denied admission into any educational institution** maintained by the State or receiving aid out of State funds on grounds only of religion, race, caste, language or any of them.

### **Article 30 Right of minorities to establish and administer educational institutions**

- All minorities, whether based on religion or language, shall have the **right to establish and administer educational institutions** of their choice.
- The State shall not, in granting aid to educational institutions, **discriminate against any educational institution** on the ground that it is under the management of a minority, whether based on religion or language.

### **Article 120 Language to be used in Parliament**

- Notwithstanding anything in Part XVII, but subject to the provisions of **Article 348** i.e. **business in Parliament** shall be transacted in Hindi or in English.

### **Article 343 Official language of the Union**

- The **official language of the Union** shall be **Hindi** in Devanagari script.

### **Article 344 Commission and Committee of Parliament on official language**

- It shall be the **duty of the Commission** to make recommendations to the President as to
  - The **progressive use of the Hindi language** for the official purposes of the Union;
  - **Restrictions on the use of the English language** for all or any of the official purposes of the Union;
  - The **language to be used for all** or any of the purposes mentioned in article 348; and
  - The **form of numerals to be used** for any one or more specified purposes

of the Union.

### Article 350A Facilities for instruction in mother-tongue at primary stage

- It shall be the endeavour of every State and of every local authority within the State to **provide adequate facilities for instruction** in the mother-tongue at the primary stage of education to children belonging to linguistic minority groups.

### 5.3 Scheme for Special Assistance to States for Capital Expenditure

Recently, **all the States except Tamil Nadu** have availed benefits of the newly announced scheme for “**Special Assistance to States for Capital Expenditure**”.

- The scheme was **announced by the Finance Minister** on 12th October, 2020 as a part of the **AatmaNirbhar Bharat package**.
- It was decided to extend a **special assistance to the State Governments** in respect of capital expenditure, in financial year 2020-21.



- The **capital expenditure** proposals of Rs. 9,879.61 crore of 27 States have been approved by the Ministry of Finance.
- The Scheme has three parts:
  - **Part –I of the scheme covers the north-eastern region:** Under this part, Rs.200 crores is allocated to 7 north-eastern States (Arunachal Pradesh, Meghalaya, Manipur, Mizoram, Nagaland, Sikkim and Tripura).
    - In view of higher population and geographical area, Assam has been allocated Rs.450 crores under the scheme.
  - **Part-II of the Scheme is, for all other States not included in Part-I:** The amount has been allocated amongst these States in proportion to their share of central tax as per the interim award of the 15th Finance Commission for the year 2020-21.
  - **Part-III of the Scheme is aimed at pushing various citizen-centric reforms in the States:** The amount will be available only to those States who carry out at least 3 out of the 4 reforms specified by the Ministry of Finance.

- The 4 reforms are **One Nation One Ration Card, Ease of doing**

### **Business Reform, Urban Local Body/ Utility Reform and Power Sector Reform.**

#### **Significance of the Special Assistance to States for Capital Expenditure**

- The Scheme is aimed at **boosting capital expenditure by the State Governments** who are facing difficult financial environment during the pandemic.
- The capital Expenditure has a **higher multiplier effect, enhancing the future productive capacity of the economy**, and results in a higher rate of economy growth.
- The capital expenditure projects have been **approved in diverse sectors of economy** like, Health, Rural Development, Water Supply, Irrigation, Power, Transport, Education and Urban Development.

#### **5.4 Kisan Kalyan Mission**

Recently, the **Uttar Pradesh** government has decided to launch '**Kisan Kalyan Mission**'.

##### **Features**

- It is a special program to **double the income of farmers** which will cover **all assembly constituencies** of the state.
- Under the Kisan Kalyan mission various programs will be organised across the state such as **exhibitions of agriculture and associate sectors** which will include the products of MSME sector units and livelihood missions.
- Under the Kisan Kalyan mission many departments of state government like agriculture marketing **Mandi Parishad, Horticulture, animal husbandry, fisheries, sugarcane food and supply and Panchayati Raj** will work together.

#### **5.5 Dak Adalat**

Recently, the **Dak Adalat** of Maharashtra circle has decided to entertain the complaints/grievances regarding Postal services pertaining to the Maharashtra and Goa status which have not been settled within 6 weeks.

- The adalat will **cover cases of complaints and disputes related to the postal**

services particularly concerning mails, parcels, registered letters, electronic money order, counter services, Speed Post, savings bank account, postal life insurance and others.

- In order to redress the grievances in an effective manner, the **Department periodically organizes Dak Adalat** where functionaries of the Department meet the aggrieved customers, gather details about their complaints and try to settle them at the earliest.
- **All types of Complaints related to Postal services will be considered** during Dak Adalat. Complaints should contain details like name and designation of the officers to whom original complaint was addressed.

#### Need for Dak Adalat

- The Postal Services form an **integral part of the socio-economic life of the country**, touching the lives of virtually every citizen.
- The **prevalence of communication gaps and service faults** in the Department of Posts results into grievances and complaints.

#### 5.6 Green Rating for Integrated Habitat Assessment (GRIHA) Summit

Recently, the 12th **Green Rating for Integrated Habitat Assessment (GRIHA) Summit 2020** was concluded by the Ministry of Housing & Urban Affairs.

- The year 2020 which was a year to **track the progress on the Sustainable Development Goals** and gear up to make the next decade count has taken a big turn and the entire focus of the world shifted to a pandemic.
- The world has been **witnessing a number of natural calamities** such as floods, droughts, and cyclones.
- It is high time for us to **change our designing and construction practices** to be resilient in terms of climate, health related issues, natural calamities, biodiversity, etc.

#### Highlights

- It is themed around **“Rejuvenating Resilient Habitats”**.
- It shall serve as a platform to **deliberate on innovative technologies and**

**solutions** which shall help in creating robust mechanisms for developing sustainable and resilient solutions.

- The deliberations held during the summit will enable knowledge sharing and **encourage the development of green and sustainable habitats** across the country.

### **GRIHA Summit**

- It is the annual flagship event organized by **GRIHA Council** in association with key stakeholders in construction industry.
- It aims to discuss and deliberate on furtherance of **Sustainable Habitat Development** in India.
- It has played host to various **technical sessions on sustainable building policies, tools & techniques and exhibitions** showcasing sustainable building materials, techniques and technologies.
- The **first conference, held in January 2010**, had 400 participants representing all the key stakeholders in the construction industry.

### **GRIHA**

- It is an acronym for **Green Rating for Integrated Habitat Assessment**.
- GRIHA is a Sanskrit word meaning '**Abode**'.
- GRIHA attempts to quantify aspects such as **energy consumption, waste generation, renewable energy adoption, etc.** so as to manage, control and reduce the same to the best possible extent.
- It is a rating tool that helps **people assesses the performance of their building** against certain nationally acceptable benchmarks.
- It evaluates the **environmental performance of a building holistically** over its entire life cycle, thereby providing a definitive standard for what constitutes a 'green building'.
- The rating system, based on accepted energy and environmental principles, will seek to **strike a balance between the established practices and emerging concepts**, both national and international.

## 5.7 Parliamentary Session

Recently, the **Ministry of Parliamentary Affairs** has provided that some opposition parties have expressed concerns about the ongoing pandemic and opined of **doing away with winter session**.

### Sessions of Parliament

- The **power to convene** a session of Parliament rests with the **government**.
- India **does not have** a fixed parliamentary calendar and by convention, Parliament meets for **three sessions in a year**.
- The **general scheme of sittings** was recommended in 1955 by the General Purpose Committee of Lok Sabha but it was **not implemented**.

### Constitutional Provisions of Parliamentary Session

- The summoning of Parliament is specified in **Article 85 of the Constitution** which is based on a provision of The Government of India Act, 1935.
- The provision specified that the central legislature had to be **summoned to meet at least once a year**, and that not more than 12 months could elapse between two sessions.
- The Constitutional makers stated that the **purpose of this provision was to summon the legislature only to collect revenue**, and that the once-a-year meeting was designed to avoid scrutiny of the government by the legislature.
- The drafting committee formulated a provision which **reduced the gap between sessions to six months**, and specified that Parliament should meet at least twice a year.
- The clause as it stands **does not prevent the legislature from being summoned** more often than what has been provided for in the clause itself.

### Challenges of Parliamentary Sessions

- **Sessions delayed due to general elections:** The governments have shuffled around the dates of sessions to accommodate political and legislative exigencies.
  - In 2011, political parties agreed to cut short the Budget Session so they could campaign for Vidhan Sabha elections in five states.

- The **parliamentary sessions have also been cut short** or delayed to allow the government to issue Ordinances.
  - In 2016, the Budget Session was broken up into two separate sessions to enable the issuance of an Ordinance.
- **Sessions have been stretched:** In 2008, the two-day Monsoon Session (in which a no-confidence motion was moved against the UPA-I government over the India-US nuclear deal) was extended until December.
- **Decline in the sittings days of Parliament:** During the first two decades of Parliament, Lok Sabha met for an average of a little more than 120 days a year which has come down to approximately 70 days in the last decade.

### Joint Session of Parliament

- The Constitution of India provides for the **joint sitting of the Parliament's two Houses**, the Lok Sabha and the Rajya Sabha, in order to break any deadlock between the two.
- The **joint sitting** of the Parliament is called by the **country's President**.
- Such a session is **presided over by the Speaker**, and in his/her absence, by the Deputy Speaker of the Lok Sabha. In the absence of both, it is presided over by the Deputy Chairman of the Rajya Sabha.
  - If any of the above are not present, any other member of the Parliament can preside by consensus of both the Houses.
- **Article 108** of the Constitution talks about a joint Parliament session.

### 5.8 No-Confidence Motion

Recently, the matter of the ruling government's initiative to move a **no-confidence motion** against the Chairman of the Legislative Council and the unruly episode that unfolded in the Upper House is now in the court of Governor.

- The government can function only when it has **majority support in the Lok Sabha**.
- The party can remain in power when it **shows its strength through a floor test** which is primarily taken to know whether the executive enjoys the confidence

of the legislature.

- If any member of the House feels that the **government in power does not have a majority** then he/she can move a no-confidence motion.
- If the motion is accepted, then the **party in power has to prove its majority** in the House.
- The member **need not give a reason** for moving the no-confidence motion.
- If the government is **not able to prove its majority** in the House, then the government of the day has to resign.
- Neither a confidence motion nor a no-confidence motion is **mentioned in the Constitution**.

#### How does No-Confidence Motion work?

- The no-confidence motion can be moved by any member of the House.
  - It can be **moved only in the Lok Sabha** and not Rajya Sabha.
- The **Rule 198 of the Rules of Procedure** and conduct of Lok Sabha specifies the procedure for moving a no-confidence motion.
- A **minimum of 50 members have to accept the motion** and accordingly, the Speaker will announce the date for discussion for the motion.
- Article 75 spells it out that the council of ministers shall be **collectively responsible to the House of the People** which implies that the majority of Lok Sabha members must support the prime minister and his cabinet.

#### 5.9 Varasat Campaign

Recently, the **Uttar Pradesh government** has launched the 'Varasat' Campaign.

- It is a special campaign of Uttar Pradesh to **curb property & land-related disputes in rural areas**.
- It is a first of its kind campaign to **end the nagging land-related issues** in the rural areas.
- It is aimed at **eradicating the exploitation of the villagers** in the name of 'Varasat' of land and property.

### Significance of Varasat Campaign

- The 'Varasat' campaign will not only **end the long pending land disputes**, but will also put a **check on the land mafia** who generally target disputed lands especially in the rural areas.
- The new initiative is expected to **settle case pending for years** in the around one lakh revenue villages of the state.
- After the 'Varasat' exercise, people will get **proper paper documents of their land property** and could also get loans from banks.
- It will also be helpful in **minimising disputes and animosity** within families and relatives.

### 5.10 Law to keep a check on Private Hospitals

Recently, the standing committee on Home Affairs has submitted a report which called for a **comprehensive public health Act** with suitable legal provisions to **keep checks and controls over private hospitals**.

#### Need for Law on Private Hospitals

- The panel highlighted that there had been several reported instances of **beds reserved for COVID-19 patients in private hospitals** being sold at exorbitant rates.
- The committee strongly recommends a comprehensive public health Act, preferably at the national level with suitable legal provisions to support the government in **keeping checks and controls over private hospitals**.
- The committee observed that in the initial phase of the pandemic, **medical insurance was not extended to patients** with COVID-19 infection.
- There is need to have **regulatory oversight on all hospitals** working in the country to prevent refusal to accept insurance claims.
- The report highlighted that measures should be taken to **avoid social stigma and fear of isolation and quarantine**, by making people aware and treating them with respect and empathy.

### Suggestions for Law on Private Hospitals

- The panel suggested that the act should keep a **check on black marketing of medicines** and product standardisation.
- It suggested that the government should be **proactive by holding awareness campaigns** on cheaper and effective repurposed medicines to prevent people from panicking and spending huge amounts of money on expensive drugs.
- The committee strongly recommends that the **target should be to make COVID-19 treatment cashless** for all people that are having insurance coverage.
- The committee recommends that a **separate wing may be formed in the National Disaster Management Authority (NDMA)** that will specialize in handling /managing pandemics like COVID-19 in future.
  - It may take a **leading role in building a partnership** of government with the public sector, corporates, NGOs and other stakeholders.

### 5.11 Electoral Bond

Recently, the **Central Information Commission (CIC)** has now ruled that the disclosure of identity of **electoral bond scheme** donors will not serve any larger public interest.

- The commission observed that the **disclosure of names of donors and the donees** may be in contravention of provisions contained in section 8 (1) of the RTI Act itself.
- The section 8 (1) of the RTI Act **exempt a public authority to give a citizen information available** to a person in his fiduciary relationship, unless the competent authority is satisfied that the larger public interest warrant the disclosure of such information.
- In January 2020, the commission had directed the Centre to **reveal the names of electoral bond scheme donors** who wanted their identities to remain confidential.

### Electoral Bonds

- It is similar to **promissory note (PN)** because it can be bought by any Indian citizen or company incorporated in India from select branches of State Bank of India.
  - The citizen or corporate can then **donate the same to any eligible**

**political party** of his/her choice.

- It is an **interest free banking instrument** issued on a non-refundable basis and is not available for trading i.e. no loan would be provided against these bonds.
- The bonds are **similar to bank notes** that are payable to the bearer on demand and are free of interest.
- An individual or party will be **allowed to purchase these bonds digitally** or through cheques.
- The electoral bonds were introduced with the **Finance Bill (2017)**.
- The bonds will be issued in multiples of **Rs 1,000, Rs 10,000, Rs 100,000 and Rs 1 crore**.

#### **Conditions for Electoral Bonds**

- Any party that is registered under **section 29A of the Representation of the Peoples Act, 1951** (43 of 1951) and has secured at least one per cent of the votes polled in the most recent General elections or Assembly elections is eligible to receive electoral bonds.
- The party will be allotted a **verified account by the Election Commission of India (ECI)** and the electoral bond transactions can be made only through this account.
- The electoral bonds will **not bear the name of the donor** and the political party might not be aware of the donor's identity.
- The Electoral Bond shall be **redeemable in the designated account** of a registered political party within the prescribed time limit from issuance of bond.
- The Electoral Bonds would have a **life of only 15 days** during which it can be used for making donation only to the political parties registered under section 29A.
- The political party needs to **disclose the details of non-governmental corporations** and persons who donate more than Rs. 20,000 to it in a financial year.

#### **Taxability of Electoral Bonds**

- A donor will get a **deduction under section 80GGB** and the recipient or the political party, will get tax exemption, provided returns are filed by the political party.
- Every political party would have to **file its return within the time prescribed** in

accordance with the provision of the Income-tax Act.

### Central Information Commission (CIC)

- It has been constituted with effect from 2005 under the **Right to Information Act, 2005**.
- The jurisdiction of the Commission extends over **all Central Public Authorities**.
- It shall consist of the **Chief Information Commissioner (CIC)** and such number of **Information Commissioners** not exceeding 10 as may be deemed necessary.
- The Chief Information Commissioner shall **hold office for a term of five years** from the date on which he enters upon his office and shall not be eligible for reappointment.
- The **members of the committee** to appoint Chief Information Commissioner consists of:
  - **Prime Minister**, who shall be the Chairperson of the committee;
  - **Leader of Opposition in the Lok Sabha**; and
  - A **Union Cabinet Minister** to be nominated by the Prime Minister.

### 5.12 President Assent to State Bills

Recently, the Chief Minister of Rajasthan has said the Amendment Bills passed in the State Assembly to counter the Centre's farm laws were held up in Raj Bhavan, as the **Governor was not sending them for Presidential assent**.

#### Powers assigned to Governor regarding State Bills

- **Article 200** of the Indian Constitution provides provisions regarding the **powers of the Governor** when a bill is passed by the state legislature.
- The Governor shall declare either that **he assents to the Bill or that he withholds assent** therefrom or that he reserves the Bill for the consideration of the President.
- When a **bill other than money bill** is presented before Governor for his assent, **he either gives assent to the bill, withhold his assent to the bill or return the bill for reconsideration of houses**.
  - If the **bill is passed again** by state legislature with or without

amendments, he has to give his assent or reserve the bill for consideration of President.

- The Governor **cannot send money bill back for reconsideration** because the money bill would usually be introduced with prior assent of Governor only.
  - In case the money bill reserved for Presidents assent, the **President has to state whether he is giving assent or withholding his assent.**
- The Constitution does not furnish any guidance to the Governor that in which matters he should accord his assent and in which matters he should withhold assent.

### Options for President on Bills reserved by Governor

- When a bill passed by a state legislature is **reserved by the governor for consideration of the President**, the President can:
  - Give his assent to the bill, or
  - Withhold his assent to the bill, or
  - Direct the governor to return the bill (if it is not a money bill) for reconsideration of the state legislature.
- It should be noted here that it is **not obligatory for the President to give his assent** even if the bill is again passed by the state legislature and sent again to him for his consideration.

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### 5.13 Powers of Governor in calling an Assembly Session

Recently, in a tug-of-war between Governor and Chief Minister of Kerala, the **Governor has turned down a request to summon a special sitting of the Assembly** to debate the new three central farm laws.

### Constitutional Provisions for summoning a session of an Assembly

- **Article 174** says that the Governor shall from **time to time summon the House** or each House of the Legislature of the State to meet at such time and place as he thinks fit.
- The provision under Article 174 also puts on the Governor the **responsibility of ensuring that the House is summoned** at least once every six months.

- **Article 163** provides that it is the **Governor's prerogative to summon the House.**
- The summoning of the house by the Governor under Article 174 implies that the **summoning of the house is not of Governor's own will** but on the aid and advice of the Cabinet.
- The power vested with the Governor under **Article 174 to summon, prorogue and dissolve the house(s)** must be exercised in consonance with the aid and advice of the chief minister and his council of ministers.

### Power of Governor to act against the will of Chief Minister

- It has been observed in few instances where the **Governor can summon the House despite the refusal of the Chief Minister** who heads the Cabinet.
  - When the **Chief Minister appears to have lost the majority** and the legislative members of the House propose a **no-confidence motion against the Chief Minister**, then the Governor can decide on his or her own on summoning the House.
- The **actions of the Governor** executed with the use of his discretionary powers can be **challenged in the court.**

### Viewpoint of Judiciary on Governor's Power to Summon an Assembly

- The number of rulings by the Supreme Court has settled the position that the **Governor cannot refuse the request of a Cabinet** that enjoys majority in the House unless it is patently unconstitutional.
- The landmark 2016 Constitution Bench ruling in which the **Supreme Court looked into the constitutional crisis in Arunachal Pradesh** after the Governor had imposed President's Rule in the state.
- The court read the **power to summon** the House as a **"function" of the Governor** and **not a "power"** he enjoys.

### 5.14 Article 356 of the Indian Constitution

Recently, the order of the Andhra Pradesh High Court directing the Andhra Pradesh government to argue on the **'breakdown of constitutional machinery in the state'** is shocking as it opens up the possibility of use or even **misuse of Article 356** by the judiciary.

## Genesis

- No liberal democratic Constitution in the world has a provision such as **Article 356** that gives the **central government the power to dismiss a democratically-elected State government**.
- The provision of President's Rule was **borrowed** by the Government of India and Pakistan from the **Government of India Act, 1935**.
- The provision which leaders had **opposed during the freedom struggle** was incorporated in the Constitution strangely in the name of democracy, federalism and stability.

## Constitutional Provisions of Article 356

- Article 355 imposes a duty on the Centre to **ensure that the government of every state is carried on** in accordance with the provisions of the Constitution.
  - It is this duty in the performance of which the Centre takes over the government of a state under Article 356 in case of **failure of constitutional machinery in state**.
- The President's Rule can be **proclaimed under Article 356** on two grounds:
  - **Article 356** empowers the President to issue a proclamation, if he is satisfied that a situation has arisen in which the government of a state cannot be carried on in accordance with the provisions of the Constitution.
  - **Article 365** says that whenever a state fails to comply with or to give effect to any direction from the Centre, it will be lawful for the president to hold that a situation has arisen in which the government of the state cannot be carried on in accordance with the provisions of the Constitution.

## Parliamentary Approval and Duration of Article 356

- The proclamation imposing President's Rule must be **approved by both the Houses of Parliament within two months** from the date of its issue.
- If the proclamation of President's Rule is issued at a time when the **Lok Sabha has been dissolved or the dissolution of the Lok Sabha takes place** during the period of two months without approving the proclamation, then the **proclamation**

survives until **30 days** from the first sitting of the Lok Sabha after its reconstitution.

- The President's Rule **continues for six months** when the proclamation is approved by both the houses of Parliament.
- The President's Rule can be **extended for a maximum period of three years** with the approval of the Parliament, every six months.
- The resolution approving the proclamation of President's Rule or its continuation can be **passed by either House of Parliament** only by a **simple majority**.
- The 44th Amendment Act of 1978 introduced a new provision to put **restraint on the power of Parliament** to extend a proclamation of President's Rule beyond one year.
  - It provided that, beyond one year, the **President's Rule can be extended by six months** at a time only when the following two conditions are fulfilled:



- A **proclamation of National Emergency** should be in operation in the whole of India, or in the whole or any part of the state; and
- The Election Commission must certify that the **general elections to the legislative assembly** of the concerned state **cannot be held** on account of difficulties.

### Scope of Judicial Review of President's Rule

- The 38th Amendment Act of 1975 made the **satisfaction of the President in invoking Article 356** final and conclusive which could not be challenged in any court on any ground.
- The above provision was subsequently **deleted by the 44th Amendment Act of 1978** implying that the satisfaction of the President is not beyond judicial review.

### 5.15 Ayushman Bharat SEHAT Scheme

Recently, the Prime Minister has launched the **Ayushman Bharat SEHAT Scheme**.

#### Key Features of Ayushman Bharat SEHAT Scheme

- It promises **health insurance** cover to all 1.30 crore people of **Jammu and Kashmir**.
- The free treatment under the Ayushman Bharat SEHAT scheme will **not be confined to only government and private hospitals in J&K** but in 24,000 hospitals across the country.
- The scheme will provide **free-of-cost insurance** cover to all residents of the UT of J&K.
- It will extend **financial cover of up to ₹5 lakh per family** on a floater basis to **all residents** of the UT.

### **Significance of Ayushman Bharat SEHAT Scheme**

- The scheme will ensure **universal health coverage** and **focus on providing financial risk protection** to the population of Jammu & Kashmir.
- The scheme is aimed at **ensuring quality and affordable essential health services** to all individuals and communities.
- The scheme will operate on **insurance mode in convergence** with Pradhan Mantri – Jan Arogya Yojana (PM-JAY).
- The benefits of the scheme will be **portable across the country** because the hospitals empanelled under the PM-JAY scheme shall provide services under this scheme as well.
- With the launch of AB-PMJAY SEHAT, **all residents of Jammu and Kashmir**, irrespective of their socio-economic status, will be covered under the scheme.

### **Pradhan Mantri – Jan Arogya Yojana (PM-JAY)**

- It is the **largest health assurance scheme** in the world as part of Ayushman Bharat Scheme.
- It aims at **providing a health cover of Rs. 5 lakhs per family per year** for secondary and tertiary care hospitalization to over 10.74 crores poor and vulnerable families.
- The households included are based on the **deprivation and occupational criteria of Socio-Economic Caste Census 2011 (SECC 2011)** for rural and urban areas

respectively.

### 5.16 Inner Line Permit (ILP)

Recently, the Union Home Minister has said that the **Inner Line Permit (ILP)** had been the Centre's biggest gift to Manipur since its statehood.

- The central government highlighted that **denying ILP will be an injustice** to the indigenous people of Manipur.
- In December 2019, the central government has given the **inner line permit to the state of Manipur**.
- The pressure groups in the northeast view ILP as a **shield against the entry of illegal immigrants**.

#### Inner Line Permit

- It is **colonial-era concept** of separating the tribal-populated hill areas in the Northeast from the plains.
- It has its origin from the **Bengal Eastern Frontier Regulation Act (BEFR), 1873**.
- During the British rule, the BEFR **prohibits an outsider's i.e. "British subject or foreign citizen"**, entry into the area beyond the Inner Line without a pass and his purchase of land there.
  - After Independence, the Indian government replaced **"British subjects" with "Citizen of India"**.
- Its aim is to **prevent settlement of other Indian nationals** in the States where ILP regime is prevalent, in order to protect the indigenous/tribal population.
- It is valid in **Arunachal Pradesh, Nagaland, Mizoram and Manipur**.
- It is issued by the concerned **state governments**.

## SCIENCE AND TECHNOLOGY

### 6.1 Bioluminescence

- Bioluminescence or light-emitting tide made an appearance on Juhu beach in Mumbai and Devgad, Velas and Murud along the state's coastline.
- The phenomenon is called 'blue tide', and appears when luminescent marine life make the sea appear a deep shade of blue.
- The spectacle occurs when phytoplankton (microscopic marine plants), commonly known as dinoflagellates, produce light through chemical reactions in proteins.
- Waves disturb these unicellular microorganisms and make them release blue light.
- Bioluminescence is the property of a living organism to produce and emit light.
- Animals, plants, fungi and bacteria show bioluminescence. A remarkable diversity of marine animals and microbes are able to produce their own light.
- It is found in many marine organisms such as bacteria, algae, jellyfish, worms, crustaceans, sea stars, fish and sharks.
- Luminescence is generally higher in deep-living and planktonic organisms than in shallow species.
- It is an anti-predatory response. Bioluminescence is assumed to startle predators, causing them to hesitate, in a form of predator intimidation.
- Another explanation is that bioluminescence helps these organisms gather together and make colonies.
- Bioluminescence has been an annual occurrence along the west coast since 2016 during the months of November and December.
- While bioluminescence is not common in India, there are several tourist places across the world which are famous for the phenomenon.
- The Blue Grotto in Malta is one of nine caves near the island of Filfa that produces a phosphorescent glow.
- The bioluminescence could have been caused by heavy rain, fertilizers run off, discharge of sewage into the ocean.

## 6.2 Emergency Use Authorisation (EUA)

Recently, the US drug-maker Moderna said it was applying for **emergency use authorisation for its Covid-19 vaccine** after Pfizer applied for emergency use authorisation for the vaccine it has developed in collaboration with BioNTech.

- Vaccines and medicines, and even diagnostic tests and medical devices, require the approval of a regulatory authority before they can be administered.
- The approval for vaccines and medicines is **granted after an assessment of their safety and effectiveness**, based on data from trials.
- In emergency situations, regulatory authorities around the world have **developed mechanisms to grant interim approvals** if there is sufficient evidence to suggest a medical product is safe and effective.
- The final approval is **granted only after completion of the trials** and analysis of full data and until then, emergency use authorisation (EUA) allows the medicine or the vaccine to be used on the public.

### Granting of Emergency Use Authorisation (EUA)

- In the US, the Food and Drug Administration (FDA) grants an EUA only after it has been determined that the **“known and potential benefits outweigh the known and potential risks of the vaccine”**.
  - It implies that an EUA application can be considered only after **sufficient efficacy data from phase 3 trials** had been generated.
- The EUA **cannot be granted solely** on the basis of data from **phase 1 or phase 2 trials**, although these too need to show the product is safe.
- The FDA, for COVID vaccines, has specified that it would consider an application for EUA only if phase 3 data showed it was **at least 50% effective in preventing the disease**.

### Emergency Use Authorisation (EUA) in India

- In India, the regulatory authority is the **Central Drugs Standard Control Organisation (CDSCO)**.
- India's drug regulations **do not have provisions for an EUA**, and the process for

receiving one is not clearly defined or consistent.

- The CDSCO has been **granting emergency or restricted emergency approvals** to Covid-19 drugs such as remdesivir, favipiravir and itolizumab.

### 6.3 Cancer Genome Atlas

Recently, the Minister of Science and Technology and Vice President of Council for Scientific and Industrial Research (CSIR) has virtually inaugurated the **2nd Cancer Genome Atlas 2020 (TCGA)**.

- It reiterated commitment of government of India to **reduce the burden of cancer in the country** by employing latest technologies in the genomics, proteomics, metabolomics, artificial intelligence and machine learning.
- It is important that India should create **indigenous, open-source and comprehensive database** of molecular profiles of all cancer prevalent in Indian population.
- The Union Minister acknowledged the efforts of the consortium comprising of scientists and clinicians from across the world, who have come together to build an **Indian Cancer Genomics Atlas (ICGA)**.
- The conference underlined the **importance of scientific team building** from diverse backgrounds in strategizing a coordinated response.
- It highlighted that establishment of **Indian Cancer Genomics Atlas (ICGA)** is a much needed initiative and will add value to India and to the world of science in terms of cancer treatment.

#### Cancer Genome Atlas 2020 (TCGA)

- It is a landmark cancer genomics program that **molecularly characterized over 20,000 primary cancer and matched normal samples** spanning 33 cancer types.
- It is a joint effort between the **US-National Cancer Institute** and the **National Human Genome Research Institute**.
- The TCGA generated over 2.5 petabytes of **genomic, epigenomic, transcriptomic and proteomic data**.
- The 'Indian Cancer Genomics Atlas (ICGA)' has been initiated by a **consortium of**

key stakeholders (led by CSIR) in India on the same lines of TCGA.

#### 6.4 Light Detection and Ranging Survey (LiDAR) Technique

Recently, the National High Speed Rail Corporation Limited has decided to adopt **Light Detection and Ranging Survey (LiDAR) technique** for the preparation of Detailed Project Report for the proposed **Delhi-Varanasi HSR corridor**.

- The **alignment or ground survey is a crucial activity** for any linear infrastructure project as the survey provides **accurate details** of areas around the alignment.
- The technique uses a combination of **Laser data, GPS data, flight parameters** and **actual photographs** to give accurate survey data.
- The aerial LiDAR survey technique, for the **first time** for any railway project in India, was adopted for the **Mumbai-Ahmedabad High Speed Rail Corridor** primarily because of its high accuracy.

#### LiDAR Technique

- It is a remote sensing method that **uses light in the form of a pulsed laser** to measure ranges (variable distances) to the Earth.
- The **Airplanes** and **Helicopters** are the most **commonly used platforms** for acquiring lidar data over broad areas.
- The two types of LiDAR are **topographic** and **bathymetric**.
  - **Topographic LiDAR** typically uses a **near-infrared laser** to map the **land**.
  - **Bathymetric LiDAR** uses **water-penetrating green light** to also measure seafloor and riverbed elevations.
- The LiDAR systems **allow scientists and mapping professionals** to examine both natural and manmade environments with accuracy, precision, and flexibility.
- It follows a simple principle i.e. **throw laser light at an object on the earth surface** and calculate the time it takes to return to the LiDAR source.

#### Application of LiDAR Technique

- It is used to **measure the exact depth of the ocean's surface** to locate any object in

the case of a maritime accident or for research purposes.

- It is also used for **calculating phytoplankton fluorescence** and biomass in the ocean surface.
- The **terrain elevations** play a crucial role during the **construction of roads, large buildings and bridges**.
  - LiDAR technology has **x, y and z coordinates**, which makes it incredibly easy to produce the **3D representation of elevations** to ensure that concerned parties can draw necessary conclusions more easily.
- The applications of LiDAR technology in the agriculture sector include **analysis of yield rates, crop scouting and seed dispersions**.

### 6.5 Hayabusa2 Mission

Recently, a small capsule from **Japan's Hayabusa2 spacecraft** successfully landed in a sparsely populated desert in the Australian Outback.

- It was launched in December 2014 when the spacecraft was sent on a six-year-long voyage to study the **asteroid Ryugu** and collect samples that it is now bringing back to the Earth.
- The spacecraft **arrived at the asteroid in mid-2018** after which it deployed two rovers and a small lander onto the surface.
- In 2019, the spacecraft fired an **impactor into the asteroid's surface to create an artificial crater** with a diameter of a little more than 10 metres, which allowed it to collect the samples.

#### Significance of Asteroid Sample

- The scientists say the samples, especially ones taken from under the asteroid's surface, **contain data from 46 billion years ago** unaffected by space radiation and other environmental factors.
- The mission is interested in **studying organic materials in the samples** to learn about how they are distributed in the solar system and if or how they are related to life on Earth.

## 6.6 India International Science Festival

Recently, the Union Minister of Science & Technology has said that the organisation of **India International Science Festival-2020** signifies the indomitable **spirit of nurturing and celebrating scientific temperament** amongst all the stakeholders of Science, Technology and Innovation.

- The IISF-2020 is organised by the **Defence Institute of High Altitude Research (DIHAR)** of the Defence Research and Development Organisation (DRDO).
- The theme for IISF-2020 is '**Science for Self-Reliant India and Global Welfare**'.
- The IISF is aimed at **bringing people together from the remotest corners** of the country in a single click and thereby helping in fulfilling the objectives of organising IISF.
- The IISF-2020 proposes to **bring more than 10,000 researchers, scientists and experts from different subjects** to discuss their research findings and exchange innovative ideas on the identified research themes.

### India International Science Festival

- It was launched in **2015** as a celebration to **promote Science and Technology** and demonstrate how science could lead India towards a developed nation.
- The aim is to **engage the public with science** and **celebrate the joy of science** and show the ways how science, technology, engineering and mathematics (STEM) provide us with the solutions to improve our lives.
- The **Ministry of Science & Technology** and **Ministry of Earth Sciences** in association with **Vijnana Bharati (VIBHA)** has created a unique platform of India International Science Festival which intends to inspire curiosity and make learning more rewarding

## 6.7 Molnupiravir

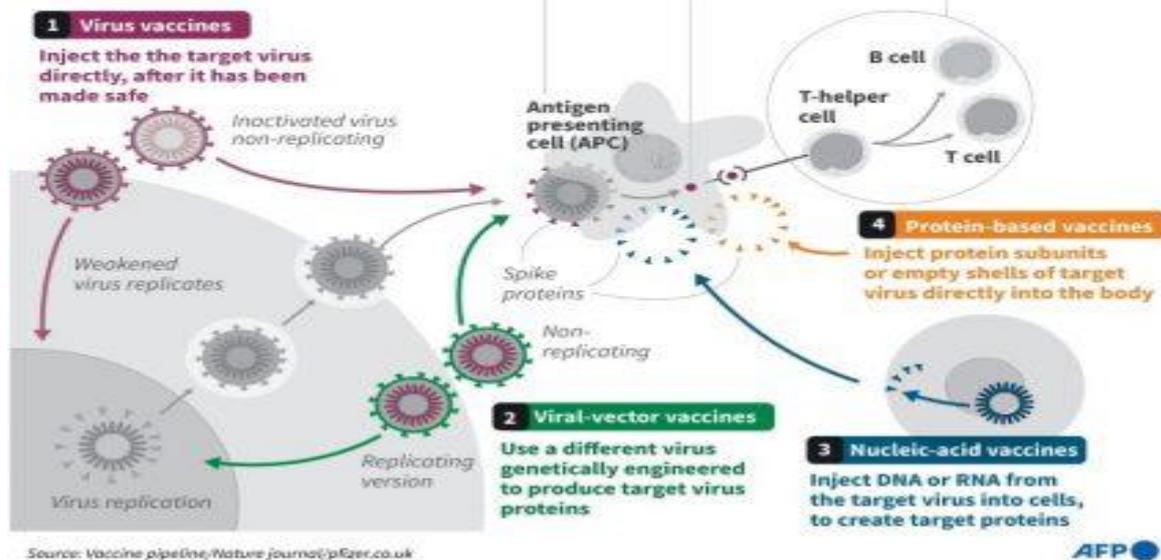
Recently, the results of the research by scientists at the Institute of Biomedical Sciences, Georgia State University have shown that **Molnupiravir** can **stop the transmission of SARS-CoV-2** in 24 hours.

## How vaccines work

The Pfizer Covid-19 vaccine is a **nucleic-acid vaccine**. It uses lab-made SARS-CoV-2 messenger RNA to trigger the body's natural defences.

### Four main approaches to vaccines

- ▶ There are four main approaches towards developing a vaccine against a virus
- ▶ All methods rely on APC to initiate the immune response
- ▶ APC identifies peptides, snippets of virus protein
- ▶ Immune cells will then be enabled to recognise, neutralise virus



- It is an **antiviral drug** also known as MK-4482/EIDD-2801.
- It is being developed by the biotechnology firm **Ridgeback Biotherapeutics** in collaboration with **pharmaceutical firm Merck**.
- It is the first demonstration of an **orally available drug** to rapidly block SARS-CoV-2 transmission.
- It is a **pro-drug of the synthetic nucleoside derivative** N4-hydroxycytidine, and exerts its antiviral action through introduction of copying errors during viral RNA replication.

## Ferrets

- Ferrets are a **popular model for influenza and other respiratory infections** because their **lung physiology is similar to humans** and researchers hope they will mimic aspects of Covid-19 in people such as its spread.

## 6.8 Quantum Key Distribution (QKD)

Recently, the **Defence Research & Development Organisation (DRDO)** undertook the

project for development of **Quantum Key Distribution (QKD)**.

- Quantum key distribution utilizes the **unique properties of quantum mechanical systems** to generate and distribute cryptographic keying material using special purpose technology.
- The technology is developed by **CAIR, Bengaluru** and **DYSL-QT, Mumbai**.
- Quantum Communication using **time-bin Quantum Key Distribution (QKD) scheme** was performed under realistic conditions.
- The setup also **demonstrated the validation of detection of a third party** trying to gain knowledge of the communication.
- Quantum based security against eavesdropping was validated for the **deployed system at over 12kms range and 10dB attenuation** over fibre optic channel.
- Quantum cryptography is a technology that **uses quantum physics to secure the distribution of symmetric encryption keys**.

#### **Importance of Quantum Key Distribution (QKD)**

- Quantum based communication offers a **robust solution to sharing the keys securely**.
- The work being done at DRDO will be used to **enable start-ups and SMEs in the domain of Quantum information technologies**.
- It will also serve to **define standards and crypto policies** that can leverage QKD system in a unified Cipher Policy Committee (CPC) framework for more secure and pragmatic key management for current and future military cryptographic systems.
- QKD provides a way of **distributing and sharing secret keys** that are necessary for cryptographic protocols.

#### **6.9 Beresheet 2**

Recently, Israel has announced its plan to send a second spacecraft i.e. **Beresheet 2 to the moon**, following the crash landing of the original Beresheet probe in 2019.

- Beresheet 1 was developed in response to the **Google Lunar X Prize competition** which challenged non-governmental groups to land a spacecraft on the

moon.

- The original Beresheet was a tall, oddly shaped 585-kilogram spacecraft built by **Israeli NGO SpaceIL** and state-owned **Israel Aerospace Industries**.
- Beresheet was **Israel's first lunar mission** and the first attempt by a private company to land on the Moon.

### **Beresheet 2**

- It is a collaborative effort of **Israeli non-profit SpaceIL, Israel Aerospace Industries** and the **Israeli Space Agency**.
- The mission is **scheduled to be launched in 2024**.
- The term Beresheet means **beginning** and is also the Hebrew name for the **Book of Genesis**.

### **6.10 Rise in Artificial Intelligence adoption in India**

Recently, a study by **PwC India** has revealed that the **highest increase in use of artificial intelligence (AI)** during Covid-19 times has been witnessed in India.

- India reported a **45% increase in the use of AI**, the highest among all countries, while the **US recorded a 35% rise, UK 23% and Japan 28%** after the virus outbreak.
- The report also showed that **94% of organisations now believe that AI will help create more opportunities** instead of being a threat to their industry.
- The report stated that around **70% of enterprises adopted AI** as compared to around 62% last year.
- India still lags behind global firms when it comes to **scaling up AI across the organisation with only 5%** doing so as compared to 25% globally.

### **Reasons for growth in Artificial Intelligence in India**

- The report attributes the **growing AI adoption to the shift in buying behaviour** and new business challenges.
- The far-reaching consequences of the **global pandemic have driven organisations** to balance the competing priorities of safeguarding health and ensuring business continuity.

- AI is now regarded as a **key enabler for organisations to repair** (emerge from the present crisis), rethink (plan for transformation) and reconfigure.

#### **Impact of Artificial Intelligence on different sectors**

- In the **travel and hospitality sector 89% firms** have implemented AI in some form.
- According to PWC India, the sector is looking at **AI solutions to reconfigure business processes** and offer contactless experiences.
- The **telecom, medicine and tech** with 86% adoption, **financial services** with 82% and **pharma** with 73% are the sectors where AI adoption has been higher.

#### **6.11 Satellite-based narrow band-Internet of Things network**

Recently, BSNL, in partnership with **Skylotech India**, announced a breakthrough in **satellite-based NB-IoT (Narrow Band-Internet of Things)**.

- It is the **world's first satellite-based NB-IoT network**.
- It is a new '**Made in India**' Solution which is indigenously developed by **Skylo**.
- It will connect with **BSNL's satellite- ground infrastructure** and provide **PAN-India coverage**, including **Indian seas**.

#### **Significance of Satellite-based narrow band-Internet of Things network**

- It is in pursuance of the Prime Minister's vision of a truly **Digital India starting with fishermen, farmers, construction, mining and logistics enterprises**.
- It will provide India the **access to a ubiquitous fabric of connectivity for millions** of yet unconnected machines, sensors and industrial IoT devices.
- The coverage will be so vast that it will **not leave any dark patch within the boundary of India**, from Kashmir & Ladakh to Kanyakumari, and from Gujarat to the North East, including the Indian seas.
- The solution is in line with BSNL's vision to **leverage technology to provide affordable and innovative telecom services** and products across customers segments
- It supports the Department of Telecom and NITI Aayog's plan of **bringing**

indigenous IoT connectivity to India's core sectors.

### 6.12 Human-made materials now outweigh Earth's entire biomass

Recently, the scientists have found out for the first time in history **man-made materials** now likely **outweigh all life on Earth**.

- The **weight of roads, buildings and other constructed or manufactured materials** is doubling roughly every 20 years and it currently weighed 1.1 teratonnes (1.1 trillion tonnes).
- The **weight of living biomass** (trees, plants and animals) has **halved since the agricultural revolution** because mankind has ramped up its insatiable consumption of natural resources.
- The research showed that the **mass of human-produced objects** stood at just three percent of the weight of biomass at the start of the 20th century.
- Since the post-World War II global production boom, manufacturing has surged to the extent that **humans now produce the equivalent of the weight of every person on Earth every week on average**.
- At the current growth rate, **man-made material is likely to weigh as much as three teratonnes by 2040**.
- The primary reasons for decreasing biomass are **deforestation and land use changes** making way for intensive agriculture.

#### Biomass

- Biomass is a **renewable energy resource derived from the carbonaceous waste** of various human and natural activities.
- It is derived from numerous sources, including the **by-products from the timber industry, agricultural crops, raw material from the forest, major parts of household waste and wood**.
- Biomass **does not add carbon dioxide** to the atmosphere as it absorbs the same amount of carbon in growing as it releases when consumed as a fuel.
- Its advantage is that it can be used to **generate electricity with the same equipment or power plants** that are now burning fossil fuels.

- Biomass is an **important source of energy** and the **most important fuel worldwide** after coal, oil and natural gas.

### 6.13 Northern Lights

Recently, the Space Weather Prediction Center at the US National Oceanic and Atmospheric Administration (NOAA) has said that the **electromagnetic storm** could be growing to major status, causing the **Northern Lights** to be visible in more number of areas than usual.

- **Northern Lights**, also known as **aurora borealis**, are usually witnessed far up in the **Polar Regions or the high latitude regions** of Europe.
  - Auroras occur when **charged particles ejected from the Sun's surface** (solar wind) enter the **Earth's atmosphere**.
- The fast-moving solar wind carries with it the **Sun's magnetic field**, which **disrupts the magnetosphere** (the region of space around Earth in which the magnetic field of our planet is dominant.).
- When the Sun's magnetic field approaches Earth, the **protective magnetic field radiating from our planet's poles** deflects the former and thus shielding life on Earth.
- The charged particles **interact with different gases in the atmosphere at the north and south poles** causing a display of light in the sky.

#### Aurora in Northern and Southern Hemisphere

- In the northern part of our globe, the polar lights are called **aurora borealis or Northern Lights**, and are seen from the US (Alaska), Canada, Iceland, Greenland, Norway, Sweden and Finland.
- In the south, they are called **aurora australis or southern lights**, and are visible from high latitudes in Antarctica, Chile, Argentina, New Zealand and Australia.

#### What are solar flares or solar storms?

- Solar flares can typically affect **space-dependent operations** like Global Positioning Systems (GPS), radio and satellite communications, besides hampering flight operations, power grids and space exploration programmes.
- The solar flares are a **sudden explosion of energy** caused by tangling, crossing or

reorganizing of magnetic field lines near sunspots.

- The **ejections travelling at a speed of 500km/second** are common during solar peaks and create disturbances in Earth's magnetosphere.
- During spacewalks, **astronauts face a great health risk** posed by exposure to solar radiation outside Earth's protective atmosphere.

### 6.14 Prithvi-2 Missile

Recently, India has successfully tested two **Prithvi-2 ballistic missiles** off the eastern coast of Odisha in Balasore.

- It is a **short-range ballistic missile** developed by the **Defence Research & Development Organization (DRDO)**.
- The **liquid-propelled Prithvi-2** has a range of 250 km and can carry a 1 tonne warhead.
- The 9-metre tall missile is the **first to have been developed by DRDO** under the Integrated Guided Missile Development Programme.
- It is **India's first indigenous surface-to-surface strategic missile**.
- The trajectory of the missiles was tracked by a **battery of long-range, multi-function radars and electro-optic telemetry stations** at different locations.
- The state-of-the-art missile uses an **advanced inertial guidance system** with manoeuvring trajectory to hit its target.
- The Prithvi-2 missile is capable of carrying **500-1,000 kg of warheads** and is powered by **liquid propulsion twin engines**.

### 6.15 Three New Systems for Indian Armed Forces

Recently, the Union Minister of Defence has handed over **three new systems** built by the **Defence Research & Development Organization (DRDO)** to the Indian Armed Forces.

#### **Border Surveillance System (BOSS)**

- It is an **"all-weather" electronic surveillance system** successfully designed and developed by Instruments Research & Development Establishment (IRDE),

Dehradun.

- It facilitates monitoring and surveillance by **automatically detecting the intrusions in harsh high-altitude sub-zero temperature areas** with remote operation capability.
- It consists of **Battle Field Surveillance Radar (BFSR) and EO payload** mounted on a pan-tilt unit kept at the observation tower.

### **Indian Maritime Situational Awareness System (IMSAS)**

- It is a **state-of-the-art, fully indigenous, high performance intelligent software system** that provide Global Maritime situational picture, marine planning tools and Analytical capabilities.
- The system provides **Maritime Operational Picture from Naval HQ** to each individual ship in sea to enable Naval Command and control (C2).
- The **Centre for Artificial Intelligence & Robotics (CAIR), Bengaluru** and **Indian Navy** has jointly conceptualised and developed the product and with the BEL.

### **ASTRA Missile**

- It is the indigenously developed first **Beyond Visual Range (BVR) Air-to-Air Missile**.
- It can be launched from **Sukhoi-30, Light Combat Aircraft (LCA), Mig-29 and Mig-29K**.
- It has been developed by **Defence Research & Development Laboratory (DRDL)** and production by **Bharat Dynamics Limited (BDL) Hyderabad**.

### **6.16 SolarWinds Hack**

Recently, a new cyberattack called '**SolarWinds Hack**' was discovered which in the United States, has emerged as one of the biggest ever targeted against the US government.

- It was first discovered by **US cybersecurity company FireEye**, and since then more developments continue to come to light each day.
- The **sheer scale of the cyber-attack remains unknown**, although the US Treasury,

Department of Homeland Security, Department of Commerce, parts of the Pentagon are all believed to have been impacted.

### SolarWinds Hack

- It is a **highly sophisticated threat actor** which is considered as a state-sponsored attack.
- The FireEye Company has said that attack was carried out by a nation with top-tier offensive capabilities and the **attacker primarily sought information** related to certain government customers.
- The cyberattack, which was named **Campaign UNC2452**, was not limited to the company but had targeted various public and private organisations around the world.

### Nature of SolarWinds Hack

- It is being called a **'Supply Chain' attack** because instead of directly attacking the federal government or a private organization's network, the hackers target a third-party vendor, which supplies software to them.
- According to FireEye, the hackers gained **'access to victims via trojanized updates to SolarWinds'** Orion IT monitoring and management software".
- Once installed, the malware gave a **backdoor entry to the hackers** to the systems and networks of SolarWinds' customers.

### 6.17 E20 Fuel

Recently, the Ministry of Road Transport and Highways has published a **draft notification** and invited comments from the public for **adoption of E20 Fuel**.

- The current permissible level of blending is **10% of ethanol** but India has reached **only 5.6% of blending** in 2019.
- The move assumes significance in the wake of Transport Minister stressing on **promoting green fuel** like ethanol to **reduce huge Rs 8 lakh crore crude import dependence**.
- The government aspires to take the **ethanol economy to Rs 2 lakh crore** in the

next five years from Rs 22,000 crore at present.

### E20 Fuel

- E20 fuel, i.e. **blend of 20% of ethanol with gasoline**, as an automotive fuel and for the adoption of mass emission standards for this fuel

### Significance of E20 Fuel

- It is an automobile fuel which is **capable of reducing vehicular emissions** such as carbon dioxide, hydrocarbons, etc.
- It will help **reduce the oil import bill**, thereby saving foreign exchange and boosting energy security.
- It added the **compatibility of vehicles** with the percentage of ethanol in the blend would be defined by the vehicle manufacturer, which would have to be displayed on the vehicle with a sticker.

### Ethanol Blending Policy in India

- Ethanol is a biofuel and a **common by-product of biomass left by agricultural feedstock** such as corn, sugarcane, hemp, potato, etc.
- The government has set targets of **10 per cent bioethanol blending of petrol by 2022** and to raise it to **20 per cent by 2030** under the ethanol blending programme to curb carbon emissions and reduce India's dependence on imported crude oil.
- **1G bioethanol plants** utilise sugarcane juice and molasses, byproducts in the production of sugar, as raw material, while **2G plants** utilise surplus biomass and agricultural waste to produce bioethanol.

### 6.18 Shigella

Recently, the Department of Community Medicine, Government Medical College Hospital, Kozhikode, has begun an investigation into the outbreak of **Shigella infection** at Mayanad area in the city.

- Shigella is a **Gram-negative, non-motile bacillus** belonging to the **Enterobacteriaceae** family
- The experts have provided that shigella bacteria causes an infection

called **shigellosis**, and the infected will have **diarrhoea, stomach cramps and fever**.

- **Diarrhoea**, often containing **blood or mucus in stool, stomach pain, cramps, fever and vomiting** are the main symptoms of the infection.

#### **Transmission of Shigella Infection**

- **Infants, non-breast fed children, children recovering from measles, malnourished children, and adults older than 50 years** have a more severe illness and a **greater risk** of death.
- It is **highly contagious** and can be transmitted after using a common toilet also.
- The transmission occurs via the **faecal-oral route, person-to-person contact, household flies, infected water, and inanimate objects**.

#### **Treatment of Shigella Infection**

- The 2005 guidelines recommend **ciprofloxacin** as first-line treatment and noted that **pivmecillinam and ceftriaxone** were the only antimicrobials that are usually effective for **treatment of multi-resistant strains of Shigella** in all age groups.
- The WHO 2013 Pocket book of **hospital care for children** includes a section on the treatment of Shigella dysentery.
  - The treatment protocol is **concurrent with the 2005 guidelines** outlined above, with the exception of a slightly lower dosage range listed for ceftriaxone.

### **6.19 Medium Range Surface to Air Missile (MRSAM)**

Recently, the Defence Research & Development Organisation (DRDO) has achieved a major milestone with the maiden launch of Army Version **Medium Range Surface to Air Missile (MRSAM)**.

#### **Medium Range Surface to Air Missile (MRSAM)**

- The Army version of MRSAM is a **Surface to Air Missile**.
- It is developed by India's **Defence Research & Development Organisation (DRDO)** in collaboration with **Israel Aerospace Industries (IAI)** for use of the

Indian Army.

- The MRSAM Army weapon system comprises of **Command post, Multi-Function Radar and Mobile Launcher system**.
- It is a 4.5m long **nuclear-capable ballistic missile** which weighs around 2.7 tonne and can carry a payload of 60 kg.
- The launching platform includes a **Multi-Functional Surveillance and Threat Alert Radar (MFSTAR)** for detection, tracking, and guidance of the missile.
- The new generation MRSAM has been developed to **neutralise airborne threats** like jets, missiles and rockets, including projectiles launched simultaneously.
- MRSAM is a **land-based configuration** of the long-range surface-to-air missile (LRSAM) or Barak-8 naval air defence system, which is designed to operate from naval vessels.

#### **Barak 8 Missile**

- Barak 8, also known as **LR-SAM** or as **MR-SAM**, is an **Indo-Israeli surface-to-air missile (SAM)**.
- It is designed to **defend against any type of airborne threat** including aircraft, helicopters, anti-ship missiles, and unmanned aircraft as well as ballistic missiles, cruise missiles and combat jets.
- Both **maritime and land-based variants** of the system exist.
- It was jointly developed by **Israel Aerospace Industries (IAI), Defence Research & Development Organisation (DRDO), Israel's Administration for the Development of Weapons and Technological Infrastructure, Elta Systems, Rafael** and other companies.
- India's **Bharat Dynamics Limited (BDL)** produces the missiles.

#### **6.20 Vigyanika-International Science Literature Festival**

Recently, the **Ministry of Science & Technology** has organized the inaugural session of 'Vigyanika'.

## Vigyanika

- It is an **International Science Literature Festival**.
- It is jointly organized by **CSIR-National Institute of Science Communication and Information Resources (CSIR-NISCAIR)**, **Ministry of Earth Sciences (MoES)** and **Vijnana Bharati (VIBHA)**.
- The event is aimed to **take science and literature to the masses** and showcase strategies to employ various aspects of science communication to promote self-reliance and global welfare.
- It is centred on the theme **“Science Communication & Science Literature – Networking Science & Society”**.
- It will deliberate on the challenges of science communication and also **critically evaluate scientific literature** and many other issues through Keynote Lectures, Panel Discussions, Scientific Sessions, and Vigyan Kavi Sammelan.

## CSIR-NISCAIR

- It was established in 1951 as a **premier institute engaged in scholarly communication** to the scientific fraternity and public outreach of science for over six decades.
- It is the only organisation in the country that **disseminates R&D information** through 18 peer-reviewed journals.
- It organises **training workshops in science communication and science writing** and offers platforms and forums for academic discourse on science promotion, governance and policy.

## VIBHA

- Vijnana Bharati or VIBHA is a **science movement** with swadeshi spirit working for the development of Swadeshi Sciences.
- It is aimed at **interlinking traditional and modern sciences** on the one hand and natural and spiritual sciences on the other hand.

## 6.21 Ammonia Gas Leak

Recently, two persons died and several took ill in a major **ammonia gas leakage** at the Indian

Farmers Fertilizer Cooperative Limited (IFFCO) unit at Prayagraj.

### Ammonia

- The **tri-hydroid of nitrogen (NH<sub>3</sub>)** i.e. ammonia, is a **building block for ammonium nitrate (NH<sub>4</sub>NO<sub>3</sub>)** that is used in agriculture as a high-nitrogen fertiliser.
- It is a **colorless gas** with a **distinct odor** composed of nitrogen and hydrogen atoms.
- Ammonia is stored for industrial use in **liquid form under high pressure** or in **gaseous form at low temperature**.
- Ammonia, which is **highly soluble in water**, is found in soil, air and water.
- It is **naturally present in the body** and secreted by the kidneys to neutralise excess acid.

### How Ammonia affects a Human Body?

- Ammonia interacts immediately upon **contact with moisture present in the skin, eyes, oral cavity and respiratory tract** to form ammonium hydroxide.
- Ammonium hydroxide is very **caustic and disrupts the cell membrane lipids**, ultimately leading to cellular destruction.
- Ammonia gas is **toxic and affects the lungs with a possibility of causing chemical pneumonitis** i.e. inflammation of the lung caused by aspirating or inhaling irritants.

### Uses of Ammonia

- Ammonia is critical in the **manufacturing of fertilizers**.
- It is one of the **largest-volume synthetic chemicals** produced in the world.
- More than 80 per cent of ammonia made is **consumed in the manufacturing of fertilizer**, and most of the remainder goes into the production of formaldehyde.

### 6.22 BBX11 Gene-Greening of Plants

Recently, the researchers at the Indian Institute of Science Education and Research (IISER)

have identified a **gene** called **BBX11**.

### **BBX11**

- It is a gene that **facilitates in the greening of plants** by playing a crucial role in regulating the levels of **protochlorophyllide**.
- Using genetic, molecular and biochemical techniques, the researchers found a mechanism where **two proteins oppositely regulate the 'BBX11' gene** to maintain optimum levels of 'BBX11'.
- The study highlighted that the **amount of protochlorophyllide synthesised needed to be proportional** to the number of enzymes available to convert them to chlorophyll.

### **Significance of Identification of BBX11**

- The study could have tremendous **implications in the agriculture sector in tropical countries** like India.
  - It can help provide leads to **optimise plant growth** under stressful and rapidly changing climatic conditions.
- The rapidly changing climatic conditions often lead to **severe distress among the farming community** as indicated by the high number of farmer suicide but the knowledge of new gene would optimise plant growth under the stressful conditions such as severe drought, high temperature and high light.

### **Protochlorophyllide**

- It is an **intermediate in the biosynthesis** of the green pigment chlorophyll.
- The plants make a precursor of chlorophyll called '**protochlorophyllide**' in the dark in order to facilitate quick synthesis of chlorophyll.

### **6.23 Pneumosil**

Recently, the Union Minister for Health & Family Welfare has launched a vaccine called '**Pneumosil**'.

- It is India's **first pneumococcal conjugate vaccine (PCV)**.

- It has been developed by the **Serum Institute of India Private Limited (SIIPL)** in collaboration with partners like the **Bill and Melinda Gates Foundation**.
- Pneumosil was found to be **safe and effective in the prevention of Pneumonia disease** during the clinical trials.
- Based on the clinical trials, the Drugs Controller General (India) has **licensed the Pneumosil vaccine** in July 2020 after approval from Subject Expert Committee (SEC).
- The vaccine targets the **pneumococcal bacterium**, which causes pneumonia and other serious life-threatening diseases such as meningitis and sepsis.

### Significance of Pneumosil

- Pneumosil is an example of **India's capability in Research & Development** and **manufacturing high end sophisticated Vaccines**.
- It is matter of pride for India for this historical milestone during COVID-19 Pandemic because till now **India was fully dependent on Pneumococcal Conjugate Vaccine manufactured by Foreign Manufacturers**.
- It is a significant milestone for the country's **public healthcare** which will ensure that **children are protected better against pneumococcal disease** with an effective vaccine.

### Pneumonia disease

- Pneumonia is an infection that **inflames the air sacs** in one or both lungs.
- Pneumonia is an infection of the lungs that can **cause mild to severe illness in people of all ages**.
- It normally starts with a **bacterial, viral, or fungal infection**.
- The **treatment** depends on the type and severity of the pneumonia:
  - **Bacterial types** of pneumonia are usually treated with **antibiotics**.
  - **Viral types** of pneumonia are usually treated with **rest and plenty of fluids**. Antiviral medications can be used in influenza.
  - **Fungal types** of pneumonia are usually treated with **antifungal medications**.

### 6.24 Quantum Random Number Generator (QRNG)

Recently, the **DRDO Young Scientist Laboratory for Quantum Technologies (DYSL-QT)** has developed a **Quantum Random Number Generator (QRNG)**.

- The DRDO Laboratory has developed a **fiber-optic branch path based QRNG**.
- The branch path based QRNG is based on the principle that if a **single photon is incident on a balanced beam splitter**, it will take either of the **beam-splitter output paths randomly**.

#### Need for QRNG

- The QRNG system developed by the laboratory has passed the **global randomness testing standards** viz. NIST and Die-harder Statistical Test Suites at the speed of 150 kbps after post-processing.
- The random numbers have **essential roles in many fields**, such as Quantum Communication, cryptography, scientific simulations, lotteries and fundamental physics experiments.
- The generation of **genuine randomness** is generally considered impossible with classical means.
- Quantum Mechanics has the **inherent potential of providing true random numbers** and thus has become the preferred option for the scientific applications requiring randomness.

#### Significance of QRNG

- The Quantum Random Number Generator **detects random quantum events** and converts those into a stream of binary digits.
- The generated random numbers are evaluated and verified using **DRDO's indigenously developed Randomness Testing Statistical Test Suite of SAG**.
- **India enters the club of countries** who have the technology to achieve the generation of random numbers based on the Quantum Phenomenon.

### 6.25 India's Highest Meteorological Centre

Recently, the Union Minister of Earth Sciences has inaugurated **highest Meteorological**

### Centre (MC) in India.

- The India Meteorological Department (IMD) will now **provide specialised weather forecasts for traffic movement on highways, agriculture, and defence personnel** from its Ladakh centre.
- The Leh centre is the **second MC located in the Himalayas** after Itanagar in Arunachal Pradesh.
- The centre would provide **localised weather forecasts** thus strengthening weather-related early warning system for the region.
- The centre will also give **weather forecasts about tourist places** such as Nubra, Changthang, Pangong Lake, Zaskar, Kargil, Drass, Dha-Baima (Aryan valley) and Khalsi.

### Need for Meteorological Centre in Leh

- Ladakh remains **vulnerable to erratic weather and changing climate** that have adverse effects on the lives of the locals.
- The Union Territory of Leh is a **geo-strategic location** from the security point of view.
- The Union Territory has varying **micro-climatic zones** ranging from plains, cold desert, hills and extreme dry places.

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### 6.26 Global Alliance for Vaccines and Immunisation (GAVI)

Recently, the Union Minister of Health & Family Welfare has been nominated by the **Global Alliance for Vaccines and Immunisation (GAVI)** as a member on the GAVI Board.

- The Minister will be representing the **South East Area Regional Office (SEARO)/ Western Pacific Regional Office (WPRO)** constituency on the GAVI Board.
- The GAVI Alliance (formerly the Global Alliance for Vaccines and Immunisation) is a **global health partnership of public and private sector organizations** dedicated to “**immunisation for all**”.
- It provides a unique opportunity for a wide-range of partners to **build consensus around policies, strategies and priorities**.

- GAVI has **observer status** at the World Health Assembly.
- Gavi's impact draws on the strengths of its core partners, **the World Health Organization, UNICEF, the World Bank and the Bill & Melinda Gates Foundation.**
- It plays a critical role in **strengthening primary health care (PHC)** and bringing us closer to the **Sustainable Development Goal (SDG) of Universal Health Coverage (UHC).**
- The GAVI Board is responsible for **strategic direction and policy-making, oversees the operations of the Vaccine Alliance and monitors programme implementation.**
- The Board provides a forum for **balanced strategic decision making**, innovation and partner collaboration with membership drawn from a range of partner organisations, as well as experts from the private sector.

Raja Sir's

#### 6.27 Indian SARS-CoV-2 Genomic Consortia (INSACOG)

Recently, the government has launched the **Indian SARS-CoV-2 Genomic Consortia (INSACOG).**

- It **comprises of 10 labs** namely DBT-NIBMG Kalyani, DBT-ILS Bhubaneswar, ICMR-NIV Pune, DBT-NCCS Pune, CSIR-CCMB Hyderabad, DBT-CDFD Hyderabad, DBT-InSTEM/ NCBS Bengaluru, NIMHANS Bengaluru, CSIR-IGIB Delhi, and NCDC Delhi.
- The aim of the Indian SARS-CoV-2 Genomics Consortium is to **monitor the genomic variations in the SARS-CoV-2** on a regular basis through a multi-laboratory network.
- The consortium will **ascertain the status of new variant of SARS-CoV-2** in the country.
  - It will also establish **sentinel surveillance for early detection of genomic variants** with public health implication, and determine the genomic variants in the unusual events/trends.
- The INSACOG will have a **high level Inter-Ministerial Steering Committee** which will provide guidance and oversight to the consortium especially

for policy matters.

- The INSACOG will **monitor the genomic variations on a regular basis** through the multi-laboratory network.
- The **DBT-NIBMG as the Coordinating Unit of Genome Sequencing Consortium** and will closely work with a **Nodal Unit of National Centre for Disease Control (NCDC)** on activities like SOPs, data annotation, data analysis, data release etc.

### 6.28 Proxima Centauri

Recently, the astronomers running the **world's largest initiative to look for alien life** have picked up an “intriguing” radio wave emission from the direction of **Proxima Centauri**.

- Astronomers at the \$100 million **Breakthrough Listen project** regularly spot blasts of radio waves using two powerful telescopes i.e. the **Parkes Observatory in Australia** or the **Green Bank Observatory in the US**.
- The beam picked up from the direction of **Proxima Centauri** which has been named **BLC1 or Breakthrough Listen Candidate 1**, has two interesting characteristics:
  - First, its signal frequency is 982 MHz which is a **narrow-band value** that is **not transmitted by human-made spacecraft or satellites**.
  - Second, the apparent shift in this frequency is reportedly consistent with the **movement of the planet**.
- It raises the possibility that the emission could be an alien “**technosignature**”, meaning something which provides evidence of alien technology.

### Proxima Centauri

- It is the **closest star to Sun**.
- Proxima Centauri is **4.2 light-years away from the Sun** which is considered a close distance in cosmic terms.
- Its mass is about an **eighth of the Sun's**, and it is **too dim to be seen** with the naked eye from Earth.
- Proxima b, lies in Proxima Centauri's “**Goldilocks zone**”, is one of the two planets

that revolve around the star.

- Goldilocks zone is the **area around a star where it is not too hot and not too cold for liquid water** to exist on the surface of surrounding planets.
- Proxima Centauri b is a **super Earth exoplanet** that orbits an M-type star.

## 6.29 SAHAYAK-NG

Recently, the Defence Research and Development Organisation (DRDO) and Indian Navy have conducted the successful maiden test trial of 'SAHAYAK-NG'.

- It is **India's first indigenously** designed and developed **Air Dropped Container**.
- It aims to **enhance Indian Navy's operational logistics capabilities** and provide critical engineering stores to ships which are deployed more than 2000 km from the coast.
- SAHAYAK-NG is an **advanced version** of SAHAYAK Mk I.
- It **reduces the requirement of ships** to come close to the coast to collect spares and stores.
- The newly developed **GPS aided air dropped container** is having the capability to carry a payload that weighs upto 50 kg and can be dropped from heavy aircraft

## SOCIAL ISSUES AND DEVELOPMENT

### 7.1 Brain Electrical Oscillation Signature Profiling

Recently CBI officers probing the alleged rape and murder of a 19-year-old Dalit girl in Hathras, Uttar Pradesh, arrived at the Gandhinagar-based Forensic Science Laboratory (FSL) with the four accused for their brain electrical oscillation signature profiling (BEOSP) test to be conducted .

- Brain Electrical Oscillation Signature Profiling (BEOSP) also known as brain fingerprinting is a neuro psychological method of interrogation in which the accused's participation in the crime is investigated by studying their brain's response.
- Brain fingerprinting is based on finding that the brain generates a unique brain wave

pattern when a person encounters a familiar stimulus.

- Use of functional magnetic resonance imaging in lie detection derives from studies suggesting that persons asked to lie show different patterns of brain activity than they do when being truthful.
- The BEOSP procedure does not involve a question-answer session with the accused and is rather a neuro psychological study of their brain.
- Brain Electrical Oscillation Signature Profiling (BEOSP) also known as brain fingerprinting is a neuropsychological method of interrogation in which the accused's participation in the crime is investigated by studying their brain's response.
- The BEOSP test is carried out via a process known as electroencephalogram, conducted to study the electrical behaviour of the human brain.
- Under this test, the consent of the accused is first taken and they are then made to wear caps with dozens of electrodes attached to them.
- The accused are then shown visuals or played audio clips related to the crime to check if there is any triggering of neurons in their brains which then generate brainwaves.
- The test results are then studied to determine the participation of the accused in a crime.
- The tests are based on the phenomenon of 'knowledge' and 'experience'.
- A person's brain might have knowledge of the crime committed and the alibi they have come up with.
- But it is the 'experience' of having participated in the crime that determines their guilt."

## **7.2 Gender equity in science**

- Gender equity in science is one of the focuses of the new Science, Technology and Innovation Policy, currently being drafted by the Department of Science and Technology (DST).
- This will increase the participation of women in science.
- For this, the DST will incorporate a system of grading institutes depending on the

enrolment of women and the advancement of the careers of women faculty and scientists.

- The concept borrows from a programme started by the UK in 2005 called the Athena SWAN (Scientific Women's Academic Network), which is now being adopted by many countries.

### Athena SWAN

- The Athena SWAN Charter is an evaluation and accreditation programme in the UK enhancing gender equity in science, technology, engineering, mathematics and medicine (STEMM).
- Participating research organisations and academic institutions are required to analyse data on gender equity and develop action plans for improvement.
- The programme recognises such efforts with bronze, silver or gold accreditation.
- Institutions that sign up commit to addressing unequal gender representation; tackling the gender pay gap; removing the obstacles faced by women in career development and progression; discriminatory treatment often experienced by trans people; gender balance of committees and zero tolerance for bullying and sexual harassment.

### 7.3 Representation of Women in Indian Judiciary

Recently, the Attorney General K. K. Venugopal has said that improving the **representation of women in the judiciary** could go a long way towards a more balanced and empathetic approach in cases involving sexual violence.

#### Current Scenario of Women in Indian Judiciary

- The Supreme Court has **only 2 women judges** as against a **sanctioned strength of 34 judges** and there has never been a female Chief Justice of India.
- There are **only 80 women judges** out of the total **sanctioned strength of 1,113 judges** in the High Courts and the Supreme Court across India.
- Of the 26 courts whose data was accessed, including the Supreme Court, the Punjab and Haryana High Court has the **maximum strength of women judges** in the country.

- There are six High Courts, which consist of **Manipur, Meghalaya, Patna, Tripura, Telangana, and Uttarakhand**, where **no sitting judges** include any woman judge.
- Currently, **no data is centrally maintained** on the number of women in tribunals or lower courts.

### Concerns associated with Judiciary

- The judiciary will not be trusted if it is viewed as a **bastion of entrenched elitism, exclusivity, and privilege**, oblivious to changes in society and to the needs of the most vulnerable.
- The citizens will find it **hard to accept the judiciary as the guarantor of law and human rights** if judges themselves act in a discriminatory manner.

### Importance of Women in Judiciary

- The achievement of equality for women judges, in terms of **representation at all levels of the judiciary** and on policy-making judicial councils, should be the goal because it is **right for the achievement of a more just rule of law**.
- The entry of women judges into spaces from which they had historically been **excluded has been a positive step in the direction of judiciaries** being perceived as being more transparent, inclusive, and representative of the people.
- The women judges **enhance the legitimacy of courts**, sending a powerful signal that they are open and accessible to those who seek recourse to justice.
- The women judges **contribute far more to justice than improving its appearance** because they contribute significantly to the quality of decision-making, and thus to the quality of justice itself.
- The judges, who belong to the **“old school”** and may be **“patriarchal” in outlook**, should be sensitised so that they do not pass orders objectifying women in cases of sexual violence.

### 7.4 Advisory on advertisements on Online Gaming

Recently, the Union Ministry of Information and Broadcasting has issued **advisory on Online Gaming, Fantasy Sports etc.**

- It provides that all private satellite TV channels stating that **no advertisement should present online gaming for real money** winnings as an income opportunity or an alternative employment option.
  - As per the ASCI guidelines, **no gaming advertisement** may depict any person **under the age of 18 years engaged in playing an online game for real money winnings** or suggest that such persons can play these games.
- According to the advisory, private television channels will have to **follow the guidelines** issued by the Advertising Standards Council of India (ASCI).
- All broadcasters are advised that the guidelines issued by ASCI are **complied with and advertisements broadcast on television** adhere to the guidelines of the ASCI.

#### Need for guidelines on advertisements

- The ministry said it had come to its notice that a **large number of advertisements on online gaming, fantasy sports**, among others, have been appearing on television, and concerns were expressed that such **advertisements appear to be misleading**.
- The concerns were expressed that such advertisements appear to be misleading and **do not correctly convey to the consumers** the financial and other risks associated.

#### 7.5 Separate Category in Prisoner Data for Transgender

Recently, the Centre has told the Delhi High Court that a communication has been issued to **all the states and union territories** to include **data of transgender prisoners** under a separate gender in prison statistics reports from 2020 onwards.

- The decision was made in response to a PIL seeking a direction to the **National Crime Records Bureau (NCRB)** to make requisite policy and format amendment to **include the data on transgender prisoners in the prison statistics** reports.
- The NCRB intends to include **transgender in the gender classification of prisoners** from PSI-2020 onwards.
  - Accordingly, gender classification of the prisoners will be classified as **Male, Female and Transgender** in the PSU proforma and Annexures.
- The NCRB has now directed the **state and UT authorities to direct the concerned**

**officials** to prepare for collection of transgender data in the gender classification of prisoners while collecting data for Prison Statistics India-2020.

### Why Special Category of Prisoner Data for Transgender is needed?

- Currently, **only two genders appear in the Prisons Statistics India report** published by NCRB i.e. male and female, to the complete exclusion of the third gender.
- The transgenders have been **recognized as third gender** in other publications like ‘Crimes in India’ and ‘Accidental Deaths and Suicides in India’ by NCRB.
- The petition also argued that the **absence of proper statistics on the number of transgender prisoners** in India raises grave concerns on the treatment of such prisoners.
- The categorisation was needed to ensure their equality and protection under **Articles 14** (equality before law), **15** (pertaining to discrimination of Indians on basis of religion, race, caste, sex or place of birth), **19** (freedom of speech and expression), and **21** (protection of life and liberty) of the Constitution of India.

### Challenges faced by Transgender in Prison

- It is not uncommon to learn about incidents of **atrocities in jails with transgenders**, and without the transparency/recognition of transgenders in the Prison Statistics India, these atrocities are only likely to increase exponentially.
- The petitioner argued that **without recognising the transgender inmates**, the Supreme Court’s guidelines on the community could not be fully implemented.
- The Transgender people face **specific and unique difficulty in prisons** and jails due to **ignorance, discrimination, and violence** from guards and other prisoners.
- The transgender and intersex prisoners often **end up in segregation against their will**, sometimes as punishment, sometimes for protection and sometimes because prison officials **cannot decide what gender they should consider** the person.

### 7.6 CO-WIN Platform

Recently, the Union Minister of Health & Family Welfare has launched the ‘**CO-WIN Platform**’.

- It is a new digital platform for **COVID 19 Vaccination Delivery**.
- It is a user friendly mobile app for **recording vaccine data** which is working as a beneficiary management platform having various modules.
- The app will have separate modules for **administrator, registration, vaccination, beneficiary acknowledgement and reports**.
  - The **administrator module** is for the administrators who will be conducting these vaccination sessions.
  - The **registration module** is for people to get registered for vaccination.
  - The **vaccination module** will verify beneficiary details and update vaccination status.
  - The **beneficiary acknowledgement module** will send SMS to beneficiaries and also generate QR-based certificates after one gets vaccination.
  - The **report module** will prepare reports of how many vaccine sessions have been conducted, how many people have attended those, and on how many people have dropped out.
- The CO-WIN platform will also be used to **send real time temperature details of storage facilities** to the main servers.

### 7.7 Atmanirbhar Bharat Rojgar Yojana (ABRY)

Recently, the Union Cabinet has given its approval for **Atmanirbhar Bharat Rojgar Yojana (ABRY)**.

#### Salient Features of Atmanirbhar Bharat Rojgar Yojana (ABRY)

- The cabinet has approved an **expenditure of Rs. 1,584 crore for the current financial year** and Rs.22810 crore for the entire Scheme period i.e. **2020-2023**.
- The government of India will provide **subsidy for two years** in respect of new employees engaged on or after 1st October, 2020 and upto 30th June, 2021.
- The government of India will pay both **12% employees' contribution** and **12% employers' contribution** i.e. 24% of wages towards EPF in respect of new

employees in establishments employing upto 1000 employees for two years.

- The government of India will pay **only employees' share of EPF contribution** i.e. 12% of wages in respect of new employees in **establishments employing more than 1000 employee** for two years.

#### **Eligibility under Atmanirbhar Bharat Rojgar Yojana (ABRY)**

- An employee drawing **monthly wage of less than Rs. 15000** and who was **not working in any establishment** registered with the Employees' Provident Fund Organisation (EPFO) before 1st October, 2020;
- An employee who **did not have a Universal Account Number or EPF Member account number** prior to 1st October 2020.
- Any EPF member **possessing Universal Account Number (UAN)** drawing monthly wage of less than Rs. 15000/- who made exit from employment during Covid pandemic; and
- An employee who **did not join employment in any EPF covered establishment** up to 30 September 2020 will also be eligible to avail benefit.

#### **Significance of Atmanirbhar Bharat Rojgar Yojana (ABRY)**

- It aims to **boost employment in formal sector** and **incentivize creation of new employment opportunities** during the Covid recovery phase under Atmanirbhar Bharat Package 3.0.
- EPFO shall work out modality to ensure that **there is no overlapping of benefits provided under ABRY** with any other scheme implemented by EPFO.

#### **7.8 Scheme for Tharu Tribes**

Recently, the Uttar Pradesh government has embarked upon a scheme to take the unique culture of its ethnic **Tharu tribe** across the world.

- The state government is working to **connect Tharu villages in Uttar Pradesh** with the **home stay scheme** of the UP Forest Department.
- The idea is to offer tourists an experience of **living in the natural Tharu habitat**, in traditional huts made of grass collected mainly from the forests.

- Under the scheme, the Uttar Pradesh Forest Corporation will **train the Tharu people to communicate effectively with visitors**, and encourage villagers to acquaint them with aspects of safety and cleanliness, and with the rules of the forest.
- Tharu homeowners will be able to **charge tourists directly for the accommodation** and home-cooked meals.
- The UP government expects both **domestic and international tourists to avail of the opportunity** to obtain a taste of the special Tharu culture by staying with them, observing their lifestyle, food habits, and attire.

### Tharu Tribes

- The community belongs to the **Terai lowlands**, amid the **Shivaliks or lower Himalayas**.
- Most of them are **forest dwellers** and some **practice agriculture**.
- The word Tharu is believed to be derived from **sthavir**, meaning **followers of Theravada Buddhism**.
- Tharus resides in the districts of **Balrampur, Bahraich, Lakhimpur** and **Pilibhit** bordering Nepal.
- The Tharus live in both **India and Nepal** and in the Indian terai, they live mostly in **Uttarakhand, Uttar Pradesh, and Bihar**.
- They speak various dialects of **Tharu**, a language of the **Indo-Aryan subgroup**, and variants of **Hindi, Urdu, and Awadhi**.
  - In central Nepal, they speak a **variant of Bhojpuri**, while in eastern Nepal, they speak a **variant of Maithili**.
- Tharus worship **Lord Shiva** as Mahadev, and call their supreme being "**Narayan**", who they believe is the provider of sunshine, rain, and harvests.
- Tharu **women have stronger property rights** than is allowed to women in mainstream North Indian Hindu custom.

### 7.9 Software to track down child pornography

Recently, the cyber wing of the **Maharashtra Police** acquired a **software from Interpol** that

would help them **track down child pornography** uploaded online.

- The Interpol has a software that uses various mechanisms like **detecting nudity in images, recognising age of the person** through facial structures, among other filters.
- It also has **in-built algorithms to look for keywords** around child pornography that would for example help law enforcement agencies track forums that indulge in these crimes.
- The software **'crawler'** scans the internet looking for such images, videos and text.

#### **TRACE team to counter child pornography**

- The Maharashtra Cyber Cell has set up the **Tactical Response Against Cyber Child Exploitation (TRACE) team**.
- The team was comprised of 12 officers who went for training to the **South Asian wing of Interpol**.
- The TRACE unit was primarily set up to **act against child pornography in Maharashtra** that is part of a larger campaign against **Child Sexual Abuse Material (CSAM)** across the country since 2019.

#### **Child Sexual Abuse Material (CSAM)**

- The United States federal law defines **child pornography as any visual depiction of sexually explicit** conduct involving a minor (**a person less than 18 years old**).
- India's fight against **Child Sexual Abuse Material (CSAM)** received a boost in 2019 when **National Centre for Missing and Exploited Children (NCMEC)** started sharing tip-offs about child pornography in India with Indian agencies.
- The tip offs were received by the **National Crime Records Bureau (NCRB)** which then passed it on to the states where the child pornography related incident had taken place.

#### **Operation Blackface**

- **'Operation Blackface'** is part of the **larger action taken against CSAM** across

the country.

- The operation was started by the **Maharashtra Cyber Cell**.

### 7.10 PM-WANI Scheme

Recently, the Union Cabinet has approved the **PM-WANI Scheme**.

- The idea of a **public data office (PDO)** was first floated by the **Telecom Regulatory Authority of India (TRAI)** in 2017.
- The TRAI had set up the **initial pilot project for PDO**, in which companies such as Facebook, and government's C-DOT had participated.
- In 2018, when **TRAI had floated the test model**, it mooted that the users should be able to buy **"sachet-sized" internet plans** that varied between Rs 2 and Rs 20, and can be used anytime.

#### PM-WANI Scheme

- It is the **Prime Minister WiFi Access Network Interface (PM- WANI)** scheme to set up public WiFi networks across the country.
- **Public Data Office (PDO):** It will establish, maintain, and operate only WANI compliant Wi-Fi Access Points and deliver broadband services to subscribers.
- **Public Data Office Aggregator (PDOA):** It will be an aggregator of PDOs and perform the functions relating to Authorization and Accounting.
- **App Provider:** It will develop an App to register users and discover WANI compliant Wi-Fi hotspots in the nearby area and display the same within the App for accessing the internet service.
- **Central Registry:** It will maintain the details of App Providers, PDOAs, and PDOs and the Central Registry will be maintained by C-DoT.

#### Significance of PM-WANI Scheme

- Under the scheme, the aggregators will **provide services utilising telecom companies' optical fibre network**.
- It will create **millions of inter-operable Wi-Fi hotspots** in the country and democratize content distribution and broadband access to millions at affordable

rates.

- The scheme would enable the **small shopkeepers to provide Wi-Fi service** and it will boost incomes as well as ensure the youth gets seamless internet connectivity.
- No License Fee for providing **broadband internet services using public Wi-Fi Hotspots** will massively encourage its proliferation and penetration across the length and breadth of the country.

### 7.11 Shakti Bill

Recently, the winter session of the **Maharashtra State Legislature** began with discussion on '**Shakti Bill**'.

- The bill is supposed to be on the lines of **Andhra Pradesh's Disha Act** that was passed in 2019.
- The committee was set up to **study the law** and another one led by PWD Officer Ashok Chavan **approved the draft prepared** by the former committee.
- The bill suggests adding a **third explanation in section 375** (which deals with charges of rape).
  - The explanation talks about the "**presumption of consent**" and in case two adults are involved the accused can appeal for 'consent or implied consent'.
- In cases involving acid attacks, the victims will be given a **compensation of Rs 10 lakh for plastic surgery and facial reconstruction** and the amount will be collected as fine from the accused.
- If the accused is charged with **rape, gang rape or penetrative assault against children**, the court can sentence the **death penalty**.
- The bill suggests making the **trial process much faster** than the already existing 60 days frame.
  - According to the draft, a probe should be completed within 15 days and trial within 30 days.
- The bill also suggests making a different registry for sexual offenders

named “**Women and Children Offenders Registry**”.

- The registry will be linked to the **National Registry of Sexual Offenders** with details of the convicted person.
- According to the bill, **threatening and intimidating women on social media** will be an offence with a maximum punishment of two years and a Rs 1 lakh fine.

### Significance of Shakti Bill

- The bill is designed to help **reduce the crimes against women and children**.
- The draft bill seeks to **amend some vital sections** of the Indian Penal Code (IPC), the Code of Criminal Procedure (CrPC) and the Protection of Children from Sexual Offences (POCSO) Act.
- The bill proposes the **death penalty, life sentence and hefty fines** as retribution for the offences, apart from setting up special courts for trial.

### 7.12 National Family Health Survey-5

Recently, the Union Ministry of Health & Family Welfare has released the **National Family Health Survey-5**.

- The latest data pertains to 17 states including **Maharashtra, Bihar, and West Bengal** and **five Union Territories** (including J&K).
- The NFHS-5 includes some new topics, such as **pre-school education, disability, access to a toilet facility, death registration, bathing practices during menstruation**, and methods and reasons for **abortion**.
- The NFHS-5 provides an indicator, for **tracking 30 Sustainable Development Goals** that the country aims to achieve by 2030.
- In the phase 1, the survey provided data on **131 key indicators from 22 states and union territories**, with special emphasis on maternal and child health.

### Malnutrition in Children

- The data from the first phase shows that several states have either witnessed **meager improvements or sustained reversals on child** (under 5 years of age) **malnutrition parameters** such as child stunting, child wasting, share of

children underweight and child mortality rate.

- Child wasting reflects **acute undernutrition** and refers to children having low weight for their height.
  - India has always had a **high level of child wasting** but instead of reducing it, several states such as Telangana, Kerala, Bihar, and Assam as well as the UT of J&K have witnessed an increase.
- There are several big states such as Gujarat, Maharashtra, West Bengal, Telangana, Assam and Kerala, which have seen an **increase in the proportion of underweight children.**
- Telangana, Gujarat, Kerala, Maharashtra, and West Bengal saw **increased levels of child stunting.**

### Mortality Rates

- The **Infant Mortality Rate** (the number of deaths per 1000 live births for children under the age of 1) and **Under 5 Mortality Rate** data is mostly stagnant.
  - Under-5 mortality was observed to be **74 deaths per 1,000 births** in NFHS-3, and **50 deaths per 1,000 births** in NFHS-4, which was a decline of about **33% over 10 years.**
  - NFHS-5 and NFHS-4 are about five years apart, but we are **seeing very little progress** in many states.
- In Maharashtra, the **under-5 mortality rate is basically the same in NFHS-4 and 5**, and in Bihar, it reduced by just 3% over five years.
- The **neonatal mortality rate (NMR)** (per 1,000 live births) **dropped in 15 states and UTs** in comparison to NFHS-4 (2015-16), while the **infant mortality rate (IMR)** and the **under-five mortality rate (UMR)** fell in 18 states and UTs.

### Urban-Rural and Gender Gap in Internet Use

- There is an **urban-rural gap** as well as **gender divide** with respect to the **use of Internet** in 22 states and union territories.
- According to the survey, on an average, **less than 3 out of 10 women in rural India** and **4 out of 10 women in urban India** ever used the Internet.
- In 2019, the NFHS-5 collects data on key indicators on **population health, family**

**planning and nutrition**, sought details on two specific indicators i.e. Percentage of women and men who have ever used the Internet.

- Only an average of **42.6 per cent of women ever used the Internet as against an average of 62.16 per cent** among the men.
  - In urban India, **an average of 56.81 per cent women ever used the Internet** compared to an average 73.76 per cent among the men.
  - In rural India, **33.94 per cent women in rural India ever used the Internet** as against 55.6 per cent among men.
- In urban India, 10 states and three union territories reported **more than 50 per cent women** who had ever used the Internet.
- The five states reporting the **lowest percentage of women**, who ever used the Internet in urban India were Andhra Pradesh, Bihar, Tripura, Telangana and Gujarat.
  - Only three states and one union territory reported **more than 50 per cent women**, who had used the Internet i.e. Goa, Kerala, Sikkim, and Ladakh.
- The five states reporting the **lowest percentage of women**, who ever used the Internet in rural India, were West Bengal, Andhra Pradesh, Telangana, Tripura and Bihar.
- The **worst-performing states in urban India** for men were Bihar, Meghalaya, West Bengal, Andhra Pradesh and Assam.
- In rural India, **only eight states reported more than 50 per cent men**, who had ever used the Internet are Goa, Himachal Pradesh, Karnataka, Kerala, Manipur, Mizoram, Nagaland and Sikkim.

### Fertility Rates in India

- India's population is stabilising, as the **total fertility rate (TFR) has decreased** across majority of the states.
  - Of 17 states analysed in the fifth round of National Family Health Survey (NFHS), except for **Bihar, Manipur and Meghalaya**, all other states have a TFR of 2.1 or less.
- The **proportion of women with unmet need for family planning**, who want to stop or delay child-bearing but are not using any method of contraception, has

declined in all states, except Meghalaya and Andhra Pradesh.

- All states have reported an **increase in users getting information** on side effects of current contraceptive methods except for Manipur.

### Health related concerns

- Anaemia among women remains a major cause of concern because in all the states, **anaemia is much higher among women** compared to men.
- The female sterilisation continues to dominate as the **modern method of contraception** in states like Andhra Pradesh, Telangana, Kerala, Karnataka, Bihar and Maharashtra.
- The male engagement in family planning **continues to be limited and disappointing** as seen by the low uptake of condoms and male sterilisation across states.
- There has been an **increase in child marriages** in Tripura, Manipur and Assam, while states like West Bengal and Bihar still have high prevalence of child marriages.

### Vaccination Coverage

- The data showed that in Andhra Pradesh, the **percentage of fully vaccinated children** (12-23 months) **jumped to 73%** from 65% in the fourth edition.
- In West Bengal, **institutional births of children increased from 75% to 91%** and in Gujarat, the proportion of anaemic children sharply increased from 62.6% to 79.7%.

### National Family Health Survey (NFHS)

- It is a **large-scale, multi-round survey** conducted in a representative sample of households throughout India.
- It is a collaborative project of the **International Institute for Population Sciences (IIPS), Mumbai** and ORC Macro, Calverton, Maryland, USA and the East-West Center, Honolulu, Hawaii, USA.
- The **Ministry of Health and Family Welfare (MOHFW)** has designated **IIPS** as the nodal agency, responsible for providing coordination and technical guidance for the NFHS.

- It was funded by the **United States Agency for International Development (USAID)** with supplementary support from **United Nations Children's Fund (UNICEF)**.

### 7.13 CoWIN Grand Challenge

Recently, the **Ministry of Health and Family Welfare (MoHFW)** has announced the launching of a '**Grand Challenge**' for strengthening **CoWIN System**.

- The CoWIN Grand challenge is aimed at strengthening the **COVID Vaccine Intelligence Network (CoWIN) system**.
- It is a joint initiative of **Ministry of Health and Family Welfare (MoHFW)** along with **Ministry of Electronics and Information Technology (MeitY)**.
- The Grand Challenge is to be launched on **MSH (MeitY Startup Hub) portal**.
- The challenge invites **participation from talented and innovative startups** and emerging technology specialists to augment and scale the CoWIN platform.

#### COVID Vaccine Intelligence Network (CoWIN)

- It is a **digitalised platform** to be used to effectively **roll out and scale up the mechanism** for COVID Vaccine Distribution System nationally.
- The CoWIN system will be a **subset of COVID India Portal** which provides end to end management of COVID19.
- The **Electronic Vaccine Intelligence Network (eVIN)** system, which provides real-time information on vaccine stocks and storage temperatures across all cold chain points in the country, is being **enhanced to address the needs for distribution and tracking of COVID-19 vaccine**.

#### MSH Portal

- It is a collaborative platform developed under the aegis of MeitY towards **building meaningful synergies** in the Indian tech startup space.
- MSH will act as a **national coordination, facilitation and monitoring centre** that will integrate all the incubation centres, start-ups and innovation related activities of MeitY.

## 7.14 Enforcement of Mandatory FASTag

Recently, the Union Minister for Road Transport & Highways has announced that **FASTag is being made mandatory for all vehicles** in the country from 1st January 2021.

### FASTag

- It is a reloadable tag that **automatically deducts toll charges** and allows a vehicle to pass through a toll gate without stopping for the payment.
- It uses **radio frequency identification (RFID) technology** to make cashless payments through a prepaid account linked to it.
- The tag is fixed to the windscreen of a vehicle and an **RFID antenna in the canopy of the toll gate scans** the QR code.
- It is **valid for five years** and different colours of FASTags are assigned to a particular category of vehicles.
- The NHAI also has a mobile application for FASTag that **allows users to buy and recharge these tags** as well as seek information on toll rates on different routes.
- These are some following **objectives** of NETC:
  - FASTag will help to **reduce the waiting time** at the plaza
  - Accommodating the **increasing traffic without additional lanes**
  - Eliminating the **acceleration and idling, harmful vehicular emissions** and air using FASTag
  - **Reducing congestion** around plazas
  - **Pollution reduction**
  - **To save fuel for the future** which will also help to reduce the operating cost of the vehicles
  - To provide customers the **flexibility of paying their plaza bills** with RFID Tag
  - **Reduce cash handling** which aids in enhanced audit control by centralising user accounts
  - **Enhancing data collection**, information such as vehicle count of the day

### 7.15 Innovation Challenge for Developing Portable Devices for Water Testing

Recently, the Ministry of Jal Shakti has **launched an innovation challenge** to develop portable devices for water testing.

- Nearly, 2.90 Crore households have been provided **tap water connections** since the announcement of National Jal Jeevan Mission.
- The mission has **increased the tap water supply** from 3.23 Crore (17%) in August, 2019 to 6.13 Crore (32%) rural households of the country.
- People receiving piped water supply in their homes **do not have any means to test** the potability of water coming from their taps.

#### Innovation Challenge

- It is an initiative under **National Jal Jeevan Mission** in partnership with **Department of Promotion of Industry and Internal Trade**.
- The main objective of the exercise is to bring an **innovative, modular, and cost-effective solution to develop portable devices** that can be used at the household level to test the drinking water quality instantly, easily and accurately.
  - Water quality testing is one of the **priority areas under Jal Jeevan Mission**, the flagship programme of Union Government.
- The aim of the innovation challenge is to ensure that **water sources are tested at various locations** and helping the policy framers to design programs which address the water contamination issues.
- The National Jal Jeevan Mission invites applicants to join the Innovation Challenge to **develop portable devices for water testing** and become a part of this life changing Jan Aandolan.

#### National Jal Jeevan Mission

- Jal Jeevan Mission is under implementation in partnership with the States to enable **every rural home** to have **tap water connection by 2024**.
- The aim of the mission is to provide **every rural household potable tap water in adequate quantity** and of prescribed quality on a regular and long-term basis.
- Under this mission, the creation of **local infrastructure for source**

**sustainability** measures as mandatory elements, like rainwater harvesting, groundwater recharge and management of household wastewater for reuse, would be undertaken.

- Jal Jeevan Mission is based on a **community approach** and includes extensive Information, Education and Communication as a key component.
- The fund sharing pattern between the **Centre and states is 90:10 for Himalayan and North-Eastern States, 50:50 for other states, and 100% for Union Territories.**

### 7.16 Kisan Fasal Rahat Yojana of Jharkhand

The Jharkhand government is set to replace the Prime Minister's insurance scheme for farmers with **Kisan Fasal Rahat Yojana**.

- It is a **compensation scheme** aimed at providing **security cover to Jharkhand farmers** in case of **crop damage due to natural calamity**.
- It will cover both **land owning and landless farmers**.
- The **Department of Agriculture, Animal Husbandry and Co-operative** will be the implementing agency of the scheme.
  - The Department will work in association with a **project management unit**, which will be a **consultancy firm** that will take care of technical requirements.
- **Food safety, crop diversification, rapid development in agriculture and paving the way for competition** are among the aims of the scheme.
- It is **not an insurance scheme** where premiums are paid.
- The **damage due to wild animal attack and preventable risks** such as unscientific farming by farmers will **not be considered** under the scheme.

#### Need for Kisan Fasal Rahat Yojana in Jharkhand

- Jharkhand is home to around **38 lakh farmers cultivating 38 lakh hectares** of land.
- The state government says that among them around **25 lakh farmers are small or marginal landholders**.
- The irregular monsoon has affected the Kharif sowing season and as **Jharkhand is**

mostly a single crop (paddy) state, the scheme will primarily target this group of farmers.

### Reasons to replace Prime Minister's insurance scheme

- Every year a **large amount is paid as premium** to the insurance companies.
  - Jharkhand paid a total of Rs 512.55 crore in the last three years while the **compensation claim settlement was only Rs 82.86 crore**, which was only 16 per cent of the total premium.
- The **number of farmers benefited as compared to the actual cover** is also **hugely disproportionate**.
  - In the last three years, out of a total of 33.79 lakh registered farmers, **only 2.25 lakh farmers have benefited from the scheme**.

### Assessment of Crop Damage

- The crop damage will be assessed through a '**ground truthing**' process, which will be a combination of sample observations.
  - In the case of **post-harvest damage**, assessment will be done on the **basis of sighting**.
- The role of the gram sabha is important in the **initial reporting of crop damage** received from the farmers.
- **Floods, hurricanes, tornadoes, volcanic eruptions, earthquakes, tsunamis, hurricanes and other geological processes** fall under the category of natural calamities which will be covered under the scheme.

### 7.17 PM Street Vendor's AtmaNirbhar Nidhi (PM SVANidhi) Scheme

Recently, the **PM Street Vendor's AtmaNirbhar Nidhi (PM SVANidhi)** scheme has received 31,64,367 applications from across the country.

### Need for PM SVANidhi Scheme

- The COVID-19 pandemic and the nationwide lockdown **left daily wage workers and street vendors out of work**.
- The scheme aims at **aiding the vendors at getting back** on their feet financially.

- In the long term, it aims at **establishing a credit score for the vendors** as well as creating a digital record of their socio-economic status, so that they can avail the Central government schemes later.

### Key Features of PM SVANidhi Scheme

- It is a **micro-credit facility** that provides street vendors a **collateral-free loan of Rs 10,000 with low rates of interest** for a period of one year.
- The scheme attempts to **formalise the informal sector of the economy** and provide them safety nets and a means of availing loans in the future.
- All the states and union territories, **except for Sikkim**, are taking part in the scheme.

### Eligibility under PM SVANidhi Scheme

- All vendors who have been **vending from or before March 24, 2020** and with a **certificate of vending** can avail the loan.
- As per the Street Vendors Act of 2014, the Town Vending Committees issue a **certificate of vending** after a survey has been conducted of all the vendors.
- As per the scheme, the **urban local bodies shall provide a Letter of Recommendation** for every vendor who wishes to avail the loan.

### Challenges in implementing PM SVANidhi Scheme

- The states across the country have **unevenly implemented the Street Vendors Act of 2014**, which necessitates a survey of the vendors to provide them with a certificate of vending.
- Delhi has **not yet conducted a city-wide survey of vendors** as per the rules notified by the Delhi government in 2016 and it led to lack of a certificate of vending.
- The mobile numbers of various vendors were **not linked with their Aadhaar cards**.

## ENVIRONMENT

### 8.1 India Climate Change Knowledge Portal

- Minister of Environment, Forest and Climate Change Prakash Javadekar launched the India Climate Change Knowledge Portal.
- The portal will have all the major steps the Government is taking at both national and international levels to address the climate change issues.
- With regard to climate actions after the Paris Agreement, Mr Javadekar said, India has practically achieved its pre-2020 climate action targets.
- He said, though India is not responsible for climate change but it is taking responsible action to mitigate the challenge.
- Mr Javadekar also demanded that other countries must commit to the advance commitments of Kyoto Protocol which has not been followed by the countries that must be done.
- The portal will have all the major steps the Government is taking at both national and international levels to address the climate change issues.
- It will be a single-point information resource that provides information on the different climate initiatives taken by various Line Ministries enabling users to access updated status on these initiatives.
- He also said that India has practically achieved its pre-2020 climate action targets.

## 8.2 Peacock Soft Shell Turtle

Recently, a professor from Assam has rescued **Peacock Soft Shell Turtle** from being sold in a fish market.

- The species is confined to **India, Bangladesh and Pakistan** because it is widespread in the northern and central parts of the Indian subcontinent.
- The Indian peacock softshell turtle has a **large head, downturned snout with low and oval carapace of dark olive green to nearly black.**
- It is found in **rivers, streams, lakes** and **ponds** with mud or sand bottoms.
- It is **omnivorous** because juveniles observed feeding on mosquito larvae and fish, while adults consume snails, earthworms, prawns, fish, frogs, carrion, and vegetation.
- It is listed as '**Vulnerable**' under the IUCN Red List of Threatened Species.

- It is protected under **Schedule 1** of the Indian Wildlife Protection Act, 1972.
- It is also listed under **Appendix I** of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).

### 8.3 Relation between Tree Rings and Floods

Recently, the scientists have studied the relation of **tree rings** and **Brahmaputra floods**.

- The new study analysed that the **existing projections of the Brahmaputra flooding** are based on observations of rainfall patterns.
- The study is based on examinations of tree rings, which showed **rainfall patterns going back seven centuries** i.e. long before discharge records were compiled.
- The **rings showed** that the **post-1950s period** was actually one of the **driest since the 1300s**.

#### Indication by Tree Rings

- The tree rings **grow wider in years** when soil moisture is high.
  - ◀ Indirectly, **wider rings reflect more rainfall** and higher river runoff.
- The study looked at rings of **ancient trees sampled at 28 sites** in Tibet, Myanmar, Nepal and Bhutan, at sites close enough to be affected by the **same weather systems as the Brahmaputra watershed**.
- The records of **river-flow gauge** in northern Bangladesh showed a median discharge of some 41,000 cubic metres per second from 1956 to 1986, and 43,000 cu m from 1987 to 2004.
- The tree rings, in contrast, showed that 1956-1986 was in **only the 13th percentile for river discharge**, and 1987-2004 was in the 22nd.
- The researchers said their findings mean that **using the discharge record would underestimate future flood hazard** by 24-38%, without factoring in climate warming.
- The **higher temperatures drive more evaporation of ocean waters**, and in this region that water ends up as monsoon rainfall.
- The high discharges will continue to be **associated with an increased likelihood of flood hazard** in the future.

#### 8.4 Committee for implementation of Paris Agreement

Recently, the Ministry of Environment, Forest and Climate Change (MoEFCC) has constituted a **high-level inter-ministerial Apex Committee for Implementation of Paris Agreement (AIPA)**.

- The purpose of AIPA is to **generate a coordinated response on climate change matters** that ensures India is on track towards meeting its obligations under the Paris Agreement including its Nationally Determined Contributions (NDC).
- The senior officials from fourteen ministries will serve as Members to AIPA who will **oversee the progress in implementation of India's NDC**.
- The key function of AIPA would be to **operate as a National Authority** to regulate carbon markets in India under Article 6 of the Paris Agreement.
- The other functions of AIPA are:
  - **Formulate guidelines** for consideration of projects or activities under Article 6 of the Paris Agreement,
  - **Issue guidelines** on carbon pricing, market mechanism and similar instruments that have a bearing on climate change and NDCs.
  - The committee will take note of the **contributions of the private sector as well as multi-/bi-lateral agencies** in the field of climate change and provide guidance for aligning their climate actions with national priorities.

#### Significance of AIPA

- The year 2021 would mark the beginning of **implementation of the Paris Agreement** and constitution of AIPA is central to **strengthening the national systems and institutional arrangements** for implementation and monitoring of climate actions.
- It will also ensure that **India maintains its climate leadership** as one the few countries in the world whose climate actions are consistent with the goals of the Paris Agreement.

#### Commitments of India's NDC

- There are **8 commitments made by India** under the NDC, under which there are

three quantitative goals:

- **Reduction in the emissions intensity of gross domestic product (GDP)** by 33 to 35 per cent by 2030 from 2005 levels;
- **Achieving about 40 per cent cumulative electric power installed capacity from non-fossil fuel-based energy resources by 2030;** and
- **Creating an additional carbon sink of 2.5 to 3 billion tonne** of carbon dioxide equivalent through additional forest and tree cover by 2030.

### 8.5 South Asia Forum on SDGs

Recently, UNESCAP South Asia and Pacific virtually organised a **special dialogue on disaster and climate resilience** in South Asia during the **Fourth South Asia Forum on SDGs**.

- It was jointly organized by the **United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP)** and the **Government of Maldives**.
- The key objectives of the High Level meeting were to **identify the opportunities and imperatives to overcome the challenges** in implementing the systemic approach to disaster and public health risk management.
  - The other objectives were to **formulate the strategies for capitalizing on existing regional and sub-regional cooperation** mechanism including the South Asian Forum on SDG.
- It aims to scale up **multi-hazard and multi-sectoral preparedness systems** for future cascading disasters.
- It highlighted that **South Asian nations are facing challenges of extreme weather events** like floods, cyclone, heat waves, cold waves, landslides and drought as well as COVID-19 pandemic and its recovery.

### Initiatives taken by India on SDG

- The vision for **eliminating single-use plastics, expansion of forest cover, improvement and restoration of 26 million hectares of degraded land by 2030** have already started yielding positive results.
- India took the initiative for the **coalition for resilient infrastructure** and

announced the global **Coalition for Disaster Resilient Infrastructure (CDRI)**, at the UN Climate Action Summit 2019.

- India is also hosting **SAARC Disaster Management Centre** which works closely with Universities of SAARC and BIMSTEC member States.

### 8.6 Declaration of Wildlife Sanctuary

Recently, the **State Board for Wildlife in Maharashtra (SBWL)** has decided to declare **ten new conservation reserves (CRs)** along with a new sanctuary i.e. **Kanhargaon sanctuary** (the state's 50th) in Chandrapur district.

- The Board decided to **establish 10 CRs** at Mahendri, Amboli-Dodamarg (Sindhudurg), Jor-Jambhli (Satara), Muniya (Nagpur) and Chandgad, Panhalgad, Vishalgad, Gaganbawda, Mayni and Ajra-Bhudargad.
- The experts have argued that **CR status makes little sense from the wildlife protection** point-of-view as the 65-sq km reserved forest (RF) was an important wildlife corridor between Bor and Melghat tiger reserves.

#### Reserve Forest (RF)

- The Reserve Forest (RF) can be directly **notified as a sanctuary as there is no question of any grazing** or firewood rights of people there.
- Wildlife Protection Act (WPA) **authorizes the Collector and not the Forest Department**, to open dialogue with people for rehabilitation of villages included in the sanctuary.
- The Reserved forests are **protected by the respective state governments** unlike wildlife sanctuaries and national parks which are supervised by the Government of India.

#### Criteria to declare Wildlife Sanctuary

- The State Government may, by notification, **declare its intention to constitute any area other than area** comprised with any reserve forest or the territorial waters as a sanctuary if it considers that such area is of adequate ecological, faunal, floral, geomorphological, natural. or zoological significance.
- The **collector** shall inquire into, and **determine the existence, nature and extent**

of the rights of any person in or over the land comprised within the limits of the sanctuary.

- **No right shall be acquired** in, or over the land comprised within the limits of the area specified in such notification, except by succession, testamentary or intestate.

### Conservation Reserves (CRs)

- The Conservation Reserves and community reserves in India are terms **denoting protected areas of India** which typically act as **buffer zones**.
- It also acts as **connectors and migration corridors** between established national parks, wildlife sanctuaries and reserved and protected forests of India.
- Such areas are designated as conservation areas if they are **uninhabited and completely owned by the Government of India** but used for subsistence by communities and community areas if part of the land is privately owned.

Raja Sir's

### 8.7 Mount Everest is 3 feet higher

Recently, the Foreign Ministers of Nepal and China jointly certified the elevation of **Mount Everest** at 8,848.86 metres above sea level i.e. 86 cm higher than what was recognised since 1954.



- The current official height of Mount Everest has been widely accepted since 1956, when the figure was **measured by the Survey of India**.
- The height of the summit is known to **change because of tectonic activity** such as

the 2015 Nepal earthquake.

- There is an ongoing debate on whether the **height should be based on the highest rock point** or the highest snow point.
- A team from Nepal completed its task of **measuring the summit in 2019** and China carried out its expedition in May 2020.
  - China using the **Yellow sea** and Nepal using a **point close to the Bay of Bengal coast** as reference for sea level.

### Mount Everest's first survey

- The mission to measure the **world's highest peak was taken up in 1847**, and culminated with the finding of a team led by Andrew Waugh of the Royal Surveyor General of India.
- The team discovered that **'Peak 15' (Mt Everest was referred to then) was the highest mountain**, contrary to the then prevailing belief that Mt Kanchenjunga (8,582 m) was the highest peak in the world.

### 8.8 Eco-bridges in the forest

Recently, the **Ramnagar Forest Division** in Nainital district has built its **first eco-bridge** for reptiles and smaller mammals.

- A 2020 study by the Wildlife Institute of India (WII) noted that nearly **50,000 km of road projects have been identified for construction** in India over the next five to six years.
- The National Tiger Conservation Authority, New Delhi, had **identified three major sites** that were cutting across animal corridors.
  - It includes **National Highway 37** through the Kaziranga-Karbi Anglong landscape in Assam and **State Highway 33** through the Nagarhole Tiger Reserve in Karnataka.
- The Eco-bridges include **canopy bridges** (for monkeys, squirrels and other arboreal species), **concrete underpasses** or **overpass tunnels** or viaducts (for larger animals) and **amphibian tunnels or culverts**.
- The **Wildlife corridors**, also known as "eco-bridges" are **areas of habitat that**

**connect wildlife populations** that would otherwise be separated by human activities or structures.

- The **wildlife corridor is a link of wildlife habitat**, generally made up from native vegetation, which joins two or more larger areas of similar wildlife habitat.

### Why Eco-bridges?.

- Eco-ducts or eco-bridges aim to **enhance wildlife connectivity** that can be disrupted because of highways or logging.
- The newly built bridge will be an **awareness-building campaign for the congested tourist route** as it will be a way of seeing how the ecosystem necessary for reptiles.
- Eco-bridges play a very important role in **maintaining connections between animal and plant populations** that would otherwise be isolated and therefore at greater risk of local extinction.
- **Human activity and intervention** in our natural environment leave fragmented patches of intact or relatively intact ecosystems whose ties with others are severed.
- The fragmentation ultimately leads to a **breakdown in the various ecological processes** such as species migration, recycling of nutrients, pollination of plants and other natural functions required for ecosystem health.
- The Animals may also suffer by not being able to **access particular habitats**.

### Importance of Eco Bridges in Biodiversity Management

- **To prevent genetic isolation of fragmented flora and fauna populations**, the bridge would encourage the interaction of wildlife by facilitating movement between the once separated forests and effectively expand habitat, mating and foraging ranges of flora and fauna.
- With wildlife crossing the expressway from one nature reserve to another, the chances of **pollination and dispersion of rare native plants** could greatly **increase**.
- Eco-bridges would also bring about **greater interaction between individuals leading to a healthy exchange** of genetic materials, thereby reducing the occurrence of inbreeding and increasing the long-term survival of our native

species.

- Providing crossing infrastructure at key points along transportation corridors is known to **improve safety, reconnect habitats and restore wildlife movement.**

## 8.9 Emission Gap Report 2020

Recently, the **United Nations Environment Programme (UNEP)** has released its annual **Emissions Gap Report 2020.**

### GHG emissions continued to increase in 2019

- **Global GHG emissions continued to grow** for the third consecutive year in 2019, reaching a record high of 52.4 without land-use change (LUC) emissions and 59.1 when including LUC.

**Fossil carbon dioxide (CO<sub>2</sub>) emissions** (from fossil fuels and carbonates) **dominate total GHG emissions** including LUC (65 per cent) and consequently the growth in GHG emissions.

- Over the last decade, the **top four emitters (China, the United States of America, EU27+UK and India)** have contributed to **55 per cent** of the total GHG emissions without LUC.

• The **top seven emitters (including the Russian Federation, Japan and international transport)** have contributed to 65 per cent, with G20 members accounting for 78 per cent.

- The **GHG emissions are declining** in Organisation of Economic Cooperation and Development (OECD) economies and increasing in non-OECD economies.
- In the 2000s, the **gap between consumption and production was growing** in rich countries but stabilized following the 2007–2008 global financial crisis.

### CO<sub>2</sub> emissions could decrease by about 7 per cent in 2020 compared with 2019 emission levels

- The **reduction in GHG emissions in 2020 due to COVID-19** is likely to be significantly larger than the 1.2 per cent reduction during the global financial crisis in the late 2000s.
- Although **CO<sub>2</sub> emissions will decrease in 2020**, the resulting atmospheric concentrations of major GHGs (CO<sub>2</sub>, methane (CH<sub>4</sub>) and nitrous oxide (N<sub>2</sub>O))

continued to increase in both 2019 and 2020.

### COVID-19 crisis offers only a short-term reduction in global emissions

- The assessments of the implications of the **COVID-19 pandemic and associated recovery measures on emissions by 2030** are still few and highly uncertain.
- The impact of the **general slowdown of the economy due to the COVID-19 pandemic** and associated rescue and recovery responses is expected to reduce global.
- The decrease in **global emissions by 2030 is projected to be significantly smaller** at around 1.5 GtCO<sub>2e</sub> and may actually increase by around 1 GtCO<sub>2e</sub>.
- The Global GHG emissions are **only projected to be significantly reduced by 2030** if COVID-19 economic recovery is used as an opening to pursue strong Decarbonization.

### Net-zero emissions goals of number of countries

- The growing number of countries that are **committing to net-zero emissions goals** by around mid-century is the most significant and encouraging climate policy development of 2020.
  - 126 countries covering **51 per cent of global GHG emissions have net-zero goals** that are formally adopted.
- There has been **limited progress of G20 members in terms of providing formal submissions to the UNFCCC by 2020** of mid-century, long-term low GHG emission development strategies and new or updated NDCs.

### 2020 Cancun Pledges of G20 Economies

- The G20 members are **projected to over-achieve their 2020 Cancun Pledges**, even without considering the expected impact of COVID-19.
- The G20 members are **not on track to achieve their unconditional NDC commitments** based on pre-COVID-19 projections.
- The impacts of COVID-19 and **economic recovery measures on 2030 emissions of individual G20 members** may be significant, although estimates are still highly uncertain and vary across the few studies available.

### Consumption-based emissions

- There is a general tendency that rich countries have **higher consumption-based emissions than territorial-based emissions**, as they typically have cleaner production, relatively more services and more imports of primary and secondary products.

### Recommendation of Emission Gap Report 2020

- The Emissions Gap Report states that **stronger action must include facilitating, encouraging and mandating** changes in consumption behaviour by the private sector and individuals.
- The **report recommends** governments to:
  - Enable and encourage consumers to **avoid high-carbon consumption** including replacing domestic short haul flights with rail;
  - Incentives and infrastructure to **enable cycling and car sharing**;
  - **Improving energy efficiency** of housing;
  - **Renewable energy defaults** from grid providers; and
  - **Policies to reduce food waste**
- The post-COVID recovery needs to focus on **low carbon, ideally decarbonisation** by moving away from fossil fuels.

### Emission Gap Report

- It is an annual report of the **United Nations Environment Programme (UNEP)**.
- The annual report from UNEP measures the **gap between anticipated emissions and levels consistent with the Paris Agreement goals** of limiting global warming this century to well below 2°C and pursuing 1.5°C.
- The report assesses the **gap between estimated future global greenhouse gas (GHG) emissions** if countries implement their climate mitigation pledges and the global emission levels from least-cost pathways that are aligned with achieving the temperature goals of the Paris Agreement.

### 8.10 Climate Change Performance Index

Recently, the **Climate Change Performance Index 2021** was released by **Germanwatch**.

- It highlighted that **no country was doing enough** to meet the goals of the 2015 Paris Agreement.
- It found out that **six G20 countries were ranked among very low performers** and the United States, with a rank of 61, was the worst performer.

#### **India's position in Climate Change Performance Index 2021**

- India, for the second time in a row, **continued to remain in the top 10** as the country scored 63.98 points out of 100.
- India is ranked **high along with the European Union and the United Kingdom** in the latest edition of the Climate Change Performance Index (CCPI).
- India received **high ratings on all CCPI indicators except 'renewable energy'**, where it was categorised as having a 'medium' performance.
- The report recommended that the country needed to **focus more on renewable energy**, both, as a mitigation strategy and for its post-novel coronavirus disease (COVID-19) green recovery.
- India had one of the largest growth trends, **per capita emissions stayed at a comparatively low level**, rated very high for their well-below 2 degrees celsius compatibility.
- India, along with Mexico, Brazil, Indonesia and Germany, was raked '**high**' for its performance in the '**Energy Use**' category.

#### **India's performance under renewable energy category**

- India has been ranked at **27th out of 57 countries** under the category of **renewable energy**.
- India's performance has been rated as '**medium**' for its **current share of renewable energy**.
- **India's improved policy framework** has been responsible for the country's good performance in this global index.
- **India's renewable energy uptake and targets** scored '**low**' and '**medium**' respectively for their compatibility being well below 2.0 degrees celsius.

### Climate Change Performance Index

- The CCPI is an **independent monitoring tool for tracking countries' climate protection performance** which has been published annually since 2005.
- It helps to **access and judge countries' climate policy**, their recent development, current levels and well-below-2 degrees celsius compatibility of greenhouse gas (GHG) emissions, renewable energies, energy use and their targets for 2030.
- The climate change performance is assessed under four categories i.e. **GHG emissions, renewable energy, energy use and climate policy**.

### 8.11 Aerosols in Indo-Gangetic Plain

Recently, the scientists have found out that the Aerosols which make the **Indo-Gangetic Plain** one of the most polluted regions of the world, have led to increased incidents of high rainfall events in the foothills of the Himalayan Region.

- The study was conducted by **National Institute of Technology Rourkela, Leipzig Institute for Meteorology (LIM), University of Leipzig, Germany, Indian Institute of Technology Madras and Indian Institute of Technology Kanpur**.
- The study was conducted under **DST Climate Change program** which has highlighted the **crucial role of the aerosol direct radiative effect** on high precipitation events over the Himalayan region.
- The **Indo-Gangetic Plain** is located **south and upwind of the Himalayan foothills** which is the region of high aerosol loading such as black carbon and dust.
- The study highlighted that particulate emissions can **alter the physical and dynamical properties of cloud systems** and, in turn, amplify rainfall events over orographic regions downwind of highly polluted urban areas.
- The study used 17 years (2001–2017) of **rainfall rate, aerosol measurements called aerosol optical depth (AOD), meteorological reanalysis fields** such as pressure, temperature, and moisture content at different altitudes.
- It is used to compute the thermodynamic variable **“moist static energy”** and outgoing long-wave radiation from Indian region to **investigate high precipitation events** on the foothills of the Himalayas.
- The team found clear associations between **high precipitation events, high aerosol**

loading and **high moist static energy (MSE) values.**

### Significance of Aerosol study in Indo-Gangetic Plain

- The results of the study indicate that aerosols can play a vital role in **exciting high precipitation (HP) events** over the Himalayas during the monsoon season.
- The aerosols, including chemistry, are **essential to consider when forecasting HP events** over the Himalayan region in regional modelling studies.

### Impact of Aerosols

- The aerosols can **influence climate by scattering light and changing Earth's reflectivity** and they can also alter the climate via clouds.
- Natural aerosols (sulfates, sea salt or ammonium salt) are the most common **condensation nuclei in pristine environments.**
- It forms the **brighter clouds** which block the sunlight from reaching Earth's surface and this **cloud albedo effect** may have a big impact on the climate.
- The aerosol can **influence precipitation by either modifying cloud microphysical processes** through aerosol activation, or by modifying local thermodynamical profile, facilitating an on-site impact on clouds overlapping with the aerosol population.

### 8.12 India Water Impact Summit (IWIS)

Recently, the Union Minister of Jal Shakti inaugurated the 5th **India Water Impact Summit (IWIS).**

- It is organised by the **National Mission for Clean Ganga and Center for Ganga River Basin Management and Studies (c-Ganga).**
- It began with the theme of **comprehensive analysis and holistic management of local rivers and water bodies** with focus on Arth Ganga-river conservation synchronised development.
- The 5th IWIS will **forge greater interaction** between investors and stakeholders in the water sector.
- It will promote **international cooperation between India and many foreign**

**countries** for water and river management.

- The summit is aimed at **discussing and disseminating the needs for the modalities of embracing Arth Ganga** and the vision of the prime minister in sectors that closely interweave with river conservation.

### **Center for Ganga River Basin Management and Studies**

- It was established at the **Indian Institute of Technology, Kanpur (IITK) in 2016.**
- It is a Centre of Excellence for **data collection, the creation and dissemination of knowledge and information** for the sustainable development of Ganga River Basin.
- The centre acts in the capacity of a **comprehensive think-tank to the National Mission for Clean Ganga (NMCG)**, Ministry of Water Resources, River Development and Ganga Rejuvenation (MoWR, RD & GR).

Raja Sir's

### **8.13 Ischaemum Janarthanamii**

Recently, the researchers at the Agharkar Research Institute (ARI), Pune have discovered the new species called **Ischaemum Janarthanamii**.

- It is a tough novel species of **Indian Muraingrasses** discovered from the plateaus of **Western Ghats of Goa**.
- It is named in honour of **Prof. M. K. Janarthanam**, a Goa University Professor known for his contribution to Indian grass taxonomy.
- It grows on **low altitude lateritic plateaus** in the outskirts of Bhagwan Mahavir National Park, Goa.
- Globally **85 species** are known from Ischaemum, of which **61 species** are exclusively **found in India**.
  - The **Western Ghats have 40 species** with the highest concentration of the genus.

### Bhagwan Mahavir National Park

- It is situated on the **eastern border of Goa** near the town of Mollem.
  - The park was earlier known as **Mollem game sanctuary**.
- The Mollem game sanctuary was declared as a **wildlife sanctuary in the year of 1969**, and known as **Bhagwan Mahavir Wildlife Sanctuary**.
  - In 1978, the core area of the Bhagwan Mahavir Wildlife Sanctuary declared as a National Park, and known as **Bhagwan Mahavir (Mollem) National park**.
- The topography of Mollem supports **tropical evergreen forest, semi evergreen forest and moist deciduous forest**.

### 8.14 Red-headed Bunting

Recently, the birdwatcher have sighted the '**Red-headed Bunting**' at Gobichettipalayam.

- It is a **migratory bird from Europe** which breeds in **Afghanistan, Iran, Kazakhstan, Kyrgyzstan, Mongolia, Russia, Central Asian Russia, Tajikistan, Turkmenistan and Uzbekistan**.
- It is a **passerine bird** in the bunting family **Emberizidae**.
- The bird breeds in **open agricultural land** and lays three to five eggs in a nest in a tree or bush and consumes seeds and insects.
- It is listed as '**Least Concern**' under the IUCN Red List of Threatened Species.

### 8.15 Climate Ambition Summit 2020

Recently, the **Climate Ambition Summit 2020** marks the fifth anniversary of the Paris Agreement on the Climate Change.

- The Climate Ambition Summit 2020 was co-convened by the **United Nations, the UK COP Presidency and France**, in partnership with **Chile and Italy**.
- The summit aims to bring together leaders to make **new commitments to tackle**

climate change and deliver on the goals of the Paris Agreement.

- The Summit is a major step on the road to the next **UN Climate Change Conference of the Parties (COP26)**.
- The Summit will provide leaders with a global platform to **showcase commitments to tackle climate change** which will be under the **three pillars of the Paris Agreement: mitigation, adaptation and finance commitments**.

#### **Commitments made under Climate Ambition Summit 2020**

- The United Kingdom pledged to **double its climate finance contribution** to USD 15.5 billion over the next five years.
- The European Investment Bank announced a **goal of 50% of investments going toward the climate and environment sectors by 2025**.
- China's commitment to **lower its carbon dioxide emissions per unit of GDP by over 65%** from 2005 levels by 2030 and the EU's commitment to reduce GHG emissions by at least 55% from 1990 levels by 2030.
- The ambitious commitments will take the shape of **new Nationally Determined Contributions, Long-Term Strategies** setting out a pathway to **net zero emissions**.
- It also called for climate finance commitments to support the **most vulnerable and ambitious adaptation plans** and underlying policies.

#### **8.16 Innovations for a Cleaner Air**

Recently, the analysis of **Central Pollution Control Board (CPCB)** has provided that the **monitoring trends in air pollution from 2016-2019** is irregular in most of the States in which the 102 cities that have been targeted for improving air quality.

#### **Status of India's Air Quality**

- **Only 15 States have PM (Particulate Matter) 2.5 monitoring systems** for any year and only West Bengal has an above average number of readings available at 110 each for five monitors.
  - **Delhi ranks as the most polluted in PM2.5 average** across all three years, followed by Uttar Pradesh and Bihar.

- Out of the 23 States listed in the National Clean Air Programme (NCAP) **only three States/Union Territories (Chandigarh, Himachal Pradesh and Punjab)** accounted for above-average readings for all three years for PM10 monitoring.
  - Jharkhand was at the bottom of the chart with **only 64 average readings per monitor**, with three monitors accounted for in the State.
- The NCAP envisages **reducing air pollution levels by 20%-30% in 102 cities by 2024**, based on 2017 levels of PM2.5 and PM10.

### Reasons for deteriorating condition of India's Air

- **Burning of Fossil Fuels:** Most of the air pollution takes place due to the burning of fossil fuels such as coal, oil, gasoline to produce energy for electricity or transportation.
  - The **release of carbon monoxide in high level** indicates how much fossil fuel is burned which also emits other toxic pollutants in the air.
  - The **inhaling air induced with pollutants due to the burning of natural gas and fossil fuel** reduces heart's ability to pump enough oxygen causing one to suffer respiratory illness.
- **Industrial Emission:** The particulate matter 2.5 and 10, Nitrogen dioxide, Sulfur dioxide, and carbon monoxide are key pollutants that are emitted from industries that use coal and wood as their primary energy source for production of their goods.
  - The **industrial pollution effects associated with your health can range from irritation** in your eyes and throat to breathing issues, at times can even lead to chronic illness.
- **Indoor Air Pollution:** The use of toxic products also called as Volatile Organic Compounds (VOCs), inadequate ventilation, uneven temperature, and humidity level can cause indoor air pollution, whether you are in office, school or at your comfortable home.
- **Wildfires:** The climate change is not just increasing wildfire but also spiking air pollution.
  - The **burning of stubble and farm residue is also a major contribution to wildfire** which causes increased PM 2.5 in the air which collides with other harmful substances like chemical gas and pollen creating smog.

- **Microbial Decaying Process:** The manufacturing, chemical, and textiles industries release a **large number of carbon monoxides, hydrocarbons, chemicals and organic compounds** which contaminate our environment.
- **Open Burning of Garbage Waste:** The exposure to **open burning of garbage waste can pose serious health risk** including cancer, liver issues, impairment of immune system, reproductive functions and can also affect the developing nervous system.

### Challenges posed by Bad Air Quality

- **Health related concerns:** The long-term exposure to outdoor and household air pollution contributed to over 1.67 million annual deaths from stroke, heart attack, diabetes, lung cancer, chronic lung diseases and neonatal diseases in India in 2019.
  - The **outdoor and household particulate matter pollution** also contributed to the deaths of more than 1,16,000 Indian infants in their first month of life last year.
  - India faced the **highest per capita pollution exposure in the world**, followed by Nepal and Niger.
- **Climate change impacts public health and welfare:** The scientists warn that carbon pollution and resulting climate change are expected to lead to more intense hurricanes and storms, heavier and more frequent flooding, increased drought, and more severe wildfires.
- **Increase in common particulate pollutants:** The levels of particle pollution and ground-level ozone pollution are substantially lower than in the past but the levels are unhealthy in numerous areas of the country.
- **Numerous toxic pollutants from diverse sources:** The EPA's most recent national assessment of inhalation risks from air toxics estimated that the whole nation experiences lifetime cancer risks above ten in a million.

### Measures adopted to tackle Air Pollution

- **Implementation of ambient air quality monitoring system:** There are more than 250 continuous ambient air quality monitoring stations and more than 800 ambient air quality monitoring stations operating across the country.
  - The system helps us to **understand the magnitude of the challenge** of

air pollution.

- **Positive response from public policy for air quality:** The budget allocation for air pollution increased substantially in 2020-21 from what it was in 2018-19 to ensure cleaner air in cities having populations above one million.
  - The establishment of the **Commission for Air Quality Management** with penal provisions against polluters in the NCR and adjoining areas is a welcome move.
  - India has an **increased focus on e-mobility** and it also jumped from BSIV to BSVI vehicles.
- **PUSA Bio Decomposer:** The Indian Agricultural Research Institute's PUSA Bio Decomposer, which turns crop residue into manure in 15-20 days, could become a cost-effective alternative to tackle stubble burning.
- **Nature-based solution to amplify air purification:** UNDP is also promoting startup-led innovations such as a filter-less retrofit device for cutting particulate matter at source in industries and vehicles.
- **GeoAI platform for brick kilns:** It is developed by UNDP in partnership with the University of Nottingham, is supporting environment regulators to identify non-complaint brick kilns from space.
  - The platform has already **mapped over 37,000 brick manufacturing units** across the Indo-Gangetic plains.
- **Revolution from Pollution:** The Delhi-based Chakr Innovation curbs air pollution with the world's first retro-fit emission control device for diesel generators.
  - It **captures 90% of particulate matter emissions** from the exhaust air without reducing energy efficiency.
- **Solar Ferry:** ADITYA, India's first solar ferry, built by NavAlt Solar & Electric Boats, brings together innovation in naval design and engineering, solar power and advanced controls.
  - It is **India's first commercially viable solar-powered ferry.**
- **CleanTech for Health and Clean Air:** Cellzyme Biotech from Coimbatore uses an engineered enzyme to make antibiotics at room temperature without using solvents (a main contributor to air quality).
- **Cooking with Radiant Heat:** Inspired by the traditional Indian method of cooking

on charcoal, the Agnisumukh manufactures commercial kitchen equipment driven by innovative, energy efficient radiant heat gas burners.

- **Biomedical Waste Management:** There are microwaves now available in the Indian market to treat infectious waste and eliminate air emissions, including toxic POPs (Persistent Organic Pollutants), toxic chemicals that adversely affect human health and the environment around the world.
- **System of air pollution monitoring and forecasting:** The SAFAR project of the Ministry of Earth Sciences forecasts weather in now-cast and short-range scales over different parts of metropolitan cities and gives weather warnings.

### Innovative steps required for a Cleaner Air

- **Mobilization of private sector participation:** Businesses and enterprises need to innovate their operations and functioning, building in emission and pollution controls and reducing institutional carbon footprint to the lowest possible levels.
  - The private sector has **strong potential to develop commercially viable products** to combat air pollution and boost the innovation ecosystem.
  - The impact of interventions that **reduce air pollution with healthcare cost, disability-adjusted life years, or economic cost** could lead to diversification of funding sources for that intervention.
- **Check the Air Quality Index (AQI):** The U.S. Environmental Protection Agency (EPA) regularly measures and reports air quality in cities and rural areas.
- **Avoid burning garbage:** It has been witnessed that many people out of their laziness prefer burning the waste instead of throwing it in municipal bodies' garbage dumping sites.
  - The government needs to take **strict action against the violators** with both fine and jail term.
- **All new buses zero-emission from 2025:** From 2025 all new public transport buses must be zero-emission.
  - The buses will run on either electricity or hydrogen fuel, both generated from renewable sources like solar and wind, and cause significantly less air pollution.
- **Air quality around sensitive receivers:** The buildings, like schools, that are designated as sensitive receivers may not be built near provincial roads and

motorways.

- **Programme to meet air quality standards:** The National Air Quality Cooperation Programme (NSL) aims to ensure that the Netherlands meets the European limit values on air quality.

### Way Forward

- India needs **context-specific innovations** not only in the technological but also in the **economic, social, legal, educational, political and institutional domains** given the complexity and magnitude of air pollution.
- It is important for it to **develop a single window online platform** for showcasing innovations with the potential to mitigate the challenges of air pollution.
  - The need of the hour is **provide an enabling ecosystem for innovations** to address context-specific air pollution challenges.
- It is also required to have a **significant government support for enterprises** to come up with scalable pollution abatement technologies.
- The resources need to be **allocated to support testing, certifying and scaling of innovative solutions** and also to extend support for intellectual property rights protection.

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### 8.17 Himalayan Serow – It's a goat, it's a pig, it's a serow



- A Himalayan serow has been **sighted for the first time in the Himalayan cold desert region** (Spiti, Himachal Pradesh).
- Himalayan serow resembles **a cross between a goat, a donkey, a cow, and a**

**pig.** It's a medium-sized mammal with a large head, thick neck, short limbs, long, mule-like ears, and a coat of dark hair.

- Taxonomically, it is a subspecies of the mainland serow (*Capricornis sumatraensis*).
- There are **several species of serows**, and **all of them are found in Asia**.
- The Himalayan serow, or *Capricornis sumatraensis thar*, is restricted to the Himalayan region. Himalayan serows are **herbivores**.

- **Geographical Location**

- They are typically found **at altitudes between 2,000 metres and 4,000 metres**. They are known to be found in **eastern, central, and western Himalayas**, but not in the **Trans Himalayan region**.

Raja S



- The Trans-Himalayas Mountain Region or Tibet Himalayan Region is located to the **north of the Great Himalayas** which consists of **Karakoram, Ladakh, Zaskar and Kailash mountain ranges**.

- **Latest Sighting**



- The animal was spotted near **Hurling village in Spiti, Himachal Pradesh**.

- Spiti lies in the **cold mountain desert region** of the western Himalaya, and its valley floor has an average elevation of **4,270 metres above sea level, making the sighting special** as Serows are generally **not found at this altitude**.

- This is the **first recorded human sighting of the serow in Himachal Pradesh**. The animal has been spotted a few times earlier in the state, but that has always been through camera traps.

- The animal has also been spotted in the **Rupi Bhaba Wildlife Sanctuary**, and in the higher reaches of Chamba.

- The Sanctuary is locally well known for its **extensive alpine pastures** as well as the numerous treks, trails and passes that connect it with the neighboring **Great Himalayan National Park** and **Pin Valley National Park**.

- **Conservation Status**
  - **IUCN Red List:** Vulnerable
  - **CITES:** Appendix I
  - **The Wildlife Protection Act, 1972:** Schedule I

### **Salient Features of Wildlife Protection Act, 1972**

- The Act provides for the protection of a listed species of **animals, birds, and plants**, and also for the **establishment of a network of ecologically-important protected areas in the country**.
- The Act provides for the formation of **wildlife advisory boards, wildlife wardens, specifies their powers and duties**, etc.
- The Act prohibited the **hunting of endangered species**.
- The Act provides for licenses for the **sale, transfer, and possession of some wildlife species**.
- Its provisions paved the way for the formation of the **Central Zoo Authority**. This is the central body responsible for the **oversight of zoos** in India.
  - It was established in 1992.
- The Act created **six schedules which gave varying degrees of protection to classes of flora and fauna**.
  - **Schedule I and Schedule II (Part II)** get **absolute protection**, and offences under these schedules attract the maximum penalties.
  - The schedules also include species that **may be hunted**.
- The **National Board for Wildlife** was constituted as a statutory organization under the provisions of this Act.
  - It is chaired by the **Prime Minister**.
  - This is an **advisory board** that offers advice to the central government on issues of wildlife conservation in India.
  - It is also the apex body to **review and approve** all matters related to wildlife, projects of national parks, sanctuaries, etc.
  - The chief function of the Board is to promote the **conservation and**

development of wildlife and forests.

### 8.18 Red Sea Bream Iridovirus (RSIV)

Recently, the outbreak of **Red Sea Bream Iridovirus (RSIV) disease** in cage farming resulting in the death of fish has been reported again from Kundapur in Udupi district.

- The first outbreak of **red sea bream iridoviral disease caused by red sea bream iridovirus (RSIV)** was recorded in cultured red sea bream Pagrus major in Shikoku Island, Japan in 1990.
  - The affected fish were **lethargic and exhibited severe anemia, petechiae of the gills, and enlargement of the spleen.**
- The causative agent was a **large, icosahedral, cytoplasmic DNA virus** classified as a member of the family Iridoviridae and was designated as red sea bream iridovirus (RSIV).
  - The **genome of RSIV is liner dsDNA** and considered to be circularly permuted and terminally redundant like other iridoviruses.
- The principal **mode of transmission of RSIVD** is by horizontal means via the water.
- There is **no cure for RSIV**, diseased and dead fish should be immediately cleared and buried or burnt in a safe location.
- The spread of the virus in the waters is **difficult to control** as the water is free flowing.

### 8.19 Temple Turtle

Recently, twenty-two hatchlings of **temple-reared black softshell turtles** were released in a major wetland within the **Kaziranga National Park** and Tiger Reserve.

- The **Yellow-headed Temple Turtle** only occurs in **Southeast Asia**, where it inhabits **slow-flowing rivers, canals, freshwater ponds** and flooded fields.
- It feeds almost exclusively on **aquatic vegetation, supplemented by fallen fruits** when available.
- It has a fragmented distribution in parts of **Thailand, Cambodia, Laos,**

**Vietnam and parts of northern Peninsular Malaysia.**

- It is a **large species of turtle** in the family Geoemydidae.
- The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) **suspended trade** of yellow-headed temple turtles in July 2012.
- It is classified as '**extinct in the wild**' under the IUCN Red List of Threatened Species.
  - According to the International Union for Conservation of Nature, the **freshwater black softshell turtle** (*Nilssonina nigricans*) is extinct in the wild.

**Kaziranga National Park**

- Kaziranga National Park represents one of the **last unmodified natural areas** in the north-eastern region of India.
- It is located in the State of Assam as the **single largest undisturbed and representative area** in the Brahmaputra Valley floodplain.
- It is regarded as one of the finest wildlife refuges in the world and the **park's contribution in saving the Indian one-horned rhinoceros** from the brink of extinction.
- The property receives the **highest legal protection and strong legislative framework** under the provisions of the Indian Wildlife (Protection) Act, 1972 and Indian Forest Act, 1927/Assam Forest Regulation 1891.
- In 1985, the park was declared as a **World Heritage Site by UNESCO**.

**8.20 Monarch Butterflies**

Recently, the U.S. President Donald Trump's administration has said that **Monarch butterflies** deserve federal protection under the Endangered Species Act.

- Monarch butterflies are **native to North and South America**, but they've spread to other warm places where milkweed grows.
  - There are also populations in **Hawaii, Portugal, Spain, Australia, New Zealand** and elsewhere in **Oceania**.
- In the east, only monarchs that emerge in late summer or early fall make the **annual**

**migration south for the winter.**

- Monarch butterflies, known for **migrating thousands of miles across North America**, have experienced a decades-long U.S. population decline due to habitat loss caused by human activities.
- It is listed as '**Not Evaluated**' under the IUCN Red List of Threatened Species.
- The monarch butterfly is known by scientists as *Danaus plexippus*, which in Greek literally means "**sleepy transformation**".

### **8.21 Coalition for Disaster Resilient Infrastructure (CDRI)**

Recently, the Union Minister of Health & Family Welfare digitally addressed an event by **Coalition for Disaster Resilient Infrastructure (CDRI)** and **UN Office for Disaster Risk Reduction (UNDRR)**.

- The event was themed around '**Build Back Better: Building resilient health infrastructure and supply chains**'.
- The **Sendai Framework for Disaster Risk Reduction (SFDRR)** highlights the role of improved disaster resilience, especially of infrastructure, as a cornerstone for sustainable development.
- While inaugurating the **Asian Ministerial Conference on Disaster Risk Reduction**, the Prime Minister of India announced that India would work with partner countries and key stakeholders in launching a "**Coalition**" for disaster resilient infrastructure.
- It was launched by the Indian Prime Minister Narendra Modi at the **2019 UN Climate Action Summit** in September 2019.
- The Government of India has been engaging with **national governments, multilateral development banks, United Nations agencies, the private sector and academia** to build the case for investing in resilient infrastructure.
  - It is a collaboration of **Government of India, UN Office for Disaster Risk Reduction, World Bank, the UN Development Programme and the Global Commission on Adaptation.**
- The members of CDRI are **Afghanistan, Australia, Bhutan, Fiji, Germany, Italy, Indonesia, India, Japan, Mauritius, Maldives, Mongolia, Nepal, Sri Lanka,**

## United Kingdom and United States.

### Purpose of CDRI

- The Coalition would address a **common challenge of building resilience into infrastructure systems**, particularly in the context of increasing disaster risk in the face of climate change.
- The Coalition would **provide access to good practices to develop appropriate standards** as well as regulatory mechanisms to manage infrastructure development in a manner that fosters resilience.
- The Coalition would also serve as a platform where **knowledge is generated and exchanged on different aspects** of disaster resilience of infrastructure.
- It will bring together a multitude of stakeholders i.e. **governments, private sector, academic research institutions and international organisations.**

### UN Office for Disaster Risk Reduction (UNDRR)

- It oversees the implementation of the **Sendai Framework for Disaster Risk Reduction 2015-2030.**
- It is supporting countries in its **implementation, monitoring and sharing** what works in reducing existing risk and preventing the creation of new risk.

### Sendai Framework for Disaster Risk Reduction

- The Sendai Framework for Disaster Risk Reduction 2015-2030 (Sendai Framework) was the **first major agreement** of the post-2015 development agenda.
- It provides Member States with **concrete actions to protect development gains** from the risk of disaster.
- The Sendai Framework works hand in hand with the other 2030 Agenda agreements, including **The Paris Agreement on Climate Change, The Addis Ababa Action Agenda on Financing for Development, the New Urban Agenda, and the Sustainable Development Goals.**
- It was endorsed by the UN General Assembly following the **2015 Third UN World Conference on Disaster Risk Reduction (WCDRR).**

## 8.22 Disturbance from North Atlantic Ocean

Recently, a team from the Centre for Atmospheric and Oceanic Sciences (CAOS), Indian Institute of Science (IISc) has suggested that planetary wave from the **North Atlantic is capable of derailing the Indian monsoon.**

- The findings suggest that modelling efforts ought to **focus on including the influence of mid-latitudes**, in addition to the Pacific and Indian oceans, for getting a better handle on **predictability of the monsoon**, its variability as well as droughts.
- The research team analysed daily **rainfall during the two categories of droughts from 1900 to 2015** and noticed dramatic differences in the evolution of rainfall deficit.
- The **rainfall deficit in El Niño droughts** sets in early around mid-June and becomes progressively worse and during **non-El Niño droughts** there is a moderate decrease in June rainfall, followed by signs of recovery during mid-July to mid-August.

### Impact of Disturbance from North Atlantic on Indian Monsoon

- The interaction between **upper-level winds and deep cyclonic vorticity anomalies** located above anomalously cold North Atlantic waters during late August to early September results in an atmospheric disturbance.
- The disturbance is called the **Rossby wave** which curves in towards India and, apparently **squeezed in by the Tibetan Plateau**, disrupts the flow of the monsoon winds.
  - The **oceanic and atmospheric Rossby waves**, also known as planetary waves, naturally occur largely due to the **Earth's rotation.**

## 8.23 Elephants and Tigers did not go extinct in India

Recently, a team from Yale University set out to investigate that why big mammals such as **elephants, tigers, and rhinos** are still seen in India when they **disappeared from the Americas.**

- Over the last 100,000 years, several **land-dwelling mammals** including big carnivores have gone extinct across the globe.

- Most of the mega fauna of South Asia and Africa were **resilient to the arrival of modern humans** and the region still has large land mammals such as elephants, tigers, and rhinos.

### Key Findings

- The paper shows that the **extinction rate in India and Africa** over the past 50,000 years is **2.5 times lower** than in South America, and nearly **4 times lower** than in North America, Europe, Madagascar, and Australia.
- It found that **mega fauna persisted in India**, just like in Africa, for at least 20,000 years in the presence of hominins or early Homo sapiens relatives.
- It is the first study to **explore the extinction of mega fauna in Indian subcontinent** in detail, and documents a mere handful of large animals that are found extinct in the fossil record.
- North America, Europe, Australia, and other higher latitudes, saw the **complete extinction of many well-recognised megafauna** such as the 250 kg saber-toothed tiger, the 600 kg woolly mammoth, the whopping 7,000 kg mastodon, and even the 70 kg dire wolf.
- In the fossil record of the Indian subcontinent, only a **few megafauna were found to have gone extinct**, while most others have evolved to scaled-down sizes today.
- The team documented the **extinction of a total of seven large species in India** in the past 30,000 years and the four were largest:
  - **Palaeoloxodon namadicus** or the Asian straight-tusked elephant;
  - **Stegodon namadicus**, another elephant relative with long tusks;
  - **Hexaprotodon sp.**, a family of hippopotamus relatives; and
  - **Equus namadicus**, a kind of prehistoric horse
- The above four extinctions make up only **four per cent of Indian megafauna** and about one-fifth of mammalian megafauna.

### Causes for extinction

- The exact cause for their extinction **cannot be narrowed down to a single prime reason**, such as overhunting as with megafauna's extinction elsewhere.
- The study highlighted the **evidence of the butchery and hunting** of mammoths,

mastodons, bison, horses, and camels in North America.

- **Breeding and drought:** Larger species reproduce slowly with longer gestation periods and pregnancies, and larger gaps between births.
  - Under conditions of drought, **breeding becomes even slower**, and fossil evidence indicates that these animals survived several drought-like conditions.
- **Range of habitat:** While modern mammals lived across Southeast Asia, the extinct animals' ranges were confined to the Subcontinent.
  - It reduces the overall **metapopulation or pockets of populations** of the same species to a small geographic area, increasing their risk of extinction.
- **Climatic change:** The Late Quaternary experienced both strengthening and weakening monsoons in India, driven by three major cold, dry events in higher latitudes which saw a return to more cooling after the warming post-Last Glacial Maximum (LGM).
- **Human impact:** The human causes behind the extinction were still the biggest contributing factor, as the megafauna survived other unfavourable conditions over millennia.
  - The authors attribute the **increased rates of extinction and ultimate decline** of each species to sophisticated hunting technology.

### Co-evolution and present-day implications

- The findings provide the **first independent evidence** for the co-evolution hypothesis, which was until now confined to Africa.
- It states that the magnitude of extinction **inversely correlates** with the amount of time large mammals coexisted with modern humans and human ancestors.
- The fossil evidence indicates that humans in India preferred to **hunt smaller creatures**, and were also domesticating cattle for dairy, indicating evolving dietary lifestyles away from hunting large animals.
- The **unfavourable environmental conditions** typically cause an entire species to move to a suitable habitat, called a refugium, to survive difficult times.
- The **pseudoextinction** or a phyletic extinction is one where **one species goes**

extinct, but an evolved daughter species survives.

### 8.24 Status of Leopard in India 2018 Report

Recently, the Union Ministry of Environment, Forest & Climate Change has released the 'Status of Leopard in India 2018' Report.

- The ministry remarked that monitoring of the tiger in India has clearly shown its **umbrella role in the ecosystem**, which has shed light on other charismatic species like the Leopard.

#### Key Highlights

- India now has **12,852 leopards** as compared to the previous estimate of **7910 conducted 2014** i.e. more than **60% increase** in population has been recorded.
- The States of **Madhya Pradesh, Karnataka and Maharashtra** recorded the highest leopard estimates at 3421, 1783 and 1690 respectively.
- India's world record tiger survey also estimated the **population of leopards and the tiger range** was found home to 12,852 leopards.
- The leopard was estimated across **forested habitats in tiger range areas** of the country but other leopard occupied areas such as **non-forested habitat, higher elevations in the Himalayas, arid landscapes and majority of North East landscape** were not sampled.

#### Geographical distribution of Leopards in India

##### Leopards in North India are distributed from Trans-Himalayas to Gangetic plains

- The current leopards' assessment was **limited to an altitude of 2,600 m** in this landscape, where leopard signs were distributed across the forested areas of **Uttarakhand, Uttar Pradesh** and parts of **Bihar**.

##### Central India and Eastern Ghats

- The leopard population for **Rajasthan** is reported only for the tiger occupied Protected Areas i.e. the Mukundara, Ranthambore and Sariska Landscapes.
- Leopard population in **central India** can be distinguished into four large contiguous

patches:

- The **Central block** extends across entire Madhya Pradesh, Chhattisgarh, Jharkhand, Odisha, Maharashtra and Northern Telangana.
- The **Southern block** covering Amrabad Tiger Reserve, Nagarjunsagar – Srisailem Tiger Reserve, and extending into Sri Venkateshwara Wildlife Sanctuary.
- The **Western block** comprises of Western Ghats of Maharashtra (Sahyadri hills) and areas of adjoining Deccan.
- The **Northern block** comprises of Sariska, Ranthambore, Mukundhara tiger reserves and northern Madhya Pradesh.

### Western Ghats

- Leopard presence were recorded in the forested areas of **Western Ghats, Nilgiris**, and sporadically recorded across much of the dry forests of Central Karnataka.

### North East Hills and Brahmaputra Flood Plains

- Leopards are distributed widely in the **North Eastern landscape from high altitude of Eastern Himalayas** to the forests adjacent to tea gardens in the flood plains.

### Leopards

- Leopard (*Panthera pardus*) is the most **widely distributed and adaptable member** of the family Felidae.
- The Leopards range covers the entire sub **Saharan and North Africa**, the **Middle East and Asia Minor**, **South and Southeast Asia**, and extended to the **Amur Valley in the Russian Far East**.
- It occurs in almost **every kind of habitat**, from the rainforests of the tropics to desert and temperate regions.
- The Indian subspecies, *Panthera pardus fusca*, is found in **all forested habitats** in the country, **absent only in the arid deserts** and above the **timber line in the Himalayas**.
- It is listed as '**Vulnerable**' under the IUCN Red List of Threatened Species.
- It is also listed in **Appendix I** of the Convention on International Trade of

Endangered Species of Wild Fauna and Flora (CITES).

- It is protected under **Schedule I** of the Wildlife (Protection) Act 1972 in India.

### 8.25 Health and Economic impact of Air Pollution

Recently, the **India State-Level Disease Burden Initiative** published a scientific paper on the **health and economic impact of air pollution** in Lancet Planetary Health.

- The report documents the trends in **health loss due to air pollution** and its economic impact in every state of India, using the latest improved methods and data.
- The findings in the paper highlight that while the disease burden due to **household air pollution is reducing in India**, the same has increased due to ambient outdoor air pollution.

#### Key Highlights

##### Health Impact of Air Pollution

- The percentage of **fatalities attributable to air pollution** was highest in **Rajasthan**, followed by **West Bengal, Uttar Pradesh, Haryana, Bihar, Gujarat, Uttarakhand** and **Delhi**.
- The report highlighted that if air pollution is eliminated, then **18 per cent deaths could be avoided**.
- The findings show that while **40 per cent of the disease burden due to air pollution** is from lung diseases, the remaining **60 per cent is from ischemic heart disease, stroke, diabetes, and neonatal deaths** related to preterm birth.
- It stated that the **household air pollution is decreasing in India**, resulting in **64 per cent reduction in the death rate attributable** to it from 1990 to 2019.
- The death rate from **outdoor ambient air pollution** has increased during this period by 115 per cent.

##### Economic Impact of Air Pollution

- The **economic loss** due to air pollution as a percentage of the state GDP was higher in the northern and central India states, with the highest in **Uttar Pradesh (2.2 per**

cent) and Bihar (2 per cent).

- The report highlighted that the **estimated expenditure of 0.4 per cent of the GDP** is done on the treatment of air pollution-related diseases.
- The **high burden of death and disease due to air pollution** and its adverse economic impact from loss of output could **impede India's aspiration to be a \$5-trillion economy by 2024**.

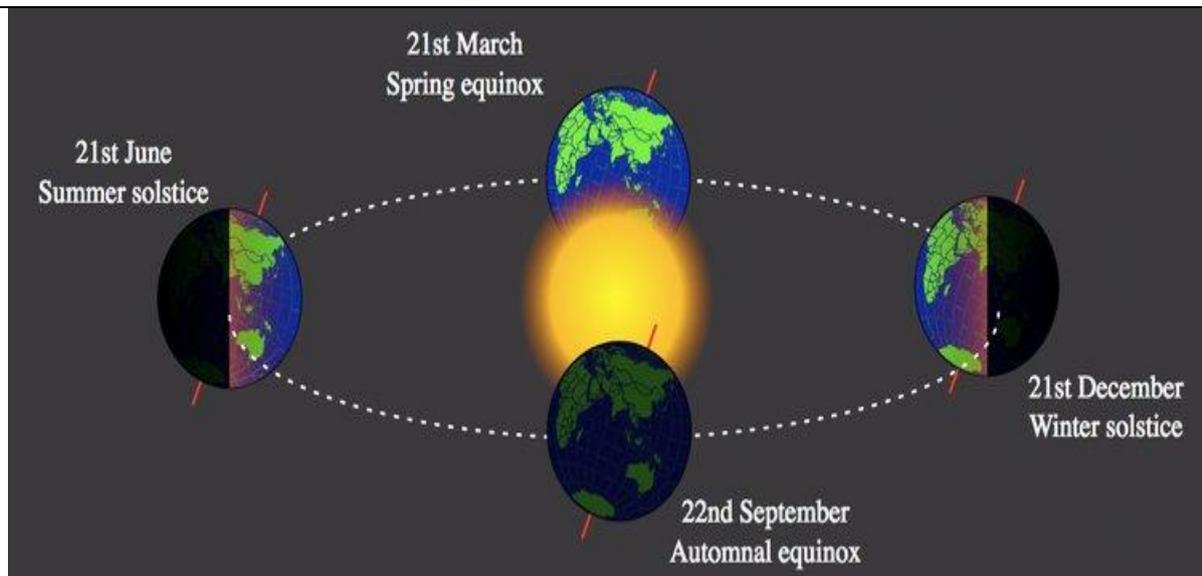
#### **India State-level Disease Burden Initiative**

- It was launched in 2015 as collaboration between the **Indian Council of Medical Research (ICMR), the Public Health Foundation of India (PHFI), Institute for Health Metrics and Evaluation (IHME)**, and senior experts and stakeholders.
- It reported an **unprecedented comprehensive assessment of the diseases** causing the most premature deaths and ill-health in each state of the country.

#### **8.26 Winter Solstice**

Recently, the **Winter Solstice** was observed on December 21.

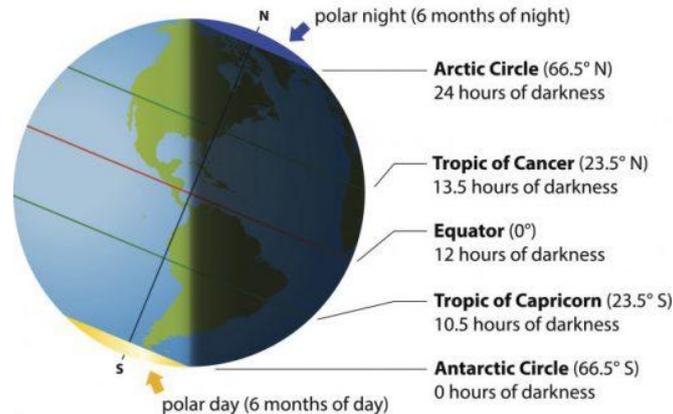
- It is the **shortest day** in the **Northern Hemisphere**.
- In the Southern Hemisphere, **December 21st is the summer solstice** i.e. the longest day in in places like Australia, New Zealand and South Africa.
- The winter solstice marks the **official beginning of astronomical winter** (as opposed to meteorological winter, which starts about three weeks prior to the solstice).



### Why are the hours of daylight not the same every day?

- The reason for difference in hours of daylight lies in the **tilting of Earth**.
  - The Earth's axis of rotation is **tilted at an angle of 23.5° to its orbital plane** and combined with factors such as Earth's spin and orbit, leads to variations in the duration of sunlight that any location on the planet receives on different days of the year.
- The Northern Hemisphere **spends half the year tilted** in the direction of the Sun, getting direct sunlight during long summer days.
- The tilt is also **responsible for the different seasons** that we see on Earth as the side facing the Sun experiences day, which changes to night as Earth continues to spin on its axis.
- During summer, in either hemisphere, that **pole is tilted towards the Sun** and the polar region receives 24 hours of daylight for months.
- The Earth's tilt helps define some familiar imaginary lines, which are also key to **determining when a Solstice occurs**.

### winter solstice (December 21)

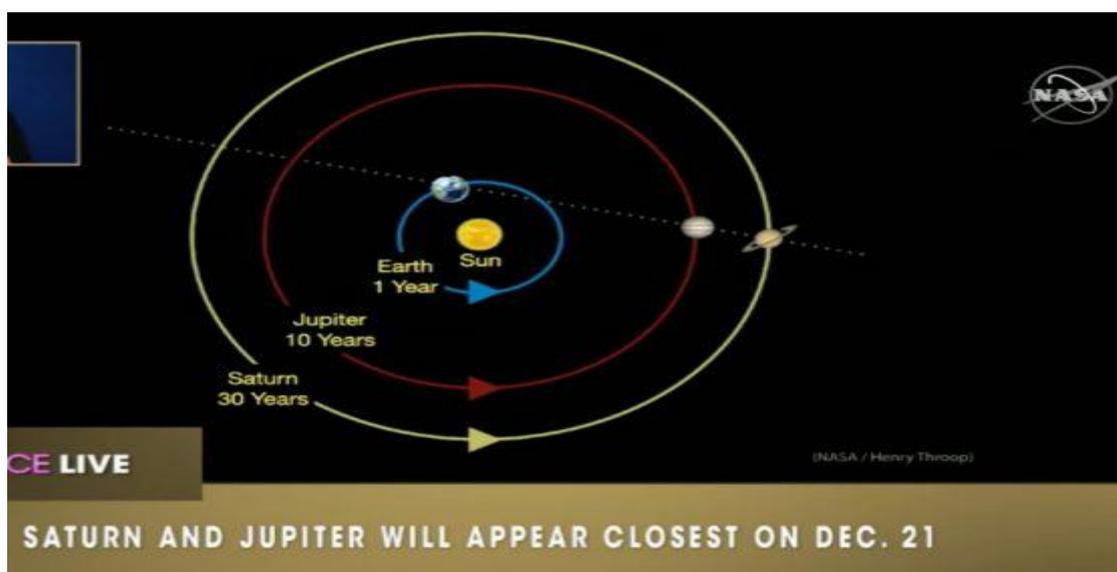


### What happens on the Winter Solstice?

- The Sun's path reaches its **most southerly point in the sky** on the day of solstice.
- The Sun's path will be **high in the sky on the winter solstice** directly overhead at noon at the latitude called the Tropic of Capricorn.
- The day after the winter solstice, the **Sun's path begins to advance northward again**, eventually reaching its most northerly point on the day of the summer solstice.

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### 8.27 Great Conjunction of Saturn & Jupiter



Recently, the two giant planets i.e. **Jupiter and Saturn** brought closest in the night sky by an astronomical event called the “**great conjunction**”.

### What is Great Conjunction?

- It is popularly referred to as the “**Christmas Star**”.
- The conjunction is not unique to Saturn and Jupiter but it is the name given to any event where **planets or asteroids appear to be very close together** in the sky when viewed from the Earth.
  - The “**spectacular**” conjunction in 2005 when **Mercury, Venus and Saturn** appeared so close together in the sky that the patch of sky where the three planets were could be covered by a thumb.
- The “**Great Conjunction**” happens once in about **20 years** because of the time each of the planets take to orbit around the Sun.
- The planets in a **conjunction are typically above or below each other**, because their orbits are slightly tilted with respect to each other.

### 8.28 Tso Kar Wetland Complex

Recently, the **Tso Kar Wetland Complex of Ladakh** has been declared as **Wetland of International Importance** under Ramsar Site Convention.

- It is the **42nd Ramsar Site of India** and **second one** in the Union Territory (UT) of Ladakh.
- The **Tso Kar Basin is a high-altitude wetland complex**, consisting of two principal waterbodies i.e. Startsapuk Tso and Tso Kar.
  - **Startsapuk Tso** is a freshwater lake of about 438 hectares to the south.
  - **Tso Kar** is a hypersaline lake of 1800 hectares to the north, situated in the Changthang region of Ladakh, India.
  - It is called Tso Kar, meaning white lake, because of the **white salt efflorescence** found on the margins due to the evaporation of highly saline water.
- The Tso Kar Basin is an **A1 Category Important Bird Area (IBA)** as per Bird

Life International and a key staging site in the **Central Asian Flyway**.

- The site is also one of the most important breeding areas of the **Black-necked Crane (Grus nigricollis) in India**.
- It is also the major breeding area for **Great Crested Grebe (Podiceps cristatus)**, **Bar-headed Geese (Anser indicus)**, **Ruddy Shelduck (Tadorna ferruginea)**, **Brown-headed Gull (Larus brunnicephalus)** and **Lesser Sand-Plover (Charadrius mongolus)**.

### Importance of declaring Ramsar Wetland

- The aim of the Ramsar list is to **develop and maintain an international network of wetlands** which are important for the conservation of global biological diversity.
- It called for **sustaining human life** through the maintenance of their ecosystem components, processes and benefits.
- Wetlands provide a wide range of **important resources and ecosystem services** such as food, water, fibre, groundwater recharge, water purification, flood moderation, erosion control and climate regulation.
- Wetlands are a **major source of water and our main supply of freshwater** comes from an array of wetlands which help soak rainfall and recharge groundwater.

### 8.29 International Blue Flag Certification

Recently, the Union Minister of Environment, Forest & Climate Change has virtually hoisted the **international blue flags** in 8 beaches across the country.

- India secured the **International Blue Flag Certification for 8 beaches** in October 2020.
- The beaches where the International Blue Flags were hoisted are **Kappad (Kerala)**, **Shivrajpur (Gujarat)**, **Ghoghla (Diu)**, **Kasarkod and Padubidri (Karnataka)**, **Rushikonda (Andhra Pradesh)**, **Golden (Odisha)** and **Radhanagar (Andaman & Nicobar Islands)**.
- The **'Blue Flag'** is a certification that can be obtained by a **beach, marina, or sustainable boating tourism operator**, and serves as an eco-label.
- The certification is awarded by the Denmark-based non-profit **Foundation for**

### **Environmental Education (FEE).**

- The FEE sets **stringent environmental, educational, safety-related and access-related criteria** that applicants must meet and maintain.
- It is **awarded annually to beaches** and marinas in FEE member countries.
- It was **started in France in 1985** and in areas out of Europe in 2001.
- The programme promotes **sustainable development in freshwater and marine areas** through four main criteria i.e. water quality, environmental management, environmental education and safety.
- India is the **only country** that has received the Blue Flag certification in 2 years' time.
  - **Japan, South Korea and UAE** are the only other Asian nations that have been conferred with a couple of Blue Flag beaches in a time frame of about 5 to 6 years.
- India is now in the league of **50 'Blue Flag' countries**.

### **India's efforts towards Blue Flag Certification**

#### **Beach Environment & Aesthetics Management Services (BEAMS)**

- India launched its own **eco-label BEAMS** by e-hoisting the flag simultaneously at all the eight beaches.
- BEAMS is launched under its **ICZM (Integrated Coastal Zone Management) project**.
- BEAMS is one of the several other projects of ICZM that the central government is undertaking for **sustainable development of coastal regions**.
- The **eight beaches recommended under the BEAMS** are Shivrajpur in Gujarat, Ghoghla in Daman and Diu, Kasarkod and Padubidri in Karnataka, Kappad in Kerala, Rushikonda in Andhra Pradesh, Golden in Odisha and Radhanagar in Andaman and Nicobar Islands.
- The **primary objectives** of BEAMS are:
  - **abate pollution** in coastal waters;
  - **promote sustainable development** of beach facilities;

- **protect and conserve coastal ecosystems and natural resources;** and
- **seriously challenge local authorities and stakeholders** to strive and maintain high standards of cleanliness, hygiene and safety for beachgoers.

### **I Am Saving My Beach Campaign**

- The campaign was started by **Society of Integrated Coastal Management (SICOM)-MoEFCC** at 10 beaches in 2019.
- It is a **national level campaign** that will be undertaken periodically at these nominated pilot beaches for Blue Flag certification journey.

### **8.30 2011-2020 Warmest Decade on Record**

Recently, the World Meteorological Organisation (WMO) has highlighted that **2011-2020 Warmest Decade on Record.**

- The WMO has stated that **2020 is on track to becoming the warmest ever year**, surpassing the highest surface temperatures recorded in 2016.
- The average global temperature in **2020 is set to be about 1.2 degree Celsius above** the pre-industrial era (1850-1900).
  - It is the **highest since modern temperature recordings** began in 1850.
- The WMO has highlighted that the **decadal warming trend** has been noted with **each passing decade since the 1980s.**

### **Reasons for Consecutive Warm Decades**

- The main reason for global consecutive warm decades is the record levels of **heat-trapping greenhouse gases** present in the atmosphere.
- The WMO experts have provided that **carbon dioxide remains in the atmosphere for several decades**, contributing to warming of the planet.
- The experts said that the **warming recorded during 2020 is despite the prevailing La Nina condition**, which is the abnormal cooling of sea surface temperatures recorded along the equatorial and central Pacific Ocean.
- The **ocean heat content was at a record high**, and it has been noted that the ocean has been fast to intake ocean heat.

- More than 90 per cent of the excess energy accumulated in the **climate system of increased concentrations of greenhouse gases** goes straight into the ocean.

### Implications of Warming Decades

- **Ecosystems:** Global warming stresses ecosystems through temperature rises, water shortages, increased fire threats, drought, weed and pest invasions, intense storm damage and salt invasion.
- **Species:** One in six species is at risk of extinction because of climate change.
- **Food and farming:** Changes to rainfall patterns, increasingly severe drought, more frequent heat waves, flooding and extreme weather make it more difficult for farmers to graze livestock and grow produce.
- **Water:** Reduced rainfall and increasingly severe droughts may lead to water shortages.
- **Coastal Erosion:** Rising sea levels and more frequent and intense storm surges will see more erosion of coastline, wearing away and inundating community and residential properties.
- **Damage to homes:** Increasingly severe extreme weather events like bushfires, storms, floods, cyclones and coastal erosion, will see increased damage to homes, as well as more costly insurance premiums.

### 8.31 Eco-sensitive Zone in Narmada district

Recently, the tribal communities have been protesting against the Centre's notification **classifying 121 villages around the Shoolpaneshwar Wildlife Sanctuary** in Narmada district as **eco-sensitive zones**.

#### Reasons for tribal communities protesting against the notification

- As per the provisions of the notification, land falling in the eco-sensitive zone **cannot be transferred for non-agricultural use, for commercial, industrial or residential purposes**.
  - The land falling in the eco-sensitive zone includes **land belonging to the forest department, horticulture department, that used for agricultural use and plots reserved for parks**.

- Any land that needs to be transferred can be done so **only after approval from the state government.**
- The process has been initiated to **include the state government as the co-owner of the land** in the 121 villages.
- The notification, combined with the formation of the Statue of Unity Area Development and Tourism Governance Authority, has **increased administrative needs owing to the booming tourism**, has left tribals in a state of mistrust and fear.
- The tribals feel the simultaneous implementation of the two government decisions could **dilute the “power” vested with villagers** under the Panchayat (Extension of Scheduled Areas) Act, 1996.

### **Shoolpaneshwar Wildlife Sanctuary**

- It is located in the **Narmada district of Gujarat.**
- It is located in the western **Satpura Range** south of the **Narmada River.**
- The sanctuary was first **declared a protected area in 1982.**
- It was called the **‘Dumkhal Sanctuary’** and was created especially for the **protection of sloth bears.**
- It shares a common boundary with **Madhya Pradesh** and **Maharashtra.**

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