

OCTOBER 2021

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COVER STORY

- ❖ WHAT DOES “NET ZERO EMISSIONS” MEAN?

ECONOMY

- ❖ AMID CRITICISM, GOVERNMENT RELOOK AT DRAFT RULES FOR E-COMMERCE
- ❖ CORE SECTOR LOGS 9.4% GROWTH
- ❖ EXPLAINED: HOW TO READ INDIA'S Q1 GDP DATA
- ❖ 40 CENTRAL UNIVERSITIES TO IMPLEMENT CREDIT BANK
- ❖ 24TH FSDC ASKS REGULATORS TO KEEP STEADY VIGIL ON FINANCIAL SECTOR
- ❖ WHAT IS DECENTRALIZED FINANCE OR DeFi EXPLAINED
- ❖ SEBI INTRODUCES T+1 SETTLEMENT CYCLE ON OPTIONAL BASIS TO ENHANCE LIQUIDITY
- ❖ RBI ENHANCES SCOPE OF TOKENISATION TO ENSURE SECURITY OF CARD DATA
- ❖ OVER 50% AGRICULTURAL HOUSEHOLDS ARE INDEBTED, FARM DEBT ROSE BY 58% IN 5 YEARS: NSO SURVEY
- ❖ CENTRE CLEARS 31 APPOINTMENTS TO NCLT, ITAT AFTER SC RAP
- ❖ WIDENING CYBER INSURANCE AMBIT: IRDAI PITCHES FOR GLOBAL JURISDICTION
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- ❖ BGCi LAUNCHES THE STATE OF THE WORLD'S TREES REPORT

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- ❖ HOW AND WHY THESE TIGERS IN ODISHA CHANGED THEIR STRIPES
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- ❖ THE SOCIAL LIFE OF A VAMPIRE BAT
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- ❖ CYCLONE GULAB: HEAVY RAINS BATTER ANDHRA DISTRICTS; NO MAJOR IMPACT IN ODISHA

SPORTS

- ❖ MS DHONI TO BE PART OF DEFENCE MINISTRY'S EXPERT PANEL TO REVIEW NCC CURRICULUM



Independent charitable organisation Oxfam has said that **‘net zero’ carbon targets** that many countries have announced may be a **“dangerous distraction”** from the priority of **cutting carbon emissions**.

“Land-hungry ‘net zero’ schemes could force an **80 per cent rise in global food prices** and more hunger while allowing rich nations and corporates to continue **“dirty business-as-usual,”** Oxfam has said in a new report titled **“Tightening the Net”** that has been released just a few months ahead of the **UN climate talks in Glasgow**.

Which countries have recently announced net-zero targets?

In 2019, the **New Zealand government passed the Zero Carbon Act**, which committed the country **to zero carbon emissions by 2050 or sooner**, as part of the country’s attempts to meet its **Paris climate accord commitments**. In the same year, the UK’s parliament passed legislation requiring the government **to reduce the UK’s net emissions of greenhouse gases** by 100 per cent relative to 1990 levels by the year 2050.

More recently, **US president Joe Biden** announced that **the country will cut its greenhouse gas emissions by at least 50 per cent below 2005 levels by 2030**. Further, John Kerry, who is US’s climate envoy and considered one of the chief architects of the Paris Climate agreement, launched a bipartisan organisation called **World War Zero in 2019** to bring together unlikely allies on climate change and with the goal of **reaching net-zero carbon emissions in the country by 2050**.

The **European Union** too, has a similar plan, called **“Fit for 55”**, the European Commission has asked all of its 27 member countries to **cut emissions by 55 per cent below 1990 levels by 2030**.

Last year, **China** also announced that **it would become net-zero by the year 2060** and that **it would not allow its emissions to peak beyond what they are in 2030**.

What does net-zero mean?

Net-zero, which is also **referred to as carbon-neutrality**, does not mean that a country **would bring down its emissions to zero**. That would be gross-zero, which means reaching a state where **there are no emissions at all**, a scenario hard to comprehend. Therefore, **net-zero is a state in which a country’s emissions are compensated by absorption and removal of greenhouse gases from the atmosphere**.

One way by which **carbon can be absorbed is by creating carbon sinks**. Until recently, the **Amazon rainforests in South America**, which are the **largest tropical forests in the world**, were carbon sinks. But eastern parts of these forests have started emitting CO₂ instead of absorbing carbon emissions as a **result of significant deforestation**.

This way, **it is even possible for a country to have negative emissions**, if the **absorption and removal exceed the actual emissions**. **Bhutan has negative emissions**, because it **absorbs more than it emits**.

What the report says

The report says that **if the challenge of change is tackled** only by way of planting more trees, then **about 1.6 billion hectares of new forests** would be required to remove the **world's excess carbon emissions by the year 2050**.

Further, it says that **to limit global warming below 1.5°C and to prevent irreversible damage** from climate change, the world needs to collectively be on track and should **aim to cut emissions by 45 per cent by 2030 from 2010 levels**, “with the sharpest being made by the biggest emitters.”

Currently, countries’ plans to cut emissions will only lead to a **one per cent reduction by the year 2030**. Significantly, if only land-based methods to deal with climate change are used, **food rises are expected to rise even more**. Oxfam estimates that they could rise by 80 per cent by the year 2050.

“Oxfam’s report shows that **if the entire energy sector** -whose emissions continue to soar- were to set similar **‘net-zero’ targets**, it would require an area of land nearly the size of the **Amazon rainforest**, equivalent to a third of all farmland worldwide,” a statement released by Oxfam says.

The report emphasises that **reducing emissions cannot be considered a substitute for cutting emissions**, “and these should be counted separately,” it said.



AMID CRITICISM, GOVERNMENT RELOOK AT DRAFT RULES FOR E-COMMERCE

Recently, the Department of Consumer Affairs is learnt to be revisiting some provisions pertaining to definitions such

as **‘related party’** and **‘e-commerce entity’** proposed in the **draft e-commerce rules**.

Need for changes in E-commerce rules

- It is required to **curb e-commerce entities' dominant position** in the market.
- There was **increased incidence of the ban on misleading users** by manipulating search results.
- The government also seeks to **ban 'flash sales' on e-commerce platforms** if such sales are organised by fraudulently intercepting the ordinary course of business using technological means.
- It is required to **purify e-commerce landscape** of the country which has been greatly vitiated by various e-commerce global companies.

Proposed amendments to Consumer Protection (E-commerce) Rules, 2020

- It is proposed that every e-commerce entity which intends to **operate in India must register itself** with the Department for Promotion of Industry and Internal Trade (DPIIT).
- The new draft proposed the **appointment of chief compliance officer and resident grievance officer**.
- The e-commerce entities are also required to **provide information not later than 72 hours of the receipt** of an order from a government agency for prevention, detection and investigation and prosecution of offences under any law.
- The government has proposed a **ban on 'mis-selling' of goods and services** offered on such platforms.
- The proposed amendment defines 'flash sale' as that organised by

an e-commerce entity at **significantly reduced prices, high discounts** or any other such promotional offers for a predetermined period of time.

- The e-commerce entities should ensure that such **registration number and invoice of orders are displayed prominently to their users** in a clear and accessible manner on their platform.
- The E-commerce entities **offering imported goods/services will also have to mention the name and details** of the importers and the country of origin.

Concerns associated with E-commerce rules

- It is claimed that the **draft rules could go beyond consumer protection** which could cause delays in the finalization of India's consumer protection legislation for the growing E-commerce in the country.
- It is pointed out that matters such as **competition, law enforcement, intermediary liability, and data protection did not fall** under the Department of Consumer Affairs' purview.
- **Fallback Liability affects investor sentiments:** The reason for such failure may be due to negligent conduct, omission or commission or any act done while fulfilling the duties and liabilities in the manner as prescribed by the marketplace e-commerce entity.
- **Rules at variance with FDI Policy:** As per Aayog, the proposed definition of e-commerce firms, including related parties, is in

conflict with the term under the foreign direct investment (FDI) policy.

- **Creates unequal playing field in the market:** The draft rules propose registration of e-commerce entities that intend to operate in India, with the Department for Promotion of

Industry and Internal Trade (DPIIT).

- As per Aayog, these norms are not applicable to brick-and-mortar stores and will create a **non-level playing field against a sector** that has played a critical role during the pandemic.

CORE SECTOR LOGS 9.4% GROWTH

Recently, the **Office of Economic Adviser**, Department for Promotion of Industry and Internal Trade (DPIIT) has released **Index of Eight Core Industries (ICI)** for the Month of July, 2021.

Highlights

- The combined **Index of Eight Core Industries stood at 134.0** in July 2021, which increased by 9.4 per cent (provisional) as compared to the Index of July 2020.
- **Coal** –Coal production (weight: 10.33 per cent) increased by 18.7 per cent in July, 2021 over July, 2020.
 - Its **cumulative index increased** by 10.5 per cent during April to July, 2021-22 over corresponding period of the previous year.
- **Crude Oil**–Crude Oil production (weight: 8.98 per cent) declined by 3.2 per cent in July, 2021 over July, 2020.
 - Its **cumulative index declined** by 3.4 per cent during April to July, 2021-22 over the corresponding period of previous year.
- **Natural Gas** - Natural Gas production (weight: 6.88 per cent) increased by 18.9 per cent in July, 2021 over July, 2020.
 - Its **cumulative index increased** by 21.0 per cent during April to July, 2021-22 over the corresponding period of previous year.
- **Petroleum Refinery Products**– Petroleum Refinery production (weight: 28.04 per cent) increased by 6.7 per cent in July, 2021 over July, 2020.
 - Its **cumulative index increased** by 13.1 per cent during April to July, 2021-22 over the corresponding period of previous year.
- **Fertilizers** – Fertilizers production (weight: 2.63 per cent) increased by 0.5 per cent in July, 2021 over July, 2020.
 - Its **cumulative index decreased** by 1.1 per cent during April to July, 2021-22 over the corresponding period of previous year.
- **Steel** –Steel production (weight: 17.92 per cent) increased by 9.3 per cent in July, 2021 over July, 2020.
 - Its **cumulative index increased** by 59.4 per cent during April to July, 2021-22 over the corresponding period of previous year.
- **Cement** –Cement production (weight: 5.37 per cent) increased by 21.8 per cent in July, 2021 over July, 2020.

- Its **cumulative index increased** by 45.6 per cent during April to July, 2021-22 over the corresponding period of previous year.
- **Electricity** –Electricity generation (weight: 19.85 per cent) increased by 9.0 per cent in July, 2021 over July, 2020.
- Its **cumulative index increased** by 14.6 per cent during April to July, 2021-22 over the corresponding period of previous year.

Index of Eight Core Sector Industries?

- It is an **index of the eight most fundamental industrial sectors** of the Indian economy and it maps the volume of production in these industries.
- It gives the details of eight sectors namely **Coal, Natural Gas, Crude Oil, Refinery Products (such as Petrol and Diesel), Fertilisers, Steel, Cement and Electricity**.

- The **Refinery Products have the largest weight** while **Cement has the lowest weight**.
- The eight industries are the **essential “basic” and/or “intermediate” ingredient** in the functioning of the broader economy.

Significance of Index of Eight Core Sector Industries

- It measures **combined and individual performance of production** in selected eight core industries viz. Coal, Crude Oil, Natural Gas, Refinery Products, Fertilizers, Steel, Cement and Electricity.
- It comprises **40.27 percent** of the weight of items included in the **Index of Industrial Production (IIP)**.
- The mapping of health of eight core industries provides a **fundamental understanding** of the state of the economy.

EXPLAINED: HOW TO READ INDIA'S Q1 GDP DATA

Recently, the Ministry of Statistics and Programme Implementation (MoSPI) released the **GDP data for the first quarter of the current financial year (2021-22)**.

Content of GDP Data

- The release provides data for two variables i.e. **one tracks the total demand** in the economy and the **other the total supply**.
- The first is **GDP**, which is the **total monetary value of final goods and services** i.e. those that are bought by the final user and produced in a country in a given period of time.

- The other is **Gross Value Added or GVA** which looks at how much **value was added (in money terms) in different productive sectors** of the economy.
- It tracks the **total output in the economy** by looking at the total supply.
- The **GDP is derived** by taking the **GVA data and adding the taxes** on different products and then **subtracting all the subsidies on products**.
- $GDP = (GVA) + (\text{Taxes earned by the government}) - (\text{Subsidies provided by the government})$

- If the government earned more from taxes than what it spent on subsidies, GDP will be higher than GVA.
- If, on the other hand, the government provided subsidies in excess of its tax revenues, the absolute level of GVA would be higher than the absolute level of GDP.

Key Highlights

- The data showed that in Q1 of 2021-22, **India's GDP grew by 20.1%** while the GVA grew by 18.8%.
- The **total output (as measured by GDP) of the Indian economy** in the first three months of the current financial year was 20.1% more than the total output created by the economy in the same months last year.
- It is important to remember that **GDP and GVA had contracted by 24.4% and 22.4%**, respectively, in Q1 of the last financial year.
- A **V-shaped recovery requires the absolute GDP** of an economy getting back to the level before the crisis.
- **India's total output in Q1**, whether measured through GDP or GVA, is nowhere near what it was in Q1 of 2019-20.
- It implies that **India has produced the same amount of goods and services in Q1** this year as it produced in Q1 four years ago.

Data on sub-components of GDP

- **Private Final Consumption Expenditure (PFCE):** In India's context, the biggest engine is consumption (C) demand from

- private individuals which is demand typically accounts for 56% of all GDP.
- It is defined as the expenditure incurred by the resident households and non-profit institutions serving households (NPISH) on final consumption of goods and services, whether made within or outside the economic territory.
- The GDP data shows that the private demand, biggest engine of growth, in Q1 of the current year was down to almost exactly the level where it was in 2017-18.
- **Gross Fixed Capital Formation (GFCF):** The second-biggest engine is the investment (I) demand generated by private sector businesses which accounts for 32% of all GDP in India.
- It refers to the aggregate of gross additions to fixed assets (that is fixed capital formation) plus change in stocks during the counting period.
- **Government Final Consumption Expenditure (GFCE):** The third engine is the demand for goods and services generated by the government (G) which accounts for 11% of India's GDP.
- It is an aggregate transaction amount on a country's national income accounts representing government expenditure on goods and services that are used for the direct satisfaction of individual needs.
- **Net Exports:** The fourth engine is the demand created by "Net Exports" (NX). It is arrived at by subtracting the demand Indians have for foreign goods (that is, India's imports) from the demand that foreigners have for Indian

goods and services (that is, India's exports).

40 CENTRAL UNIVERSITIES TO IMPLEMENT CREDIT BANK

Forty central universities will **kick off implementation of innovative measures** such as the academic credit bank and the glue grant meant to encourage multi-disciplinarity.

Glue Grant Scheme:

- The scheme was announced in the budget 2021-22 by the Finance Minister.
- The institutions in the same city **would be encouraged to share resources**, equipment and even **allow their students to take classes** from each other.
- Finance minister proposed **to set up an umbrella body** as part of the glue grant scheme **to monitor and conduct joint operations** between the industries and the academic institutions.
- This will help to integrate the educational and professional domains of the country.
- It will also help to **reform the academic curriculum** as per the requirement of the professional world and to produce better human resources.
- It is funding provided in the educational sector to link the academic institutions with the industrial demand.
- **Aim:** To create a sustainable partnership between multidisciplinary institutions in order to promote development that benefits the whole nation.

Cities to be befitted:

- **Six cluster cities** have been identified and the glue grant framework has been initiated with the support of Principal Scientific Advisor (PSA).
- The identified cities are:
 - Delhi NCR
 - Bengaluru
 - Pune
 - Hyderabad
 - Jodhpur
 - Bhubaneswar

Academic Credit Bank:

- Academic Bank of Credit is envisaged as a **digital bank that holds the credit earned by a student in any course**.
- It is a major instrument for facilitating multidisciplinary and holistic education and multiple entry and exit in higher education.
- The Academic Credit Bank would have to be **adopted separately by the academic council** of each university to kick off implementation.
- The Academic Bank of Credits **will enable students to select the best courses or combination of courses** to suit their aptitude and to tailor their degrees or make specific modifications or specialisations rather than undergoing the rigid, regularly prescribed degree or courses of a single university.
- Academic Bank of Credits will provide a variety of services

including **credit verification, credit accumulation, credit transfer or redemption and authentication of academic awards.**

How it works?

- To start with, the system would allow students to attain qualifications by amassing credits rather than specific durations on campus.

- A certain **number of credits would add up to a certificate**, then a diploma and then a degree, allowing for multiple entry and exit points.
- Students can **earn up to 40% of their credits in online Swayam classes**, rather than in the physical classroom.
- In the future, these credits will hold validity across different institutions.

24TH FSDC ASKS REGULATORS TO KEEP STEADY VIGIL ON FINANCIAL SECTOR

The high-level **Financial Stability and Development Council (FSDC)** meeting headed by Finance Minister discussed a host of issues concerning the economy.

- It focused on the need for keeping a continuous vigil on the financial sector by the government.

Highlights:

- The 24th meeting deliberated on various mandates of **FSDC** such as financial stability, financial sector development, inter-regulatory coordination, financial literacy, financial inclusion, and macro prudential supervision of the economy including the functioning of large financial conglomerates.
- Issues relating to management of assets, strengthening institutional mechanism for financial stability analysis.
- Framework for resolution of financial institutions and issues related to IBC
- Banks' exposure to various sectors and government.
- Internationalization of the Indian rupee and pension sector related issues.

FSDC:

- The Financial Stability and Development Council (**FSDC**) was constituted by the Union Government as a **non-statutory apex body** under the Ministry of Finance in 2010.
- **Raghuram Rajan Committee** (2008) on financial sector reforms first proposed the creation of FSDC.

Council Members of FSDC:

- **Chairman-** Finance Minister
- Reserve Bank of India (RBI)
- Insurance Regulatory and Development Authority (IRDA)
- Securities and Exchange Board of India (SEBI)
- Pension Fund Regulatory and Development Authority (PFRDA)
- **Other members** are Finance Secretary, Chief Economic Advisor and Secretary of the Department of Financial Services.

Functions:

- It was established as an autonomous body dealing with **macroprudential** and

financial regularities in the entire financial sector of India.

- The body envisages to strengthen and institutionalize the mechanism of maintaining financial stability, financial sector development along macro-prudential regulation of the economy.
- **No funds** are separately allocated to the council for undertaking its activities.

Responsibilities:

- Bringing about stability in the financial sector
- Development of the Financial Sector
- Coordination of Inter-Regulatory bodies
- Promoting financial literacy
- Ensuring financial inclusion
- Macroprudential supervision of the economy including the functioning of large financial conglomerates.

WHAT IS DECENTRALIZED FINANCE OR DeFi EXPLAINED

Decentralized Finance (DeFi) refers to the financial transactions that **eradicate intermediaries between participants.**

DeFi:

- It uses **cryptocurrency** and **blockchain technology** to eliminate central authorities and provide peer-to-peer facilities to carry out financial services such as banking, loans, mortgages, etc.
- The primary purpose is to **establish an open-source**, transparent, and permissionless ecosystem without any central authority owning the power over financial transactions.
- It **allows participants** to control their assets, efficiently conduct peer-to-peer exchanges and build decentralized applications.

Applications:

1. Decentralized Exchanges (DeX):

- Allow participants to exchange tokens with other assets in their possession without a need of a custodian.
- Enables them to transact peer-to-peer and monitor their funds.

- Reduces the risk of theft as crypto assets are not in the exchange custody itself.

2. Lending and Borrowing platforms:

- The lending and borrowing platforms use smart contracts to **eliminate intermediaries** such as banks, financial institutions.

3. Payments:

- Individuals can directly **transfer their cryptocurrency** through a secured channel with DeFi, and faster payments and processes can be ensured.

Advantages of DeFi:

- New financial instruments and digital assets can be **built rapidly** by taking advantage of **highly programmable smart contracts** and their automated execution.
- Blockchain's decentralized nature **offers immutability**. It indicates that a record, once stored, cannot be modified or deleted through any form. This provides **increased security** and audit precision.

- **New DeFi applications** or products can be built or modified by combining the existing product with **another DeFi product**.
- DeFi protocols are built with open-source code, allowing individuals to read, modify and use the code to make other DeFi products.
- It enables users to **direct smart contract contracts** through their crypto wallets without any minimum number of resources.

Challenges:

1. Data feed centralization:

- Blockchain technologies use **third-party services** that allow access to external information.

- If an external third-party feed **corrupted** information, then it would disrupt the DeFi protocols.

2. Security risks with smart contracts:

- Smart contracts are the fundamental backbone of any DeFi protocol or application, the **security risk** related to them can disrupt the entire application or protocol.
- Smart contracts are **open-source**, enabling users and programmers to review them before investing in the DeFi protocol. This raises the threat of a **cyberattack**.

SEBI INTRODUCES T+1 SETTLEMENT CYCLE ON OPTIONAL BASIS TO ENHANCE LIQUIDITY

The Securities and Exchange Board of India (SEBI) has introduced an optional **T+1** settlement cycle for the starting on January 1, 2022.

What is a T +1 settlement cycle?

- T+1 and T+2 indicate the **settlement date for a securities transaction**.
- T standing for the date of transaction, and **1 and 2 denoting how many days** later the transfer of stock ownership and payment to the buyer and the seller, respectively, takes place.
- T+1 means that **settlements will have to be cleared within one**

day of the actual transactions taking place.

- After opting for the T+1 settlement cycle for a scrip, the stock exchange will **have to mandatorily continue** with the same for a **minimum period of six months**.

Key Facts:

- Currently, **trades on the Indian stock exchanges are settled within two days**, just like most major markets such as Singapore, Hong Kong, Australia, Japan, and South Korea.
- Taiwan, which had **switched to T+1 settlement**, has moved **back to the T+2 cycle**.

RBI ENHANCES SCOPE OF TOKENISATION TO ENSURE SECURITY OF CARD DATA

Reserve Bank of India has allowed for tokenisation of cards while making payments, which can reduce the risk of card data being stolen.

Highlights:

- RBI has extended **tokenisation of Card-on-File (CoF) transactions** — where card details used to be stored by merchants.
 - In a CoF transaction, a cardholder has authorised a merchant to store his or her Mastercard or Visa payment details, and to bill the stored account.
- RBI has directed the merchants **not to store card details** in their systems from **January 1, 2022**.
 - From January 1, 2022, no entity in the card transaction or payment chain, **other than card issuers and card networks**, should store the actual card data.

What is tokenisation?

- It refers to **replacement of card details** with an alternative code called a **‘token’**.
- Token is **unique** for combination of card, token requestor (the entity that accepts a request from the customer for tokenisation of a card) and the device.
- **Tokenisation** is allowed through mobile phones or tablets for all use

cases and channels like contactless card transactions, payments through QR codes and apps.

- The **tokens** are generated by companies like Visa and MasterCard, which act like Token Service Providers (TSPs).
- They provide the **tokens to mobile payment** or e-commerce platforms so that they can be used during transactions instead of the customer’s credit card details.
- The token can be used to perform **contactless card transactions** at point-of-sale (PoS) terminals and QR code payments.
- It reduces the **chances of fraud** arising from sharing card details.

Procedure:

- The **cardholder** can get the **card tokenised** by initiating a request on the app provided by the token requestor.
- The **token requestor** will forward the request to the card network which, with the consent of the card issuer, will issue a token corresponding to the combination of the card, the token requestor, and the device.

OVER 50% AGRICULTURAL HOUSEHOLDS ARE INDEBTED, FARM DEBT ROSE BY 58% IN 5 YEARS: NSO SURVEY

The Ministry of Programme Implementation and Statistics has released **Situation Assessment of Agricultural Households and Land Holdings of Households in Rural India, 2019** recently.

- The survey was conducted by the **National Statistical Office**.

Highlights:

1. **Average outstanding loan** per agricultural household increased 57.7% to Rs 74,121 in 2018

- compared with Rs 47,000 five years ago in 2013.
2. **Average monthly income** from different sources rose 59% to Rs 10,218 based on the 'paid out expenses' approach in 2018-19 compared with Rs 6,426 in 2012-13.
 - In the **paid-out expenses** approach, all out of pocket expenditure incurred for each type of input is taken into account.
 3. More than 50% of **increase in income** was on account of higher monthly wages, which almost doubled to 4,063 in 2018 compared with Rs 2,071 in 2013.
 4. Number of **agricultural households** with outstanding loans at 4.67 crore during July-December 2018, about one lakh less than the 2013 estimate.
 5. While the **national average outstanding loan** was Rs 74,121 during July-December 2018, it was the highest in **Andhra Pradesh** at Rs 2.45 lakh and lowest in **Nagaland** at Rs 1,750.
 - 11 states — Andhra Pradesh, Kerala, Punjab, Haryana, Telangana, Karnataka, Rajasthan, Tamil Nadu, Himachal Pradesh, Maharashtra and Madhya Pradesh had **higher average outstanding loan per household** than the national average in 2018.
 - 3 states — Tamil Nadu, Manipur and Arunachal Pradesh registered a decline.
 6. Of the **Rs 10,218 average monthly income** (based on 'paid out expenses' approach) per agricultural household:
 - Rs 4,063 came from wages; Rs 134 from leasing out of land; Rs 3,798 came as net receipt from crop production; Rs 1,582 as net receipt from farming of animals; and Rs 641 as net receipt from non-farm business.
 7. **Non-agricultural households** living in rural areas are 7.93 crore. 83.5% of rural households had less than 1 hectare of land, while only 0.2% possessed land in excess of 10 hectare.

Definition of Agricultural Household:

- The survey defines an **agricultural household** as one receiving more than **Rs 4,000** as value of produce from **Agri-activities** (e.g., cultivation of field crops, horticultural crops, fodder crops, plantation, animal husbandry, poultry, fishery, piggery, bee-keeping, vermiculture, sericulture, etc.) and having at **least one member self-employed** in agriculture either in principal status or in subsidiary status during the last **365** days.

CENTRE CLEARS 31 APPOINTMENTS TO NCLT, ITAT AFTER SC RAP

Central government has appointed **31 people** as judicial, technical and accountant members at the National

Company Law Tribunal (**NCLT**) and the Income Tax Appellate Tribunal (**ITAT**).

- NCLT deals with matters related to **companies' law** and

the **insolvency law**, while ITAT deals with **income tax** matters.

Highlights:

- The appointments came after **Supreme Court** flagged concerns regarding vacancies in the tribunals.
- There are around **250 posts lying vacant** at various key tribunals and appellate tribunals such as NCLT, DRT, TDSAT and SAT.
- The **appointments for NCLT** will be for five years from the date of assumption of charge or till attaining the age of 65 or until further orders.
- The **appointments in ITAT** were made for a period of four years.

NCLT and ITAT:

1. National Company Law Tribunal:

- NCLT is a **quasi-judicial body** in India that adjudicates issues **relating to Indian companies**.
- NCLT was constituted on 1st June 2016 under the Companies Act, 2013 on the recommendations of **justice Eradi committee**.
- It has been **set up to govern companies registered in India** and is a successor to the **Company Law Board**.
- The benches of NCLT are headed by the **President** and 16 Judicial Members and 9 Technical Members at different locations.

NCLT as Appellate Tribunal:

- NCLT is **required to dispose the appeal within six months** from the date of the receipt of the appeal.
 - Appeals can be made by any person aggrieved by an order or decision of the NCLT, within a **period of 45 days** from the date on which a copy of the order or decision of the Tribunal.
 - **Decisions of the NCLT** may be appealed to the **National Company Law Appellate Tribunal (NCLAT)**.
 - The **decisions of NCLAT** may be appealed to the **Supreme Court of India**.
 - **No civil court** has the jurisdiction to **consider any suit or proceeding with reference** to any matter which the Tribunal or the Appellate Tribunal is empowered to decide.
- 2. Income Tax Appellate Tribunal:**
- ITAT is a **quasi-judicial institution** which specializes in dealing with appeals under the Direct Taxes Acts.
 - The oldest Tribunal in the country was constituted in **January 1941** under section 5A of the Income Tax Act, 1922.
 - Orders passed by the ITAT are **final**. An appeal lies to the High Court only if a substantial question of law arises for determination.
 - The tribunal is divided in various zones. The headquarter being at originally at New Delhi but since 1952 at **Mumbai**.
 - A sitting or retired judge of a **High Court** is appointed as President.

WIDENING CYBER INSURANCE AMBIT: IRDAI PITCHES FOR GLOBAL JURISDICTION

With online frauds on the rise, Insurance Regulatory and Development Authority of India (IRDAI) has advised insurance firms to **expand the coverage** of individual cyber-cover by including card cloning, skimming, small claims without FIR (First Information Report).

Highlights:

- As per IRDAI, the Insurers may **offer options** for worldwide territory, the jurisdiction for claims settlement should be **India**.
- A number of **syndicated frauds** originate from outside India like phishing, ransomware and malware attack. The **cyber insurance clauses** may or may not be clear on the coverage in this regard.

Types of Cyber Attacks:

1. Phishing:

- It is the practice of sending **fraudulent communications** that appear to come from a reputable source.
- It is usually done through email. The goal is to **steal sensitive data** like credit card and login information, or to install malware on the victim's machine.

2. Malware:

- Malware is malicious software designed to **infect IT systems** and cause damage or compromise data.
- It comes in many forms such as viruses, worms, trojans, adware, spyware, ransomware, and more.

3. Ransomware:

- Ransomware is a form of malware that **encrypts data** on infected IT systems.

- It demands a ransom which is paid to get a code to decrypt the infected system, usually to an anonymous address using Bitcoin.

4. SIM-jacking:

- It is essentially **taking control of someone's phone number**, and tricking a carrier into transferring it to a new phone.
- Thieves usually manage to gain control of a number by bribing someone who works for the carrier and stating the subscriber's personal information.

5. Credit Card Cloning:

- It refers to making an **unauthorized copy** of a credit card. This practice is also sometimes called skimming.
- Thieves copy information at a credit card terminal using an electronic device and transfer the data from the stolen card to a new card or rewrite an existing card with the information.

6. Skimming Attack:

- Skimming is a method used by identity thieves to **capture payment** and personal information from a credit card holder.
- The most advanced approach involves a small device called **skimmer** that reads the information stored in a card's magnetic strip or microchip.

7. Spoofing Attack:

- Spoofing is when an attacker impersonates an authorized device or user to steal data, spread malware, or bypass access control systems.

Types of Spoofing:

- **IP address spoofing** - Attacker sends packets over the network from a false IP address
- **ARP spoofing** - Attacker links their MAC address to an authorized IP address already on the network
- **DNS spoofing** - Attacker initiates a threat such as cache poisoning to reroute traffic intended for a specific domain name traffic to a different IP address

8. Sim swapping:

- A SIM swap attack is where an attacker tricks a mobile phone service provider into transferring a customer's phone number from the customer's SIM card, to the attacker's SIM card.
- An attacker may try to access a bank account, either with stolen or guessed credentials.

IRDAI:

- The Insurance Regulatory and Development Authority of India is the apex body responsible for regulating and developing the insurance industry in India.

- It was established under the **Insurance Regulatory and Development Authority Act, 1999**.

- **Headquarters:** Hyderabad, Telangana.

Functions of IRDAI:

- **Protect** the rights of insurance policy holders.
- Provide **registration certification** to life insurance companies
- **Promote efficiency** in conduct of insurance business
- Promote and regulate professional organisations connected with insurance and reinsurance business; regulate investment of funds by insurance companies
- **Adjudication of disputes** between insurers and intermediaries or insurance intermediaries.

Mission:

- **To protect** the interests of the policyholders.
- To regulate, promote and ensure orderly growth of the insurance industry.

RBI ANNOUNCES OPENING OF THIRD COHORT UNDER REGULATORY SANDBOX

The Reserve Bank of India announced the opening of the third cohort under the Regulatory Sandbox.

- The application for the third cohort may be submitted from October 1 to November 14, 2021.
- Theme for the third cohort is **MSME lending**.

Highlights of the announcement:

- RBI also selected **eight entities for the 'test phase' of the second cohort** on cross border payments.
- Six entities have already completed the 'test phase' of the first cohort on retail payments.
- The products were evaluated based on mutually agreed test scenarios and expected outcomes.

- The products found **acceptable under this cohort may be considered for adoption** by regulated entities subject to compliance with applicable regulatory requirements.

Regulatory Sandbox:

- A regulatory sandbox (RS) usually refers to **live testing of new products or services** in a controlled/test regulatory environment for which regulators may (or may not) permit certain regulatory relaxations for the limited purpose of the testing.
- The RS allows the regulator, the innovators, the financial service providers (as potential deployers of the technology) and the customers (as final users) to **conduct field tests to collect evidence on the benefits and risks of new financial innovations**, while carefully monitoring and containing their risks.
- It can **provide a structured avenue for the regulator to engage with the ecosystem** and to develop innovation-enabling or innovation-responsive regulations that facilitate delivery of relevant, low-cost financial products.
- The RS is potentially an important tool which enables more dynamic, evidence-based regulatory environments which learn from, and evolve with, emerging technologies.
- The proposed financial service to be launched under the RS should include **new or emerging technology**, or **use of existing technology in an innovative**

way and should address a problem, or bring benefits to consumers.s

Objectives:

- Provides an environment to **innovative technology-led entities** for limited-scale testing of a new product or service that may or may not involve some relaxation in a regulatory requirement before a wider-scale launch.
- The RS is, at its core, a **formal regulatory programme for market participants** to test new products, services or business models with customers in a live environment, subject to certain safeguards and oversight.

Benefits:

- It fosters 'learning by doing' on all sides. Regulators **obtain first-hand empirical evidence** on the benefits and risks of emerging technologies and their implications, enabling them to take a considered view on the regulatory changes.
- Users of an RS can **test the product's viability without the need for a larger and more expensive roll-out**.
- The RS can go a long way in not only improving the pace of innovation and technology absorption but also in financial inclusion and in improving financial reach.
- The dependence of the regulator on industry/stakeholder consultations is correspondingly reduced by providing a structured and institutionalized environment for evidence-based regulatory decision-making.
- RS could lead to better outcomes for consumers through an increased

range of products and services, reduced costs and improved access to financial services.

Risks and Limitations:

- Innovators **may lose some flexibility and time** in going through the RS process.
- Running the sandbox program in a time-bound manner at each of its stages can mitigate this risk.
- Case-by-case bespoke authorizations and regulatory relaxations can involve time and discretionary judgements.
- May be addressed by handling applications in a transparent manner and following well-defined principles in decision-making.
- The RBI or its RS cannot provide any legal waivers.
- Post-sandbox testing, a successful experimenter **may still require regulatory approvals** before the product/services/technology can be permitted for wider application.

- Regulators can potentially face some legal issues, such as those relating to consumer losses in case of failed experimentation or from competitors who are outside the RS, especially those whose applications have been/may be rejected.

Eligibility Criteria:

- The target applicants for entry to the RS are **FinTech firms which meet the eligibility conditions** prescribed for start-ups by the government.
- RS will encourage innovations where:
 - There is absence of governing regulations;
 - There is a need to temporarily ease regulations for enabling the proposed innovation;
 - The proposed innovation shows promise of easing/effecting delivery of financial services in a significant way.

INDIA AND SINGAPORE TO LINK THEIR FAST PAYMENT SYSTEMS, OPERATIONALIZATION TARGETED BY JULY 2022

The Reserve Bank of India (RBI) and the Monetary Authority of Singapore (MAS) announced a project to **link their respective fast payment systems** which is expected to be **operationalised by July, 2022**.

Genesis:

- This initiative is in line with the central bank's vision of reviewing corridors and charges for inbound cross-border remittances outlined in the **Payment Systems Vision Document 2019-21**.

- The linkage builds upon the **earlier efforts of NPCI International Private Limited (NIPL) and Network for Electronic Transfers (NETS)** to foster cross-border interoperability of payments using cards and QR codes, between India and Singapore.

Highlights:

- While **India uses Unified Payments Interface (UPI)** as a fast payment method, **Singapore uses the PayNow system**.

- The UPI-PayNow linkage will enable users of each system to make instant, low-cost fund transfers on a reciprocal basis without a need to get onboarded onto the other payment system.
- The linkage will be a **significant milestone in the development of infrastructure** for cross-border payments between India and Singapore.
- It will also closely **align with the G20's** financial inclusion priorities of driving faster, cheaper and more transparent cross-border payments.

Unified Payments Interface (UPI):

- UPI is India's mobile based, '**fast payment**' system that facilitates customers to make round the clock payments instantly **using a Virtual**

Payment Address (VPA) created by the customer.

- This **eliminates the risk of sharing bank account details** by the remitter.
- UPI supports both **Person to Person (P2P) and Person to Merchant (P2M) payments** as also it enables a user to send or receive money.

PayNow:

- PayNow is also an **electronic fund transfer service** that allows a user to transfer funds instantly to a payee, using his/her mobile number or **NRIC/FIN or UEN number** instead of his/her bank account number.
- PayNow supports nine participating banks and three Non-Bank Financial Institutions (NFIs).

REPORT ON ALL INDIA DEBT & INVESTMENT SURVEY - 2019

National Sample Survey has released the findings of **All-India Debt & Investment Survey, 2019**.

Highlights:

- The survey was conducted from January to December 2019.
- **Objective:** To collect basic quantitative information on the **assets and liabilities** of the households as on 30.6.2018.
- The survey gathered information on the **amount of capital expenditure** incurred by the households during the Agricultural Year 2018-19.
- Assets were calculated by putting a **monetary value** on everything owned by households, including:

- **Physical assets** like land, buildings, livestock and vehicles
- **Financial assets** like shares in companies, deposits in bank, and post offices, etc.

Findings of the survey:

- The **richest 10%** of Indians own over half of the country's physical and financial assets while the **bottom 50%** own less than **10%**.
- The richest 10% own **55.7%** of the total assets in urban areas and **50.8%** in rural areas.
- The **total physical and financial assets** owned by people living in the rural areas was Rs 274.6 lakh crore.

- Out of which **Rs 139.6 lakh crore** was owned by the richest **10%**.
- The **bottom 50%** owned 10.2% of assets in rural areas and an even smaller 6.2% in urban areas.

Inequality in distribution of assets:

- Within rural areas, where close to **two-thirds** of India lives, the skew was the highest in **Delhi**.
- In Delhi the top 10% owned **80.8% of assets** and the **bottom 50%** just 2.1%.

- **Among large states**, after **Delhi**, asset inequality in rural areas was highest in **Punjab** where the richest 10% own over 65% of assets and the bottom 50% just over 5%.
- **Uttarakhand**, Madhya Pradesh and Haryana had high inequality in **asset ownership** in the villages.
- **Among large states** (and UTs), the **rural skew** was the least in Jammu and Kashmir with the top 10% owning 32% and the bottom half 18%.

UNCTAD PROJECTS INDIAN ECONOMY TO EXPAND TO 4-YEAR HIGH OF 7.2% IN 2021

The United Nations Conference on Trade and Development (UNCTAD) has pegged India's economic growth rate to hit a four-year high of 7.2 per cent for 2021.

Highlights:

- With 7.2 percent **India** would be the fastest growing economy after China, which is projected to grow by 8.3 per cent.
- The calculations are based on GDP at constant dollars in 2015.
- In India, **consumer inflation** was at six per cent before the pandemic. The Covid-19 shock caused a temporary **dip in prices**.
- As the economy recovered and food prices accelerated, the country returned to a six per cent inflation rate in mid-2021.
- Inflation based on the **Consumer Price Index (CPI)** moderated to a four-month low of 5.3 per cent in August 2021 from 5.59 per cent in July 2021.

- Unanticipated **second wave of the pandemic**, compounded by bottlenecks in the vaccine roll-out, hit India in the second quarter, on top of rising food and general price inflation.

UNCTAD:

- United Nations Conference on Trade and Development (UNCTAD) was established in 1964 to promote **development-friendly integration** of developing countries into the world economy.
- It is a permanent **intergovernmental body** under the United Nations General Assembly.
- **Headquarters:** Geneva, Switzerland.

Objectives of UNCTAD:

- Understand options to address **macro-level development challenges**.
- Acquire **beneficial integration** into the international trading system.

- Reduce the dependency on commodities by diversifying the economies.
- Decrease their exposure to debt and financial volatility.
- Increase development-friendliness by attracting more investments.
- **Increase technologies** related to the digital domain.
- Give more thrust to **innovation and entrepreneurship**.

- Aid local firms to move up value chains.

UNCTAD Reports:

It publishes important reports like:

- Trade & Development Report
- World Development Report
- The Least Developed Countries Report
- Information and Economy Report
- Commodities and Development Report
- Technology and Innovation Report

WHAT IS GOOD ABOUT A 'BAD BANK'

Finance Minister of India has announced the formation of **India's first-ever "Bad Bank"**.

Highlights:

- The National Asset Reconstruction Company Limited (NARCL)- India Debt Resolution Company Ltd (IDRCL) structure is the **new bad bank**.
 - The government has okayed the use of **Rs 30,600 crore** to be used as a guarantee.
1. **The National Asset Reconstruction Company Limited:**
 - It will acquire stressed assets worth about Rs 2 lakh crore from various commercial banks in different phases.
 2. **India Debt Resolution Company Ltd (IDRCL)**
 - It will sell the stressed assets in the market.

Bad Bank?

- A **bad bank** is a bank set up to buy the bad loans and other illiquid

holdings of another financial institution.

- The entity holding significant **nonperforming assets** will sell these holdings to the bad bank at market price.
- By transferring such assets to the bad bank, the original institution may clear its balance sheet.
- If the **proportion of bad loans** (calculated as a **percentage of the total advances**) rise, then it leads to:
 - The concerned bank becomes **less profitable** because it must use some of its profits from other loans to make up for the loss on the bad loans.
 - It becomes more **risk-averse**.
- In India, the level of **NPA**s rose alarmingly since 2016. This was a result of the RBI requiring banks to clearly recognise the bad loans on their books.

The requirement of bad bank:

- It was argued that the government needs to create a bad bank, an

entity where all the bad loans from all the banks can be placed.

- It will reduce “**stressed assets**” of the commercial banks allowing them to focus on resuming normal banking operations, especially lending.
- While commercial banks resume lending, the bad bank would sell these “**assets**” in the market.

Working of NARCL-IDRCL:

- The NARCL will first purchase bad loans from banks. It will pay 15% of the agreed price in cash and the remaining 85% will be in the form of “**Security Receipts**”.
- When the assets are sold, with the help of IDRCL, the commercial banks will be paid back the rest.
- If the bad bank is unable to sell the bad loan, then the government guarantee will be invoked.

- Thus, it will be paid from the Rs 30,600 crore that has been provided by the government.

Benefits of a Bad Bank:

Providing Lending Leverage to Banks:

- The benefits include recovered value, and significant lending leverage because of:
 - Capital being freed up from less than fully provisioned bad assets.
 - Capital freed up from security receipts because of a sovereign guarantee.
 - Cash receipts that come back to the banks and can be leveraged for lending, also freeing up provisions from the balance sheet.

Revival of Credit Flow:

- A bad bank can help free capital of over ₹5 lakh crore that is locked in by banks as provisions against the bad loans.

GST MEETING: PETROL, DIESEL LIKELY ON AGENDA; DETAILS HERE

Finance Minister of India chaired the **45th** Goods and Services Tax (GST) Council meeting held in Lucknow, Uttar Pradesh recently.

Highlights:

- **Petrol and diesel** will not be brought under the GST regime yet.
- GST rate on **biodiesel**, which is supplied to oil marketing companies for blending with diesel, has been **reduced** from 12% to 5%.
- GST rates on **Retro Fitment Kits** for vehicles, used by persons with special disabilities, have also been reduced to 5%.
- Online food delivery aggregator firms **Swiggy and Zomato** will be

liable to pay GST and not the restaurant partners.

- Food delivery apps will now collect and deposit GST with the government.
- GST rate on **fortified rice kernels** for schemes like integrated child development schemes has been recommended to be reduced from 18% to 5%.
- **Transport of export goods** by vessels and air has been exempt from GST till September 30. This exemption was given as exporters were facing difficulties in getting a refund of ITC (**Input Tax Credit**) due to technical glitches on the GST portal.

- **National permit fees** for granting permits to goods carriages (charged by the states) has been exempted from the GST regime.
- **Cess** to pay back **compensation loans** taken by Centre and then transferred to states last fiscal and this fiscal will continue till March 2026.
 - Beyond June 2022, the cess will be collected only to repay the loans taken by the states
- **Inverted duty structure** on footwear and textiles will be corrected from January 1, 2022.
- On **locomotives and certain railway parts**, the GST rate has been increased to 18% from 12% to correct the inverted duty structure.
- GST of 12% will be applicable on **specific renewable devices**.
- Concessional GST rates on **COVID-19 related drugs** have been extended till December 31.
- GST rates on **cancer-related drugs** such as Keytruda etc. will come down from 12% to 5%.
- Expensive imported drugs such as **Zolgensma** and **Viltesto** are exempted from GST.
 - They are used to treat Spinal Muscular Atrophy (SMA), & cost around Rs 16 crores.

GST Council:

- GST Council is the **governing body** of GST having 33 members.
 - Out of which 2 members are of Centre and 31 members are from 28 state and 3 Union territories with legislation.
- The council contains the **following members:**
 - Union Finance Minister (as chairperson)
 - Union Minister of States in charge of revenue or finance (as member)
 - Ministers of states in charge of finance or taxation or other ministers as nominated by each state's government (as member).
- GST Council is an **apex member committee** to modify, reconcile or to procure any law or regulation based on the context of goods and services tax in India.
- The council is responsible for any revision or enactment of rule or any rate changes of the goods and services in India.

SC INTRODUCES FAST AND SECURED TRANSMISSION OF ELECTRONIC RECORDS SYSTEM

The Supreme Court has introduced '**Fast and Secured Transmission of Electronic Records**' (FASTER) system, by which the crucial decisions can be communicated electronically to prison authorities and investigating agencies.

Highlights:

- The **e-authenticated copies** of the record of proceedings/orders, digitally signed by the authorised officer may be transmitted through **FASTER system** to the duty-holders of the justice system.
- The system will ensure that **undertrials** are **not made to**

wait for days on end behind bars to be released because the certified hard copies of their **bail orders were late to reach the prison.**

- It will prevent **unnecessary arrests** and custody of people even

after the court has granted them protection.

- It may even communicate a **stay on an execution** ordered by the final court on time.

CCI SLAPS RS 873 CRORE FINE ON UBL, CARLSBERG, OTHERS FOR 'CARTELISATION' OF BEER SALE

Competition Commission of India slapped a penalty of Rs 873 crore on the companies as well as the All-India Brewers Association and 11 individuals for cartelization in the sale and supply of beer in 10 states and Union Territories.

- **United Breweries Ltd (UBL), Carlsberg India Pvt Ltd (CIPL)** and Anheuser Busch InBev India, had colluded to fix beer prices between 2009 and 2018.

What Is a Cartel?

- A cartel is an **organization** created from a formal agreement between a group of producers of a good or service to regulate supply in order to regulate prices.
- It is a **collection of independent businesses** or countries that act together as if they were a single producer and thus can fix prices for the goods they produce and the services they render, without competition.

Key Points:

- Cartels are competitors in the same industry and seek to reduce that competition by controlling the price in agreement with one another.
- Strategy used by cartels include reduction of supply, price-fixing,

collusive bidding, and market carving.

- In most regions, cartels are considered illegal and promoters of anti-competitive practices.
- The actions of cartels hurt consumers primarily through increased prices and lack of transparency.

How Cartel can be worse than Monopoly?

- Cartels could extract a **higher social cost** than even monopolies.
- Monopolies are a source of social loss through productive inefficiencies. The reduced product innovation, is a greater problem with cartels than monopolies.
- Given that innovation would require the expenditure of research and development costs, such investment would not be undertaken.
 - Since the monopolist, unlike the cartel, must be concerned with other firms developing goods which may be less expensive substitutes for its goods,
 - The monopolist may have greater incentive for research and development expenditure.
- Thus, the social costs of reduced product innovation may be greater with cartels.

- Cartels neither have any incentive to invest in research aimed at improving their product nor do they see any reason why they should boost investments towards making the methods of production more efficient.

Competition Commission of India:

- The Competition Commission of India was established in 2003.
- **Aim:** To establish a competitive environment in the economy through engagement with the stakeholders, government, and international jurisdiction.

Objectives:

- To prevent practices that harm the competition.
- To promote and sustain competition in markets.
- To protect the interests of consumers.
- To ensure freedom of trade.

Formation of the Commission:

- The CCI was established under the provisions of the Competition Act 2002.

- The Competition (Amendment) Act, 2007 was enacted to amend the Competition Act, 2002.
- This led to the establishment of the CCI and the **Competition Appellate Tribunal**.

Functions of the Commission:

- Ensuring the benefit and welfare of the customers are maintained in the Indian Market.
- Inclusive economic growth through fair and healthy competition in the economic activities of the nation.
- Efficient utilization of the resources through the execution of competition policies.
- It is the antitrust ombudsman for small organizations.
- It scrutinizes any foreign company that enters the Indian market through a merger or acquisition to ensure that it abides by India's competition Act 2002.
- It ensures interaction and cooperation with the other regulating authorities in the economy.

SEBI APPROVES FRAMEWORKS FOR GOLD AND SOCIAL STOCK EXCHANGES

Securities and Exchange Board of India approved new measures including frameworks for gold, social stock exchange and introduction of silver Exchange Traded Funds.

Framework For Gold Exchange:

- The instrument representing gold will be called '**Electronic Gold Receipt**', it will be notified as "**securities**" under Securities Contracts (Regulation) Act, 1956.

- EGRs will have the trading, clearing and settlement features akin to any other security instruments.
- Any recognized stock exchange, existing and new, can launch trading in EGRs in a separate segment.
- **Trading of EGR** and conversion into gold, will be decided by the recognized stock exchanges, with the approval of the market regulator.

- EGR holder can continue to hold the EGR if intended.
- At his discretion, he can withdraw the underlying gold from the vaults, upon surrender of the EGRs.
- EGRs will be made "**fungible**" and "**inter-operability between Vault Managers**" will be allowed to lower the costs associated with withdrawal of gold from the vaults.

Framework for Social Stock Exchange:

- SSE must be **Non-Profit Organization (NPO)** and **For-Profit Social Enterprise (FPE)** with social intent and impact.
- It will engage in a social activity out of the 15 eligible activities approved by the Board.
- Eligible **Non-Profit Organizations** may raise funds through equity, Zero Coupon Zero Principal bonds, Mutual Funds, Social Impact Funds.
- NPOs raising funds on SSE will be required to be registered with SSE.
- Social Venture Funds will be termed as Social Impact Funds (SIFs). The corpus requirements for such funds shall be reduced from ₹ 20 crore to ₹ 5 crore.
- The concept of "**muted returns**" will be removed.
- Social audit will be mandated for Social Enterprises raising funds/registered on SSE.

Introduction Of Silver Exchange Traded Funds:

- The Board approved an amendment to **SEBI Regulations, 1996** to enable introduction of Silver Exchange Traded Funds with certain safeguards including the existing regulatory mechanism for Gold ETFs.

Electronic Gold Receipts:

- The government wants India's outsized influence in the physical market for gold to be visible in the financial market for gold as well.
- It is a way of getting people to not hoard gold, by creating an exchange that provides transparent pricing and liquidity.
- SEBI's concept proposes, issuing an electronic gold receipt in exchange physical gold, deposited with a vault manager, and this receipt can then be traded.

Exchange Traded Funds:

- It is a basket of securities that trade on an exchange just like a stock.
- ETF share prices fluctuate all day as the ETF is bought and sold.
- It contains all types of investments including stocks, commodities, or bonds.
- They offer low expense ratios and fewer broker commissions than buying the stocks individually does.

CREDIT GUARANTEE SCHEME FOR MSMES EXTENDED TILL MARCH 31

The **Ministry of Finance** has extended the **Emergency Credit Line Guarantee**

Scheme by six months till 31st March, 2022.

Highlights:

- **Loans** sanctioned have crossed Rs. 2.86 lakh crore under the Scheme in September 2021.
- About 95% of the **guarantees** issued are for loans sanctioned to Micro, Small and Medium Enterprises.
- The government extended the scheme for **six months**, or till guarantees for an amount of Rs 4.5 lakh crore are issued under the scheme.
- The goal is to **support** various **businesses** impacted by the second wave of COVID 19 pandemic
- The last date of disbursement under the scheme has been extended to 30 June 2022.

Amendments:

- **Existing borrowers** under ECLGS 1 would be eligible for additional credit support of up to 10% of total credit outstanding on 29.02.2020 or 31.03.2021.
- Businesses who have not availed **assistance** under ECLGS 1, can avail credit support up to 30% of their credit outstanding as on 31.03.2021.
- **Businesses in sectors** specified under ECLGS 3.0, can avail credit support up to 40% of their credit outstanding as on 31.03.2021, to the maximum of Rs.200 crore per borrower.
- **Incremental credit** can be availed within the limits by existing ECLGS borrowers whose eligibility increased due to cutoff date 31.03.2021 from 29.02.2020.

- **Borrowers** who have availed assistance under ECLGS and whose credit outstanding as on 31.03.2021 is higher than that on 29.02.2020 shall be eligible for incremental support within the cap under ECLGS 1,2, 3.

ECLGS Scheme:

- It has been formulated as a **specific response** to the situation caused by COVID-19 which has severely impacted manufacturing and other activities in the MSME sector.
- **Aim:** To mitigate the economic **distress being faced by MSMEs** by providing funding up to Rs. 3 lakh crores in the form of a fully guaranteed emergency credit line.

Objective:

- To provide an **incentive to banks**, financial institutions, and non-banking financial companies to enable availability of additional funding facility to MSME borrowers, by providing 100% guarantee for any losses suffered by them due to non-repayment by the borrowers.

Features:

- Funding under **Emergency Credit Line Guarantee** shall be provided with a 100% credit guarantee by National Credit Guarantee Trustee Company to Member Lending Institutions under **ECLGS**.
- **Tenor of loan** under Scheme shall be four years with moratorium period of one year on the principal amount.
- **No Guarantee Fee** shall be charged by NCGTC from (MLIs) under the Scheme.

- **Interest rates** are capped at 9.25% for banks and FIs, and at 14% for NBFCs.

MSME MINISTER LAUNCHES INDIA EXPORT INITIATIVE AND INDIA Xports 2021 PORTAL

Ministry of Micro, Small and Medium Enterprises inaugurated the India Export Initiative and India Xports Portal on 29th September 2021 in New Delhi.

Highlights:

- **India Xports** aims to orient MSMEs free of cost, with the objective of focusing on the untapped export potential in existing tariff lines.
- It seeks to **support MSMEs** in order to grow the number of exporting MSMEs and increase MSME exports by 50% in 2022.

India Xports Portal:

- The portal serves as a **knowledge base** for exports by Indian MSMEs.

- It provides information related to export potential for all the 456 tariff lines along with the potential markets, trends in exports, export procedures etc.
- Instructor led **orientation** will be provided to MSMEs highlighting the opportunities in specific products in international markets.
- It targets 1 lakh+ MSMEs interested in **exports** and hand holding 30,000+ MSMEs to start exporting, doubling the base of active exporters.



INDIAN NAVY'S MAIDEN EXERCISE WITH ALGERIAN NAVY

Recently, the **Indian Navy** has conducted **Maritime Partnership Exercise** with **Algerian Navy**.

Maritime Partnership Exercise with Algeria

- The Indian Navy was represented by **INS Tabar**.

- It held off the Algerian coast and saw participation of a frontline Algerian warship, 'Ezzadjer'.
- It included diverse activities such as **coordinated manoeuvring, communication procedures** and **steam past**.

Significance of Maritime Partnership Exercise with Algeria

- It enabled the two navies to understand the **concept of operations** followed by each other.
- It provides **enhanced interoperability** and opened the possibility of **increasing interaction and collaboration** between them in future.
- The naval exercise with Algeria is very important for India as it is **strategically located in the Maghreb region** and is the largest country of Africa.

India-Africa Maritime Cooperation?

- India has been gradually increasing its **engagements with the navies in the African continent** through frequent naval deployments and port visits.
- An inclusive **regional maritime security infrastructure** has been set up with the participation of the island states which are strategically located and there are constant interactions at the operational level.
- A **robust information sharing mechanism** has been set up by India to monitor the activities in the IOR.
- An Indian- led initiative **Indian Ocean Rim Association (IORA)**, is headquartered in Mauritius and has eight African members including the strategic island states like Madagascar and Comoros.

Integrated Maritime Strategy 2050 of the African Union

- The main aim of the Strategy is to **foster increased wealth creation** from Africa's oceans and seas.

- It can be done by developing a **sustainable thriving blue economy** in an environmentally sustainable and secure manner.

Importance of Maritime Domain for India and Africa

- A secure maritime environment in the Indian Ocean Region (IOR) is crucial for both India and African countries for **securing national interests and achieving sustained national development**.
- India has a vast coastline of 7,500 kilometers and an EEZ of two million square kilometers and it occupies a **central position in the IOR**, straddling the main international shipping lanes.
- Africa's maritime environment is globally significant as **huge amounts of international shipping activities** pass through its seas.
- Around 90 percent of the continent's trade is carried out by sea, thereby making the **African Maritime Domain (AMD) crucial for commercial, security, environmental, and developmental reasons**.

INS Tabar

- It is a **Talwar-class stealth Frigate** built for the Indian Navy in Russia.
- It is equipped with a **versatile range of weapons and sensors**.
- It is a part of the **Indian Navy's Western Fleet** which is based in Mumbai under Western Naval Command.
- It was commissioned in **2004 in Kaliningrad, Russia**.

HOW INDIAN ROYAL JELLY CAME UP TO MARK, BEAT TOP-QUALITY PRODUCTS FROM THAILAND, TAIWAN

Recently, the **Indian Royal Jelly** has been found to surpass top-quality sellers, including those produced in Thailand and Taiwan.

Royal Jelly?

- It is a **pearly white or pale yellow-coloured** cohesive mixture of honey and secretions from the **hypopharyngeal and mandibular glands of worker honeybees**.
- It contains **moisture or water** (60-70 per cent), **lipids** (1-10 per cent), **minerals** (0.8-3 per cent), **proteins** (9-18 per cent), **sugar** (7 per cent) and other elements.

- It is produced artificially by **stimulating bee colonies** to produce queen bee, grown outside its natural habitat.
- It needs to be stored in **sub-zero temperatures immediately after production**, during packaging and also at the consumer's end.
- The perfect time to harvest royal jelly is when the **maximum amount gets accumulated** upon the larva turning 5 days old.
- The recommended temperature for **fresh royal jelly is below -20 degrees Celsius**.

HOW INDIAN ROYAL JELLY FARES AGAINST ISO STANDARDS

Parameter (per cent by mass)	ISO permissible limit	Indian Royal Jelly
Moisture	62 to 68.5	64 to 66
10 HDA	1.4	2.02 to 2.31
Protein	11 to 18	11.56 to 12.97
Total sugar	7 to 18	10.02 to 10.39
Glucose	2 to 9	1.96 to 2.54
Total lipid	2 to 8	2.96 to 6.46

Quality and Standards of Indian Royal Jelly

- It meets the ISO-prescribed standards imposed by the **Food Safety and Standards Authority of India (FSSAI)** in 2019.

- The standards are laid down based on the **concentration of moisture, sugars, protein and Hydroxy acids** with 10 carbon atoms (10 HDA).
- The country-specific standards of royal jelly standards are available

only in **Switzerland, Bulgaria, Brazil and Uruguay** whereas other countries are in the process of devising the same with the help of **International Honey Commission**.

Market and Consumers of Royal Jelly

- In the 1940s, the production techniques of royal jelly were **first developed by Japan**.
- At 600 metric tonnes/year, **China tops the production charts** and is followed by **Taiwan (350 metric tonnes/year)**.
- **Thailand and Italy** are among the other top producers in the world.
- With over 400 metric tonnes/year, **Japan is the world's largest importer** followed by Germany, America and some other European nations.
- **Delhi and north Indian markets mostly supply Chinese-manufactured royal jelly** whereas markets in Mumbai have imports available from Thailand.

Advantages of Royal Jelly

- Royal jelly is **no medicine** but a nutritious substance.
- An average healthy person needs to **consume only about 500 mg (fresh) and 200mg (powder)** in a day to get maximum health benefits.

- Royal jelly is known for its **antioxidant properties**.
- It **cures damaged cells in the body and rejuvenates them** and some cancer patients are advised consumption of royal jelly up to 10mgs.
- Its consumption is suggested to women for **improving their fertility**.
- It is found effective for **women suffering from premenstrual and post-menopausal problems**.

Significance of Indian Royal Jelly meeting ILO standards

- India can now **undertake extensive training of honeybee keepers** exclusively for royal jelly collection and artificial production.
- The estimates say that there are about **2 lakh beekeepers in India** of which not even five per cent are trained in royal jelly collection.
- There is a **huge potential for Indian beekeepers** to enter the manufacturing of royal jelly and make a place as an exporter in the ever-growing international demand.
- India can also **cut down on its imports, especially from China**, whose products are flooding Indian markets.

INDIA PLAYED 'CONSTRUCTIVE ROLE' IN ADOPTION OF UNSC RESOLUTION 2593 ON AFGHANISTAN: FS SHRINGLA

The **UN Security Council adopted a resolution** on Afghanistan on **August 30**, under the presidency of India.

UNSC Resolution 2593:

- The resolution 2593 (2021) was adopted by a **vote of 13** in favour

with two abstentions (Russia and China).

- It has **15 members**- 5 Permanent + 10 Non-Permanent.

The resolution:

- Demanded that **Afghan territory** should not be used to threaten or attack any country or to plan or to finance terrorist acts.
- Reiterated the importance of **combating terrorism** in Afghanistan.
- Condemned the deplorable attacks of August 26, 2021, near **Hamid Karzai International Airport** in Kabul, Afghanistan.
- Reaffirmed the importance of **upholding human rights**,

including those of women, children and minorities.

- Encouraged all parties to seek an **inclusive, negotiated political settlement**, with full, equal and meaningful participation of women.
- Called for enhanced efforts to provide **humanitarian assistance** to Afghanistan and called on all parties to allow safe, unhindered access for the **UN** and its agencies, including with respect to internally displaced persons.

SAND AND DUST STORMS IMPACT OVER 500 MILLION IN INDIA

Asian and Pacific Centre for the Development of Disaster Information Management (APDIM) recently published its findings in the report **“Sand and Dust Storms Risk Assessment in Asia and the Pacific”**.

- APDIM is a regional institution of the **United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP)**.

Highlights of the report:

- The report identified **four main sand and dust storm corridors** of Asia-Pacific: ‘east and northeast Asia’, ‘south and southwest Asia’, ‘central Asia’ and the ‘Pacific’.
- The region is the **second-largest emitter of mineral dust**.
 - Sand and dust storms are a **transboundary meteorological hazard**.

MULTITUDINOUS IMPACT:

Human health and cities:

- More than **500 million people in India** and more than **80 per cent of the populations of Turkmenistan, Pakistan, Uzbekistan, Tajikistan and Iran** are exposed to medium

and high levels of poor air quality due to sand and dust storms.

- Sand and dust storms **contribute significantly to poor air quality** in Karachi, Lahore and Delhi in ‘southwest Asia’.
- Nearly 60 million people in these places experienced **more than 170 dusty days a year in 2019**.
- The situation is much **worse for six million residents of eight cities** across the region. 3 in China, 2 in Iran, 2 in Pakistan and 1 in Uzbekistan.
 - These places had **unhealthy concentrations of particulate matter** in the air every day for **at least ten months in 2019**.

Energy:

- India, China and Pakistan lost 1584 gigawatt-hours (gWh), 679 gWh and 555 gWh of energy loss, respectively, due to sand and dust storms in 2019.
 - These losses amounted to over \$107 million (Rs 782 crore) for India per year and exceed \$46 million and \$37

million for China and Pakistan respectively.

- Dust deposition impacted large portions of farmland in Turkmenistan (71 per cent), Pakistan (49 per cent) and Uzbekistan (44 per cent).
- It significantly to the gross domestic product and foreign exchange earnings in these countries.
- Much of this dust is characterized by **high salt content, making it toxic for plants**. It reduces yield, posing a significant threat to the production of irrigated cotton and other crops.

Environment:

- Very high **dust deposition also occurs in the Himalaya-Hindu Kush Mountain range** and the **Tibetan Plateau**.
- They are the sources for fresh water for more than 1.3 billion people in Asia.
- The deposition of dust on glaciers induces a **warming effect, increasing the melting of ice, with direct and indirect impacts on society** through numerous issues, including food security, energy production, agriculture, water stress and flood regimes.
- Sand and dust storms directly affect **11 of the 17 United Nations-mandated sustainable development goals (SDG):**
 - Ending poverty in all forms

- Ending hunger
- Good health and well-being
- Safe water and sanitation
- Affordable and clean energy
- Decent work and economic growth
- Industry innovation and infrastructure
- Sustainable cities and communities
- Climate action
- Life below water
- The risk of impacts from sand and dust storms is **projected to increase in the 2030s** due to more extreme drought conditions in parts of Western Australia, south-eastern Turkey, Iran and Afghanistan.
- Managing the risks associated with sand and dust storms would also become necessary in parts of northern and southern Thailand, south-eastern China, northern Malaysia and southeastern most Australia.

Positive impacts:

- The impacts of dust storms are not all negative. They can increase the nutrient content in the areas of deposition and benefit vegetation.
- Dust deposited on water bodies can alter their chemical characteristics, triggering both positive as well as adverse outcomes.
- Dust particles that **carry iron can enrich parts of oceans**, improving the phytoplankton balance and impacting marine food webs.

INDIAN ARMY DEMONSTRATES ITS BATTLE DRILLS, FIRING SKILLS AT ZAPAD 2021

A 200 personnel contingent of Indian Army will participate in Exercise ZAPAD 2021 from 03 to 16 September 2021.

- It is a Multi Nation exercise being held at **Nizhniy, Russia.**
- Countries from Eurasian and South Asian Region will participate in this signature event.
- The NAGA Battalion group participating in the exercise, will

feature an all Arms combined task force.

ZAPAD

- ZAPAD 2021 is one of the **theatre level exercises of Russian Armed Forces** and will focus primarily on **operations against terrorists.**
- **Aim:** To enhance military and strategic ties amongst the participating nations.

INDIA, RUSSIA TIES HAVE STOOD TEST OF TIME - 6th EASTERN ECONOMIC FORUM 2021

Prime Minister of India addressed the virtual session of **6th Eastern Economic Forum (EEF)** held on 3 September 2021 in Vladivostok, **Russia.**

Highlights:

- India applauded Russia's vision for development of **Russian Far East region.**
- India reiterated its commitment of being a reliable partner of **Russia** as part of its Act East Policy.
- The importance of **health and pharma sectors** as important areas of cooperation was highlighted. Other potential areas of **economic cooperation** include diamond, coking coal, steel, timber etc.

Eastern Economic Forum:

- Eastern Economic Forum is an **international forum** held **annually** in Vladivostok, Russia for encouraging foreign investment in the **Russian Far East.**
- **Established** by President of Russian Federation in **2015.**

- It is also a **key platform** for discussion of issues in world economy, regional integration, and the development of new industrial and technological sectors, as well as of the global challenges faced by Russia and other nations.
- Forum's business programme includes a number of business dialogues with leading partner countries in **Asia-Pacific region**, and **Association of Southeast Asian Nations (ASEAN).**

Russian Far East region:

- Russian Far East is a region in Northeast Asia and the **easternmost part of Russia.**
- It is located between **Lake Baikal** and the **Pacific Ocean.**
- It shares **land borders** with Mongolia, China, and North Korea to its south.
- It shares **maritime boundaries** with Japan to its southeast, and United States along the **Bering Strait** to its northeast.

INDIA, US SIGN PACT FOR COOPERATION IN DEVELOPMENT OF AIR-LAUNCHED UNMANNED VEHICLE - ALUAV

India and the United States have signed a Project Agreement for Air-Launched Unmanned Aerial Vehicle (**ALUAV**) under the Defence Technology and Trade Initiative (**DTTI**).

Key's

- It is a **collaboration** between Air Force Research Laboratory, and Defence Research and Development Organisation towards design, development, testing and evaluation of systems to develop an ALUAV prototype.
- **Aim:**

- To bring sustained leadership focus to promote collaborative technology exchange.
- **To create opportunities** for co-production and co-development of future technologies for Indian and U.S. military forces.
- Under DTTI, **Joint Working Groups** on land, naval, air, and aircraft carrier technologies have been established for focus on mutually agreed projects.
- DTTI was announced in 2012 as an ambitious initiative for **co-production** and co-development of military.

LOGISTICS AGREEMENT WITH RUSSIA SHORTLY, IN FINAL STAGES WITH U.K.

India is set to conclude the bilateral logistics agreement **Reciprocal Exchange of Logistics Agreement (RELOS)** with Russia, while the agreement with the U.K. is in the final stages of conclusion.

- The RELOS will give India access to Russian facilities in the **Arctic region**.
- **It will increase global activity** as new shipping routes will open and

India's own investments in the Russian Far East.

Key fact:

India has signed **several logistics agreements** with all Quad countries, France, Singapore and South Korea beginning with the Logistics Exchange Memorandum of Agreement (**LEMOA**) with the U.S. in 2016.

INDIA, SINGAPORE CONDUCT 3-DAY MEGA NAVAL WARGAME NEAR SOUTH CHINA SEA

India and Singapore have carried out a **mega naval wargame** in the southern fringes of the **South China Sea** recently.

- It was the 28th edition of the Singapore-India Maritime Bilateral Exercise (SIMBEX).

SIMBEX:

- Singapore India Maritime Bilateral Exercise (SIMBEX) is an **annual bilateral naval exercise** conducted

by Indian Navy and Singapore Navy since **1994**.

- It is Indian Navy's **longest uninterrupted bilateral maritime exercise** with any foreign navy.
- The Indian Navy deployed its guided-missile destroyer INS Ranvijay, anti-submarine warfare corvette INS Kiltan and guided-missile corvette INS Kora and one

P8I long-range maritime patrol aircraft for the 'SIMBEX' exercise.

- The Singapore Navy was represented by formidable class

frigate RSS Steadfast, victory class missile corvette RSS Vigour, one Archer class submarine and one Fokker-50 maritime patrol aircraft.

WHY THE WORLD SHOULD BE MORE THAN A BIT WORRIED ABOUT INDIA'S NIPAH VIRUS OUTBREAK

Kozhikode in **Kerala** is seeing re-emergence of **Nipah virus**, with some casualties associated with the virus.

Nipah Virus:

- Nipah virus is a **zoonotic virus** or **bat-borne virus** that causes virus infection in humans and other animals.
- It can also be transmitted through contaminated food or directly between people.
- It causes a **range of illnesses** from asymptomatic infection to acute respiratory illness and fatal encephalitis in humans.
- The virus can also cause **severe disease** in animals such as pigs, resulting in significant economic losses for farmers.

Transmission:

- Consumption of fruits contaminated with urine or saliva from infected fruit bats.
- Human-to-human transmission among family and care givers of infected patients.
- Spreads directly from human-to-human through close contact with people's secretions and excretions.

Symptoms:

- Human infections range from asymptomatic infection to acute respiratory infection and fatal encephalitis.
- Symptoms include fever, headaches, myalgia (muscle pain), vomiting and sore throat.
- The incubation believed to range from 4 to 14 days.
- The case fatality rate is estimated at 40% to 75%.

Treatment:

- There are currently **no drugs** or vaccines specific for the infection.
- Intensive supportive care is recommended to treat severe respiratory and neurologic complications.

Prevention:

- Cleaning and disinfection of pig farms with appropriate detergents.
- Reducing the risk of bat-to-human transmission.
- Reducing the risk of human-to-human transmission.
- Health-care workers with confirmed infection, should implement standard infection control precautions.

INDIAN NAVY AND RAN BEGIN FOURTH EDITION OF AUSINDEX EXERCISE

Royal Australian Navy (RAN) and Indian Navy commence **Bilateral** exercise – ‘AUSINDEX’.

Highlights:

- The 4th edition of AUSINDEX is being held in September 2021 in **North Australian exercise area**.
- Includes complex surface and air operations between ships,

submarines, helicopters, and Long-Range Maritime Patrol Aircraft of the participating Navies.

- Royal Australian Navy (RAN) Anzac Class Frigate, **HMAS Warramunga** will participate in the exercise.
- Participating Indian Naval Ships are **Shivalik and Kadmatt**.

PIYUSH GOYAL IS SHERPA FOR G20 SUMMIT

The government has appointed Union Minister for Commerce & Industry, as Sherpa for the G20 summit.

G20 Summit:

- The G20 is an annual meeting of leaders from the countries with the largest and fastest-growing economies.
- Its members account for **85%** of the world’s GDP, and two-thirds of its population.

Origin of G20:

- After the **Asian Financial Crisis in 1997-1998**. The G7 finance ministers established the G20 Finance Ministers and Central Bank Governors meeting in 1999.

Aim:

- To promote of International Financial stability.
- To solve Balance of Payments problems and financial markets by improved coordination of monetary, fiscal, and financial policies.

Member countries of G20:

- The G20 comprises **19 countries** and the **European Union**.
- The 19 countries are: Argentina, Australia, Brazil, Canada, China, Germany, France, **India**, Indonesia,

Italy, Japan, Mexico, Russia, Saudi Arabia, South Africa, South Korea, Turkey, United Kingdom and United States.

Functioning of G20:

- The G20 **does not have a permanent secretariat** or Headquarters.
- G20 Presidency rotates annually according to a system that ensures a regional balance over time.
- Every year the G20 selects a country from another group to be president.
- The president is responsible for **bringing together the G20 agenda** in consultation with other members and in response to developments in the global economy.

India’s priority in G20 summits:

- Checking tax evasion to fight corruption, choking terror funds.
- Cutting the cost of remittances, market access for key drugs.
- Reforms in the World Trade Organisation to improve its functioning
- Full implementation of the Paris Agreement

Sherpa?

- A Sherpa is a **personal representative** of the leader of a member country at an international Summit meeting such as G20.
- He engages in planning, negotiation, and implementation tasks through the Summit.
- They coordinate the agenda and participate in a series of pre-Summit consultations to help negotiate their leaders' positions.
- Sherpas are **career diplomats** or senior government officials appointed by the leaders of their countries.

Role of Sherpa in G20 summit:

- Sherpas meet before the start of the Summit to point out differences on various issues.

- At the G20 Summit, work progresses through two channels: the Finance Track and Sherpas' Track.
- Track representatives, prepare the Leaders' "Declaration" or "Communique", which is the outcome of the G20 Summit.
- The Sherpas' Track involves **technical and policy analyses** by working groups comprising officials from each member country and international organizations.
- It focuses on development-oriented issues such as agriculture, fighting corruption, employment, etc.

PM MODI TO CHAIR 13TH BRICS SUMMIT IN VIRTUAL FORMAT: MEA

The **13th BRICS** summit was held **virtually** chaired by the Prime Minister of India.

- It called for an **inclusive intra-Afghan dialogue** for stability in Afghanistan.

Highlights of the Summit:

- It focused on the developments in Afghanistan, and adopted **BRICS Counter Terrorism Action Plan**.
- The BRICS leaders called for **settling the situation by peaceful means**.
- They condemned the terrorist attacks at the Hamid Karzai International Airport, Afghanistan.
- The document titled the '**New Delhi Declaration**' called for addressing the humanitarian situation in Afghanistan and urged the need to

uphold rights of women, children and minorities.

- It emphasized the importance of the principle of **non-interference** in international affairs.
- Issues related **conflicts in Myanmar**, Syria, the tension in the **Korean peninsula**, Israel-Palestine violence were discussed.
- It recommended strategy to strengthen **counter pandemic cooperation** and **multilateral reform** due to COVID-19 Pandemic.
- The summit called for reform of the **UN Security Council** and urged to **revitalize** the UN General Assembly.
- There was an agreement on **Remote Sensing Satellite**

Constellation between the space agencies of the member nations.

BRICS:

- **BRICS** is a group of the world's leading emerging economies, namely **Brazil, Russia, India, China,** and **South Africa**, established in **2006**.
- **Headquarters:** Shanghai, China

Structure:

- It is an **annual summit** between the supreme leaders of five nations.
- The Chairmanship of the forum is **rotated annually** among the members, in accordance with the acronym B-R-I-C-S.
- BRICS cooperation in the past decade has expanded to include an **annual Programme** of over 100 sectoral meetings.

Salient Features:

- BRICS accounts for about **40%** of the world's population and about 30% of the GDP making it a critical economic engine.
- It is an **emerging investment market** and global power bloc.

Objectives:

- It seeks to intensify **cooperation** within the grouping and among the individual countries for more sustainable, equitable, and mutually beneficial development.
- Takes into consideration each member's growth, development, and poverty objectives to ensure relations are built on the respective country's **economic strengths**.

- It is emerging as a new and promising **political-diplomatic entity** with diverse objectives of reforming global financial institutions.

Significance of BRICS for India:

- **Geo-Politics:** India finds itself in the middle of Geopolitics today.
- This has made difficult for India for balancing its strategic interests between the U.S and the Russia-China axis.
- BRICS platform provides an opportunity for India to balance Russia-China axis.
- **Global Economic Order:** BRICS countries shared a common objective of reforming the international financial and monetary system.
- BRICS community plays an important role in the G20, in shaping global economic policies and promoting financial stability.
- **Voice of Developing Nations:** As the western countries are raising challenges on issues from World Trade Organisation to climate change, the developing countries are crippling under these policies.
- BRICS has emerged as the voice of developing countries.
- **Terrorism:** BRICS provides a platform for India to galvanize its efforts against terrorism and bring about focused consultations on specific aspects relating to terrorism.

INDIA, U.S. AGREE TO COLLABORATE ON EMERGING FUELS

Minister of Petroleum and Natural Gas co-chaired a virtual Ministerial meeting with U.S. Secretary of Energy to launch the U.S.-India **Strategic Clean Energy Partnership** (SCEP).

SCEP:

- SCEP is launched in accordance with **U.S.-India Climate and Clean Energy Agenda 2030**.
- SCEP organizes inter-governmental engagement across five pillars of cooperation:
 1. Power and Energy Efficiency
 2. Responsible Oil and Gas
 3. Renewable Energy
 4. Sustainable Growth
 5. Emerging Fuels

Highlights of the Meeting:

- The revamped **clean energy partnership** will intensify the efforts from both sides to take advantage of the complementarities that exist between US and India.

- Emphasis on upscaling cooperation under the **renewable energy pillar**.
 - India’s renewable energy target is 450 GW by 2030.
- Strengthening **electric grid** in India to support large-scale integration of renewables, as well as promoting energy efficiency and conservation measures.
- India-US Low Emissions Gas Task Force, on innovative projects to support India’s vision of gas-based economy.
- Institutionalization of **India Energy Modeling Forum** with the constitution of Six Task Forces for carrying out research and modeling in different areas.
- Expanding the scope of smart grid and storage as part of the **Partnership to Advance Clean Energy (PACE)**-R initiative.

KONGTHONG AMONG 3 INDIAN ENTRIES FOR UNWTO ‘BEST VILLAGE CONTEST

Meghalaya’s **whistling village** – **Kongthong** has been selected as one of three India entries for the United Nations World Tourism Organization (UNWTO) **‘Best Tourism Village’ contest**.

- The other two villages that have been selected are **Pochampally of Telangana** and **Ladhpura Khas in Madhya Pradesh**.

Whistling village:

- Kongthong located in **East Khasi Hills** district of Meghalaya. It is popularly known as “whistling village”.

- The village is talked about for its unique tradition called **‘Jingrwai lawbei’** where a **mother assigns a tune or lullaby to a child** within a week of birth, which becomes his/her unique identity, instead of a name.
- The village is nestled in the Khat-ar Shnong area, is famous for its panoramic view, unique culture and virgin beauty.
- Khat-ar-shnong, a valley region in East Khasi Hills, Meghalaya reportedly has several other villages where **people call each other by a**

tune and talk through whistling, apart from Kongthong.

- However, Meghalaya Rural Tourism Forum chairman said that it does not depict the real practice which is called '**rwai sur iaw-bei**'.
- The unique tradition is by **assigning a song as a name to a newborn**

child in no way is associated with whistling.

- The individual actually **produces verbal utterance of words** in the form of a song when naming a child which is totally different from someone who is producing a sound from their mouth in the form of whistling.

MUMBAI TEEN NAMED 2021 INTERNATIONAL YOUNG ECO-HERO FOR ENVIRONMENT PROJECT

A 12-year-old environmental activist from Mumbai- **Ayaan Shankta** has been named as a **2021 International Young Eco-Hero** in recognition of his efforts to solve tough environmental problems.

- He won the third place in the **8-14 age category** for his project **Conservation and Rehabilitation of Powai Lake**.

International Young Eco-Hero:

- Every year since 2003, **Action For Nature (AFN)** has sought to recognize and reward young people

who are taking action to solve the world's tough environmental problems.

- Youth from countries around the globe send in their stories and explain their work.
- Each Eco-Hero Award winner receives **a cash prize of up to \$500**, a certificate of achievement, media coverage, and **exclusive access to the eco-hero alumni facebook group**.

CABINET APPROVES AGREEMENT ON THE RECRUITMENT OF INDIAN CITIZENS TO WORK IN THE PORTUGUESE REPUBLIC BETWEEN INDIA AND PORTUGAL

Union Cabinet has **approved the signing** of an agreement on the recruitment of Indian citizens to work in the Republic of **Portugal**.

Highlights:

- The agreement would set an **institutional mechanism** for partnership and cooperation between **India** and **Portugal** on sending and accepting Indian workers.

- It would ensure that the **movement of workers** happens smoothly with the maximum support from both sides.

Signing this agreement with Portugal will:

- Add **new destination** for Indian migrant workers in an EU member nation.

- Provide **new opportunities** for skilled Indian workers and professionals.

India – Portugal relations:

- India and Portugal share **warm** and friendly relations. Portugal has advocated India's **permanent membership** in the UNSC.
- The countries have signed **various MoUs** in the areas of Defence, Agriculture & Allied sectors, Marine Research & Resources, Space, Avoidance of Double Taxation, Nanotechnology, Biotechnology, Public Administration and Governance Reforms, Culture, Youth & Sports, Higher Education (IITs) etc.
- Several **cultural exchanges** have been organised in Portugal through Indian Council for Cultural Relations (ICCR) under the MoU of **Cultural Cooperation**.
- Portugal has a **large Indian-origin diaspora** of about 120,000.

Trade and Commerce:

- **India-Portugal trade** in FY 2019-20 amounted to **\$886 million**. Indian exports stood at \$ 744.49 million

and Portuguese exports at \$141.82 million.

- **Major exports from India:** Textiles; agriculture products; metals; chemicals; plastic and rubber; footwear; machinery and appliances; leather; vehicles and other transport materials.
- **Major exports from Portugal:** Machinery and appliances; minerals; plastic and rubber; chemicals; metals; textiles and apparels; leather; paper/pulp; wood and cork; optical and precision instruments.

Location of Portugal:

- Portugal is located on the **Iberian Peninsula** in south-western Europe.
- It is bordered to the:
 - West and South by Atlantic Ocean
 - North and East by Spain
- Spain is the **sole country** to have a land border with **Portugal**.
- Portugal shares geographic and cultural commonalities with countries of both northern Europe and Mediterranean.

Capital: Lisbon

INDIA, AUSTRALIA HOLD 2+2 DIALOGUE, JAISHANKAR WELCOMES PAYNE WITH FIST BUMP

India and Australia held the **high-level 2+2 foreign and defence ministerial dialogue** in New Delhi recently.

Highlights:

- The dialogue is aimed at **further strengthen** the overall defence and strategic cooperation between the two countries, including in the **Indo-Pacific**.

- Both sides welcomed the elevation of India-Australia relationship to a **Comprehensive Strategic Partnership (CSP)** during the Leaders' Virtual Summit held in June 2020.
- The shared objective of an **open, free, prosperous and rules-based Indo-Pacific region** was reiterated.

- It is in line with India's increasing engagement in the region through:
 - Indo-Pacific Oceans' Initiative
 - Australia's Indo-Pacific approach and Pacific Step-Up.
- The Ministers intended to **expand cooperation** under the 2+2 framework and to meet at **least once in every two years** to maintain the momentum.
- The next 2+2 Ministerial Dialogue would be held in **2023**.
- The launch of the **Supply Chain Resilience Initiative** by the Trade Ministers of India, Australia and Japan was welcomed.
- It was agreed to **continue** boosting cooperation in the **maritime domain**, as encapsulated in the **Joint Declaration on a Shared Vision for Maritime Cooperation** in the Indo-Pacific, adopted in June 2020.

India – Australia relations:

Economic relations:

- Trade Ministers of India, Japan and Australia formally launched **Supply Chain Resilience Initiative (SCRI)**.
- The countries have upgraded their relationship to a **Comprehensive Strategic Partnership** in 2020.

Multilateral relations:

- The countries have **signed multiple defence agreements** and co-operate in various multilateral fora.
- Both countries are **members** of the Quad, Commonwealth, Indian Ocean Rim Association, ASEAN Regional Forum, Asia Pacific

Partnership on Climate and Clean Development, and participate in East Asia Summits.

- Australia supports India's membership in **Asia Pacific Economic Cooperation** (APEC).

Other Pacts/initiatives:

- **Mutual Legal Assistance Treaty** and **Extradition Treaty** between India and Australia, which were signed in June 2008.
- A **Civil Nuclear Cooperation Agreement** was signed in September 2014.
- India was sent oxygen, ventilators and Personal Protective Equipment (**PPE**) kits by Australia as part of an immediate support package during COVID-19 pandemic.
- The researchers from both countries are working jointly to **advance COVID-19 screening** and study the future health effects of the virus through projects funded by **Australia-India Strategic Research Fund**.

Defence Relations:

- The countries have increased defence cooperation.
 1. AUSINDEX- Bilateral naval exercise
 2. AUSTRALIA HIND- Bilateral exercise with Army
 3. PITCH BLACK- Multilateral air combat training exercise of Australia
 4. Malabar Exercise Phase I- Multilateral exercise comprising Quad countries

INDIA, US LAUNCH CLIMATE ACTION AND FINANCE MOBILIZATION DIALOGUE OF AGENDA 2030 PARTNERSHIP

India and the United States jointly launched the Climate Action and Finance Mobilization Dialogue (CAFMD) of the agenda 2030 Partnership.

Highlights of the Dialogue:

- CAFMD will provide both countries an opportunity to renew collaborations on **climate change**.
- It will address the **financing aspects** and deliver climate finance primarily as grants and concessional finance envisaged under Paris Agreement to strengthen climate action.
- It will strengthen India-US bilateral cooperation on **climate and environment**.
- India aims to achieve 450 GW of **Renewable Energy** by 2030.
- India electrified 28.02 million homes in 18 months and achieved universal household electrification.

United Nations Framework Convention on Climate Change (UNFCCC):

- It is an international environmental treaty which seeks to reduce **atmospheric concentrations of greenhouse gases**.
- UNFCCC was signed in 1992 at the United Nations Conference on Environment and Development, also known as the **Earth Summit**, the Rio Summit.
- There are 197 countries to the convention, meet annually in Conferences of the Parties (COP) to assess progress in dealing with climate change.

Aim:

- To prevent dangerous anthropogenic interference with the earth's climate system.

Countries under UNFCCC:

- **Annex 1:** Industrialized countries and economies in transition.
- **Annex 2:** Developed countries which pay for the cost of developing countries.
- **Annex B:** The countries in this category are Annex I countries, who have first or second-round Kyoto greenhouse gas emissions targets.
- **Least-developed countries:** These countries are given special status under the treaty taking into consideration their limitations adapting to the effects of climate change.
- **Non-Annex I:** countries that are not listed in Annex I come under the category of low-income developing countries.

India and UNFCCC:

- India **ratified** the UNFCCC in 1993. Since India is a developing country, it is not required to adhere to GHG mitigation commitments because of its relatively smaller emissions.

Key facts:

- India played an active role in taking steps to **mitigate climate change**, as it is exposed to risks associated with climate change like erratic monsoons and natural calamities like floods, droughts, landslides, etc.
- **National Environment Policy, 2006** promotes sustainable development along with respect for ecological constraints and the imperatives of social justice.

- The Government of India launched **National Action Plan on Climate Change in 2008**.
- At **COP 21** (Paris Agreement), India had made various commitments to be achieved by 2030.
- India was instrumental in the formation of the **Coalition for Disaster Resilient Infrastructure**.

INDIA TO HOLD BIENNIAL DEFENCE DIALOGUE WITH AFRICAN NATIONS

India will hold the 12th edition of India-Africa Defence Dialogue on the sidelines of **DefExpo** in March 2022 in Gandhinagar, Gujarat.

- **Theme of the event:** 'India-Africa: Adopting Strategy for Synergizing and Strengthening Defence and Security Cooperation'
- This will help in **building on the existing partnerships** between India and the African Continent.
- It will give both sides to **explore new areas of convergence** in areas including maritime security, cyber

security, counter terrorism, capacity building and training.

Key Facts:

- It is going to held after two years of the first India-Africa Defence Ministers' Conclave held in February 2020 in Lucknow.
- At the conclusion of the meeting a Joint Declaration, '**Lucknow Declaration**' was adopted.
- Traditionally, DefExpo was always held at **New Delhi's Pragati Maidan**.

BIDEN TO HOST LEADERS OF AUSTRALIA, INDIA, JAPAN AT WHITE HOUSE NEXT WEEK

The US President will host the **first in-person meeting** of the **Quad countries** on September 24, which would be joined by the Prime Ministers of India, Australia, and Japan.

- The Quad will focus on issues related to the Covid-19 crisis, climate change, cyberspace, and security in the Indo-Pacific.

Formation of the QUAD:

- The Quadrilateral Security Dialogue (QUAD) is a **strategic dialogue** between the United States, Japan, Australia and India.
- It was formed after the Indian Ocean tsunami in 2004 to collaborate

on **disaster relief efforts**, which was formalised in 2007.

- In 2017, with the **rising threat of China**, Quad was revived broadening its objectives and creating a mechanism that aimed to slowly establish a rules-based international order.
- It has focused on **expanding existing agreements** between member countries and highlighting their shared values.
- QUAD conduct **joint military exercises** as a show of unity and diplomatic cohesion.

- In 2020, the trilateral India-US-Japan **Malabar naval exercises** including Australia was the **first joint military exercises** among the four countries.

Objectives of QUAD:

- **Primary objectives** of the QUAD are to secure **rules-based global order**, liberal trading system, maritime security, freedom of navigation and seeks to **contain China**.
- Willingness to expand the partnership through **Quad Plus** that would include South Korea, New Zealand, and Vietnam amongst others.

Importance of QUAD for India:

India as a Net Security provider:

- India must be a Net Security Provider in the Indian Ocean Region, its dominance in the IOR needs to be maintained and sustained.

- QUAD provides India a platform to **enhance security** through partnership in the region as well as emphasize that its idea of Indo-Pacific stands for a free, open, and inclusive region.

Countering China:

- The Quad provides a platform to India to **seek cooperation from countries** on various issues such as **ensuring respect** for territorial integrity and sovereignty and peaceful resolution of disputes.
- It also demonstrates a united front to check the unceremonious activities of China against India.
- It is crucial in present times as relations between India and China have deteriorated due to border incursions along Tibet India border at more than one place.

INDIAN MILITARY CONTINGENT PARTICIPATES IN THE 6TH EDITION OF EXERCISE SCO PEACEFUL MISSION 2021 AT ORENBURG, RUSSIA

The 6th edition of Exercise PEACEFUL MISSION is hosted in the Orenburg Region from 13 to 25 September 2021, by Russia.

Highlights:

- Joint Counter Terrorism Exercise **PEACEFUL MISSION** is a Multilateral Exercise, conducted as part of military diplomacy between **Shanghai Cooperation Organisation (SCO)** member states.
- The aim of the exercise is to **foster close relations** between SCO member states and to **enhance** abilities of the military

leaders to command multi-national military contingents.

- It will provide an opportunity to the Armed Forces of SCO Nations to **train in Counter-Terrorism Operations** in an urban scenario in a multinational and joint environment.
- The scope includes professional interaction, mutual understanding of drills procedures, establishment of joint command & control structures and elimination of terrorist threats.

Indian Contingent:

- Military contingent of all arms combined force of 200 personnel with 38 personnel from the Indian

Air Force will participate in the exercise including two **IL-76 aircrafts.**

INDIA TO JOIN SCO SUMMIT IN DUSHANBE TODAY, AFGHANISTAN AFFAIRS HIGH ON AGENDA

Afghanistan-themed outreach summit between the **Shanghai Cooperation Organisation (SCO) and the Collective Security Treaty Organisation (CSTO)** was held recently.

- The meeting was being **hosted by Tajikistan**, also saw the inclusion of Iran as a new member of the SCO.
- Indian PM commended the step to include Saudi Arabia, Egypt and Qatar as new dialogue partners of the regional organisation.

Highlights of the speech of Indian PM at SCO:

- The political change in Afghanistan **did not lead to an inclusive system** and the process was **not conducted through negotiation.**
- The Taliban has declared an “interim government” in Kabul but India has not yet recognised that set-up.
- The neighbours of Afghanistan would be **seriously impacted by the developments** in that country.
- He expressed India’s support for the “central role” of the United Nations in the global deliberation regarding the current system in Afghanistan.
- The SCO members have been dealing with terrorism and that was why they should ensure that the **territory of Afghanistan was not used to export terrorism.**

- Terrorist and extremist ideologies will receive encouragement if Afghanistan continues to remain unstable and in the grip of fundamentalist forces.
- A large number of advanced weapons were left behind by western powers in Afghanistan, and cautioned that the **country could emerge as the source of uncontrolled flow of drugs, illegal weapons and human trafficking.**
- To deal with the fallout of the volatile situation in Afghanistan, he urged the SCO member-countries to **frame a “code of conduct”** to stop terror financing and cross-border terrorism.
- The SCO member-countries should adopt **strong and common norms to deal with the matter.**

Shanghai Cooperation Organisation (SCO):

- SCO is a permanent intergovernmental political, economic and military organization founded by: China, Kazakhstan, Kyrgyzstan, Russia, Tajikistan, and Uzbekistan in **2001 in Shanghai.**
- Shanghai Five group was **founded in 1996** by all the current SCO members except Uzbekistan.
- After the inclusion of Uzbekistan in 2001, it was renamed as SCO.

- **Aim:** Regional development and security issues (terrorism, ethnic separatism and religious extremism)
- **Official Languages:** Russian and Mandarin

Working structure:

- The Heads of State Council (HSC): Highest decision-making body in the SCO.
- The Heads of Government Council (HGC): Second highest body that deals with the grouping's trade and economic agenda besides approving its annual budget.

Permanent bodies:

- The Secretariat
- The Regional Anti-Terrorist Structure (RATS)– combats regional terrorism, separatism and extremism.

Significance:

- 42% of the world's population
- 20% of the global GDP.
- 4 of its members (India, Russia, China and Pakistan) are nuclear powers and 2 (Russia and China) are permanent members of the UN Security Council (UNSC).

- A counterweight to the North Atlantic Treaty Organization (NATO).

Collective Security Treaty Organization (CSTO)

- It is a **Russia-led military alliance** of seven former Soviet states.
- **Created in:** 2002
- **Current members:** Armenia, Belarus, Kazakhstan, Kyrgyzstan, Russian Federation & Tajikistan
- **Observers:** Afghanistan and Serbia
- **Objective:** To ensure the collective defence of any member that faces external aggression.
- **Counterpart of:** NATO (North Atlantic Treaty Organization)
- **Presidency system:** Rotating presidency system
- **Highest body:** Collective Security Council (CSC)

Functions:

- Counter cyber warfare, narcotics trafficking, the illegal circulation of weapons, transnational
- crime, and terrorism.
- Developed law enforcement training for its members.

INDO - NEPAL JOINT EXERCISE SURYA KIRAN AT PITHORAGARH (UK)

15th edition of Indo - Nepal Joint Military Training, Exercise Surya Kiran between **Indian Army and Nepali Army** is commencing from 20 September 2021 at Pithoragarh (UK).

- The exercise is part of an initiative to develop **inter-operability and sharing expertise** between the two nations.

Highlights:

- It is an annual military exercise between the two countries.
- Both the Armies would familiarise themselves with **each other's weapons, equipment, tactics, techniques and procedures** of operating in a counter-insurgency environment in mountainous terrain.

- There would be a **series of Expert Academic Discussions** on various subjects such as Humanitarian Assistance and Disaster Relief, High

Altitude Warfare, Jungle Warfare etc.

- Last edition of Exercise **Surya Kiran** was conducted in Nepal in 2019.

INDIA RANKS 59TH IN WORLD FOR DIGITAL QUALITY OF LIFE; INDIA'S E-SECURITY BETTER THAN CHINA

The **third annual edition** of the **Digital Quality of Life Index (DQL)** ranks India **59th** among **110** countries.

About the report:

- The **DQL study** is conducted by the cybersecurity company **Surfshark**, and covers **90%** of the global population.
- It provides a **robust global outlook** into how countries excel digitally and sets the basis for digital advancement.
- It evaluates countries based on a set of **five fundamental digital wellbeing pillars**, which include:
 1. e-government
 2. e-security
 3. Internet affordability
 4. Internet quality
 5. e-infrastructure

Highlights:

Top 5 nations:

- **Denmark** ranks 1st in DQL, followed by South Korea, Finland, Israel and the U.S.

Bottom 5 countries:

- Ethiopia, Cambodia, Cameroon, Guatemala, and Angola.

India specific highlights:

- India ranks **33rd** in e-government, **36th** in e-security, **47th** in internet affordability, **67th** in internet quality and **91st** in e-infrastructure.
- India has demonstrated a **slight drop** compared to DQL 2020, falling from 59th to 61st place.
- India ranks **17th** in Asia and **1st** in the Southern Asia region.
- India's **e-security** has improved by **76%** since 2020 and ranks higher than China's.
- **Mobile speed in India** is one of the slowest in the world (12.33 Mbps) and the country comes only 95th in the number of individuals using the internet.

INDIA, UAE FREE TRADE PACT HOLDS HUGE POTENTIAL TO BOOST TRADE, INVESTMENT: GOYAL

India and the **United Arab Emirates** have officially launched negotiations for a **free trade agreement** Comprehensive Economic Partnership Agreement (**CEPA**).

- The agreement is expected to be signed by **March 2022**, after the completion of the legal paperwork and ratification.

Highlights:

- **CEPA** is a strategic economic agreement that is expected to **create new jobs**, raise the living standards, and provide wider social and economic opportunities in both nations.
- It is expected to **increase the bilateral trade** in goods to **\$100 billion** within five years of the signed agreement and increase trade in services to **\$15 billion**.
- The agreement will:
 - Further strengthen the deep trade and economic ties between the two countries.
 - Strengthen the rules-based, transparent, non-discriminatory, open, and inclusive multilateral trading system embodied by the World Trade Organisation.

India – UAE Economic relations:

- UAE is **India's third-largest trading partner** and **second-largest export destination** after the US.
- The exports are valued at approximately **\$29 billion** in the 2019-2020 financial year.
- **India's major exports to UAE** include petroleum products, precious metals, stones, gems and jewellery, minerals, food items such as cereals, sugar, fruits and vegetables, tea, meat, and seafood, textiles, engineering and machinery products, and chemicals.
- **India's top imports from UAE** include petroleum and petroleum products, precious metals, stones, gems and jewellery, minerals, chemicals, wood and wood products.

- India imported USD 10.9 billion of crude oil from the UAE in 2019-2020.
- UAE is the **eighth-largest investor** in India, having invested around \$11 billion between April 2000 and March 2021.
- Investment made by **Indian companies in UAE** is estimated to be **over \$85 billion**.

Important events:

- India and UAE have signed a **Comprehensive Strategic Partnership** signed in 2017 for cooperation on **trade remedy measures**. As per it, both countries will **identify clear areas** of focus and establish ways of working together to resolve trade remedy cases.
- In **2018**, India and UAE signed a historic pact under which a consortium of Indian oil companies were provided with **10% oil stake** in offshore oil fields of Abu Dhabi.
- PM of India received the **UAE's highest civilian award 'the Order of Zayed'** in 2019.

Cultural relations:

- UAE has **over 3.3 million Indians** making it the **largest ethnic community** in UAE and constituting roughly about 30% of the country's population.
- The foundation stone for the **first Hindu temple in Abu Dhabi** was laid on 20 April 2019.
- **Expat remittances** from the UAE amounted to **\$21.6 billion** in the first half of 2020.

Defence and Security Cooperation:

- **Bilateral naval exercise: Zayed Talwar 2021**

- **Bilateral air combat exercise:**
Desert Eagle

LARGE GRAZING AREA LOST TO GROWING CHINESE PRESENCE, SAYS LADAKH COUNCILLOR

A group of villagers who marched to the **Kiu La pass** for cattle grazing were denied access by the Indian Army.

- Villagers have lost access to a vast grazing area **near Gogra** in **eastern Ladakh** owing to growing Chinese presence in the area.

Kiu La pass:

- Kiu La is an **international high mountain pass** located on the **China-India** border.
- At an elevation of **5711m** above the sea level, it is one of the **world's highest motorable roads**.
- The pass links the China's Tibet Autonomous Region and **India's UT Ladakh**.

GOVERNMENT e MARKET PLACE BAGS PRESTIGIOUS CIPS AWARD

Government e Marketplace (GeM) was announced as the **winner in the "Best Use of Digital Technology"** category at the CIPS Excellence in Procurement Awards 2021 (CIPS Awards).

- GeM was shortlisted as a finalist in **two additional categories** as well, i.e., '**Public Procurement Project of the Year**' and '**Best Initiative to Build a Diverse Supply Base**'.

CIPS Awards:

- The CIPS Awards are one of the leading recognitions around procurement globally, which is conducted under the **aegis of The Chartered Institute of Procurement & Supply (CIPS), London**.
- CIPS is a **global not-for-profit organisation** and professional body

dedicated to promote good practices in procurement and supply management, with a community across 150 countries.

Government e Marketplace:

- Government e Marketplace is a **100% Government owned Section 8 Company** setup under the aegis of **Department of Commerce**, Ministry of Commerce and Industry for **procurement of goods and services** by Central and State Government organizations.
- GeM offers a cashless, contactless, and paperless experience for sellers and buyers, and serves as an **end-to-end solution for procurement** of common use goods and services by Government buyers.

₹22,000 CRORE DEAL WITH AIRBUS FOR 56 C-295 TRANSPORT PLANES

Ministry of Defence has signed an estimated **₹22,000-crore** deal with Airbus Defence and Space S.A., **Spain** for **56 C-295MW transport aircraft**.

Highlights:

- The aircraft will **replace** the Indian Air Force's **ageing 56 Avro aircraft** that were procured in the 1960s.
- Of the 56 aircraft, **16** will be delivered in flyaway condition from **Spain** within 48 months and the remaining will be **manufactured in India** by the Tata Group within 10 years from the date of contract.
- This is the first project of its kind in which a **military aircraft** will be manufactured in India **under technology transfer** by the private sector.

Aircraft:

- The **C295** has 5-10 tonne capacity. It is used for **tactical transport** of up to 71 troops or 50 paratroopers, and for **logistic operations** to locations not accessible to current heavier aircraft.
- It has a proven capability of operating from **short or unprepared airstrips**.

Significance:

- The aircraft will give a major boost to the **tactical airlift capability** of the IAF, especially in the northern and north-eastern sectors and the Andaman and Nicobar Islands.
- The manufacturing in India will create 15,000 direct jobs and 10,000 indirect jobs over the coming 10 years.

PRIME MINISTER'S PARTICIPATION IN THE QUAD LEADERS' SUMMIT

The first in-person **Quad leaders' summit** was conducted on 24 September 2021 in the **United States**.

- The Quadrilateral Security Dialogue (Quad) is a **strategic dialogue** between the United States, India, Japan and Australia.

Highlights:

- Quad called for **rule of law**, freedom of navigation and overflight, peaceful resolution of disputes, democratic values and territorial integrity of states.
- The leaders vowed to ensure a "free and open" **Indo-Pacific** to **promote** free, open, rules-based order, rooted in

international law and undaunted by coercion.

- It is a **positive initiative** designed to lift the wellbeing of the people of the Indo-Pacific, by making the region stronger, more prosperous & more stable.
- The joint statement reaffirmed that **South Asia should not be used** to shelter or train terrorists, or to plan future attacks.
- It called on **Taliban to provide safe passage** to any person wishing to leave Afghanistan, and to ensure human rights for all Afghans, including women, children, and minorities.

- Quad announced several new pacts to **tackle the climate crisis** and threat to **cyber security**.
 - The countries would work together to facilitate **public-private cooperation** and demonstrate in 2022 the scalability and cyber security of open, standards-based technology.
 - A **5G partnership** was rolled out to enabling environment for 5G diversification.
- India would make **8 million doses** of Johnson & Johnson **Covid-19 vaccine** available for export to Indo-Pacific region by the end of October 2021.
 - **Quad will pay** for the vaccine and India will bear a certain share of those.



8TH MEETING OF AGRICULTURAL EXPERTS OF BIMSTEC COUNTRIES

Recently, India hosted the **8th Meeting of Agriculture Experts of Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC)** Countries.

Highlights

- It highlighted the **UN Food System Summit 2021** and the transformations that are happening in the agriculture and food systems globally.
- It exhorted to enhance the **engagement and deepen the cooperation in agriculture and allied sectors** amongst the BIMSTEC Member States by encouraging the exchange of knowledge, germplasm, students and experts.
- It emphasized **addressing biosafety and biosecurity concerns and promoting digital agriculture** along with the trade of technologies for developing resilient agriculture, food systems and value chains.
- The BIMSTEC Member States appreciated the **greater engagement of India offering six slots of scholarships** each for Master and PhD programmes in agriculture and its other initiatives

for capacity development and training.

- It discussed cooperation in the **areas of high impact transboundary diseases of livestock and poultry; aquatic animal diseases** and bio-security in aquaculture and digitalization to promote precision farming.

BIMSTEC

- It is a regional organization comprising **seven Member States** lying in the **littoral and adjacent areas of the Bay of Bengal** constituting a contiguous regional unity.
- It came into being in 1997 through the **Bangkok Declaration** and **headquartered in Dhaka**.
- It constitutes **seven Member States**: five deriving from South Asia, including **Bangladesh, Bhutan, India, Nepal, Sri Lanka**, and two from Southeast Asia, including **Myanmar and Thailand**.
- Formally, the **economic bloc** was formed with four Member States with the acronym **'BIST-EC' (Bangladesh, India, Sri Lanka and Thailand Economic Cooperation)**.

Significance of BIMSTEC

- The regional group constitutes a **bridge between South and South East Asia** and represents reinforcement of relations among these countries.
- The BIMSTEC has also established a platform for **intra-regional cooperation** between SAARC and ASEAN members.

- The BIMSTEC region is home to around 1.5 billion people which **constitute around 22% of the global population** with a combined gross domestic product (GDP) of 2.7 trillion economy.
- Its objective is to **harness shared and accelerated growth through mutual cooperation** in different areas of common interests by mitigating the onslaught of globalization.
- The Bay of Bengal has grown in **strategic significance within the Indo-Pacific**, especially due to the contest between India and China.

Importance of BIMSTEC for India

- In 2016, India held a joint **BRICS-BIMSTEC Summit in Goa for the latter's regional outreach** and after this, the support for BIMSTEC gained further momentum.
- An **India-Myanmar-Thailand highway** is one of the key projects that figures in a big way in the **UN Food System Summit 2021** (earlier Look East) policy.
- The groupings such as BIMSTEC can take forward the **concept of regional cooperation in a different manner** with the India-Pakistan bickering coming in way of a smooth functioning of the SAARC.

Challenges faced by BIMSTEC

- It has come under scrutiny mainly due to **dormancy in initial years** and a **stalled Free Trade Agreement (FTA) process**.
- The **lack of involvement of Malaysia, Singapore and**

Indonesia in BIMSTEC, even as dialogue partners has also been a point of contention.

- India aggressively pushed for the **conclusion of a long-pending FTA among BIMSTEC nations** but differences between India and Thailand over market

access for professionals, duty cuts on traded goods and policy relaxation stalled the process.

- BIMSTEC has been **slow on the come-up** because unlike bodies like the EU or ASEAN, it is based on consensus-building which takes time.

CHINA OPENS FIRST ROAD-RAIL TRANSPORT LINK TO INDIAN OCEAN

The **test cargo** via the **China-Myanmar New Passage** (Yangon-Lincang-Chengdu) **sea-road-rail intermodal transport** arrived at Chengdu International Railway Port (China) for the first time.

- The goods were shipped:
 - From **Singapore** to Yangon Port in **Myanmar**.
 - Entered by road transport in Lincang, southwest **China's** Yunnan Province.
 - Transported to Chengdu **directly through railway**.
- The passage connects **logistics lines** of Singapore, Myanmar and China.
- It is currently the most **convenient land and sea channel** linking **Indian Ocean** with **southwest China**.
- The transportation distance is greatly shortened, with one-way journey saving **20 to 22 days**.
- It will be a new **channel for China** to enter **Atlantic Ocean** via **Indian Ocean** and to directly carry out international trade and logistics.

What is BRI?

The Belt and Road Initiative, reminiscent of the Silk Road, is a massive infrastructure project that would stretch from East Asia to Europe. It was launched in 2013.

The plan is two-pronged: the overland Silk Road Economic Belt and the Maritime Silk Road-The two were collectively referred to first as the One Belt, One Road initiative but eventually became the Belt and Road Initiative.

The project involves creating a vast network of railways, energy pipelines, highways, and streamlined border crossings.

Pakistan and BRI:

To date, more than sixty countries—accounting for two-thirds of the world's population—have signed on to projects or indicated an interest in doing so.

Analysts estimate the largest so far to be the estimated \$60 billion China-Pakistan Economic Corridor, a collection of projects connecting China to Pakistan's Gwadar Port on the Arabian Sea.

What was the original Silk Road?

The original Silk Road arose during the westward expansion of China's Han Dynasty (206 BCE–220 CE), which forged trade networks throughout the Central Asian countries, as well as

modern-day India and Pakistan to the south. Those routes extended more than four thousand miles to Europe.

How have other countries responded to BRI?

- Some countries see the project as a disturbing expansion of Chinese power.
- The United States shares the concern of some in Asia that the BRI could be a Trojan horse for China-led regional development and military expansion.

What does China hope to achieve?

- China has both geopolitical and economic motivations behind the initiative.
- The country has promoted a vision of a more assertive China, while slowing growth and rocky trade relations with the United States have pressured the country's leadership to open new markets for its goods.
- Experts see the BRI as one of the main planks of a bolder Chinese

statecraft under Xi, alongside the Made in China 2025 economic development strategy.

- The BRI also serves as pushback against the much-touted “pivot to Asia,” as well as a way for China to develop new investment opportunities, cultivate export markets, and boost Chinese incomes and domestic consumption.

India's views:

- India has tried to convince countries that the BRI is a plan to dominate Asia, warning of what some analysts have called a “**String of Pearls**” geo-economic strategy whereby China creates unsustainable debt burdens for its Indian Ocean neighbors in order to seize control of regional choke points.
- In particular, New Delhi has long been unsettled by China's decades-long embrace of its traditional rival, Pakistan.

BANGLADESHI VACCINE SCIENTIST, PAKISTANI MICROFINANCEER AMONG THIS YEAR'S RAMON MAGSAYSAY AWARDEES

A Bangladeshi vaccine scientist and a microfinance pioneer from Pakistan were among the five recipients of this year's Ramon Magsaysay Award -- regarded as the **Asian version of the Nobel Prize**.

This year's awardees-

- Apart from **Dr. Firdausi Qadri from Bangladesh** and **Muhammad Amjad Saqib from Pakistan**, the other winners are **Roberto Ballon, American Steven Muncy** and

Indonesian torch bearer for investigative journalism, **Watchdoc**.

- Dr. Qadri who is 70 years old has a doctorate from Liverpool University, U.K.
- She **joined International Centre For Diarrhoeal Disease Research, Bangladesh**, in 1988.
- She was recognised for “**her passion and life-long devotion to the scientific profession**”.

- **Muhammad Amjad Saqib founded one of the largest microfinance institutions in Pakistan**, servicing millions of families.
- **Watchdoc is a production house** that ingeniously combines documentary filmmaking and alternative platforms to highlight underreported issues **in Indonesia**.
- **Steven Muncy, a humanitarian** who has been helping the displaced refugees of Southeast Asia rebuild their lives.
- **Roberto Ballon, a fisherman from Southern Philippines** who has led a community in restoring their rich aquatic resources and their primary source of livelihood.

Ramon Magsaysay award:

- It is **established in 1957**, the Ramon Magsaysay Award was founded to **preserve former Philippine President Ramon Magsaysay's** example of **integrity**

in governance and idealism in a democratic society.

- It was **funded by the Rockefeller Brothers trustees** with Philippine government's agreement.
- Ramon Magsaysay Award is regarded as the **Asian version of the Nobel Prize**.
- The foundation gives the **prize to Asians achieving excellence in their field**.
- **Six categories**, five of which were discontinued in 2009:
 - Government Service (Until 2008)
 - Public Service (Until 2008)
 - Community Leadership (Until 2008)
 - Journalism, Literature, and Creative Communication Arts (Until 2008)
 - Peace and International Understanding (Until 2008)
 - Emergent Leadership (2001)
 - Uncategorized (2009)

The award is **presented in a formal ceremony in Manila**, the capital of the Philippines on **August 31 each year**.

UNESCO WORLD HERITAGE INSTITUTE OF TRAINING AND RESEARCH FOR THE ASIA AND THE PACIFIC REGION - WHITRAP

- World Heritage Institute of Training and Research – Asia Pacific has recognised CEPT University's Programme as a 'Commended Case' of **Global Innovation on World Heritage Education**.
- WHITRAP is an organisation under the World Heritage Centre, **UNESCO**.
- **Mission:** To strengthen implementation of **World Heritage**

Convention in the Asia and the Pacific region.

- This would be done by **capacity building** of professionals and bodies involved with World Heritage site inscription, protection, conservation and management in the **Asia and Pacific region**, through training, research, dissemination of information and network building.

FUKUTOKU-OKA NO BA VOLCANO

- An **underwater volcano eruption** of Fukutoku-Okanoba volcano in the **Pacific Ocean** is posing risk to the passage of planes and ships.
- **Fukutoku-Okanoba volcano** is a submarine volcano situated about **25 metres** below the sea.
- It is a part of the **Volcano Islands** in the Bonin Islands of **Japan**, located 5 kilometres northeast of the island of South Iwo Jima.

WORLD SOCIAL PROTECTION REPORT 2020-22: SOCIAL PROTECTION AT THE CROSSROADS – IN PURSUIT OF A BETTER FUTURE

International Labour Organization (ILO) released the World Social Protection Report 2020-22 recently.

Highlights:

- 4.1 billion people (over half of all people in the world) were living without any social safety net of any kind.
- In 2020, only 46.9% of the global population benefitted from by at least one social protection benefit.
- Social protection includes access to health care and income security measures related especially to old age, unemployment, sickness, disability, work injury, maternity or the loss of the main breadwinner in a family, as well as extra support for families with children.
- Only 30.6% of the working-age population are legally covered by comprehensive social security systems.
- There are significant inequalities across and within regions:
- The coverage rates in Europe and Central Asia (83.9%) and the Americas (64.3%) are above the global average.
- Asia and the Pacific (44.1%), Arab States (40%) and Africa (17.4%) have far more marked coverage gaps.

International Labour Organization (ILO):

- ILO was founded in October 1919 under the League of Nations.
- It is the first and oldest specialized agency of the UN.
- It is a member of United Nations Development Group, a coalition of UN organization aimed at helping meet the Sustainable Development Goals.
- Objective: To advance social and economic justice through setting international labour standards.
- The ILO's international labour standards are broadly aimed at:
- Ensuring accessible, productive, and sustainable work worldwide in conditions of freedom, equity, security and dignity.

ILO works towards:

- Effective recognition of the right to collective bargaining
- Elimination of forced or compulsory labour
- Abolition of child labour
- Elimination of discrimination in respect of employment and occupation

Members: 187 countries

Headquarters: Geneva, Switzerland

WHY DURAND LINE IS A FRICTION POINT BETWEEN AFGHANISTAN AND PAKISTAN

The Afghans have opposed the fence erected by Pakistan along the Durand Line.

The issue has sowed distrust between Afghans and Pakistan for decades, and is a potential flashpoint in relations between the Taliban and Pakistan.

Durand Line:

- The Durand Line is the international border between Afghanistan and Pakistan.
- It was fixed by British civil servant Sir Henry Mortimer Durand and the then Afghan Emir Abdur Rahman Khan in 1893.
- The length of the Durand Line is 2670 km. It is internationally recognised as the western border of Pakistan.
- It was established in order to fix the respective spheres of influence and also to improve the diplomatic ties between the British establishment in India and the Afghan Kingdom.
- The line cuts through the Pashtun homelands of the region. The line divides ethnic Pashtuns and Balochs, who live on both sides of the border.

- The borderline is deemed as one of the most dangerous in modern times. The ongoing conflict in the Waziristan region, located on the Pakistan side of the Durand Line, has become a hub of drug trafficking, kidnapping and general lawlessness.

Issue?

- Pakistan started building a fence along the Durand Line in 2017.
- The \$500 million fencing is two sets of chain-link fences with a 6-ft gap, filled with concertina wire coils.
- It is 11.6 ft high on the Pakistani side, and 13 ft on the Afghan side.
- It is fitted with surveillance cameras and infrared detectors, and punctuated by 1,000 watchtowers.
- Cross-border movement will only be allowed through 16 formally designated points after the completion of the project.
- Pakistan believes that in the new situation in Afghanistan, the fence will help control any spillover from unrest and chaos there.

GUINEAN PRESIDENT DETAINED AS ARMY SEIZES POWER; UN CHIEF CONDEMNS COUP ATTEMPT

UN Secretary-General **Antonio** Guterres has condemned the **coup attempt in Guinea** and called for the **release of President** Alpha Conde.

Location:

- Guinea is located in **western Africa**.

- Guinea is bordered by the Atlantic Ocean, Guinea-Bissau to the west, Senegal and Mali to the north, Cote d'Ivoire (Ivory Coast) to the east, and Liberia and Sierra Leone to the south.

- The country has a **coastline along the Atlantic Ocean** to the southwest. It is located in

the **Northern and Western Hemispheres.**

UAE INTRODUCES NEW RESIDENCY GUIDELINES TO ATTRACT FOREIGNERS

The United Arab Emirates announced a **new class of visas- 'Green Visas'**, the latest step in a series of moves aimed at attracting talent and boosting growth.

- The visa was announced under the banner of **'Projects of the 50'**.

Green Visas:

- The new 'Green Visas' will allow expatriates to **apply for work without being sponsored by an employer.**
- Green visa holders can **sponsor their parents and children** who are up to the age of 25.
- The government will **allow people who've lost their jobs to remain in the country** for up to 180 days, a major boost as most visas is tied to employment contracts.

'Projects of the 50':

- The project is a series of development and economic projects.
- Aimed at making **UAE an ideal destination for highly skilled individuals and investors**, a restructuring of the entry and residency system.
- Under the programme, another stream of visa was announced, like the **federal freelancers visa** for self-employed workers based in the UAE and **overseas in specialised fields** such as artificial intelligence, blockchain and digital currencies.
- The existing Golden Visa eligibility will be expanded.
- **Business trip permits** also stand increased from three months to six months.

WHAT IS THE 'FOOD EMERGENCY' IN SRI LANKA?

Sri Lanka's parliament has approved a **state of emergency** pertaining to distribution of essential food items.

Highlights:

- The emergency has been announced to **control food prices** and **prevent hoarding** amid shortages of some staples.
- The regulations empower authorities to provide essential food items at a **concessionary rate** to the public.
- This done by **purchasing stocks of essential food items**, including

paddy, rice and sugar at government-guaranteed prices, and prevent market irregularities and hoarding.

- The law also enables authorities to **detain people** without warrants, seize property, enter and search any premises, suspend laws and issue orders that cannot be questioned in court.

Criticism:

- The opposition has said that the emergency rules can be misused to

stifle **critics**, curb protests and other democratic action.

Contraction of Sri Lanka's economy:

- Due to COVID-19 pandemic, all **major sources of foreign exchange earnings** — exports, worker remittances and tourism has compounded the economic stress.
- Sri Lanka's economy **contracted by 3.6%** in 2020.
- The foreign reserves have decreased from **\$7.5 billion** in November 2019 to **\$2.8 billion** in July 2021.
- Further, it has huge **foreign debt repayment**, especially from **China**.

Food crisis in Sri Lanka:

- Sri Lanka is home to **21 million** people. The country's is **dependent on imports** for essentials like petroleum, sugar, dairy products, wheat, medical supplies etc.
- Sri Lanka does not have a **universal public distribution system** or ration cards that can ensure essential goods reach all consumers.

- Government imposed a **ban import of chemical fertilizers** and adopted an **organic only** approach in April 2021.
- This is also being blamed by the farmers (**especially paddy & tea**) to around 50% drop in production.

Sri Lanka:

- Sri Lanka is an **island country** in South Asia which lies in **Indian Ocean**.
- It is separated from Indian subcontinent by **Gulf of Mannar** and **Palk Strait**.
- Sri Lanka shares a **maritime border** with **India** and **Maldives**.
- **Legislative Capital:** Sri Jayawardenepura Kotte
- **Sinhalese** (buddhists) are the majority and **Tamils** constitute large minority group.
- It is a member of United Nations, Commonwealth of Nations, G77, Non-Aligned Movement and founding member of SAARC.
- Sri Lanka is the **only South Asian country** with high ratings on **Human Development Index**.

NAPOLEON HAT WITH DNA PREVIEWS FOUND IN HK

A newly discovered hat with **DNA evidence** proving it belonged to general **Napoleon Bonaparte** was previewed by an auction house in Hong Kong.

Highlights:

- A **bicorne** winter campaign hat is the first hat to bear the **Emperor's DNA**.
- The hat was then **tested extensively** using various methods, including electronic microscopy.

- Two hairs when followed up, carried the DNA of Napoleon.

Napoleon Bonaparte:

Profile:

- Napoleon was a brilliant military commander, an Emperor of France during **Napoleonic Wars** (1803–15), who conquered much of Europe.
- **Born:** August 15, 1769 France
- **Died:** May 5, 1821 at St. Helena, United Kingdom
- **Nickname:** Little Corporal

Major events:

- **1785:** Napoleon graduated from **military academy** in France.
- Commissioned as a **second lieutenant** of an artillery detachment in French Army.
- He rose through the **ranks of military** during French Revolution (**1789-1799**).
- Supported **Jacobins**, a far-left political movement and popular political club from the French Revolution.
- **1793:** Fought in **French Revolutionary Wars** and was promoted to brigadier general.
- **1795:** Suppressed a monarchy-backed uprising against the revolutionary government, and got promoted to **major general**.
- **1797:** Negotiated **Treaty of Campo Formio** after victories against Austrians in northern Italy.
- **1798:** Attempted to conquer Egypt but was defeated by British in the **Battle of Nile**.
- **1799: Coup of 18 Brumaire-** Napoleon was part of a group that successfully overthrew French Directory.
- **1800:** His forces defeated Austrians, driving them out of Italy in **Battle of Marengo**.

Reign of Napoleon:

- **1803 to 1815- Napoleonic Wars:** Series of major conflicts with various coalitions of European nations.
- **1803:** To raise funds for future wars, he sold France's **Louisiana Territory** in North America to United States for \$15 million.

- **1804:** He crowned himself emperor of France.
- **1805:** British defeated Napoleon's fleet at the **Battle of Trafalgar** in October.
- **1805:** His army defeated Austrians and Russians at the Battle of Austerlitz in December.
- The victory resulted in **dissolution of Roman Empire** and creation of Confederation of Rhine.

Mistakes of Napoleon:

1. Continental System:

- **1806:** Napoleon ordered a **blockade** (closing of ports) to prevent all trade and communication between Great Britain and other European nations. The Continental system **hurt French** more than British, weakening economy of France.

2. Peninsular War:

- **1807-08:** He sent an army **via Spain to invade Portugal**. The people in **Spain rioted** and started **Guerrilla warfare** against the French army, which continued till **1813**.
- **1809:** Britain also sent its troops to support the rebels.
- **1813-14:** British forces, under **Duke of Wellington** invaded southwest France.
- Napoleon lost around **3 Lakh men** in peninsular war, followed by rebellion in Germans and Italians conquered territories.

3. Invasion of Russia:

- **June 1812:** He marched into Russia with his **4,20,000 strong Grande Armée**.
- Russians burnt all **grain fields** and **slaughtered** all the

livestock in **Moscow**, with nothing left for enemy to eat.

- **October 1812:** He asked his army to return back. But due to **harsh climate** (minus 30-degree temperature), exhaustion and hunger, his army reduced to around **30,000 soldiers**.

Fall of Napoleon:

- **1813:** He was defeated in **Battle of Leipzig**, by coalition formed between Britain, Russia, Prussia, Sweden and Austria.

- **1814:** He abdicated the throne and accepted **treaty of surrender** drafted by Russian emperor Alexander I.
- He was given a pension and sent to **Elba**, a tiny island near **Italian Coast**.
- **1815:** Tried to comeback, but defeated in **Battle of Waterloo** on June 18, and exiled to **St. Helena**.
- **1821:** He **died in exile** at St. Helena, United Kingdom.

INTERNATIONAL LITERACY DAY 2021: HISTORY, SIGNIFICANCE, THEME, QUOTES AND ALL YOU NEED TO KNOW

8th of September was proclaimed International Literacy Day by the United Nations Educational, Scientific and Cultural Organization (UNESCO) in **1966**.

- **Aim:** To highlight importance of literacy for individuals, communities and societies and the need for intensified efforts towards more literate societies.
- **Theme 2021:** Literacy for a Human-centred Recovery: Narrowing the Digital Divide.

Key Facts:

- Literacy goals are a key part of UN's **Sustainable Development Goals 2030**.
- **SDG agenda** contains 17 goals and 169 targets, adopted in 2015, to build on Millennium Development Goals, which were adopted in **2000**.
- As per the last census (**2011**) in India, a total of **74.04%** are literate.

CRITICAL GAPS IN REFUGEE EDUCATION: TWO THIRDS OF REFUGEE YOUTH MIGHT NEVER GET TO SECONDARY SCHOOL

United Nations High Commissioner for Refugees (UNHCR) has launched its education report- **Staying the course: The challenges facing refugee education**.

- The data was taken from more than 40 countries.

Highlights:

- The gross enrollment at secondary level education for refugees around the world is **34 per cent**.
- School enrollment figures for **sub-Saharan Africa** are worse than in Asia and America.
- Gross enrollment rates in Kenya and Uganda, were 99% and 76%.

- Refugee learners lost an average of 142 days of school because of closure of schools, universities, and other institutions.
- **Girls lagged boys** when it came to access to education.
- At primary level, global gross enrollment rates for refugees were 70 and 67 per cent for boys and girls respectively;
- At secondary level, they were 35 and 31 per cent.

Measures adopted by UNHCR:

- Ensuring the right of all children, including those in crisis-affected contexts, to access secondary education
- Providing dedicated, multi-layer financing for secondary education
- Ensuring that adolescent girls enjoy the life-changing benefits of secondary education
- To ensure quality secondary education equips young people with the skills they need.

UNHCR:

- It is a UN Refugee Agency dedicated to saving lives, protecting the rights, and building a better future for refugees.
- It was established in 1950
- **Headquarters:** Geneva, Switzerland.

1951 Refugee Convention:

- The 1951 Refugee Convention is a UN treaty that defines who a refugee is and establishes the rights of such persons.
- It is the main legal document that governs the working of the UNHCR.
- It is also called the Convention Relating to the Status of Refugees.
- It talks about the responsibilities and legal obligations of countries that grant asylum status to people.

1967 Protocol:

- The 1967 Protocol is a major international document for refugee rights.
- The protocol expands the definition of a refugee given in the Convention.
- It removes the Euro-centricity of the Convention.
- India is not a signatory to the 1967 Protocol.

Functions:

- It is mandated to lead and co-ordinate international action to protect refugees worldwide.
- It safeguards the rights and well-being of refugees.
- It strives to ensure that everyone can exercise the right to seek asylum and find safe refuge in another state, with the option to integrate locally or to resettle in a third country.

ICRISAT AWARDED 2021 AFRICA FOOD PRIZE

International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) has been awarded the **Africa Food Prize 2021**.

- The award was given for its work that has improved food security

across 13 countries in sub-Saharan Africa.

- The ICRISAT has developed **266 improved legume varieties** and almost half a million tonnes of seed for a range of legume crops.

INTERNATIONAL DAY TO PROTECT EDUCATION FROM ATTACK

9 September marked the observation of the International Day to Protect Education from Attack.

- In **9 September 2020**, the day is established for the first time by the unanimous adoption of **UN General Assembly Resolution**.
- It was **presented by Qatar** and 62 co-sponsoring countries.
- The Day draws attention to the plight of **more than 75 million 3-to-18-year-olds living** in 35 crisis-affected countries and to their urgent need of educational support.

- It expresses concern over the effects of continued violence on these children and their ability to access education.
- In most countries with armed conflicts, the military use of schools and other educational institutions remains a constant feature, depriving students of their right to access quality education and teachers from the ability to deliver learning adequately.

ON 124TH ANNIVERSARY OF BATTLE OF SARAGARHI, UK UNVEILS STATUE HONOURING FALLEN SOLDIERS

The **124th anniversary** of **Battle of Saragarhi** was observed, which took place on 12 September **1897**.

Battle of Saragarhi:

- The Battle is considered one of the **finest last stands** in the military history of the world.
- **Twenty-one soldiers** fought against over **8,000 Afridi and Orakzai tribals** but they managed to hold the fort for seven hours.
- The soldiers of **36th Sikhs** (now 4th battalion of Sikh regiment), led by **Havildar Ishar Singh**, fought till their last breath, **killing 200 tribals** and **injuring 600**.

Saragarhi post:

- **Saragarhi** was the **communication tower** between **Fort Lockhart** and **Fort Gulistan** in North West

Frontier Province (NWFP), now in **Pakistan**.

- The forts were built by **Maharaja Ranjit Singh** but renamed by the British.
- Saragarhi helped to link up the **two important forts** which **housed** a large number of British troops in the rugged terrain of NWFP.
- Saragarhi was usually **manned** by a platoon of 40 soldiers, on the day of battle it was being held by only **21 soldiers** from 36th Sikh (now 4 Sikh) and a **non-combatant** called Daad, a Pashtun who did odd jobs for the troops.
- The **tribals** wanted to **isolate the two forts** by cutting off the lines of communication between them.

Havildar Ishar Singh:

- He was born in a village near Jagraon in Punjab, India.

- He joined the **Punjab Frontier Force** and was drafted into the **36th Sikhs**.
- He was given independent command of the **Saragarhi post**.
- He **led the troops** in the battle and displayed gallant conduct.

Key fact:

- Making a departure from the tradition of not giving gallantry medals posthumously, **Queen Victoria** awarded the **21 dead soldiers** the Indian Order of Merit (comparable with the Victoria Cross) along with **two 'marabas'** (50 acres) and Rs 500 each.

MCC TEAM ARRIVES IN NEPAL TO EXPEDITE ENDORSEMENT OF US PROGRAMME

A delegation representing US foreign aid agency Millennium Challenge Corporation (MCC) arrived in Nepal for the endorsement of the MCC agreement, which is under consideration in the House of Representatives.

- Nepal and the United States signed the MCC agreement in 2017.

About MCC:

- The Millennium Challenge Corporation (MCC) is an innovative and independent U.S. foreign assistance agency that is helping lead the **fight against global poverty**.

- MCC forms **partnerships with developing countries** who are committed to good governance, economic freedom and investing in their citizens.
- Under the MCC programme, the US government will **provide the grant assistance** which will be mainly utilised on **strengthening Nepal's transmission line** that would facilitate the **export of hydro-electricity to India** in the near future and also improve the country's road networks.
- **Objective:** To **eradicate poverty** by **fostering economic growth**.

FOOD SYSTEMS SUMMIT: 'SUPPORTS TO FARMERS KEEPING THE WORLD AWAY FROM SDGs AND THE PARIS AGREEMENT'

A report titled "**A Multi-billion-dollar Opportunity**" was released recently, ahead of the first ever **UN Food Systems Summit 2021**.

- The **report** was released by Food and Agriculture Organization (FAO), UN Development Programme (UNDP) and UN Environment Programme (UNEP).

- The report has demanded **reforming and repurposing agricultural support systems** across the world.

Highlights of the Report:

- It focuses on the **countries' support** to farmers that distort prices, encourage emission-intensive agriculture resulting in global warming and make the global

agriculture trade an unequal one for the vast smallholder farmers.

- It has **analysed countries** support to farmers and their **impacts** on each of the above aspects.
- Annually, countries support agriculture up to **\$540 billion**. More than half of this support is **price-distorting** and is largely harmful to the environment.
- Developed countries offer the **best deal to their farmers** to make them compete in world trade.
- Developing and emerging economies **also offer support** to farmers.
- Support to farmers in low-income countries in Sub-Saharan Africa is **negligible**.
- This is due to lack of financial resources and government's focus on curbing prices to keep food prices low.

India specific highlights:

- Farming sector in India has been largely **penalised**, due to the strong focus of Indian agricultural policy **on protecting consumers** by ensuring affordable food prices.
- This led to implicitly taxing the farming sector.
- India along with Argentina and Ghana are exceptions in terms of:
 - Taxing the producers to protect the consumers.
 - Keep food inflation low and affordable for the general population.
- India's **Producer Support Estimate (PSE)** is negative 5.7% for Indian farmers, which led to the loss of \$23 billion for them in 2019.

- However, farmers enjoy support like **cash transfer** in India (PM-KISAN, scheme that transfers Rs 6,000/year to farmers).

Suggestions towards repurposing agricultural support:

Short Term:

- Pursue global efforts to **repurpose agricultural support** as key catalyst for food systems transformation in order to achieve the SDGs.
- Develop **country-specific data** and analysis to inform the design and implementation of effective repurposing strategies that put sustainable development as centerpiece.
- Foster greater cooperation across government, research institutions, non-governmental organizations, and the private sector at country level.

Medium Term:

- **Close data, research,** and knowledge gaps on the status, characteristics and impacts of agricultural support, in collaboration with relevant international organizations.
- Advance commitments within **World Trade Organization (WTO)** and other trade agreements and promote further reduction of trade distorting measures and coupled subsidies.
- Develop **standard monitoring systems** to be adopted by countries to track the outcomes of agricultural policies and their repurposing and reform.

ISRAELI FIRM UNVEILS ARMED ROBOT TO PATROL VOLATILE BORDERS

An Israeli defense contractor unveiled a **remote-controlled armed robot** that can patrol battle zones, track infiltrators and open fire.

Highlights:

- The four-wheel-drive robot was developed by the state-owned Israel Aerospace Industries-**REX MKII**.
- It is operated by an **electronic tablet** and can be equipped with two machine guns, cameras and sensors.
- The robot can **gather intelligence** for ground troops, carry injured soldiers and supplies in and out of battle, and strike nearby targets.
- With every mission, the **device collects more data** which it then learns for future missions.

Arguments in favour of using robots in warfare:

- Proponents say such semi-autonomous machines **allow armies to protect their soldiers**.
- **Unmanned ground vehicles** are being increasingly used by other armies, including those of the United States, Britain and Russia.
- Their **tasks include** logistical support, the removal of mines and firing weapons.
- Autonomous weapons systems act as a **force multiplier**, i.e., fewer war fighters are needed for a given mission, and the efficiency of each war fighter is greater.

- The weapons systems can **reduce casualties** by removing/ replacing human war fighters from dangerous missions.
- Long-term **savings in military expenditure** could be achieved through fielding an army of military robots.
- Robot pilots are not subjected to physiological and mental constraints of warfare.

Argument against using robots in warfare:

- Critics fear this marks another dangerous step toward **robots making life-or-death decisions**.
- Robotic weapons could decide on their own, perhaps **erroneously**, to shoot targets.
- Such weapons cannot be trusted to **distinguish between combatants and civilians** or make proper calls about the harm attacks may do to nearby civilians.
- Missile defense using Artificial Intelligence (AI) could be extremely destabilizing if it allows one nation to launch a **nuclear strike** against another without the fear of retaliation.
- Machines **cannot understand value of human life**, which undermines human dignity and violates human rights laws.
- There would be a major concern is the **problem of accountability** when autonomous weapons systems are deployed.

BRICS YOUNG SCIENTIST FORUM – BRICS YSF

BRICS Young Scientists Forum This year the four-day conclave from 13 September to 16 September, 2021.

- Young innovator prize has been one of the focuses of the BRICS-YSF and the award is supported by the DST, Government of India.
- The BRICS Young Scientist Forum has created a network to **harness knowledge for solving common societal challenges** through research and innovation.

- The BRICS Young Scientist Conclave created a pool of creative youth in Science & Technology.

Summits:

- The BRICS-YSF summits were **first hosted by India in 2016**, followed by China in 2017, South Africa in 2018, Brazil in 2019, and Russia in 2020.
- The next conclave would be organized by China in 2022.

U.S., U.K. AND AUSTRALIA ANNOUNCE NEW SECURITY PARTNERSHIP FOR INDO-PACIFIC -AUKUS

A week before a meeting of Quad leaders in Washington DC, US announced a new **trilateral security partnership for the Indo-Pacific**, between Australia, the U.K. and the U.S. (AUKUS).

Highlights:

- **Australia will acquire nuclear-powered submarines** with help from the U.K. and the U.S.
- The nuclear powered submarines **will be built in Adelaide**, in close cooperation with the U.K. and the U.S.
- **18-month project** to deliver the first fleet, would help Australia acquire submarines that are quieter than their conventional counterparts but also more **capable of being deployed for longer periods** and needing to surface less frequently.
- AUKUS will also **involve a new architecture of meetings and engagements** between the three countries, as well as **cooperation across emerging**

technologies (applied AI, quantum technologies and undersea capabilities).

- The initiative is in response Australia wanting to step up its game with regard to **maritime security in the Indo-Pacific region**.
- The partnership was also a “down-payment” the U.K. was making on its decision to engage more deeply with the Indo-Pacific.
- The partnership was a fundamental decision that binds, decisively, Australia to the United States and Great Britain for generations.

Genesis:

- Tensions have been **high between Australia and an increasingly assertive China**, its largest trade partner.
- Australia **banned Chinese telecom giant Huawei** in 2018 and also called for an investigation into the origins of COVID-19.

- China retaliated by imposing tariffs on or capping Australian exports.

Key Facts:

- The U.S. sharing this kind of technology on nuclear powered

submarines had been done only once before with the U.K. in 1958.

THE AUKUS AGREEMENT TO EQUIP AUSTRALIA WITH N-SUBS, AND WHY IT HAS UPSET FRANCE

The **United States, United Kingdom, and Australia** announced a new defence deal, under which the US and UK will help Australia deploy **nuclear-powered submarines** in the Pacific region.

AUKUS Agreement:

- AUKUS is the new **enhanced trilateral security** partnership between Australia, the United Kingdom, and the United States.
- It would be a **collaboration** of the technology, scientists, industries, defence forces of the three countries to deliver a safer and more secure region.
- The first major initiative of AUKUS would be to deliver a **nuclear-powered submarine fleet** for Australia.
- The deal is seen as a step towards **curtailing China's** aggressive manoeuvres in the Pacific region, especially in and around the South China Sea.

AUKUS and France:

- The deal has complicated the relations between **France and Australia**, and **France and the US**.
- France is outraged that it was not **even informed or consulted about the decision** and the new agreement.
- In 2016 —**France and Australia had signed a contract** to buy 12

Attack-class submarines from the French shipbuilder Naval Group worth nearly \$90 billion.

- There is a case of legal battle over the contract between the two countries.

Significance of nuclear-powered submarine:

- Nuclear-powered submarine gives Navy the capability to reach far out into the ocean and **launch ballistic missiles**.
- The submarine can go to long distances, at a higher speed, **without being detected** which gives a nation the ability to protect its interests far from its shores.
- The **nuclear-powered propulsion** gives the submarine a near infinite capacity to stay dived.
 - Since it is propelled by a nuclear-powered engine rather than by batteries, it does not have to **emerge** on the surface at all, except to **replenish supplies** for the crew.
 - **Conventional** diesel-engine submarines have batteries which have life from a few hours to a few days.
- They are able to **move faster underwater** than the conventional submarines.

Does India have nuclear-powered submarines?

- India is among the **six nations** that have **nuclear-powered submarines (SSN)**.
- **Other five** are: the US, the UK, Russia, France and China.

Nuclear submarines of India:

1. INS Chakra:

- India got the Soviet-built K-43 Charlie-class SSN in **1987**, rechristened **INS Chakra**. The submarine was decommissioned in **1991**.

2. INS Chakra 2:

- **2012:** India got another Russian SSN on a 10-year lease, called INS Chakra 2.

3. INS Arihant:

- India built its own nuclear submarine, INS Arihant, commissioned in 2016.
- INS Arihant completes **India's nuclear triad**, i.e., the country has the capacity to launch nuclear missiles from land, aircraft, and submarine.

4. INS Arighat:

- A second Arihant-class submarine, **INS Arighat**, was secretly launched in 2017, and is likely to be commissioned soon.

WTO AGREEMENT ON AGRICULTURE TILTED AGAINST DEVELOPING COUNTRIES

According to the Commerce Minister of India the Agreement on Agriculture at the World Trade Organisation has deep imbalances, which favour the **developed countries** and have tilted the rules against many developing countries.

Highlights:

- While addressing the **G-33** Virtual Informal Ministerial Meeting, India stated that **historical asymmetries** and imbalances in the agreement must be corrected to ensure a rule-based, fair, and equitable order.
- G-33 must strive for **positive outcomes** on a permanent solution to **public stockholding** for food security purposes, finalization of a safeguard mechanism and a

balanced outcome on domestic support.

- The **G-33 Virtual Informal Ministerial Meeting** was organised by Indonesia.
- It aimed to discuss the **agricultural priority** issues of G-33 and way forward for the **12th Ministerial Conference** of WTO, scheduled to be held from November 30 to December 3, 2021.

WTO Agriculture Agreement:

- The agreement came into force in **1995**.

Aim:

- To **address government policies** that distort markets and **restrict trade**.

Functions:

- It initiated **reductions in subsidies** and trade barriers to

make markets fairer and more competitive.

- It guided members to continue negotiations for further reform, considering concerns like food security and the environment.

Provisions under the Agreement:

1. Market Access:

- Under the reform Programme, the developing country members have converted their non-tariff measures to equivalent bound tariffs.
- **Additional market access** is provided through tariff rate quotas, and the tariffs are being reduced.
- **Contingency protection** is provided through special safeguards, and transparency works through notifications.

2. Domestic Support:

Uruguay Round reform Programme

- The present rules and commitments on agriculture are called the “**Uruguay Round reform Programme**”.

Aim:

- To ensure the specific binding commitments in the areas of market access and export competition are not undermined through **domestic support measures**.

Categories of domestic support:

a) The Green Box

- Support with no, or minimal, distortive effect on trade are referred to as “**Green Box**” measures.
- They have to be **government-funded** (not by charging consumers’ higher prices) and must **not involve price support**.
- The measures are **exempted** from reduction commitments and, can be

increased without any financial limitation under the WTO.

- The Green Box applies to **both developed and developing** country Members.
- In case of **developing countries** special treatment is provided in respect of governmental stockholding programmes for food security purposes and subsidized food prices for urban and rural poor.

Government service programmes:

- It covers **government service programmes** including general services provided by governments, public stockholding programmes for food security purposes and domestic food aid.
- It provides for the continuation of programmes such as research, including general research, research in connection with environmental programmes, and research programmes relating to products.

b) Amber Box

- Trade-distorting support are known as “**Amber Box**” measures.
- Government buying-in at a guaranteed price (market price support) is considered as amber box category.
- The aggregate monetary value of Amber Box measures is, with certain exceptions, subject to reduction commitments.

c) Blue Box

- Direct payments under production limiting programmes are termed as “**Blue Box**” measures.
- They exempt from commitments if payments are made on fixed areas and yield or a fixed number of livestock.

- Such payments fit into this category if they are made on 85 per cent or less of production in a defined base period.
- Here **production is required** in order to receive the payments, but the actual payments do not relate directly to the current quantity of that production.

3. Export competition/subsidies

The right to use export subsidies is now limited to:

1. Export subsidies subject to **product-specific** reduction commitments within the limits specified in the schedule of the WTO Member concerned.
2. Any **excess of budgetary outlays** for export subsidies or subsidized export volume over the limits specified in the schedule which is covered by the **“downstream flexibility”** provision of **Article 9.2(b)** of the Agreement on Agriculture.
3. Subsidies consistent with the special and differential treatment provision for developing country Members.
4. Subsidies other than those subject to reduction commitments if they are in conformity with the anti-circumvention disciplines of **Article 10** of the Agreement on Agriculture.

U.S. PRESIDENT JOE BIDEN UNVEILS PLAN TO CUT METHANE EMISSIONS

The U.S. President has announced the **Global Methane Pledge**, a U.S.–EU-led effort to cut methane emissions.

Highlights:

- The announcement was made at the **Major Economies Forum on Energy and Climate (MEF)**, hosted virtually by the White House.
- Countries joining the Global Methane Pledge **commit to**:
 - A **collective goal** of reducing global methane emissions by at least 30% by 2030, compared with 2020 levels.
 - Moving towards using best **available inventory methodologies** to quantify methane emissions, with a particular focus on high emission sources.
- Delivering on the Pledge would reduce warming by at least **0.2 degrees** Celsius by 2050.

Significance:

- As the **atmospheric lifetime of methane** is short, taking action now can rapidly reduce the rate of global warming.
- It will also produce benefits like **improving public health** and **agricultural output**.

Methane gas and its Impact on climate change:

- Methane is a greenhouse gas which is **80 times more potent** than **carbon dioxide** in terms of its global warming capacity.
- Approximately **40%** of methane emitted is from natural sources.
- About **60%** comes from human-influenced sources, which include **livestock** farming, rice agriculture, biomass burning and so forth.

- It is the biggest cause of climate change after **carbon dioxide** (CO₂). It accounts for **about half** of the 1.0 degrees Celsius net rise in global average temperature since the pre-industrial era.

Global Methane Initiative:

- Global Methane Initiative (GMI) is a voluntary, collaborative effort to **reduce methane gas emissions** and advance methane recovery and use as a clean energy source.
- The initiative began as the "Methane to Markets Partnership" in November 2004. It brings together national governments, private sector entities, development banks, NGOs and other interested stakeholders.

- The initiative currently **focuses on five sectors** (known sources of anthropogenic methane emissions): agriculture, coal mining, municipal solid waste, municipal wastewater, and oil and gas systems.
- **GMI Partner Countries** together contribute approximately 70% of the world's anthropogenic methane emissions.
 - **India** is a founder partner of GMI.

Key Fact:

- India has announced a **renewable energy capacity goal of 450 GW** by 2030.
- The Indian Railways plans to **fully electrify** its tracks by 2023, and has committed to net-zero emissions by 2030.

EXPLORERS ADD 8 MILES (13 KM) TO WORLD'S LONGEST KNOWN CAVE SYSTEM

Mammoth Cave National Park, the **world's longest cave system** has added **13** kilometers to its length.

Highlights:

- The additional mileage was mapped and documented by the **Cave Research Foundation**, Mammoth Cave National Park.
- It brings the **total length** of the cave system in south-central Kentucky to 676 kilometers.

Mammoth Cave National Park:

- It is an **American National Park** in west-central Kentucky,

encompassing portions of Mammoth Cave, the longest cave system in the world.

- It was officially declared as a **national park** in 1941.
- Became a **World Heritage Site** in 1981 and an **International Biosphere Reserve** in 1990.
- The Park **preserves the cave system**, a part of the Green River Valley, and the rolling hills of south-central Kentucky.

INDIA WILL BECOME 3RD LARGEST IMPORTER BY 2050: UK REPORT

Global Trade Outlook Report was launched recently by the **UK's Department of International Trade**.

Highlights:

1. Import sector:

- **India** will become the world's **third largest importer** by **2050** with a share of 5.9% of global imports, right behind **China** and the **US**.
- This will be due to its **growing middle class** and rising discretionary spending.
- At present, India is **ranked eighth** among largest importing nations with a 2.8% import share and is set to become the fourth largest importer by 2030.
- The **US's** and the **EU's** share of **most import sectors** is expected to decline out to 2030.
- This due to growing purchasing power of **Asia's middle-class**, which accounts for a rising share of global import demand.
- This change is **particularly marked** in the food, travel and digital services sectors.

2. Centre of economic gravity: Indo-Pacific:

- Between 2019 and 2050, **56% of global growth** is expected to come from the Indo Pacific, compared with a quarter from the EU and North America combined.
- Growth within the Indo Pacific is **expected to rebalance** over time, with South Asia's contribution (driven by India) rising.

- The world's centre of economic gravity is **shifting eastward** for decades due to the rapid growth in Indo Pacific.
- China is a major driver of this eastward economic shift & is expected to become the **world's largest economy** by **2030**.
- China already **displaced the US** in **Purchasing Power Parity (PPP)** terms (which account for differences in local prices) in the mid-2010s.
- **India** would be the world's **third largest economy** in 2050, ranking just behind China and the US, with a share of **6.8%** in global GDP.
- At present, India is **ranked fifth** in size of world's economies with a share of 3.3%.
- India's GDP is projected to **cross Germany** by 2030 to become the fourth largest economy.

3. Emerging economies:

- The role of **emerging economies** in the trading system will rise over time, consistent with their growing weight in the global economy.
- The **'E7 group'** is the group of the **seven largest emerging economies**—China, India, Brazil, Russia, Indonesia, Mexico and Turkey.
- They are projected to equal the **G7 countries' share** of global import demand by 2050.

WORLD BANK GROUP TO DISCONTINUE DOING BUSINESS REPORT

In **August 2020**, the World Bank has announced that the publication of the **2021 Doing Business report** and rankings had been temporarily stopped following irregularities in the reporting of data.

Highlights:

- The action came after an **external investigation's** found that the rankings were manipulated by "undue pressure" by **top bank officials**.
- The manipulated data had resulted in country rankings changed to **favour China**.
- The manipulation likely involves the then **World Bank chief** executive Kristalina Georgieva and the former **World Bank president** Jim Yong Kim.
- The report, considered a global benchmark to judge investment climate across nations, had **boosted China's ranking in 2017**.

The scandal:

The **internal investigation** found that between 2016 and 2020, the following irregularities:

- **Azerbaijan (DBR 2020):** Azerbaijan's global ranking should have been **28** (instead of 34) and it would have been on the list of top 10 improvers in the Doing Business 2020.
- **Saudi Arabia (DBR 2020):** Saudi Arabia's global ranking would have been **63** (and not 62), and it would not have been the top improving economy in Doing Business 2020.
- **United Arab Emirates (DBR 2020):** UAE's global ranking would have been unchanged at 16.

- **China (DBR 2018):** China's global ranking in Doing Business 2018 would have been **85** instead of 78, a decline of 7 places.

Doing Business Report:

- The Doing Business report outlined the **levels of business regulation** in 190 economies.
- The last report was launched in 2020, which was the **17th** in the series of annual studies.
- It **assessed the business climate** on 12 broad parameters integral to starting, sustaining and winding down a business.
- The **quantitative indicators** ranged from dealing with construction permits, getting electricity, getting credit, protecting minority investors, paying taxes, and trading across borders.
- The study presented a **detailed analysis of costs, requirements and procedures** that a specific type of private company is subjected to in all countries and provided nations with specific prescriptions on how and when to reform key laws.

Significance:

- Nations around the world **monitored the annual reports** since they set the Ease of Doing Business Index for the next year.
- The index is the **formal ranking of nations** – from most business-friendly to worst.
- This report card showed whether **nations had improved or degenerated** in their efforts to create a more liberal economic ecosystem, at least for the average business.

India and the Report:

- Among 190 countries, India ranked **63rd** in Doing Business in 2020.
- India was ranked **142** in 2014.

- India has improved its ranking by 79 positions in the five years between 2014 and 2019.
- India was also placed in the list of “economies with the most notable improvement” for the third year in a row.

DRAMATIC CHANGES NEEDED IN GLOBAL FOOD SYSTEMS TO ADDRESS NUTRITION DISPARITY, POVERTY: IFAD

United Nations International Fund for Agricultural Development (IFAD) has released a report titled ‘**Transforming food systems for rural prosperity**’.

Highlights:

- The report has urged for a **dramatic revolution** in the global food systems to make them **more inclusive, fair and sustainable**.
- It called for **investing in** and **creating conditions** for productive, economically viable and environmentally sustainable small-scale family farming.
- **Small-scale family farmers** are the foundation of food supply across all low- and middle-income countries.
- Farms of **up to two hectares** produce 31% of the world’s food on **less than 11%** of the farmland.
- They play a **critical role** in reducing rural poverty and ensuring national food and nutrition security.
- The report stressed on the **importance of government investment** in rural farms and local small- and medium-size enterprises that support activities after the farm gate, such as storing, processing, marketing and food distribution.

Need for the reforms:

- There are **800 million hungry people** and yet high obesity rates on the other hand.
- **Nutritious diets** are expensive yet many small-scale farmers are poor.
- Further, the current food growing practices are **not good for our environment**.
- Food systems are responsible for **37% of greenhouse gas emissions** and highly vulnerable to a changing climate.

Recommendations:

- Develop and focus on **pricing systems** that reflect the full and true cost of production, including **rewarding farmers** for ecosystem services, such as maintaining healthy soil and regulating pests.
- Making **available innovations** such as nature-based solutions, agro-ecology and affordable digital technologies to boost rural small-scale farmers’ production.
- The measures will also enable the cultivators to be **climate-resilient** employing low-carbon and sustainable techniques.
- Making **food markets accessible to villagers** and on fair terms by

rethinking the present concentration of power within food systems.

- **Promote** accessible and affordable **nutritious food**. This requires focusing on nutrition education, empowering women to make nutrition decisions, and stronger government policies to regulate and steer market choices.
- **Incentives** need to be given to reward **nature-based practices** and local, healthy diets.

United Nations International Fund for Agricultural Development:

- IFAD is an **international financial institution** and a **specialized United Nations** agency based in **Rome** – the UN’s food and agriculture hub.

- IFAD has been working in India **since 1979**.
- It **invests in rural people**, empowering them to reduce poverty, increase food security, improve nutrition and strengthen resilience.
- It aims to increase the rural poor’s **access to agricultural technologies**, natural resources, financial services, value chains and is sharing knowledge on poverty reduction and nutrition security.
- It targets its activities to the **poorest and most vulnerable groups** in rural society, such as small-scale and marginal farmers, women, tribal communities and scheduled castes.

GLOBAL CO₂ EMISSIONS FROM WILDFIRES IN JULY, AUGUST HIGHEST SINCE 2003: COPERNICUS

Carbon dioxide emissions from wildfires in the months of July and August have touched a new high since 2003 in September 2021.

Highlights:

- As per Copernicus Atmosphere Monitoring Service (CAMS), the **cumulative CO₂ emissions** from **violent forest fires** in these two months was **2643.4** megatons.
- In **July** 2021, over half of the 1258.8 megatons of CO₂ was attributed to fires in North America and Siberia.
- In **August** 2021, 1384.6 megatons of CO₂ were released into the atmosphere by wildfires.

- Wildfires are common during the **boreal fire season** (of the Northern Hemisphere) that lasts from May to October every year.
- But the **number of fires**, their intensity, region covered and persistence were unusually high in 2021.
- **States in India** also recorded some of their **biggest wildfires** since 2020.
- Odisha recorded **51,968 forest fires** from November 2020 to June 2021 — the state's highest.
- The **Mediterranean basin** emerged as the wildfire hotspot. The countries in the region experienced dry conditions and heatwaves in 2021.

- **Intense wildfires in Siberia** in 2021 corresponds with **increased temperatures** and decreased soil moisture in the region.
- In **Sakha Region** in north-eastern Russia, daily fire intensities surged and emissions doubled since 2020.
- **Large-scale destruction** and **pollution** were observed in the western regions of North America, Canada, Pacific Northwest and California throughout July and August.

Copernicus Atmosphere Monitoring Service (CAMS):

- CAMS is a service implemented by the **European Centre** for Medium-Range Weather Forecasts, launched in November 11, 2014.
- CAMS, is part of the **Copernicus Programme**, and **tracks air pollution**, solar energy, greenhouse gases and climate globally, providing continuous data and information on atmospheric composition.
- It analyses data from its **Global Fire Assimilation System** collected using fire radiative power measurements

from **MODIS** satellite by National Aeronautics and Space Administration.

- The service uses these calculations to make estimates of **daily global emissions from fires**.

Copernicus Programme:

- Copernicus is the **Earth observation programme** of the **European Union** in partnership with European Space Agency.
- It **aims at achieving** a global, continuous, autonomous, high quality, wide range Earth observation capacity, covering **six main interacting themes**: atmosphere, marine, land, climate, emergency and security.

Copernicus has following components:

- **Space component** (observation satellites and associated ground segment with missions observing land, atmospheric and oceanographic parameters).
- **In-situ measurements** (ground-based and airborne data-gathering networks providing information on oceans, continental surface and atmosphere).

INTERNATIONAL DAY OF SIGN LANGUAGES: THEME, HISTORY, SIGNIFICANCE

September 23 is celebrated as the International Day of Sign Languages every year.

Highlights:

- The day supports and protects the **linguistic identity** of people who are deaf along with people using **sign languages**.
- **Theme 2021: We Sign for Human Rights**

sign languages?

- Sign languages are the ones that use **visual-manual modality** to convey the meaning.
- United Nations (UN) describes sign languages as **natural languages**, structurally distinct from spoken languages.
- The convention on the rights of persons with disabilities recognizes

and promotes the use of sign languages.

- They are **equal in status** to spoken languages.
- It **obligates states** to facilitate the learning of sign languages and promote **the linguistic identity** of deaf people.

History:

- It was first celebrated in the year **2018** as a part of the **International Week of the Deaf**.
- 23 September commemorates the date **World Federation of**

Deaf (WFD) was established in 1951.

- There are over 70 million deaf people across the globe and 80% of these are from developing countries.
- Over **300 different sign languages** are used across the globe.

Significance:

- It aims to **raise awareness** about the importance of sign languages.
- It recognizes the importance of **preserving sign languages** as a part of linguistic and cultural diversity.

BANGLADESHI FAIROOZ FAIZAH BEETHER GETS 2021 CHANGEMAKER AWARD

Fairooz Faizah Beether of Bangladesh has been chosen for the **2021 Changemaker Award** for her work promoting **good health and well-being** by the Bill and Melinda Gates Foundation.

About the award:

- The Changemaker Award is **part of the Goalkeepers Global Goals award** instituted by the **Bill and Melinda Gates Foundation**.
- **Aim:** To accelerate progress towards attaining the Sustainable Development Goals (SDGs) of the UN.
- The Award **celebrates an individual** who has inspired change using personal experience or from a position of leadership.

2021 Global Goalkeeper Award:

- Former United Nations under-secretary-general and executive director of UN Women, **Phumzile Mlambo-Ngcuka**, has been chosen as the winner of the Award for her ‘unwavering global leadership on gender equality and continued advocacy to address the COVID pandemic’s disproportionate impact on women and girls.’
- The Goalkeepers is the Bill and Melinda Gates Foundation’s campaign to accelerate progress towards the Sustainable Development Goals (SDGs) announced by the UN in 2015.

A 3,500-YEAR-OLD CLAY TABLET DISCOVERED FROM RUINS OF ASSYRIAN KING’S LIBRARY GOING BACK TO IRAQ

A **3,500-year-old clay tablet** discovered in the ruins of

the **library of an ancient Mesopotamian king**, then looted from

an Iraqi museum 30 years ago, is finally headed back to Iraq.

- The “Gilgamesh Tablet”, a **clay tablet** was found in 1853 as part of a 12-tablet collection in the rubble of the library of **Assyrian King Assur Banipal**.
- The **Gilgamesh tablet** is part of a **section of a Sumerian poem from the Epic of Gilgamesh** written at least 4,000 years ago.
- It is one of the world’s oldest works of literature, and one of the oldest religious texts.
- It measures **5 by 6 inches**.

- It features **inscriptions in Sumerian**, the language of the ancient Mesopotamian civilization.

Genesis:

- The “Tablet” is believed to have been **looted from a museum in Iraq** following the conflict in that country in **1991**.
- It was believed to be **illegally imported into the United States** in 2003, then sold to Hobby Lobby and eventually put on display in its Museum of the Bible in Washington, D.C. U.S.
- In 2019, it was **seized by the US Department of Justice**.

CHINA WORST ABUSER OF INTERNET FREEDOM; PAKISTAN IN TOP 10: REPORT

The “Freedom on the Net 2021: The Global Drive to Control Big Tech” report was released by the U.S.-based **Freedom House** recently.

- As per the report the Internet freedom has **declined for the 11th year** in a row worldwide.

About the report:

- The report has measured the **level of internet freedom for 70 countries** and assigns them **numerical scores** ranging from **100** (the freest nation) to **zero** (the least free).
- Countries with **scores between 70 to 100** are designated as **‘Free’** on internet freedom status.
- Those with points **between 40 to 69** are designated as **‘Partly-free’**.
- Those scoring **less than 39** are designated as **‘Not free’**.
- The report determines the level of internet freedom by

examining **three broad categories:** obstacles to access; limits on content; and violations of user rights.

- The countries are categories **based on nine key Internet controls** to document how governments censor and control the digital space.
- The **controls include** blocking of social media, deliberate disruption of communication network, manipulation of online discussions by pro-government commentators, and introduction of a new law increasing surveillance and restricting anonymity.

Highlights:

- **India** has scored **49 points** in the report. **China** was ranked as the **worst environment** for Internet freedom for the seventh year in a row.

- The **greatest deteriorations** were found in **Myanmar, Belarus, and Uganda**, where state forces cracked down amid electoral and constitutional crises.
- Authorities in at **least 45 countries**, including **India**, are suspected to have access to targeted spyware and extraction technology purchased from private companies.
- Governments in **least 48 countries** surveyed pursued new rules for tech companies on content, data, and competition in the past year, attempting to suppress online dissent.
 - In fact, India **ranks among 55 other countries** that have investigated, arrested, or convicted people for their social media posts, especially on WhatsApp, Facebook, YouTube and Twitter.

Ranks of the countries:

The **top 10 countries** with the highest level of internet freedom:

- | | | |
|---------------|------------|------------|
| 1. Iceland | 2. Estonia | 3. Canada |
| 4. Costa Rica | 5. Taiwan | 6. Germany |
| 7. France | 8. UK | 9. Georgia |
| 10. Japan | | |

The lowest rankers:

Scores in Asia-Pacific:

Internet freedom:

- Internet freedom is a term that includes digital rights, freedom of information, and the right to Internet access.
- **Suppression of Internet freedom** indicates that governments across the world are asserting their authority over technology platforms, forcing business to comply with censorship and surveillance.

WHAT SAMPLES BROUGHT BACK BY CHINA MISSION TELL US ABOUT MOON

China's **Chang'e-5 lunar mission** delivered to Earth nearly 2 kg of rocky fragments and dust from the Moon on December 16, 2020.

Highlights:

- **Chang'e-5** landed on an area of the Moon which is not sampled by the American or Soviet missions.
- It retrieved fragments of the youngest **lunar rocks** for analysis in laboratories on Earth.

The Findings:

- 90% of the materials collected by Chang'e-5 from the landing site and

its surroundings, are '**mare basalts**'.

- These **volcanic rocks** are visible to us as the darker grey areas that spilled over the Moon as ancient eruptions of lava.
- 10% percent of the fragments have different, '**exotic**' chemical compositions.

Importance:

- The distinct 10% fragments may preserve records of other parts of the **lunar surface** and types of **space rocks** that have impacted the Moon's surface.

- **Glassy droplets** have been traced, known as 'Rima Mairan' and 'Rima Sharp'.
- The fragments could give insights about the energetic, fountain-like **volcanic activity** on the Moon.

UN FOOD SYSTEMS SUMMIT 2021

The UN Food Systems Summit took place during the UN General Assembly in New York as part of the Decade of Action **to achieve the Sustainable Development Goals (SDGs) by 2030.**

- The Summit launched new actions to deliver progress on all 17 SDGs, each of which relies to some degree on healthier, more sustainable and equitable food systems.

Aim:

- Maximizing the co-benefits of a food systems approach across the entire 2030 Agenda and meeting the challenges of climate change.
- To provide a platform for ambitious new actions, innovative solutions, and plans to transform food systems and leverage these shifts to deliver progress across all of the SDGs.

Objectives:

- **Raise awareness of food systems' centrality** to the entire sustainable development agenda, and the urgency of transforming food systems, particularly in the wake of a global pandemic;
- **Align stakeholders around a common understanding** and narrative of a food system framework as a foundation for concerted action, making food and food systems a more widespread issue for advocacy and action to achieve the 2030 Agenda;

- The geological age of the rocks at the landing site ages less than 2 billion years.

- **Recognize the need for inclusivity and innovation in food systems** governance and action;
- **Motivate and empower stakeholders who support food systems** transformation through the development of improved tools, measurement, and analysis; and
- **Catalyze, accelerate, and enlarge bold action** for the transformation of food systems by all communities, including countries, cities, companies, civil society, citizens, and food producers.

Outcomes:

- There is a need to achieve the United Nations-mandated Sustainable Development Goals (SDG) by 2030 and address climate change in view of food production.
- There is an urgent need to **move from incremental and siloed action towards a systems approach.**
- All stakeholders and people within the system play a crucial role through responsible and innovative practices in ensuring that **everyone has access to healthy food.**
- Food systems **encompass the entire range of actors and their interlinked value-adding activities** involved in the production, aggregation, processing, distribution,

consumption and disposal of food products.

- Food systems comprise all food products that **originate from crop and livestock production**, forestry, fisheries and aquaculture, as well as the broader economic, societal and natural environments in which these diverse production systems are embedded.
- The UN secretary-general commended the summit for “**injecting new life into multilateralism**” and for “leading the way to food systems that can **drive the global recovery** in three fundamental ways: **For people, for the planet, and for prosperity.**”
- **Five action areas** to help inform the transitions needed to realise the vision of the 2030 agenda:

- Nourish all people
- Boost nature-based solutions
- Advance equitable livelihoods, decent work and empowered communities
- Build resilience to vulnerabilities, shocks and stresses
- Support means of implementation
- At a global level, UN agencies as the **FAO, the International Fund for Agricultural Development (IFAD)**, and the World Food Programme (WFP) will jointly lead a UN system-wide coordination hub **to continue the work of the Summit.**
- To track progress toward the UN’s 2030 Agenda, the secretary-general will present an annual report to the high-level political forum.

NASA LAUNCHES NEW MISSION TO MONITOR EARTH’S LANDSCAPES

A NASA satellite was successfully launched on 27th September 2021 from Vandenberg Space Force Base in California.

Landsat Mission:

- The first **Landsat satellite** was launched in 1972.
- The satellites have collected **images of Earth** and helped understand how land usage has changed over the decades.
- The earth monitoring satellite, **Landsat 9**, is a joint mission of NASA and the US Geological Survey (USGS).
- The images have been used to study the **health of forests**, coral reefs,

monitor water quality and **melting glaciers.**

Landsat 9?

- The Landsat 9 joins Landsat 8 that was launched in 2013 and the satellites will collect **images of Earth’s surface.**
- The satellite can **see more color shades** with greater depths than the previous satellites.
- The satellite has Operational Land Imager 2 (**OLI-2**) and the Thermal Infrared Sensor 2 (**TIRS-2**).
- OLI-2 will **capture sunlight**, reflected off Earth’s surface and studies the visible, near-infrared, and short-wave infrared portions of the spectrum.

- TIRS-2 will capture **thermal radiation** and help to study the Earth's surface temperature.

How will the satellite monitor climate change?

- The Landsat will capture images if a forest is affected by **drought**, it will help to decode the **areas at risk**.
- **During wildfire**, the images will capture the plumes of smoke and

help to study the extent of a burning.

- It can identify **water bodies** affected by harmful **algal blooms**.
- The images helped in the study of **melting ice sheets** of the Antarctic and Arctic regions.
- It can track cracks in the glaciers, movement of glaciers, and decode how further global warming will impact them.

WHO AND PARTNERS CALL FOR URGENT ACTION ON MENINGITIS

The World Health Organization on 28th September 2021, launched the first-ever strategy of Global Roadmap to **Defeat Meningitis** by 2030.

- The strategy was launched at a virtual event, by **WHO** in Geneva, Switzerland.

Highlights:

- **Aim:** To prevent infections and improve care and diagnosis for those affected.
- The strategy could save more than 200,000 lives annually and **reduce disability** caused by the disease.
- **Meningitis** causes around 250,000 deaths a year and can lead to fast-spreading epidemics.
- It kills a tenth of those infected mostly children and young people.
- It is most common in the **'Meningitis Belt,'** which spans 26 countries across sub-Saharan Africa.

Objectives of the Roadmap:

- Achievement of high immunisation coverage, development of new affordable vaccines.
- Improved prevention strategies and outbreak response.

- **Speedy diagnosis** and optimal treatment for patients
- Good data to guide prevention and control efforts
- **Advocacy and engagement**, to ensure high awareness of meningitis, accountability for national plans, care, and after-care services.

Meningitis?

- Meningitis is a serious infection of the **meninges**, the membranes covering the brain and spinal cord.
- It is a devastating disease and remains a major public health challenge.
- The disease can be caused by different **pathogens** including bacteria, fungi, or viruses, the highest global burden is seen with bacterial meningitis.
- It can affect anyone of any age, but mainly affects babies, children, and young people.

Transmission:

- The **bacteria** are transmitted from person-to-person through droplets of respiratory or throat secretions from carriers.

- The incubation period is 4 days but can range between 2 and 10 days.
- It can overwhelm the body's defenses allowing infection to spread through the bloodstream to the brain.

Symptoms:

- The most common symptoms are a stiff neck, high fever, sensitivity to light, confusion, headaches, and vomiting.
- **Bacterial meningitis** may result in brain damage, hearing loss or a learning disability in 10% to 20% of survivors.

Treatment:

- A range of antibiotics can treat the infection, including penicillin, ampicillin, and ceftriaxone.

- **A conjugate vaccine** has been rolled out in the meningitis belt of sub-Saharan Africa in 2010

Key Facts:

Types of meningococcal vaccines:

- **Polysaccharide vaccines** used in outbreak response, in Africa.
- **Conjugate vaccines** used in prevention and outbreak response.
- **Protein based vaccine**, against N. meningitidis B. It is used in an outbreak response.
- Outside the Africa, **chemoprophylaxis** is recommended for close contacts.
- Ciprofloxacin is the antibiotic of choice, and ceftriaxone an alternative.



HAVE NOT LOCATED DARA SHIKOH'S GRAVE, SAYS ARCHAEOLOGICAL SURVEY OF INDIA

Recently, the final resting place of **Mughal prince Dara Shikoh** remains a mystery, with the Archaeological Survey of India saying it has not located the grave within the **Humayun's Tomb complex** over a year after a committee was formed for the job.

Dara Shikoh?

- Dara Shikoh was **born in Ajmer**, the land of Khwaja Moinuddin

Chishti, to whom, his father Shah Jahan had prayed for a son.

- Dara Shikoh, who was **Mughal emperor Shah Jahan's son** and expected heir, was killed on the orders of his brother Aurangzeb in 1659 after losing the war of succession.
- At the age of twenty-five, Dara wrote his first book, **Safinat-ul-Awliya**, a concise document detailing

the **lives of the Prophet and his family**, the Caliphs and of saints belonging to the five major Sufi orders then popular in India.

- Dara Shikoh is described as a “**liberal Muslim**” who tried to find commonalities between Hindu and Islamic traditions.

Work of Dara Shikoh

- Dara Shikoh, who had a **deep understanding and knowledge of major religions**, particularly Islam and Hinduism, is known as a pioneer of the academic movement for interfaith understanding in India.
- He strove to **develop cordial relationships between people by finding commonalities** between Hinduism and Islam and bringing their cultures into dialogue.
- His most important works, **Majma-ul-Bahrain (Mingling of Two Oceans)** and **Sirr-i-Akbar (Great Mystery)**, are devoted to the cause

of establishing connections between Hinduism and Islam.

- He not only **discovered commonalities** but even said that the foundation of the two religions is the same, which is the belief, “**One Reality and One God**”.
- Dara Shikoh acquired **proficiency in Sanskrit and Persian**, which enabled him to play a key role in popularising Indian culture and Hindu religious thought.
- He **translated the Upanishads** and other important sources of Hindu religion and spirituality from **Sanskrit to Persian**.
- He wrote ‘**Risala-i-hak Numa**’ (The Compass of the Truth), the ‘**Shathiyat or Hasanat-ul-Arifin**’ and the ‘**Iksir-i-Azam**’.
- He also commissioned the ‘**Jug Bashist**’ and the ‘**Tarjuma-i-Akwali-i-Wasili**’.

INDIAN NAVY SIGNS CONTRACT WITH BEL FOR SUPPLY OF ANTI-DRONE SYSTEM

Indian Navy sealed a contract with defence PSU **Bharat Electronics Limited** for the supply of **Naval Anti Drone System (NADS)**.

- NADS is the **first indigenously developed anti-drone system** to be inducted into the Indian armed forces.
- **Developed by:** Defence Research and Development Organisation
- **Manufactured by:** Bharat Electronics Limited

Capabilities:

- Has both hard-kill and soft kill capabilities and offers 360-degree coverage.
- Can instantly detect **micro drones** and uses a **laser-based kill mechanism** to terminate the targets.
- Uses Radar, electro-optical/infrared (EO/IR) sensors and radio frequency (RF) detectors to **detect and jam** the micro drones.

RAJBHASHA KIRTI PURASKAR

- **Deendayal Port Trust** has bagged the highest Rajbhasha Kirti Award for 2020-21.
- It was award for excellent performance in the field of **Official Language Implementation** amongst various Boards/Autonomous

Bodies/Trusts/Societies etc. of Government of India.

- Hindi language was first adopted by the Constituent Assembly of India as the **official language of India** on September 14, 1949.

PM MODI LAUDS SUKHET MODEL TO CHECK POLLUTION IN MADHUBANI VILLAGES

An initiative called '**Sukhet Model**' adopted by **Dr Rajendra Prasad** Agriculture University, Madhubani and local agricultural research centres was praised by Prime Minister during his Maan Ki Baat address.

Sukhet model:

- Sukhet model is named after **Sukhet village** in Madhubani district of Bihar.
- It is being implemented by the scientists of Dr Rajendra Prasad Central Agriculture University, Pusa (Samastipur).
- It is **promoting cleanliness and organic manure** to the farmers.

- It is also helping the village in **getting rid of pollution**.
- Under this project, **garbage and dung from houses are collected door-to-door** and then converted into vermicompost (organic manure).
- From the income generated from the sale of organic manure, **every family is provided LPG cylinders** every two months in exchange of the waste and cow dung.
- This project also provides **employment to 14 to 15 people** at the village.

INDIAN NAVY'S AVIATION WING RECEIVES PRESTIGIOUS PRESIDENT'S COLOUR AWARD

President will award the President's Colour to **Indian Naval Aviation** at a ceremonial parade to be held at **INS Hansa**, Goa, on September 6, 2021.

The **President's Colour** is the **highest honor** for a **military unit in recognition of its exceptional service** to the nation.

Indian Naval Aviation:

Naval Aviation came into being with acquisition of the first **Sealand**

aircraft on January 13, 1951 and the commissioning of **INS Garuda**, the first Naval Air Station, on May 11, 1953.

Presently, Naval Aviation boasts of **nine air stations** and **three naval air enclaves** along the Indian coastline and in the Andaman and Nicobar Islands.

Navy has **more than 250 aircraft** comprising carrier-borne fighters, maritime reconnaissance

aircraft, helicopters and remotely piloted aircraft (RPA).

LADAKH ADOPTS STATE ANIMAL AND BIRD

Ladakh adopted State **animal and bird** two years after it was carved out as a separate Union Territory (UT) from the erstwhile State of J&K.

- Snow leopard (*Panther unica*): State animal
- Black-necked crane (*Grus nicricollis*): State bird
- Both are endangered species.

Snow leopard:

- The snow leopard is one of the most elusive big cat species found in high, remote mountainous regions of Central Asia.
- The elegant and well-camouflaged snow leopard is one of the **world's most elusive cats**.

Description:

- Their fur keeps them well insulated in cold weather - it can be 5cm long on their back and sides and almost 12cm long on their belly.
- Snow leopards' tails are **80-105cm long**, they're thought to **aid balance** and they also wrap them around themselves for added warmth.
- Snow leopards' wide, fur-covered feet act as natural snowshoes - helping distribute their weight over soft snow and protecting them from the cold.
- Unlike other big cats, **snow leopards can't roar**. Snow leopards have a '**main**' call described as a '**piercing yowl**' that's so loud it can be heard over the roar of a river.

- Snow leopards are solitary creatures, and skillful predators, able to kill prey up to three times their own weight in challenging terrain.

Distribution and Habitat:

- Spread across 12 countries in central Asia.
- China, Bhutan, Nepal, India, Pakistan, Afghanistan, Russia, and Mongolia
- Snow leopards have evolved to live in some of the **harshest conditions** on Earth.
- Snow leopards live at **high altitudes**, usually at elevations of 3,000-4,500m.
- They prefer **steep, broken terrain like cliffs**, rocky outcrops and ravines.
- Having short forelimbs and long hind legs help keep them agile in their steep and rugged environment.

Treats:

- Poaching and retaliatory killing

Conservation Status:

- Listed as "**vulnerable**" in the International Union for Conservation of Nature Red List.

Black-necked crane:

- Black-necked cranes are iconic birds of the Tibetan Plateau, and are of great spiritual and cultural significance to Tibetan Buddhism as well as are integral to the landscape's biophysical ecosystem.

Description:

- Adults – **red crown**, head and neck are black, except for small light grey spot extending backward from yellow eye, ashy gray body feathers, black wings, tail and legs.
- Juveniles – black and gray body plumage, cinnamon-brown head.

Distribution:

- Breeding range includes the **Himalayan mountains**, parts of **central China and northern India**.
- Wintering range includes parts of **southern China and Bhutan**.

Threats:

- Habitat loss and degradation related to climate change, changes in

agriculture practices, pollution and environmental contamination.

Conservation Status:

- Listed as **“Near Threatened”** on the IUCN Red List.
- Listed in Appendix I of CITES. Listed in Schedule I of Wildlife (Protection) Act 1972.

Key Facts:

- The bird is revered by the **community of Monpas** (major Buddhist ethnic group of Arunachal Pradesh) as an embodiment of the sixth Dalai Lama.
- Black-necked crane, only found in Ladakh’s Changthang region, was the **State bird of J&K before August 5, 2019**.

'MISSION 5000': VENKAI AH NAIDU CALLS FOR PEOPLE'S MOVEMENT AGAINST DISRUPTIONS IN PARLIAMENT

Vice President and Rajya Sabha Chairman expressed concerns over **rising disruptions in Parliament and called for a people's movement** against it.

Highlights:

- This was announced at his speech at 'Pranab Mukherjee Memorial Lecture' to mark the first death anniversary of the former president.

- Theme of the lecture: **'Constitutionalism: The Guarantor of Democracy and Inclusive Growth'**.
- A people’s movement to influence the conduct of 5000 MPs, MLAs and MLCs in law-making bodies to make a difference.

INDIAN PSU (POWERGRID) WINS ATD - ASSOCIATION FOR TALENT DEVELOPMENT (ATD) 2021 BEST AWARD

Power Grid Corporation of India Limited (POWERGRID), a Maharatna CPSU under Ministry of Power has been awarded the coveted **“Association for Talent Development (ATD) 2021 BEST Award”**.

- POWERGRID has won this for its **diligent efforts in talent**

development practices and programmes driven by POWERGRID Academy of Leadership (PAL).

- It secured **8th rank among the 71 organizations** from around the globe.

- It became the only PSU to win this award and one of the **only two companies of India in Top 20**.

Association for Talent Development:

- The Association for Talent Development (ATD, formerly ASTD) is the **world's largest association dedicated to those who develop talent in organizations**.

B P KATAKE COMMITTEE TO ASSESS DAMAGES BAGHJAN OIL WELL FIRE

The Supreme Court formed an expert committee led by former Guwahati High Court judge, Justice **B.P. Katakey** to assess the damage to the **Dibru-Saikhowa National Park**.

Genesis:

- The Managing Director of **Oil India Limited** is allegedly responsible for the **fire and destruction caused by Baghjan oil well fire in 2020**.

- The global program recognizes organizations that demonstrate enterprise-wide success through talent development.
- ATD's BEST Award is the **talent development industry's** most rigorous and coveted recognition.

- Committee will begin its work and submit an **interim report** within a month on the remedial compensation **OIL ought to pay**.
- SC directed OIL to pay for the committee's expenses.
- The environment ministry will appoint a nodal officer to facilitate the committee and monitor its logistical arrangements.

INDIA'S 1ST N-MISSILE TRACKING SHIP - INS DHRUV

National Security Advisor is expected to **commission India's first satellite and ballistic missile tracking ship Dhruv** from Visakhapatnam on September 10.

INS Dhruv:

- INS Dhruv was built by **Hindustan Shipyard** in collaboration with Defence Research and Development Organisation (DRDO) and National Technical Research Organisation (NTRO).
- It has the capability to **map ocean beds** for research and detection of enemy submarines.
- The ship can also **detect ballistic missile tests** carried out by other countries.
- INS Dhruv is equipped with DRDO developed state of the **art active**

scanned array radar or **AESA** with the ability to scan various spectrums to monitor spy satellites watching over India as well as monitor missile tests in the entire region.

- This will add to the Indian Navy's capability to monitor the **region from the Gulf of Aden to the ingress routes to the South China Sea** via Malacca, Sunda, Lombok, Ombai and Wetar straits.

Significance:

- The **10,000-tonne ship** will be at the heart of India's future anti-ballistic missile capability as it will **act as an early warning system** for enemy missiles headed towards Indian cities and military establishments.

- The ship will be a **vital key to maritime domain awareness** in the Indo-Pacific and is being commissioned at the time when the era of underwater armed and surveillance drones has dawned.
- The nuclear missile tracking ship will be **manned by Indian Navy personnel** with the Strategic Forces Command (SFC).
- Such ships are operated by **France, the US, the UK, Russia, and China** only.
- INS Dhruv by mapping the Indian Ocean bed **will also help the Indian Navy plan better military operations** in all three dimensions—sub-surface, surface and aerial.
- The latest Indian ship will **help India's electronic intelligence-gathering spy agency**, the NTRO, to project threat to India in real-time.
- India will be **able to keep an eye on the nuclear arsenal** of countries like China and Pakistan.

TEACHER'S DAY 2021: DATE, HISTORY, SIGNIFICANCE AND CELEBRATION IN INDIA

On **5th September**, India celebrates **teacher's day** every year for students. **Worlds Teacher's Day** is celebrated every year on **October 5**.

- This day is celebrated to mark the **birth anniversary of India's first Vice President** Dr Sarvepalli Radhakrishnan.

Dr Sarvepalli Radhakrishnan:

- Dr Radhakrishnan was born to a Brahmin family in **Tiruttani of Andhra Pradesh** on September 5, 1888.
- A symbol of academics and education, Radhakrishnan was a renowned philosopher, statesman as well as a teacher.
- In his later period of life, he served as a **vice chancellor of Andhra University** and **Banaras Hindu University**.
- He was appointed as professor of Philosophy to the King George V Chair of Mental and Moral Science at the University of Calcutta (CU).
- During his tenure at the university, he represented CU at the Congress of the Universities of the British Empire in June 1926 as well as at the International Congress of Philosophy at Harvard University, the USA in September 1926.
- Radhakrishnan was **nominated 16 times for the Nobel Prize in Literature**, and another **11 times for the Nobel Peace Prize**.
- Dr Radhakrishnan was also **India's second President** from 1962 to 1967.
- During his **tenure as the Vice President**, Radhakrishnan was in charge of the Rajya Sabha (Upper House) sessions. Whenever a heated conversation would take place during the sessions, Radhakrishnan would quote slokas from Sanskrit classics or quotes from the Bible to calm the agitated audience.
- Leading the Indian delegation to the United Nations Educational,

Scientific and Cultural Organization (UNESCO), Dr Radhakrishnan was **elected chairman of UNESCO's executive board in 1948.**

- He believed that **true teachers are those who help us think for**

ourselves, so they should be the best minds in the nation.

- Dr Radhakrishnan was **posthumously awarded the Bharat Ratna**, the nation's highest civilian honour.

LAKSHADWEEP LAUNCHES SEAWEED FARMING UNITS IN NINE INHABITED ISLANDS

Large-scale farming of **indigenous seaweeds** was launched in nine inhabited islands of Lakshadweep under the guidance of **Central Marine Fisheries Research Institute (CMRI).**

- UT Lakshadweep administration is prioritizing **seaweed farming** as a major engine of economic development.

Highlights:

- The UT can produce **nearly 30,000 tonnes** of dry seaweed per year worth ₹7.5 million by farming only **1%** (200 ha) of its 21,290 ha of lagoon area (inhabited islands only).
- The **indigenous seaweeds** being farmed are- red algae, Gracilaria edulis and Acanthophora spicifera etc.
- These **quality seaweeds** can be utilised in high-end sectors like pharmaceuticals, food and nutraceuticals.

Seaweeds?

- Seaweed is a **generic term** used to describe **all marine algae.**
- There are over **600 species of seaweed** growing in rocky tidepools along the Indian coast.
- Seaweed is one of the **lowest carbon foods** and require no arable land, irrigation or fertilisers to grow.

- They are also a **carbon sink** as they pull carbon down to the bottom of the ocean.
- **Natural seaweed forests** help sustain marine life, are a home for fish and turtles while producing **low-carbon, highly nutritious food.**

Applications:

- Due to its **ability to absorb nutrients from seawater**, seaweed is among the most nutritional foods on Earth.
- Seaweed contains some of the greatest concentrations of **iodine** found in nature.
- In India, seaweed is used mainly as a **gelling agent.**
- The extracted gels, such as **agar-agar** and **alginates**, are commonly used in food and pharmaceutical industries.
- **Carrageenan**, used in toothpastes is a gel extracted from **red seaweed.**
- Many seaweeds contain anti-inflammatory, anti-microbial agents and some possess powerful **cancer-fighting agents.**
- Seaweed is also used in food additives, medicine, fertiliser and cosmetic goods and to **combat beach erosion.**

Seaweed Farming:

- **Seaweed farming** or kelp farming is the practice of **cultivating and harvesting seaweed**.
- **Gujarat** and **Tamil Nadu** are the primary suppliers of seaweed.
- **Benefits:**
 - Occupation for coastal people.
 - Raw material for seaweed-based industry
 - Major tool to treat coastal pollution & reduce CO₂.

Challenges:

- India currently has **no seaweed policy** and practices for farming and harvesting seaweed vary regionally.

- Seaweed farming requires **high-temperature-tolerant** and **fouling- and disease-resistant** strains.
- Most Indian seaweed cultivation is located in **near-shore waters**.
- **Alternative farming strategy** including expanding to offshore culture systems is required to overcome inshore challenges.
- Over-reliance of industry on **genetically uniform genotypes** of seaweed increases vulnerability of cultivated species to abiotic stressors, pests and pathogens.

HOW CSC NETWORK MAY HELP EXPAND PASSPORT SERVICES

The **Common Services Centres (CSC)** have received **approvals to manage and operate Passport Seva Kendra (PSK)** kiosks in rural areas.

Common Services Centre (CSC) programme:

- Common Services Centre (CSC) programme is an initiative of the Ministry of Electronics & IT (MeitY), Government of India.
- CSCs are the **access points for delivery of various electronic services** to villages in India, thereby contributing to a digitally and financially inclusive society.
- They are positioned as **change agents, promoting rural entrepreneurship and building rural capacities and livelihoods**.
- They are **enablers of community participation** and collective action for engendering social change through a bottom-up approach with key focus on the rural citizen.

- **CSC e-Governance Services India Limited** monitors the implementation of the Common Services Centers Scheme.
- It is a Special Purpose Vehicle (CSC SPV) incorporated under the Companies Act, 1956.
 - It provides a centralized collaborative framework for delivery of services to citizens through CSCs, besides ensuring systemic viability and sustainability of the scheme.

Significance

- The CSCs have an **extensive network of village-level entrepreneurs (VLEs)** who run and operate over 2.5 lakh centres across India.
- Most of these centres are **present either in rural or semi-urban areas**, where internet connectivity is not always the fastest.

- CSCs have **managed to create a niche for themselves** by offering services such as:
 - Agriculture Services (Agriculture, Horticulture, Sericulture, Animal Husbandry, Fisheries, Veterinary)
 - Education & Training Services (School, College, Vocational Education, Employment, etc.)
 - Health Services (Telemedicine, Health Check-ups, Medicines)
 - Rural Banking & Insurance Services (Micro-credit, Loans, Insurance)
- Entertainment Services (Movies, Television)
- Utility Services (Bill Payments, Online bookings)
- Commercial Services (DTP, Printing, Internet Browsing, Village level BPO).
- CSCs enable the **three vision areas** of the Digital India programme:
 - Digital infrastructure as Utility to Every Citizen
 - Governance and services on demand
 - Digital empowerment of citizens

DEFENCE MINISTRY DELEGATES ENHANCED FINANCIAL POWERS TO ARMED FORCES

Defence Minister released order on Delegation of Financial Powers to Defence Services 2021 to enhance **delegation of Revenue Procurement powers** for the Armed Forces.

Aim:

- To empower field formations, focus on operational preparedness, promote ease of doing business and enhance jointness among the Services.

Highlights of DFPDS 2021:

- Delegated financial powers of **Vice Chiefs** of the services have been increased by 10% subject to an overall ceiling of ₹500 crore.
- It empowers **Field Commanders** and below to **procure equipment/war-like stores** in a speedy manner for **urgent operational necessities** and meeting essential sustenance requirements.

- The critical equipment like **air-to-air refuellers** for Air Force can be hired for short periods as compared to buying them or a long-term lease.
- A **general enhancement** of up to two times has been approved for Competent Financial Authorities (CFAs).
- Financial Powers of **Chief of Integrated Defence Staff** to the Chairman Chiefs of Staff Committee (CISC) as CFA has been enhanced and aligned with Vice Chiefs of the Services.
- **New CFAs** have been added namely Deputy Chief of Army Staff, Master General Sustenance, ADG (Procurement)/DG Air Operations/DG Naval Operations etc. in service headquarters and in field formations on account of reorganisation/restructuring/functional requirements.
- Provision of **Emergency Financial Powers** to the Field formations

below Command level for the Defence Services has been incorporated in Emergency Powers Schedule.

Significance:

- The enhanced delegation of financial powers will result in:
 - Overcome procedural delays

- Quicker decision-making at all levels
- Better planning and operational preparedness
- Optimum utilisation of resources
- Greater decentralisation and operational efficiency

PM PAYS HOMAGE TO LEGENDARY FREEDOM FIGHTER V.O CHIDAMBARAM

Valliappan Olaganathan Chidambaram Pillai popularly known as **Kappalottiya Tamilan** was a formidable freedom fighter and entrepreneur from **Tamil Nadu**.

PM Pays Homage to Legendary Freedom Fighter V.O Chidambaram (VOC) on his Birth Anniversary.

Key Points:

Birth:

- VOC was born on 5 September 1872 in **Ottapidaram**, District Tirunelveli in Tamil Nadu.

Early Life:

- Graduated from **Caldwell College, Tuticorin**. Before beginning his law studies, he worked for a brief period as the taluk office clerk.
- He became a pleader in 1895 practising in Ottapidaram.

Entry in politics:

- Joined the Congress Party after the Bengal partition in 1905
- He was a follower of **Bal Gangadhar Tilak**.
- He was a great believer in the Swadeshi movement.
- In 1906, he decided to establish an Indian shipping company called the **Swadeshi Steam Navigation Company**.

- Along with Subramania Siva, he started the '**Swadeshi Sangam**'.

Role in the Freedom struggle:

- **Tuticorin Coral Mills** strike in 1908 was the turning point in his life. The workers at the British-owned mill decided to go on a strike demanding better pay and a reduction in the number of working hours.
- He took up the workers' cause and gave **many fiery speeches** which drew the people's attention to the plight of the workers.
- V.O.C, Siva and Padmanabha Iyengar decided to hold a procession on 9 March 1908 to observe the release of national leader **Bipin Chandra Pal** from prison.
- On 12 March 1908, the three leaders including V.O.C, Siva and Iyengar were remanded to the district jail.
- The court sentenced V.O.C to two life imprisonments for **charges of sedition**.

Later Life:

- After he was released, he moved to Chennai with his family since he was not permitted to return to Tirunelveli.
- He was in regular correspondence with Mahatma Gandhi but

later **cited ideological differences with Gandhi.**

- Helped in setting up labour unions in the state of Madras.
- He moved to Coimbatore later where his pleader's license was restored by a judge. He worked as a lawyer in Kovilpatti.

Famous Writings of VOC:

- Some of his works are – Meyyaram, Meyyarivu, Autobiography, commentary on the Thirukkural, compiled works of Tolkappiyam, etc.

Death:

- He died in the Tuticorin office of the Congress Party on 18 November 1936.

ODISHA PASSES BILL CAPPING RESERVATION OF SEATS AT 50%

The Odisha Assembly has passed the **Odisha Municipal Laws (Amendment) Bill, 2021** to cap **reservation at 50%**.

- Due to **confusion over reservation**, the government had not been able to conduct elections to urban local bodies, which are currently being **governed by bureaucrats**.
- The move has paved way for **conducting elections** to urban local bodies in the State.

Genesis:

- In 2013, the Orissa High Court passed an order stating that **upper ceiling limit of reservation of seats for SC, ST and Backward Classes** shouldn't exceed 50% in accordance with the judgment passed by Supreme Court in **K. Krishna Murthy** case.

CABINET INCREASES MINIMUM SUPPORT PRICES (MSP) FOR RABI CROPS FOR MARKETING SEASON 2022-23

Cabinet Committee on Economic Affairs (CCEA) has approved the increase in Minimum Support Prices (MSP) for all mandated **Rabi crops** for Rabi Marketing Season 2022-23.

Highlights:

- Government has increased the MSP of Rabi crops to ensure **remunerative prices** to the growers for their produce.
- The **highest absolute increase** in MSP is for **Lentil (Masur)** and **Rapeseeds & Mustard** (Rs.400 per quintal each) followed by **gram** (Rs.130 per quintal).

- MSP for safflower has been increased to Rs.114 per quintal.
- The expected returns to farmers over their cost of production are estimated to be highest in **case of wheat and rapeseed & mustard** (100% each), followed by lentil (79%); gram (74%); barley (60%); safflower (50%).

MSP:

- MSP is the **minimum price** which the government pays for the farmers' produce at the time of procurement. The MSP is remunerative for farmers.

Aim:

- To save the crops from price fluctuations in the market.

How is MSP fixed?

- It is fixed by the centre based on the recommendations of the **Commission for Agricultural Costs and Prices (CACP)**, which is a statutory body.

It considers **three costs** while recommending MSP-

- A2 which covers all the cash and kind expenses of the farmers.
- A2+FL which considers the estimated value of the unpaid labour of family members.
- C2 which includes A2+FL along with the interests foregone.

Crops under MSP:

- 23 crops are being supported by the centre by fixing of MSP. They belong to the family of cereals (7), pulses (5), oilseeds (7) and commercial crops (4).
- **These are:** Paddy, Jowar, Bajra, Maize, Wheat, Barley, Gram, Groundnut etc.

Importance of MSP:

- To **safeguard farmers** from the market price fluctuations.
 - The prices of farm commodities are dependent on factors like good harvest season which leads to fall in prices.
 - In such cases, farmers might not prefer to sow the aforesaid crop next season.
- To **encourage farmers** to sow the crops and thereby maintain a healthy supply.

Key Facts:

- **National Mission on Edible Oils-Oil Palm (NMEO-OP)** scheme will help in increasing the domestic production of edible oils and reduce imports dependency.
- **Pradhan Mantri Annadata Aay SanraksHan Abhiyan (PM-AASHA)** will aid in providing remunerative return to farmers for their produce.
 - The scheme consists of Price Support Scheme (PSS), Price Deficiency Payment Scheme (PDPS) and Private Procurement & Stockist Scheme (PPSS).

GOVT APPROVES PURCHASE OF 56 C-295 TRANSPORT AIRCRAFT

The Cabinet Committee on Security (CCS) clears deal to purchase 56 **C-295** medium transport aircraft for **Indian Air Force**.

Highlights:

- C-295MW is a **transport aircraft** of 5-10 tonne capacity. It will replace the **Avro aircraft** of the IAF were first inducted around 60 years ago. The deal to buy C-295MW transport aircraft is expected to cost **Rs 20,000** crore.

- **Jointly executed by:** Airbus Defence and Space and Tata Advanced Systems Limited.
- All aircrafts will be installed with the **indigenous Electronic Warfare Suite**.
- Airbus will supply the **first 16 aircraft** in flyaway condition from Spain while the remaining 40 will be assembled in India by TASL.

NATIONAL MISSION FOR CLEAN GANGA & NAULA FOUNDATION CELEBRATE HIMALAYAN DAY 2021 WITH THE THEME 'CONTRIBUTION OF HIMALAYAS AND OUR RESPONSIBILITIES'.

The **National Mission for Clean Ganga (NMCG)** organised **Himalayan Diwas** in association with Naula Foundation on 9th September.

Himalayan Diwas:

- Himalaya Diwas is celebrated annually on **9th September** in **Uttarakhand** since **2015**.
- It is celebrated with the **aim to conserve Himalayan ecosystem** and region.
- **Theme 2021: Contribution of Himalayas and our responsibilities.**

Himalayan Range:

- The Himalayas are a **mountain range in Asia** separating the plains of the Indian subcontinent from the Tibetan Plateau.
- The range runs **west-northwest to east-southeast** in an arc 2,400 kms long.
- It is the **youngest** mountain range, formed due to **subduction** of Indian tectonic plate under the Eurasian Plate.
- The range is spread in **five countries**: Bhutan, India, Nepal, Tibet (China), and Pakistan.
- They are **bordered** on:
 - Northwest by **Karakoram** and **Hindu Kush ranges**
 - North by **Tibetan** Plateau
 - South by **Indo-Gangetic** Plain
- It varies in **width** from 350 km in the west to 150 km in the east.

- The range has some of the planet's **highest peaks**, including the highest **Mount Everest**.
- Over 100 peaks **exceeding** 7200 m in elevation lie in the Himalayas.
- World's **major river systems**- Indus, Ganges, and Tsangpo-Brahmaputra rise from Himalayas with combined home to some 600 million people around the river basins.

Concerns:

- Himalayan hill towns face several challenges because of:
 - Poor Building Planning & Designs
 - Poor Infrastructure (Roads, Sewage, Water Supply etc.)
 - Unprecedented cutting of trees
 - Natural disasters
 - Climate change

Importance of Himalayas:

- Himalayas trigger the **Monsoons** every year, and protect India from the **cold and dry winds** of Central Asia.
- They are a source of diverse **medicinal plants** and multiple **rivers** and **streams**.
- Himalayan host **biodiversity** and provide **firewood** and a large variety of raw material for forest-based industries.
- They provide **defence**, tourism, hydroelectricity, forest wealth, minerals and pilgrimage.
- The rivers originating from Himalayas **carry fertile soil** from the mountains to the plains.

Various projects in Himalayas:

NMCG has sanctioned various projects for the conservation of Himalayas:

- **Rejuvenation of dying springs** in Tokoli Gad Catchment of Tehri Garhwal district using Geo-chemical & Geo-physical techniques' by IIT Roorkee.
- **Cultural mapping** of river Ganga from Gaumukh to Ganga Sagar by Indian National Trust for Art and Cultural Heritage (**INTACH**).

- Under the project, the tangible and intangible heritage of river Ganga and the cities, is being documented.
- Uttarkashi, Tehri Garhwal, Haridwar & Rudraprayag are important Himalayan cities covered.
- **Uttarakhand river's atlas**: It intends to **map all rivers** in Uttarakhand and give them a unique identification number.

PM MODI LAYS FOUNDATION STONE OF RAJA MAHENDRA PRATAP SINGH UNIVERSITY

The Prime Minister Inaugurated the foundation stone for a university named after **Raja Mahendra Pratap Singh** in Aligarh district, Uttar Pradesh.

Mahendra Pratap Singh:

- Raja Mahendra Pratap was an Indian freedom fighter, journalist, and the **first President** in the Provisional Government of India in Afghanistan.
- He was a **Marxist revolutionary** and social reformer, was an active participant in politics since his early age.

Birth:

- He was born in a princely state of **Mursan** in the Hathras District of Uttar Pradesh on 1 December 1886.

Early life:

- In 1895 Pratap went to the Government High School in **Aligarh**.
- Later he went to the **Muhammadan Anglo-Oriental Collegiate School** which became Aligarh Muslim University.

- He could not complete his graduation and left MAO in 1905.

Entry in Politics:

- He went to Kolkata in 1906 to attend the **Congress session**, met several leaders involved in the Swadeshi movement.
- He also started the movement to burn the foreign-made clothes in his state.
- On 20th December 1914, he left India for **European countries** to liberate India from the British colonial rule.
- In 1915 he went to **Afghanistan**, established first provisional Government of India in Kabul.
- He published "**World Federation Monthly Magazine**" in Japan, 1929, to free India from British rule.

Later Life:

- He followed **Mahatma Gandhi** and accepted the Gandhian philosophy of **non-violence**.
- After independence, he continued his struggle for transfer of power to the common man.

- Believed that the Panchayat Raj was the only tool, which can give the real power in the hands of people.
- He was president of **Indian Freedom Fighters' Association**, and All India Jat Mahasabha.

Awards and Honors:

- He was nominated for **Noble Peace Prize** in 1932.

Death:

He died on 29 April 1979.

THAMIRABARANI CIVILISATION IN TAMIL NADU

A carbon dating analysis of rice with soil, found in a **burial urn at Sivakalai** in Thoothukudi district of Tamil Nadu has yielded the date of 1155 BC, indicating that the Thamirabarani civilisation **dates back to 3,200 years.**

Announcement made following the excavation:

- Chief Minister of Tamil Nadu announced the establishment of **Porunai Museum in Tirunelveli** at a cost of ₹15 crore.
- The state archaeological department will conduct research in Quseir al-Qadim in Egypt, which was once part of the Roman empire, as well as in Khor Rori in Oman to establish Tamils' trade relations with these countries.
- The government will also conduct similar studies in **southeast Asian countries** like Thailand, Malaysia, Indonesia and Vietnam (conquered by Tamil king Rajendra Chola).

Thamirabarani River:

- The Thamirabarani is a **perennial river** that originates from the **Agastyarkoodam** peak of Pothigai hills of the Western Ghats.
- It flows through districts of the Tamil Nadu and into the Gulf of Mannar.

- The river forms the **Paanatheertham waterfalls** as it enters the Kariyar reservoir.
- The river descends down the mountains near Papanasam, where it forms the **Kalyanatheertham falls** and **Agasthiar falls.**
- **Tributary rivers:** Karaiyar, Maniamuthar river, Peyar, Servalar river, Gadananthi river, Ullar, Pachaiyar river, Pambar and the Ramanathi river.

History:

- The river got its name from the **Tamil word "tamiran"** which means **copper**. Since the traces of the copper metal was found in this river, this river is known as Thamirabarani.
- It was called the Tamraparni River in the pre-classical period, a name it lent to the island of Sri Lanka.
- Apart from the metal traces, a lot of medicinal properties are found in this river, as this flows from the Podhigai hills where many of the medicinal plants and shrubs grow.
- The old Tamil name of the river is **Porunai.**

GUPTA PERIOD STAIRS, PILLARS FOUND IN ETAH

The **Archaeological Survey of India** (ASI) discovered the remnants of **an ancient temple** dating back to the 5th century CE, the **Gupta period**, in Etah, Uttar Pradesh.

Discovery:

- The stairway includes **Shankhalipi** inscriptions which state **'Sri Mahendraditya'**, the title of the Gupta emperor Kumaragupta I.
- **Shankhalipi** is an elaborate, stylized ancient script that was employed for names and signatures between 4th and 8th century CE.
- There were **two ornamental pillars** that were near to one other and had human sculptures on them.

Etah Ruins:

- The writing discovered on the **Etah skeletons** has previously been discovered on a horse statue in **Lakhimpur Kheri**.
- The bones were dated to **Kumaragupta 1's** reign.
- The Etah ruins are the **third Gupta era structure temple discovered** so far.
- Earlier, only two structural temples were found — **Dashavatara Temple** in Deogarh and **Bhitargaon Temple** in Kanpur Dehat.

Kumaragupta-1:

- Kumaragupta 1 was the son and successor of **Chandragupta II**.
- **Reign:** 414 - 455 AD
- Adopted the titles of **'Shakraditya'** and **'Mahendraditya'**.
- Performed **'Ashvamedha'** sacrifices.

- He laid the foundation of **Nalanda University** which emerged as an institution of international reputation.

Famous Inscriptions of Kumaragupta's reign:

- These are – Karandanda, Mandisor, Bilsad inscription (oldest record of his reign) and Damodar Copper Plate inscription.

Temple architecture during Gupta period:

- Gupta period marks the beginning of Indian temple architecture.
- Manuals were written regarding how to form temples.

The Gupta temples were of five main types:

Type 1:

- Square building with flat roof
- Shallow pillared porch
- Sanctum (garbhagriha) at the center of the temple
- A single entrance & porch (Mandapa)
- Mandapa appears to originate 1st from here
- Example- **Vishnu Varaha** temples in (MP)

Type 2

- Square temple with a squat tower (shikhara) above
- Pillared approach, a high platform at the base
- Example- **Ladkhan Temple** at Aihole (Karnataka)

Type 3

- An elaboration of the first type

- Addition of an ambulatory (paradakshina) around the sanctum
- Most unique achievement of this stage was “Curvilinear tower” i.e., “Shikhara”.
- “**Nagara Style**” of temple making.
- Example- **Dasavatara temple** (Deogarh, Jhansi)

Type 4

- Rectangular temple with an apsidal back
- Barrel-vaulted roof above
- Example- **Kapoteswara temple** at Cezarla (Andhra Pradesh)

Type 5

- Circular temples with shallow rectangular projection

Example- **Maniyar Math shrine** at Rajgir, Bihar

BJP REMOVES CM VIJAY RUPANI 15 MONTHS BEFORE GUJARAT ASSEMBLY POLLS

The Chief Minister of **Gujarat** resigned on 11th September, a few months ahead of the Assembly polls in 2022.

Appointment of a CM:

- The Chief Minister is appointed by the **governor**.
- **Article 164** of the Constitution provides that there shall be a Council of Ministers with the Chief Minister at its head to aid and advise the governor.

Who can be a Chief Minister?

- After general election to the State Legislative Assembly, the party or coalition group which secures **majority** in this House, elects its leader, and communicates his name to the **Governor**.
- **The Governor** then formally appoints him as the Chief Minister and asks him to form his Council of Ministers.
- When no party gets a clear majority in the State Legislative Assembly, the Governor normally asks the **leader of the single largest party** to form the government.

Eligibility:

The Constitution of India sets the principal qualifications one must meet to be eligible to the office of the chief minister. A Chief Minister must be:

- A citizen of India.
- Should be a member of the state legislature
- 25 years of age or more
- Must be a graduate

Tenure:

- Theoretically, the Chief Minister holds office during the pleasure of the Governor.
- In actual practice the Chief Minister remains in office so long as he continues to be the **leader of the majority** in the State Legislative Assembly.

Powers and Functions of Chief Minister:

- The Chief Minister is at **the Head of the Council of Ministers** and the leader of the house.
- He must communicate to the Governor all the decisions of the council of ministers relating to the administration of the states.

- All the policies are announced by him on the floor of the house.
- He **recommends dissolution** of legislative assembly to the Governor.
- He **advises the Governor** regarding summoning, proroguing the sessions of State Legislative Assembly from time to time.

Resignation:

- The Chief Minister of any state hands over his **resignation** to the **Governor** of that state.
- In the event of a Chief Minister's resignation, the outgoing Chief minister holds the informal title of "**caretaker**" Chief minister until

the **Governor** either appoints a new chief minister or dissolves the assembly.

- He enjoys all the powers of a regular Chief Minister.
- He cannot make any major policy decisions or cabinet changes during his/her short tenure.

Removal of Chief Minister:

- The **Governor** can dismiss him in case he loses his majority support.
- The **State Legislative Assembly** can also remove him by passing a vote of no-confidence against him.

WHY INDIA IS NOT SELF-SUFFICIENT IN OILSEED PRODUCTION

Central government's decision to **allow import of 1.2 million tonnes (MT)** of crushed and de-oiled genetically modified (**GM**) **soya cake or soyameal** has landed Maharashtra's soya producers in trouble.

- **Maharashtra**, along with Madhya Pradesh, is one of the **leading soya** producing States. Together they contribute an estimated **89%** of the total soya production in India.

Highlights:

- India had the **requirement** of 28.99 lakh quintal of soybean seeds for 2021 Kharif season, and the availability was 28.11 lakh quintals.
- But India had exported about **19 lakh tonne non-GM soyameal** to other countries.
- As a result, India's poultry sector faced a **shortage of soyameal** and the now government has decided to **import GM soya cake**.

- So, the **soya prices** in the market have come down and farmers have to sell their produce at a **lower** price.
- This explains lack of ecosystem and **poor planning in India's oil seeds and oil production**.

Oil seeds in India:

- **Major edible oils** consumed in India are mustard, soyabean, groundnut, sunflower sesame oil, niger seed, safflower seed, castor, and linseed (primary source) and coconut, palm oil, cottonseed, rice bran, solvent extracted oil, tree and forest origin oil.
- From **5.16 MT** in 1950-51 to 33.42 MT in 2019-20, oil seed production in India has **witnessed growth** at a slow pace.
- The average **per hectare yield** of major oilseeds is **over 50 per cent lower** than average world yields in several crops.

Concerns:

- The **four main concerns** for oil seed and oil producers in India are:
 - Micro-irrigation, quality seeds, marketing infrastructure and government policies.
- The **crop-wise coverage of irrigated area** for oil seeds is only 27.8%.
 - Almost 70% of cereals and 52% of foodgrains are covered under irrigation.
- The production and **domestic availability** of oilseeds in India falls short of needs in domestic demand for edible oil. A big volume of edible oil has to be **imported** every year.
- **Changes in international prices** of edible oil make an impact on its domestic Indian price.

Dependency on imports:

- The **total domestic demand** of edible oils in India is approximately **250 lakh metric tonnes** per year.
- Around **60%** of the edible oils consumed is met through imports. **Palm oils** (crude + refined) import constitutes around 60% of the total edible oil imported, out of which 54% is imported from Indonesia and Malaysia.
- During 2019-20 the **import** of Agri-commodities was **\$19.91**

billion and the import of vegetable oils constituted the largest share – **48%**.

Need for a strategy:

- **Solvent Extractors Association of India** (SEA) members have been demanding **higher** Minimum Support Price (**MSP**) for oilseeds, so that more farmers are drawn towards oilseed cultivation.
- The demand is also to **link import duty** on edible oils to MSP.
- India's **domestic oilseed production** needs to go up about **54 MT** by 2025 to reduce edible oil imports by 10 MT annually.

Government's efforts:

- To achieve self-sufficiency in the production of oilseeds, the government of India decided to distribute **free high yielding varieties** of seeds to the farmers for the kharif season 2021 in the form of **mini-kits**.
- It is expected that the **special kharif programme** will bring an **additional 6.37 lakh hectare** of area under oilseeds and is likely to produce 120.26 lakh quintals of oilseeds and edible oil amounting to 24.36 lakh quintals.

INDIAN COAST GUARD SAVES LIVES OF 11 FISHERMEN NEAR SAGAR ISLAND

Indian Coast Guard (ICG) has saved lives of 11 fishermen whose boat underwent an engine failure and was stuck in the Bay of Bengal **near Sagar Island**.

Sagar Island:

- Sagar Island is the **southernmost part of West Bengal**, and is a religious spot for Hindu pilgrims.

- It is an island in the **Sunderban**, an unspoiled beach on the **estuary of the mighty Ganga**.
- It is cut off from the main land by **Muriganga river**.
- The island of Sagardwip is one of the **most famous Hindu pilgrimage centers** in India.
- Every year on **Makar Sankranti**, pilgrims gather for a holy dip at the confluence of the river Ganga and the Bay of Bengal.

HINDI DIWAS 2021: KNOW ITS HISTORY AND SIGNIFICANCE

India celebrates **Hindi Diwas** on **September 14** every year to commemorate the **adoption of Hindi in the Devanagari script** as one of the official languages of the nation.

- This day is celebrated to **prevent the increasing trend of the English language** in the nation and the neglect of Hindi.

Hindi Diwas/Day:

- The Constituent Assembly of India accepted **Hindi, written in Devanagari script**, as the official language of India on **September 14, 1949**.
- The **first Hindi Day** was celebrated on September 14, **1953**.
- The reason behind adopting Hindi as one of the official languages was to simplify administration in a nation with multiple languages.

Significance:

- **Rajbhasha Kirti Puraskar** and **Rajbhasha Gaurav Puraskar** awards are also given to ministries, departments, public sector units (PSUs), nationalised banks and citizens on Hindi Diwas for their contribution and promotion of Hindi.

Role of Gandhi in promoting Hindi language:

- Mahatma Gandhi called Hindi the **language of the masses** and talked about making Hindi the national language of the nation.
- Gandhi himself learned Hindi very diligently as he faced the language problem during the **Champaran satyagraha** in Bihar.
- Before joining the freedom movement, Gandhiji travelled all across India and found that **Hindi is the only language that can connect the whole country**.
- The Hindi that Gandhi used to write and speak **was not called Hindi, but Hindustani**.
- It was **different from the Sanskritised Hindi** of that time. It was simple Hindi, which Gandhi used as a communication language.
- Gandhi also brought out several newspapers in Hindi, English and Gujarati languages. He brought out **two newspapers in Hindi - Navjeevan and Harijan Sevak**.
- Gandhiji **preferred to answer** most of his letters in **Hindi only**.

ENGINEER'S DAY: INDIA CELEBRATES SIR M VISVESVARAYA'S 160TH BIRTHDAY, ALL YOU NEED TO KNOW ABOUT THE GREATEST ENGINEER

National Engineer's Day is celebrated on September 15 to recognize and honor the achievements of the great engineer of India **Moksha Gundam Visvesvaraya**.

- Engineers' day is celebrated in India, Sri Lanka, and Tanzania on September 15.
- The day is observed to commemorate the great work of engineers and encourage them for improvement and innovation.

Key Facts:

- He was born on 15th September 1861, in **Muddenahalli** Bengaluru.
- He was called the **Father of Modern Mysore State**.
- He completed his engineering from the Poona College of Science.
- In November 1909, he joined the Mysore service as Chief Engineer, assuming the position of the 19th **Dewan of Mysore**.
- He was instrumental in developing a system to protect **Visakhapatnam port** from sea erosion.
- He took voluntary retirement in 1918, did not agreed with the

proposal to set aside state jobs for **“non-brahmin”** community.

- After his retirement, he presided as chairman or became a member of various committees.

Contributions:

- **Institute** - He established the Sir Jayachamarajendra Occupational Institute in Bangalore in 1943.
 - It was later renamed to Sir Jayachamarajendra Polytechnic.
 - It was meant to impart special training to technicians keeping in mind the impending industrial development of India.
- **Books** - Reconstructing India; Planned Economy of India; Memoirs of Working Life.

Awards and honors:

- Received the **Bharat Ratna**, in 1955.
- Awarded with several honorary doctoral degrees including D.Sc., LL.D., D.Litt. from eight universities in India.

Death:

- He died on 14 April 1962 in Bangalore, Karnataka.

NOW, MADE-IN-INDIA TRANSPARENT CERAMICS

Indian researchers have developed transparent ceramics for the first time in India.

- It has reached theoretical transparency through a technique called **colloidal processing** followed by simultaneous application of temperature and pressure.
- Researchers have produced **magnesium**

aluminate spinel ceramics with colloidal processing followed by **HIP technique** which involves the simultaneous application of temperature and pressure.

- **Chemical Vapour Deposition (CVD)** involving reactions of the precursors in the vapor phase at elevated temperatures and **Hot Isostatic Pressing (HIP)** involving simultaneous application of

temperature and pressure are a few advanced processing techniques generally practiced to get transparent ceramics.

- Spinel is currently emerging as a transparent ceramic based on the outstanding optical properties of transmission– more than **75 % in the visible** and more than **80% in the infrared range**.
- It also has higher strength of **200 megapascal** and hardness of more than 13 Gigapascal.
- The material can be used for **thermal imaging applications**, especially in harsh service conditions and personal protection

systems such as, helmets, face shields, and goggles.

Transparent ceramics:

- Transparent ceramics is a new class of advanced materials with **unique transparency and excellent mechanical properties**.
- These materials can be designed not only for transparent to visible light but **also for ultraviolet (UV), Infrared (IR), and Radiofrequency (RF)**, giving opportunity for diverse applications
- Though produced by different countries globally, **transparent ceramics are restricted in supply** as they can be used for strategic applications.

INDIA POST GIVES THIS CENTURY-OLD DELICACY A STAMP OF RECOGNITION

India Post in collaboration with Agricultural and Processed Food Products Export Development Authority (APEDA) has released a specially designed envelope to commemorate **Joynagarer Moa**, a century-old GI certified sweet from West Bengal.

- The move is aimed at boosting the exports of the **indigenous food products**.

Joynagarer Moa:

- **Joynagarer Moa** is prepared from popped-rice ball held together with fresh date-palm jaggery.
- It originated in Joynagar, South 24 Pargana district, **West Bengal** more than a century back.
- Received its **GI certification** in 2015 due to the efforts of the **‘Joynagar Moa Nirmankari Society’**.

HOW A GUPTA ERA TEMPLE IN ETAH HAS PUT FOCUS BACK ON SHANKHALIPI SCRIPT

The discovery of Gupta era temple in Etah district of Uttar Pradesh by Archaeological Survey of India (ASI) has put back the focus on the **shankhalipi script**.

- The script in the temple was deciphered as saying, **‘Sri**

Mahendraditya’, the title of **Kumaragupta-I** of the Gupta dynasty.

Shankhalipi script?

- Shankhalipi or shell-script is a term used to describe **ornate spiral characters** assumed to be **Brahmi**

derivatives that look like **conch shells** or shankhas.

- They are found in inscriptions across **north-central India** and date to between the **4th and 8th centuries**.
- Shankhalipi is found to be **engraved on** temple pillars, columns and rock surfaces.
- Both **Shankhalipi** and **Brahmi** are stylised scripts used primarily for names and signatures.
- The inscriptions consist of a **small number of characters**, suggesting that the shell inscriptions are names or auspicious symbols or a combination of the **two**.

Chronology and meaning:

- The script was discovered in **1836** on a brass trident in Uttarakhand's **Barahat** by English scholar **James Prinsep**.

- He was the founding editor of the Journal of the Asiatic Society of Bengal.
- Later, two more similar scripts were found at Nagarjuna group of caves in the **Barabar Hills** near Gaya, Bihar.
- **Prominent sites** with shell inscriptions include:
 - Mundeshwari Temple in Bihar
 - Udayagiri Caves in Madhya Pradesh
 - Mansar in Maharashtra
 - Some cave sites of Gujarat and Maharashtra
 - Also reported in Indonesia's Java and Borneo.
- The attempts to decipher shell script **have not been successful**.
- No such inscriptions with dates or numbers have been reported so far even as their chronology can be determined by the objects on which they are written.

PROPOSED HERITAGE VILLAGE AT SINGAPERUMAL KOIL UNDER RURBAN MISSION TO BOOST TOURISM

The government proposed a plan to create a heritage village and boost tourism at Singaperumal Koil and nearby villages, **Chennai**.

Highlights:

- Government has sanctioned **₹25 lakh** under the Shyama Prasad Mukherji Rurban Mission to promote heritage villages and tourism in the region.
- The **'Rurban Mission'** covers Singaperumal Koil and six nearby villages — Appur, Chettipuniyam, Guruvanmedu, Kolathur, Reddipalayam, and Venkatapuram.

- The funds are allotted to **develop infrastructure** including:
 - Drainage system, citizen service centres, common service centres
 - Upgradation of schools with smart classrooms, piped water supply
 - Skill development centres, solid and liquid waste management, and tourism promotion.

About Shyama Prasad Mukherji Rurban Mission (SPMRM):

- SPMRM was launched in 2003, is in lines with Provision of Urban Amenities to Rural Areas (PURA).

Genesis:

- As per Census of India statistics, the rural population in India, stands at 833 million, constituting almost **68%** of the total population.
- The rural population has shown a growth of 12% during the 2001-2011 period and there has been an increase in the absolute number of villages by 2279 units.
- Large parts of rural areas in the country are part of **cluster settlements**, these clusters have a potential for social and economic growth and development
- The mission would lead to the holistic **development of the region** and encourage integrated and inclusive rural development.

Objectives of SPMRP:

Infrastructure:

- 24x7 water supply
- Solid and Liquid Waste Management facilities at household and cluster level
- Provision of Inter and Intra village roads within the cluster
- Installation of street lights

- Transport facilities using green technologies

Economic amenities:

- Comprises various thematic areas in the sectors of Agri Services and Processing, Tourism, and Skill Development to promote Small and Medium Scale Enterprises

Growth and Development

- Sanitation
- Access to Village Streets with Drains
- Agri-Services Processing and Allied Activities
- Education and Digital Literacy
- Sports and Social Infrastructure
- Healthy Environment

Progress under Rurban Scheme:

- **300 Rurban clusters** are envisaged to be developed in a timebound manner. The number of Integrated Cluster Action Plans (**ICAPs**) approved are 288.
- Total investment approved in 288 ICAPs is Rs. 28,075 crores.
- **NITI Aayog** has proposed a new and extended Programme for over 1,000 clusters in the next 3 years.

ANTI-TANK MISSILE COMPLETES ALL TRIALS

The **helicopter-launched Nag Anti-Tank Guided Missile (ATGM)**, Helina, has completed all trials and the process for issuing of Acceptance of Necessity (AoN) by the Army has started.

'Helina' and 'Dhruvastra':

- The 'Helina' and 'Dhruvastra' are **third generation anti-tank guided missiles** that can engage targets both in direct hit mode as well as top attack mode.

- Helina (the **Army version**) and Dhruvastra (**IAF version**) have been designed and developed indigenously by **Defence Research and Development Organisation (DRDO)**.
- Helina is a **fire and forget class ATGM** mounted on an **indigenous Advanced Light Helicopter (ALH)** and has a minimum range of 500 m and a **maximum range of 7 km**.

- Once the Electro-Optic (EO) system of ALH identifies the target, it automatically hands over target to the missile.
- It is lock-on before launch.
- The system has **all- weather day and night operational capabilities** and can defeat battle tanks with conventional armour as well as explosive reactive armour (ERA).
- The Helina missile can engage targets both **in direct hit mode as well as top attack mode.**

Nag Missile:

Features:

- **Third-generation anti-tank guided missile.**
- **Range:** 500 m – 4 km

- The Nag Missile system fired **from a Nag Missile Carrier (NAMICA)** can take out targets at ranges of **4 to 7 kilometres.**
- **Named after:** Former DRDO chief B D Nagchaudhuri
- **Developed under:** Integrated Guided Missile Programme

Capabilities:

- Fire-and-forget and top-attack with capabilities of:
- Passive homing guidance
- It can target all types of tanks in day and night conditions.
- **Produced by:** Bharat Dynamics Limited (defence public sector undertaking)
- **Missile Launcher of NAG:** A BMP-II based system with amphibious capability

7 GIRLS DROWN IN JHARKHAND'S LATEHAR DISTRICT

Seven girls were drowned in a pond in **Jharkhand's** Latehar district during "karma puja" festivities.

Karma Festival:

- The **Karma puja** is one of the most important festival in Jharkhand. It is performed by the Baiga, Oraon, Binjhari and Majhwar tribes of the state.

Significance of Karma Puja:

- The **spiritual** and religious festival is associated with **harvest**, which is symbolized through a **Karam tree.**
- The tribal community believes that due to **Karam Devta** they have a good harvest.
- The festival is very auspicious and a symbol of **fertility** and prosperity.

- It is celebrated in the **11th moon** of the Hindu month of Bhadrapada (August/September).

Rituals:

- Villagers go to the forest and collect the branch of **Karam tree.** They sing the traditional songs that praise the deity.
- They collect fruits and flowers which are essential for the **Karma puja.**
- Planting the tree of Karma initiates the process of Karma Puja. The branch of Karma tree is washed with milk and handia, the rice beer and then raised at the center of the dancing arena.
- Branches are decorated with garlands and curd; rice and flowers are offered by the devotees.

- Grains are filled in the red-colored baskets and offered to the branches.
- The young devotees **wear barley seedlings** on their head which are distributed among them.

COUNTRYWIDE FREE TELEMEDICINE FACILITY TO MARK “SEVA SAMARPAN ABHIYAAN”- UNION MINISTER DR JITENDRA SINGH

To mark “Seva Samarpan Abhiyaan” on the occasion of the birthday of Prime Minister, Ministry of Science & Technology launched **countrywide free Telemedicine Consultation cum drugs facility**, which is perhaps unique of its kind.

- The Minister also announced that “**JIGYASA**” will be extended to cover schools in over 700 districts of India within one year.

‘JIGYASA’:

- It is a **student- scientist connect programme** of the Ministry of Science & Technology.
- The programme is inspired by Prime Minister’s vision of a new India and **Scientific Social**

Responsibility (SSR) of Scientific Community and Institutions.

- Implemented by the Council of Scientific and Industrial Research (CSIR) in collaboration with Kendriya Vidyalaya Sangathan (KVS).
- The focus is on **connecting school students and scientists** to extend student's classroom learning with a well planned research laboratory based learning.
- The program will also enable the students and teachers to practically live the theoretical concepts taught in science by visiting CSIR laboratories and by participating in projects.

KAUSHALACHARYA AWARDS 2021 TO 41 SKILL TRAINERS

The Kaushalacharya Awards 2021 were presented virtually to **41 skill trainers** for their exemplary contribution to the skill ecosystem.

- These 41 **trainers** are from several initiatives and training programmes of Skill India— Directorate General of Training (DGT), Apprenticeship, Pradhan Mantri Kaushal Vikas Yojana (PMKVY), Jan Shikshan Sansthan (JSS) and Entrepreneurship.
- The award is an **annual celebration** that focuses on

honouring the skill trainers, their contribution to the skill ecosystem and the impact created by them on India's youth.

- **Initiative of:** Ministry of Skill Development & Entrepreneurship

It has two categories:

- **Category 1** National Award for Excellence- **Trainer** (Excellence in Training)
- **Category 2** National Award for Excellence – **Master Trainers** (Excellence in Providing Training of Trainers)

GOVT ISSUES ORDERS TO SET UP DISTRICT-LEVEL POWER COMMITTEES

Ministry of Power has issued an order for the setting up of **District Level Committees** to exercise oversight over all power related schemes of Government of India.

Highlights:

- These committees would **exercise oversight** over all power-related schemes and its impact on the **provision of services** to the people.
- **The composition of the committee would be:**
 1. Most Senior member of Parliament (MP) in the district: Chairperson
 2. Other MPs in the district: Co-chairpersons
 3. District Collector: Member Secretary
Chairperson/President of the District Panchayat: Member (e)
MLAs of the district: Members
- All States and Union Territories will have to **notify and ensure**

establishment of these District Electricity committees.

- The committee of a district will meet at the district headquarters **at least once in three months** to review and coordinate the overall development of power supply infrastructure in the district.
- All Government of India Schemes (power related), including their progress and quality issues.
- Development of Sub-transmission and distribution network including regular operations and maintenance of network - identifying further areas where strengthening is needed.
- Impact of the works on quality and reliability of power supply.
- Standards of Performance and consumer services quality of supply.
- Complaints and Grievance Redressal System.

DEFENCE MINISTER APPEALS PEOPLE TO GENEROUSLY CONTRIBUTE TO ARMED FORCES FLAG DAY FUND

Raksha Mantri has appealed to the general public to generously **contribute to the Armed Forces Flag Day Fund (AFFDF)**, which is used in rehabilitation and welfare of dependents of brave soldiers who were killed in action or disabled.

Armed Forces Flag Day Fund (AFFDF):

- The Fund is **administered by Kendriya Sainik Board (KSB)** Secretariat under the aegis of its Management Committee and Executive Committee.

- Managing Committee is headed by Raksha Mantri at the Centre and Governor / Lt Governor of the State.
- Executive Committee is headed by Secretary, Ex-Servicemen Welfare (ESW).
- Out of the income earned on the AFFDF corpus, **7.5 per cent is ploughed back into the corpus** and balance is used to fund the welfare and rehabilitation schemes for Ex-Servicemen (ESM)/dependents.
- AFFDF is formed by amalgamation of the following:

- Amalgamated Special Fund for war bereaved, war disabled and other ESM/serving personnel
- Armed Forces Flag Day Fund
- St.Dunstan's (India) and Kendriya Sainik Board Fund
- Indian Gorkha Ex-Servicemen's Welfare Fund.
- Some of the important welfare schemes funded out of AFFDF are as under:
 - Raksha Mantri's Ex-servicemen Welfare Fund (RMEWF)
 - Financial Assistance for Serious Diseases
 - Paraplegic Rehabilitation Centres (PRCs)

- War Memorial Hostels (WMHs)

Armed Forces Flag Day:

- Since 1949, **7th December** is observed as the Armed Forces Flag Day throughout the country to honor the martyrs and the men in uniform who valiantly fought on our borders to safeguard the country's honor.
- On this day, Army, Navy and Air Force personnel who sacrificed their lives for the cause of the nation are remembered by observing **two-minute silence at 11:00 hours as a mark of respect.**

DEFENCE MINISTRY PLACES ₹7,523 CR ORDER FOR 118 TANKS FOR INDIAN ARMY

The Defence Ministry placed an order of worth ₹7,523 crore with the **Heavy Vehicles Factory**, Avadi, Chennai for 118 locally made Arjun Mk-1A tanks to sharpen the army's combat skills.

high mobility, and excellent protection.

Features:

Arjun Main Battle Tank Mk-1A:

- **MBT Mk-1A** is a new **variant of Arjun Tank** designed to enhance fire power, mobility and survivability, infused with **72 new features** and more indigenous content than the Mk-1 variant.
- The tank has been designed and developed by Combat Vehicles Research and Development Establishment (**CVRDE**) along with Defence Research and Development (**DRDO**).
- **Objective:** To create a state-of-the-art tank with superior **fire power,**

- The **Arjun Mk-1A** has 54.3% indigenous content against the 41% in **Mk-1**.
- It is equipped with a massive **120 mm rifled gun** and **Kanchan armor**, making it the most potent armored system in the inventory of the army.
- It has a **computer-controlled integrated fire control system** with stabilized sighting that works in all lighting conditions.
- The **secondary weapons include** a co-axial **7.62-mm machine gun** for anti-personnel and a 12.7-mm machine gun for anti-aircraft and ground targets.

HIGH POWER TRANSMITTERS AT WORLD'S HIGHEST RADIO STATION AT HUMBATINGLA IN KARGIL

Ministry of Information and Broadcasting will inaugurate high power transmitters at the world's highest radio station at Humbatingla in **Kargil**, UT Ladakh.

Key Points:

- **Aim:** To improve information reach to the public in the bordering villages of Ladakh.
- The 10kW High **Power Transmitters** of All India Radio, FM radio station and Doordarshan will improve the transmission and the reach in Kargil and Batalik sectors.
- People in the mountainous region would get **better quality services** of AIR and DD.

- Transmission of Ladakhi News and Programs on **DD Kashir** DTH platform will be doubled.
- It will allow viewers/listeners to learn about the country's policies, news, and current affairs.
- It will make **educational content** available for the students in the region through DD and AIR.
- **Prasar Bharati** has been offering various educational content for school & college students in collaboration with various state education departments and institutions.

THE PRESIDENT OF INDIA HAS PRESENTED THE NATIONAL SERVICE SCHEME AWARDS FOR THE YEAR 2019-20.

National Service Scheme Awards:

- The NSS awards were **instituted by the Ministry of Youth Affairs & Sports** in 1993-94 on the occasion of Silver Jubilee Year of National Service Scheme.
- National Service Scheme was **established in 1969**, on the occasion of the **birth centenary of Mahatma Gandhi**.
- **Aim:** To recognise and reward outstanding contributions towards

voluntary community service made by the Universities/ Colleges, (+2) Councils and Senior Secondary, NSS Units/ Programme Officers and NSS Volunteers.

- The awards are given in **three different categories** like University/ +2 Councils, NSS Units and their Programme Officers and NSS volunteers.

PM MODI LAUNCHES AYUSHMAN BHARAT DIGITAL MISSION, SAYS WILL BRING REVOLUTIONARY CHANGES IN HEALTH FACILITIES

The Prime Minister launched the Ayushman Bharat Digital Mission on 27th September 2021, to bring

revolutionary changes in the health facilities.

Highlights:

- The initiative would play a big role in eliminating problems in **medical treatment** of the poor and middle class.
- It will connect patients with hospitals across the nation and provide a strong technology platform.
- It will provide **reliable data**, leading to better treatment and savings for patients.

Ayushman Bharat Digital Mission:

1. A unique **digital health ID** will be provided to the people, which will contain all the health records of the person.
2. It will enable access and exchange of **longitudinal health records** of citizens with their consent.
3. Includes a **health ID** for every citizen that will work as their health account, to which personal health

records can be linked and viewed with the help of a mobile application.

4. Healthcare Professionals Registry (**HPR**) and Healthcare Facilities Registries (**HFR**) will act as a repository of all healthcare providers.
5. It will ensure **ease of doing business** for doctors and hospitals and healthcare service providers.
6. It will create **integration within the digital health ecosystem**, like the Unified Payments Interface (UPI).

Key Facts:

- The pilot project of the **National Digital Health Mission** was announced by the Prime Minister during Independence Day from the Red Fort on August 15, 2020.
 - At present, the project is implemented in the pilot phase in **six Union Territories**.

SWACHH SURVEKSHAN 2022 LAUNCHED WITH 'PEOPLE FIRST' AT ITS CORE

Ministry of Housing and Urban Affairs launched the seventh consecutive edition of Swachh Survekshan, at New Delhi on 27th September 2021.

Highlights:

- It focusses on the initiatives of cities for the **welfare and well-being** of frontline sanitation workers.
- It will **reinforce** the participation of senior citizens and young adults towards upholding the cleanliness of urban India.

Swachh Survekshan 2022:

- It is the 7th consecutive edition of Swachh Survekshan, conducted by **Swachh Bharat Mission-Urban (SBM-U)**.

- It will boost the **Swachh Bharat Mission** towards a circular economy approach through optimum resource recovery.
- The revamped version of the **Swachhata App** was launched.
- It is the digital sanitation grievance redressal platform that was launched in 2016.

Theme:

- With the theme of **'People First'**, Swachh Bharat Mission-Urban (SBM-U) will organize a series of citizen-centric activities under the overarching theme of **'Jan Bhagidari'**.

- Campaigns like **'Kachra Alag Karo'** will aim to reinforce the practice of source segregation for effective waste management.

Keys:

- Survekshan 2021 will create a level playing field for smaller cities by introducing two population categories, one under 15,000 and another between 15,000-25,000.
- District rankings have been introduced to expand the **Survekshan footprint**.

- It will now cover 100% wards for sampling, as compared to 40% in previous years.
- Increase in the number of assessors for the **on-field assessment**.
- The survey will have improved technological interventions such as
 - **QR code-based citizens' feedback, geo-tagging of sanitation**, waste management for better efficiency, and **digital tracking** of documents.

AKASH PRIME, THE NEW VERSION OF AKASH MISSILE, SUCCESSFULLY TESTED IN ODISHA

A new version of the Akash Missile – **'Akash Prime'** has been successfully flight tested from Integrated Test Range, Chandipur, Odisha on 27 September 2021.

Highlights:

- The missile intercepted and destroyed an **unmanned aerial target** mimicking enemy aircrafts.
- It is equipped with an **indigenous active Radio Frequency (RF)** seeker for improved accuracy.
- It will ensure **reliable performance** under low temperature environments at higher altitudes.
- Modified ground system of the existing Akash weapon system has been used for the current flight test.
- Radars, Electro Optical Tracking System and Telemetry stations monitored the missile trajectory and flight parameters.

Akash Missile System:

- Akash is a **medium-range** mobile surface-to-air missile (SAM) system

developed by the Defence Research and Development Organisation (**DRDO**).

- It can **target aircraft** up to 50–80 km away, at altitudes up to 18,000 m.
- It has the capability to **neutralize aerial targets** like fighter jets, cruise missiles and air-to-surface missiles as well as ballistic missiles.
- It can simultaneously **engage Multiple Targets** in Group or Autonomous Mode.
- It is operational in service with the Indian Army and the Indian Air Force.

History:

1. Mark-I

- The first test flight of Akash missile was conducted in 1990.
- 3-D Central Acquisition Radar (3D-CAR) group mode performance is fully established.
- It has unique characteristics like mobility, multiple target handling,

digitally-coded command guidance and fully automatic operation.

2. Akash-1S

- DRDO tested Akash-1S on 25 May and 27 May 2019 with a strike range of 30 km, from Integrated Test Range (ITR), Chandipur, Odisha.
- It was fired five times against multiple targets and successfully completed the trials.
- It supports the command and active terminal seeker guidance to

enhance the single shot kill probability.

3. Akash-NG

- It was approved in September 2016 to succeed Akash and Akash-1S with improved capabilities.
- It has an improved reaction time and higher level of protection against saturation attacks.
- The range increased from 40 km to greater than 80 km.

INDIA GETS FIRST HERBICIDE-TOLERANT & NON-GM RICE VARIETIES

The **Indian Agricultural Research Institute** has developed the country's first-ever non-genetically modified, herbicide-tolerant rice varieties.

Highlights:

- **Pusa Basmati 1979 and Pusa Basmati 1985** contain a mutated **acetolactate synthase (ALS)** gene making it possible for farmers to spray Imazethapyr, an herbicide, to control weeds.
- The new varieties will replace water with **Imazethapyr**.
- There is no need for nursery, puddling, transplanting, and flooding of fields, one can sow paddy directly, just like wheat.
- The new basmati varieties contain an **ALS gene** whose DNA sequence has been altered using ethyl methane sulfonate, a chemical mutant.
- The plants can **"tolerate"** application of the

herbicide, and hence it kills only the weeds.

- Both varieties have been bred by crossing, **Pusa 1121 and Pusa 1509**, with 'Robin'. The latter is a mutant line derived from **Nagina 22**, an upland drought-tolerant rice variety.

Direct Seeding of Rice Technique:

- Farmers in Punjab and Haryana are adopting direct seeding of rice (DSR) in response to labour shortages and **depleting water tables**.
- DSR cultivation is based on two herbicides, **Pendimethalin and Bispyribac-sodium**. These are costlier than Imazethapyr.
- Imazethapyr, has a wider weed-control range and is safer, as the ALS gene isn't present in humans and mammals.
- DSR need 30 per cent less water, it will save Rs 3,000 per acre in transplantation labour charges,
- It will **reduce the time** due to no nursery preparation.

ASSAM'S RICE WINE JUDIMA GETS GI TAG

Judima, the wine brewed by the Dimasa community in Assam, has been awarded the geographical indication (GI) tag.

Highlights:

- The wine made from **rice** and a certain herb is the first beverage from the north-east to earn the label.
- The Assam Agricultural University, coordinated the research on the

popular drink with the Youth Association for Development and Empowerment (YADEM) in Assam's Dima Hasao district.

- **Judima** is intrinsic to the social and cultural life of the **Dimasas**.
- The GI tag for the drink came 14 years after the ginger of the adjoining Karbi Anglong district received its geographical indication.

NATIONAL ACTION PLAN FOR DOG MEDIATED RABIES ELIMINATION BY 2030

The Government on **World Rabies Day** (September 28) launched the National Action Plan for Dog Mediated Rabies Elimination by **2030**.

Highlights:

- It has been drafted by the **National Centre for Disease Control** (NCDC) with the Ministry of Fisheries and Animal Husbandry.
- The scheme is based on 5 major pillars:
 - Political will, sustained funding, intersectoral planning, coordination, community planning, and operational research.
- **Aim:** To reduce human deaths due to dog-mediated rabies to zero by 2030 through mass dog vaccination and appropriate post-exposure treatment.
- Using the term '**Hadakwa**' in popularizing the activities under the Plan. Rabies is popularly known as Hadakwa in rural India.

Vital Elements of the Scheme:

- **Prevention:** Introduction of cost-effective public health intervention techniques to improve, affordability, and availability.

- **Promotion:** Improve understanding of rabies through advocacy, awareness, education, and operational research.
- **Partnership:** Provide coordinated support for the anti-rabies drive with, urban and rural civil society, government, private sectors, and international partners.

Rabies?

- Rabies is a viral **zoonotic disease** that causes progressive and fatal inflammation of the brain and spinal cord.
- It has two forms:
 - **Furious rabies:** characterized by hyperactivity and hallucinations.
 - **Paralytic rabies:** characterized by paralysis and coma.
- The preventable viral disease is **transmitted through** the bite or saliva of infected animals, like dog, monkey, bats etc.
- **Dog-mediated** human rabies can be eliminated by tackling the disease at its source.

Symptoms:

- Early symptoms can include a **fever with pain**, unusual tingling,

burning sensation at the wound site.

- The virus can spread to the **central nervous system**, causing fatal inflammation of the brain and spinal cord.
- The **incubation period** of the disease can vary from 1 week to 1 year.
- **Furious rabies** causes signs of hyperactivity, hydrophobia.
- In **Paralytic rabies**, muscles gradually become paralyzed, at the site of the bite. A coma slowly develops and eventually death occurs.

Treatment:

- **Vaccinating dogs** is the most effective strategy for preventing rabies in people.
- Human rabies vaccines exist for pre-exposure immunization.
- If bitten wash the wound with soap or detergent.
- Apply an **iodine-containing** or anti-viral medication to the wound.
- Avoid covering the wound with dressings or **bandages**.
- Avoid applying **irritants** to the wounds like acids and alkalis.



WHO ARE THE PANJ PIARE, AND WHY ARE THEY IMPORTANT IN SIKHISM?

Former Uttarakhand Chief Minister has apologised for comparing Punjab Congress chief and his four advisers to the Panj Piare.

Panj Piara?

- 'Panj Piare' is not just a group of five baptised people but a concept and tradition founded by 10th Sikh Guru Gobind Singh.
- Guru Gobind Singh established the institution of Panj Piare while founding the Khalsa on the day of Baisakhi in 1699.
- Addressing a large gathering, he asked for five heads for sacrifice. Five men responded to his call and the Guru baptised them and called them Panj Piare.
- Since then, every group of five baptised Sikhs is called Panj Piare and accorded the respect enjoyed by the first five Sikhs.
- Guru Gobind Singh himself got baptised from them at the same stage to tell the Sikhs that Panj Piaras have higher authority and

decision making power than anyone in the community.

- The Panj Piare are also seen as a manifestation of the Guru himself.

First Panj Piare?

- The Panj Piare were from different castes and states of India.
- Bhai Daya Ram hailed from Lahore, Bhai Dharam Rai was from Hastinapur in Uttar Pradesh, Bhai Himmat Rai came from Jagannath in Odisha, Bhai Mohkam Rai from Gujarat and Bhai Sahib Chand was from Bidar, Karnataka.
- In return, Guru Gobind Singh made them drink Amrit (sweet water

prepared by reciting Gurbani) from one utensil.

- Then he suffixed Singh with their names and renamed them with prefix- Bhai.

Who can become a Panj Piara?

- Any baptised Sikh can become a Panj Piare.
- The unanimous decision taken by Panj Piare has to be followed by everyone in the community.
- Akal Takht Jathedar also can't take any decision unilaterally and every diktat from the Akal Takht has to be signed by all the five Jathedars of the five Takhts (Temporal seats) or their representatives.

GOVT SIGNS PEACE ACCORD WITH 5 INSURGENT GROUPS OF ASSAM

A tripartite agreement among five insurgent groups of Assam, the Centre and the State government was signed to end years of **violence** in the **Karbi Anglong region**.

- Centre promises **₹1,000** crore package for Assam to develop Karbi areas.

Highlights:

- The insurgent groups signed the peace accord include:
 - People's Democratic Council of Karbi Longri (PDCK)
 - Karbi Longri North Chachar Hills Liberation Front (KLNLF)
 - Karbi People's Liberation Tiger (KPLT)
 - Kuki Liberation Front (KLF)
 - United Peoples Liberation Army (UPLA)
- About **1,000 militants** belonging to these groups **have**

surrendered along with their arms and have joined the mainstream.

Significance:

- It would **ensure Autonomous Council (KAAC)**, protection of identity, language, and culture of the Karbi people and focused development of the Council area, without affecting the territorial and administrative integrity of Assam.
- The Assam government will set up a **Karbi Welfare Council** for focused development of Karbi people living outside the KAAC area.
- It proposes to give more legislative, executive, administrative and financial powers to **KAAC**.
- The agreement would promote **peace and prosperity** in Assam.
- Assam government will notify **Karbi** as the **official language** of KAAC.

- English, Hindi, and Assamese would continue to be used for official purposes.
- Under the agreement, the hill tribes would be **entitled to reservation**.

Karbi people:

- The Karbis are one of the major ethnic communities in Northeast India and especially in the hill areas of Assam.
- The Karbis linguistically belong to the **Tibeto-Burman group**.
- The original home of these people was in western China near the Yang-Tee-Kiang and the Howang-ho rivers.
- They went down the courses of the Brahmaputra, and entered India and Burma. The Karbis, entered Assam from Central Asia.

Religion:

- Most of the Karbis still practice **their cultural and traditional** influences.

- The practitioners of traditional Animism believe in reincarnation and honour the ancestors.
- Many people follow Hinduism. There are Karbi Christians also around (10-15%).

Culture and Tradition:

- The Karbis mainly speak their **native language**, i.e., Karbi language. They are well versed in Assamese.
- They have a **patrilineal society** which are composed of five major clans or Kur.
- The traditional system of governance is headed by the Lindok, **the king**.
- They celebrate many festivals like-Hacha-Kekan, Chojun, Rongker, Peng Karkli, Thoi Asor Rit Asor and Botor Kekur.

CABINET CLEARS ₹10,683-CR PLI SCHEME FOR MAN-MADE TEXTILES

The Cabinet has approved a new **five-year Production Linked Incentive (PLI) scheme** for the textile industry, which covers items from the **MMF** (man-made fibre) and **technical textiles** sectors.

Highlights:

- PLI scheme for textiles** is part of overall announcement of PLI schemes for 13 sectors made during the **Union Budget 2021-22** with an outlay of ₹ 1.97 lakh crore.
- Budgetary outlay:** Rs. 10,683 crores.

- Aim:** To provide a major boost to domestic production and exports of synthetic fibers and technical textiles.
- The approved incentive of 3-11% of **annual incremental revenue** will be provided to **eligible units** over a **period of five years**.

Eligibility:

- For eligibility under the scheme, **two types** of investments are possible.
 - Any person (which includes firm/company) willing to invest a minimum of **₹300 crore** in plant, machinery, equipment and civil

works to produce products of **notified MMF fabrics & technical textiles**, shall be eligible to apply for participation in first part of the scheme.

2. In the second part, any person, firm or company, willing to invest **minimum ₹100 crore** shall be eligible to apply.
 - Factories based around **aspirational districts** or **Tier-3 & Tier-4 cities** will be given priority.
 - It will especially **benefit** Gujarat, Uttar Pradesh, Maharashtra, Tamil Nadu, Punjab, Andhra Pradesh, Telangana etc.
 - It is expected to generate an **additional direct employment** of 7.5 lakh and indirect employment of several lakhs more.

About the fibres:

- A fiber is a long and thin strand or thread of material that can be **knit or woven** into a fabric.

1. Synthetic or man-made fibers (MMF):

- They are made by **chemical synthesis**, as opposed to natural fibers that are directly derived from **living** organisms.
- **MMFs** such as nylon, polyester, acrylic, rayon, viscose and polyolefin dominate global apparel production.
- They account for **75%** of all fibers produced worldwide, and **80%** in developed markets such as Europe and North America.
- **Applications:** Clothing, carpets and household textiles, tyres, conveyor belts, cold-weather clothing, air and water filters.

2. Technical textiles:

- These are materials and products manufactured primarily for their **technical and performance properties** rather than their aesthetic or decorative characteristics.
- **Applications:** Automobiles, civil engineering and construction (roads, railway tracks), agriculture, healthcare, industrial safety, personal protection, military and disaster management.
- In India, **Technical textiles** segment is estimated at **\$16 billion** or **6%** of \$250-billion global market.

Need for the move:

- India has primarily focused on **cotton** textile. But **two-thirds share** of the international textile market is of man-made and technical textile.
- The share of **export of textiles** from India has fallen from 24% in 2000 to just **11%** in 2020. Indian companies and exporters have **lost market** share to China, Bangladesh and Thailand.
- **MMF** (man-made fibre) and **technical textiles** sectors account for **less than 20%** of India's total textile production.
- The penetration level of **technical textiles** is low in India, varying between 5-10% against 30-70% in developed countries.

State of textile production in India:

- The **textiles** (including apparel) industry in India provides **direct employment** to 45 million people and 60 million in allied industries.

- India is among the **world's largest producers of textiles** products and apparel.
- The domestic textiles and apparel industry contributes **5%** of India's GDP, **7%** of industry output in value terms and **11%** of export earnings.
- **Issues include:** Lack of working capital, outdated technology, fragmented nature of supply chains etc.

Key Facts:

- The Cabinet has approved **Rs 1480 crore National Technical Textiles Mission** in

2020, set to run till 2024. The mission targets an average growth rate of **15-20% annually** and a domestic market size of \$40-50 billion by 2024.

- As many as **92 categories** of technical textiles, including fire-resistant curtains, geogrid for railways, high-altitude combat gear, bulletproof jackets, leno bags for transporting farm commodities, and architectural membranes for tents, had been identified for **mandatory use** by central ministries and public agencies.

OPERATION RED FLAG: TO PLAY OUT SOON IN PUNJAB, A 100-DAY WAR ON DRUG MENACE

The Chief Minister of **Punjab** has decided to launch a **100-day Big Bang programme** to check the problem of drugs in the state.

- The outreach of **Outpatient Opioid Assisted Treatment (OOAT)** centres in rural areas would be enhanced by opening extension centres and clinics.

Outpatient Opioid Assisted Treatment Centres:

- OOAT centres administer **de-addiction medicine**, a **combination of buprenorphine and naloxone**, to the opioid dependent people registering there.
- It is administered in the **form of a pill** and treatment is primarily for addicts of opioid drugs, including heroin, poppy husk and opium.
- OOAT centres in Punjab were first set in **October 2017**.

- There are currently **202 government-run OOAT** centres, including 11 in jails, where medicine is given free of cost.
- In addition, there are 54 government and 224 **private de-addiction** and rehabilitation centres.
- In all these centres, there are **over 7 lakh patients** registered for treatment at present.

OOAT linked extension centres in rural areas:

- The **state government** is set to open as many as **300 OOAT-linked extension centres/clinics** in rural areas to broaden the outreach of this treatment.
- It will also **reduce pressure** on existing OOAT centres and provide medicine to patients **nearer** to place of residence.

Govt. efforts in curbing drug abuse:

- **Narcotic Drugs and Psychotropic Substances Act 1985:** Prohibits a person from producing, possessing, selling, purchasing, transporting, storing, and/or consuming any narcotic drug or psychotropic substance. The Act was amended thrice – in 1988, 2001 and 2014.
- **Narco-Coordination Centre:** Constituted in November 2016 and the scheme of **Financial Assistance to States for Narcotics Control** was revived.
- **Project Sunrise:** To tackle rising HIV prevalence in North-Eastern India, especially among people injecting drugs. Launched by Ministry of Health and Family Welfare in 2016.
- **Seizure Information Management System:** Software to create a complete online database of drug offences and offenders, by Narcotics Control Bureau.
- **National Fund for Control of Drug Abuse:** To meet expenditure required for combating illicit traffic

in Narcotic Drugs, rehabilitation of addicts, and public education against drug abuse, etc.

- **National Drug Abuse Survey:** To measure trends of drug abuse in India through Ministry of Social Justice & Empowerment with assistance from National Drug Dependence Treatment Centre of AIIMS.
- **Nasha Mukh Bharat or Drug-Free India Campaign:** To focus on community outreach programs.

International Treaties and Conventions:

India has signed these International treaties and conventions to combat drug menace:

- UN Convention on Narcotic Drugs (1961)
- UN Convention on Psychotropic Substances (1971)
- UN Convention against Illicit Traffic in Narcotic Drugs and Psychotropic Substances (1988)
- UN Convention against Transnational Organized Crime (2000)

PANEL TO FRAME NEW DRUGS, COSMETICS AND MEDICAL DEVICE LAWS

The Central government has constituted a committee for framing drugs, cosmetics, and medical devices law.

Highlights:

- Government constituted the committee to frame the New Drugs, **Cosmetics and Medical Devices Act.**

- The eight-member panel will be headed by **Drug Controller General of India V.G. Somani.**
- The committee will undertake pre-legislative consultations and examine the present Act, and submit a draft document for a de-novo Drugs, Cosmetics and Medical Devices bill.

WHAT IS NIRF, AND WHY DID THE GOVERNMENT DECIDE TO RANK UNIVERSITIES?

The Ministry of Education has launched the **sixth edition** of the National Institute Ranking Framework (**NIRF**).

- **IIT-Madras**, IISc-Bangalore, and IIT-Bombay have emerged as the country's **top three** higher education institutions.

National Institute Ranking Framework:

- NIRF is the **first-ever effort** by the government to rank higher education institutions (HEIs) in the country.
- NIRF was launched in **2016**. Earlier, HEIs were usually ranked by private entities, especially news magazines.
- Participation in NIRF was **voluntary** in the initial years, but made **compulsory** for all government-run educational institutions in **2018**.
 - Roughly 6,000 institutions participated in NIRF in 2021.

Parameters:

- All education institutions are assessed on **five parameters**:
 1. Teaching, learning and resources
 2. Research and Professional practices
 3. Graduation Outcomes
 4. Outreach and Inclusivity
 5. Peer Perception
- NIRF lists out best institutions across **11 categories** – overall

national ranking, universities, engineering, college, medical, management, pharmacy, law, architecture, dental and research.

Rankings of 2021:

- Indian Institute of Technology dominated the **overall rankings**, with seven of the top 10 positions.

1. Overall rank:

- **IIT-Madras** ranked **first**, Indian Institute of Science, Bengaluru ranked **second**, followed by IIT-Bombay, IIT-Delhi, IIT-Kanpur, IIT-Kharagpur, IIT-Roorkee, IIT-Guwahati, Jawaharlal Nehru University and Banaras Hindu University.

2. Among Universities:

- **Indian Institute of Science** was ranked **one**, followed by JNU, BHU, Calcutta University, Amrita Vishwa Vidyapeetham in Coimbatore, Jamia Millia Islamia in New Delhi, Manipal Academy of Higher Education, Jadavpur University, University of Hyderabad and Aligarh Muslim University at rank 10.

Significance:

- NIRF aims to bring more and more institutions under the ranking framework, set a benchmark for HEIs and establish India as a preferred global study destination.

'NO NEW COAL PLANTS NEEDED TO MEET 2030 DEMAND'

A report prepared by EMBER, an independent British energy think-tank, in collaboration with Bangalore-based Climate Risk Horizons was released recently.

Highlights of the report:

- India does **not require additional new coal capacity** to meet expected demand growth by financial year 2030.

- India's peak demand would reach **301 GW by 2030**, if India's power demand grows **5 per cent annually**, coal-fired generation in the financial year 2030 will be lower than in the financial year 2020.
- If this occurs during sunlight hours, **India's planned solar capacity can cover much of it.**
- Even if it occurs in the evening, substituting the 'zombie' coal plants with additional battery storage capacity represents a more flexible, cheaper option.
- The development of **new coal plants will lead to "zombie" units** – ones which will exist, but not be operational.
- India can **free up Rs 247,421 crore by "killing" the zombie coal projects**, as these surplus plants will require an estimated Rs 247,421 crore investment.
- They will lock consumers into expensive contracts and jeopardise India's RE [renewable energy] goals by adding to the system's overcapacity.
- As India recovers from the disruption caused by the Covid-19 pandemic, **how the country uses scarce public resources** will be absolutely crucial.
- The smart option is to divert these resources to renewables and storage to build a cheaper, more resilient grid for the future.
- The private sector investment on "zombie" coal plants will be Rs 62,912 crore.

NORTH WESTERN RAILWAY EMPLOYEES PROTEST AGAINST PRIVATISATION

The employee union of the North Western Railway (NWR) protest the privatization of railways announced by the Central Government recently.

Highlights:

- Around 400 stations will be sold under PPP model.
- The target is to sell 90 trains to private parties.
- 1,400 km of track is targeted to be handed over to private investors by 2023.
- The Centre has set a target of handing over 265 goods train to private investors.

What is privatization?

- The railway ministry, on July 1, 2020, began the formal process of allowing private trains on 109

routes under Public Private Partnership (PPP) model.

Aim:

- To upgrade its facilities and infrastructure.

Causes of Privatization:

1. **Low Quality of Service:** Indian Railways deserves the credit for serving the largest democracy in the world, but it faces criticism, particularly in case of, catering, and punctuality.
2. **Low Internal Revenue:** The problem of cross-subsidization has severely affected the internal revenue generation of the Indian Railways.
3. **Cross subsidization:** Money earned through freight traffic is diverted to

meet the shortfalls in passenger revenue, and thus the development of freight traffic infrastructure suffers.

4. **Increasing Number of Accidents:** Repeated railway accidents have further raised questions on government ownership

Benefits:

1. **Improved Infrastructure:** Privatization will lead to better infrastructure which in turn would result in improved amenities for travelers.
2. **Normalization of prices:** Improvement in quality of services must be matched up by a rise in charges paid by the travelers.
3. **Improved Security:** Private participation can lead to better accountability and monitoring, which can keep a check on rising accidents in railways.
4. **Better Technological Innovation:** Private participation can lead to the infusion of modern technology and capacity building of Indian railways.

Disadvantages:

- **Limited Coverage:** An advantage of Indian Railways being government-owned is that it provides nation-wide connectivity irrespective of profit.
 - Privatization would mean the railways will become a profit-making enterprise.
 - It can have a negative impact on connectivity and further increase the rural-urban divide.
- **Lesser Inclusive:** Hike in fares can render the railways out of reach for lower-income groups.
- **Issue of Accountability:** The privatization of Indian Railways is not easy, as it covers every part of India and runs for 24×7 hours.
- **Impact on the Economy:** Indian Railways is the backbone of India; it provides low fare transportation to agricultural and industrial trade.
 - Privatization shall affect the Indian economy at large.
- It is **difficult to privatize** a portion of the railways' operations as it is strongly vertically integrated.

REDUCING FOOD WASTAGE, EMPOWERING LOCALS: FOOD PROCESSING UNIT INAUGURATED IN MADHYA PRADESH

The Ministry of Food Processing Industries inaugurated a new unit of food processing in Morena, **Madhya Pradesh**.

- The processing unit will benefit everyone at **the local level**. It will add to the development of India's food processing sector.

Highlights:

- The Ministry has approved **41 mega food parks**, 353 cold chain projects,

63 Agro-processing clusters, 292 food processing units, creation of **63 backward and forward linkages** projects, and 6 operation green projects across the country under Pradhan Mantri Kisan Sampada Yojana (**PMKSY**).

- This includes 62 cold chain projects in Maharashtra and 23 in Uttar Pradesh.

- The unit will provide **direct and indirect employment** to about 700 persons.
- Provide Benefits to 1,000 farmers in the Central Processing Centre (CPC) and Primary Processing Centers (PPC) catchment areas.
- Provides facilities such as **packing machines**, water treatment plants, water storage tanks, subsystems, fittings, etc.

Cold Chain Scheme:

- Cold Chain, Value Addition, and Preservation Infrastructure, is a centrally sponsored scheme launched in 2008.
- It is a component of Pradhan Mantri Kisan Sampada Yojana (**PMKSY**).
- It was created to **reduce post-harvest losses** of horticulture and non-horticulture produce and provide remunerative prices to farmers for their produce.
- An **infrastructure facility** is created for the entire supply chain, including pre-cooling, weighing, sorting, grading, packing facility, blast freezing, etc. of agricultural produce.

Aim:

- To provide integrated cold chain and preservation infrastructure facilities, without any break, from the farm gate to the consumer.

Importance:

- **Reduces the loss** of agricultural and other perishable commodities like fruits & vegetables, meat, food, etc. till it reaches the consumers.
- **Preserves** and extends the shelf life and safeguards the nutrient quality of products.
- Improves **domestic food supply**, leads to improved nutrition and food safety, adds to farmers income.
- New jobs would be created all along the Cold Chain.

Significance:

- The scheme allows flexibility in project planning with special emphasis on creation of cold chain infrastructure at farm level.
- It is set up by Partnership Firms, Companies, Corporations, Self Help Groups (SHGs), Farmer Producer Organizations (FPOs), NGOs, Central / State PSUs, etc.

WOMEN SELF-HELP GROUPS: FUNDING ALONE DOES NOT WORK; THE GOVERNMENT NEEDS TO LISTEN IN

Despite COVID-19-induced difficulties and socio-political pressure, **women-run SHGs** successfully established social well-being in their communities.

Highlights:

- Women-run self-help groups (SHG) from **backward districts** of India fought the pandemic with innovation.

- They manufactured **essential medical products** such as masks, sanitisers, protective equipment and ran community kitchens, provided financial support to the vulnerable and communities.
- These SHGs also fight **against gender discrimination** in rural India. As many as 67 million Indian

women are members in six million SHGs.

Efforts to support SHGs:

- World Bank gave **\$750 million** in financial support to **National Rural Livelihoods Mission**.
- The government of India announced **financial support** to over **0.4 million SHGs** through Rs 1,625 crore in funds August 12, 2021, under the Atma Nirbhar Bharat (self-reliant India) programme.
- Central government has provided **financial support** to Micro Food Processing Enterprises (PMFME) and Farmer Producer Organizations (FPOs).
- Government initiatives have **encouraged women citizens** to have a bank account, which has made it easier to **procure loans** for SHGs.
 - SHGs have shown satisfactory results by **bringing down** banks' non-performing assets.
- New reforms have been incorporated in the **sustainable development model** by creating self-reliant economy and inspiring women to explore the global market.

Existing Challenges:

Despite scopes and capability, some SHGs are **unable to develop** into full-fledged organisations because of the following reasons:

1. Lack of understanding about core values of business
2. A loss of interest in doing business due to socio-cultural pressure
3. Poor presentation skills and zero knowledge transfer

4. Poor financial knowledge and lack of management
5. Poor marketing and promotional skills
6. Short-term orientations and lack of proper road map for the next phase
7. Lack of well-defined policies for SHGs
8. Lack of understanding on importance of UN mandated Sustainable Development Goals.
9. Roadblocks compounded by traditional malpractices.

Road Ahead:

- **Proper Policy design** focussed on the challenges faced by women SHGs
- Providing funds and successful **pilot implementation** of large-scale projects
- Creating a **gender-neutral ecosystem** for women entrepreneurs, develop adequate infrastructure, provide training, destroy red-tapism, omit the role of middle-man, establish a platform for knowledge transfer, financial assurance, create innovative mentorship programs, connect various stakeholders such as non-profits, government bodies & institutes.
- **Specialised training** should be given on climate change, clean energy, disaster management, water, etc.
- SHGs should be **inspired to explore** other sectors as agriculture, handicrafts, renewables, watershed development, alternative tourism, finance, education

- **Development activities** should be conducted keeping in mind **socio-geographical factors** and designed according to the requirements of end-implementers.
- Mechanism of **monitoring and evaluation** of the projects as per the global standards.
- **CSR support**, international funding, multilateral bank support should be given to SHGs.
- Innovative ideas should be incubated and relaxations

and **special assistance** should be given to SHGs for tenders and expression of interest.

- A dedicated **grievance resolving mechanism** and **Integrated common facility centre** will help promote activities.
- A **multidisciplinary committee** should be instituted to improve the condition of women SHGs in India, with a mentorship programme to guide SHGs to survive in the hard, competitive market.

ASSAM DIRECTS FOREIGNERS' TRIBUNALS TO NOT PASS 'CONSEQUENTIAL ORDERS' ON DETENTION, DEPORTATION

The Assam government has directed the **Foreigners' Tribunals (FTs)** to stick to giving "opinion" on a person's nationality, and refrain from passing any "consequential orders."

- The government says that, the FT members were passing "consequential orders/directions", while giving opinion. **"This may not be a correct approach."**
- Apart from NRC drop-outs, FTs have been adjudicating **cases of 'doubtful voters'** and other references **made by the Border Police in Assam.**

Foreigners' Tribunals:

- Set up by the **Ministry of Home Affairs in 1964**, FTs are **quasi-judicial bodies** that adjudicate **citizenship in Assam.**
- As per the Foreigners (Tribunals) Order, 1964, FTs were constituted to give an **"opinion" on whether a person is a foreigner or not**, as per Foreigners Act, 1946.

- Earlier, the powers to constitute tribunals were vested only with the Centre.
- The Act is unique to Assam, in other parts, once a 'foreigner' has been apprehended by the police for staying illegally, he or she is produced before a local court under the **Passport Act, 1920, or the Foreigners Act, 1946.**
- The FTs get **two kinds of cases:**
 - Those against whom a "reference" has been made by border police, and
 - Those whose names in the electoral rolls have a D (Doubtful) against them.
- **Section 9 of the Foreigners Act** says that "the onus of proving that such person is not a foreigner or is not a foreigner of such particular class or description, as the case may be, shall, notwithstanding anything contained in the Indian Evidence Act, 1872, lie upon such person".

- Thus, the **accused has to prove he or she is an Indian.**
- The amended Foreigners (Tribunal) Order, 2019 empowers **individuals to approach the Tribunals.**
- Earlier, only the **State administration could move the**

Tribunal against a suspect, but with the final NRC, if a person doesn't find his or her name in the final list, they could move the Tribunal.

GOVT. CURBS FUNDING FOR 10 CLIMATE CHANGE, CHILD LABOUR NGO's

The **Ministry of Home Affairs** has limited the funding of **ten** non-governmental organizations (NGOs) related to climate and child labour.

Highlights:

- **Reserve Bank of India (RBI)** has sent an internal note to all the banks directing them to put a specific number of foreign organizations in the PRC list (**Prior Reference Category**) under the Foreign Contribution Regulation Act (FCRA) 2010.
- These NGOs include-
 - NGOs from USA named Omidyar Network International, Humanity United and Stardust foundation.
 - NGOs from Australia named Walk Free Foundation and Minderoo Foundation.
 - NGOs from the UK named Children's Investment Fund Foundation, Freedom fund and Laudes foundation etc.
- The RBI has instructed that **any fund flow** from the (specified) donor agencies to any NGO/Voluntary organization/ persons in India should be brought to the **Ministry of Home Affairs** so that the funds are allowed to be credited to the recipients only after clearance/ prior permission from the MHA's

Foreigners Division of the FCRA wing.

Key facts:

- The FCRA approval of foreign funded NGOs including the **Commonwealth Human Rights Initiative** was suspended in June 2021.
- More than **6600** NGOs' FCRA licenses were cancelled with around 260 of them suspended by the government during the period 2016-2020.

Foreign Contribution Regulation Act (FCRA):

- Foreign Contribution (regulation) Act, 2010 is a consolidating act whose scope is to regulate the acceptance and **utilisation of foreign contribution** or foreign hospitality by individuals or associations or companies.
- The act **regulates foreign donations** and ensures that such contributions do not adversely affect internal security.
- It is implemented by the **Ministry of Home Affairs.**

Salient Features:

- FCRA is applicable to all associations, groups and NGOs which intend to receive foreign donations.

- It is mandatory for all such NGOs to **register themselves** under the FCRA.
- The registration is **initially valid for five years** and it can be renewed subsequently if they comply with all norms.
- **Registered associations** can receive foreign contribution for social, educational, religious, economic and cultural purposes.
- Filing of annual returns, on the lines of Income Tax, is **compulsory**.
- The NGOs must give an undertaking that the acceptance of foreign funds is not likely to prejudicially affect the **sovereignty and integrity of India** or impact friendly relations with any foreign state and **does not disrupt communal harmony**.
- All such NGOs would have to operate accounts in either **nationalised or private banks** which have core banking facilities to allow security agencies access on a real time basis.
- The Act makes **Aadhaar number mandatory** for all office bearers, directors or key functionaries of a

person receiving foreign contribution, as an identification document.

Restriction on use of foreign funding:

- All funds received by an NGO must be **used only for the purpose for which they were received**. No funds other than foreign contribution is deposited in the Foreign Contribution account.
- Such funds must **not use in speculative activities** identified under the Act.
- Except with the prior approval of the Authority, such funds **must not be given or transferred to any entity** not registered under the Act.
- Every asset purchased with such fund must be in the **name of the NGO** and not its office bearers or members.
- Any **organisation of a political nature** and any association engaged in the **production and broadcast of audio- or audio-visual news** have been placed in the category **prohibited** to accept **foreign contribution**.

STATE OF THE ART CONTAINER SCANNER INSTALLED AT PARADEEP PORT AS PART OF GOVT'S EASE OF DOING BUSINESS INITIATIVE

Paradip Port is a **natural, deep-water port** on the East coast of India in Jagatsinghpur district of **Odisha**.

- It is situated at confluence of the **Mahanadi River** and the **Bay of Bengal**.
- The Major Port is administered under Major Port Trusts Act, 1963, under the Ministry of Shipping.

Why in News?

- A **Mobile X-Ray Container Scanning System (MXCS)** has been installed by **Paradip Port** at a cost of Rs 30 crore under **Ease of Doing Business** initiative.
- It is installed for the purpose of **reducing physical examination** and dwell time of containers at the Port.
- The Scanner can scan **up to 25 containers per hour**, enabling the

Trade to directly move out their containers with upgrade security and zero hassle.

CABINET APPROVES CRUCIAL RELIEF PACKAGE FOR STRESSED TELECOM SECTOR

The Union Cabinet has approved a much-needed **relief package** for the stressed telecom sector in India.

Highlights:

- **Aim:** To offer relief to telecom companies burdened by large regulatory dues and attract foreign capital into the telecom sector.

Telecom sector relief package:

- **Definition of adjusted gross revenue (AGR)** has been changed to exclude non-telecom revenue i.e., all non-telecom revenue will be removed from AGR.
- Relief on computing dues relating to AGR and **Four-year moratorium** on the AGR dues.
 - To protect government revenues, **companies availing of the moratorium** will have to pay interest.
 - This would be at the rate of marginal cost of funds-based lending rate (**MCLR**) plus 2%.
- Foreign ownership rules were liberalised by allowing **100% foreign direct investment (FDI)** through the **automatic route** with safeguards.
 - Currently, 100% FDI is allowed in the telecom sector, but only 49% was on the automatic route, any

investment above that limit required government approval.

- Option for government to **convert dues into equity** in the companies after the moratorium period expires.
- Allow telcos to **surrender their spectrums** that have not been used so far.
- **Removal** of spectrum usage charges in future telecom auctions. The spectrum allocation would be of **30 years** instead of 20 years.
 - Businesses could surrender spectrum after a **10-year lock-in period** after paying a defined surrender charge.
- **Simplify KYC norms** by eliminating physical paperwork for customers and simplified the process of setting up telecom towers.

Significance:

- AGR-related benefit will provide telcos time to **re-strategize its business** and clear the **pending dues** in a longer period.
- It would help **save jobs in the sector** and ensure much-needed **competition** in the industry.
- It would ensure that the industry is able to **invest fearlessly** and support India's digital ambition.

AUTO SECTOR GETS ₹26,058-CRORE PLI SCHEME TO PUSH NEW TECH, CLEAN FUELS

The Union Cabinet has approved a PLI (**Production Linked Incentive**) scheme for the auto sector to promote advanced technologies, including clean energy.

Highlights:

- The Production Linked Incentives of **₹26,058 crore** will be provided to the auto sector **over five years**. With the introduction of the PLI scheme, the auto sector is expected to:
 - Attract fresh investments of over ₹42,500 crore in the five years
 - Incremental production of over ₹2.3-lakh crore
 - Create additional employment for over 7.6 lakh people.
- A PLI scheme for the **drone industry** was also approved with an allocation of **₹120 crore** spread over three financial years. It is expected to:
 - Bring fresh investments of over ₹5,000 crore
 - Incremental production of over ₹1,500 crore.
- The PLI Scheme is **open to** existing automotive companies as well as new ones currently not in the automobile or auto components manufacturing business.

Scheme components:

The scheme has **two components**.

1. Champion OEM Incentive Scheme:

- It is a ‘sales value linked’ plan, applicable to Battery Electric and Hydrogen Fuel Cell Vehicles of all segments.

2. Component Champion Incentive Scheme:

- It is a ‘sales value linked’ plan for advanced technology components, Completely and Semi-Knocked Down (CKD/SKD) kits, vehicle aggregates of 2-wheelers, 3-wheelers, passenger vehicles, commercial vehicles and tractors.

Key Fact:

- The **PLI scheme** for the automotive sector along with the already launched **PLI for Advanced Chemistry Cell** (₹18,100 crore) and Faster Adaption of Manufacturing of Electric Vehicles (**FAME Scheme**) (₹10,000 crore) will give a big boost to manufacture of electric vehicles.

Significance:

- The PLI scheme will help the industry to move faster towards future technologies and make fresh investments for **indigenous global supply chain** of advanced automotive technology products.
- It is a significant push for the workforce, organisations (Original Equipment Manufacturer OEMs), and consumers to seek competitive, diverse, and climate conscious **mobility solutions**.
- It has the potential to increase volumes and provide a huge opportunity for exports and make **India an integral manufacturing base** for the world.

IIT BOMBAY LAUNCHES AI-BASED TRANSLATION ‘PROJECT UDAAN’

The Indian Institute of Technology, **Bombay** has launched **Project Udaan**, which is a language translator to ease students in understanding languages.

- It is an **end-to-end ecosystem**, which translates **scientific and technical content** from **English** to **Hindi** and **all other Indian languages**.

- The **AI-based** translation software ecosystem can translate **engineering textbooks**, learning materials.
- The Project aims to translate **500 engineering texts in Hindi** in one year and in 15 Indian languages in 3 years.

NITI AAYOG LAUNCHES REPORT ON REFORMS IN URBAN PLANNING CAPACITY IN INDIA

NITI Aayog launched a report titled '**Reforms in Urban Planning Capacity in India**' recently, with recommendations on measures to ramp up urban planning capacity in India.

Need for reforming Urban Planning:

1. Urban Transition:

- India's population was **1.21 billion** in 2011, with an urbanisation level of **31.1%**.
- India's **urbanisation is poised to accelerate** in the coming decades with rise in population.
- **Estimations indicate:**
 - During 2011–36, urban growth will be responsible for **73%** of the rise in total population (MoHFW, 2019).
 - About 416 million people will be added as urban dwellers in India between 2018 and 2050 (United Nations 2018).
 - India will be **50% urban** by 2050 (UN-Habitat, 2017).

2. Urbanisation is Central to India's Economy:

- MoHUA (2016) stated that urbanisation contributes nearly **60%** to India's Gross Domestic Product (**GDP**).

- India needs action for fulfilling the full potential of urban economy and its economic growth targets:
 - USD 5 trillion economy by 2024
 - Total workforce estimated to be 0.64 billion by 2030, of which 0.26 billion to be employed in urban areas (MoF, 2021)
 - Creation of 11 large industrial corridors as part of the National Industrial Corridor Programme, several multi-modal logistic parks, etc.
 - River rejuvenation, clean air in cities, etc.
- Indian cities must be well-prepared for **dealing with current challenges** and a competitive future, which needs effective urban and spatial planning, urban land markets, sustainable development and governance.

3. India's Global Commitments:

- India's has commitments to UN's Sustainable Development Goals (SDGs) 2030; UN-Habitat's New Urban Agenda; and Paris Agreement under UN Framework Convention on Climate Change.

1. **SDG Goal 11** (making cities inclusive, safe, resilient, and sustainable)—**promote urban planning** as one of the recommended methods for achieving sustainable development.
2. **New Urban Agenda** adopted at **Habitat III** in 2016 puts forth principles for the planning, construction, development, management, and improvement of urban areas.
3. **Paris Agreement** of 2016 relies upon the pledges of countries known as National Determined Contributions (NDCs). Urban areas hold a key in such massive emission reduction.

Suggested Reforms in Urban Planning Capacity:

1. Programmatic Intervention for Planning of Healthy Cities:

- The report recommends a Central Sector Scheme ‘**500 Healthy Cities Programme**’, for a period of 5 years, wherein priority cities and towns would be selected jointly by states and local bodies.
- Every city must aspire to become a ‘Healthy City for All’ by **2030**.

2. Programmatic Intervention for Optimum Utilization of Urban Land:

- The cities and towns under ‘Healthy Cities Programme’ should strengthen development control regulations to maximize the efficiency of urban land (or planning area).

3. Ramping Up of Human Resources:

- States/UTs need to expedite the filling up of vacant positions of town planners.

- Need for requisite amendments in recruitment rules to ensure the entry of qualified candidates into town-planning positions.

4. More institutional clarity and multi-disciplinary expertise:

- The report recommends the constitution of a **high-powered committee** to re-engineer the present urban-planning governance structure.
- The **key aspects** would be:
 1. Clear division of roles and responsibilities of various authorities, appropriate revision of rules and regulations, etc.
 2. Creation of a more dynamic organizational structure, standardisation of the job descriptions of town planners and other experts
 3. Extensive adoption of technology for enabling public participation and inter-agency coordination.

5. Revision of Town and Country Planning Acts:

- Review and upgradation of the Town and Country Planning Acts of states.
- Formation of an **apex committee** at the state level is recommended to undertake a regular review of **planning legislations** (including town and country planning or urban and regional development acts or other relevant acts).

6. Urban Planning with Citizen involvement:

- Need to enable citizens’ participation at relevant stages of urban planning. Committee strongly recommends a ‘Citizen Outreach Campaign’ for demystifying urban planning.

7. Enhancing the Role of Private Sector:

- Private sector can be involved by adoption of fair processes for procuring technical consultancy services, strengthening project structuring and management skills in the public sector, and empanelment of private sector consultancies.

8. Strengthening Urban Planning Education System:

- Central universities and technical institutions in all the other States/UTs are encouraged to offer **postgraduate degree programmes** (MTech Planning) to cater the requirement of planners.
- Faculty shortage in educational institutions conducting degree and PhD programmes in planning need to be resolved by 2022.

- 'Planning' as an umbrella term-include all its specializations such as environment, housing, transportation, infrastructure, logistics, rural area, regional, etc.

9. Strengthening Human Resource and Match Demand-Supply:

- **National Council of Town and Country Planners** as a statutory body of the Government of India should be constituted.
- **National Digital Platform of Town and Country Planners** is suggested to be created within the National Urban Innovation Stack of MoHUA. This portal will enable **self-registration** of all planners and evolve as a **marketplace** for potential employers and urban planners.

MEGHALAYA ENTERPRISE ARCHITECTURE PROJECT (MEGHEA) LAUNCHED - PROJECT AIMS TO IMPROVE GOVERNANCE AND SERVICE DELIVERY AT GRASSROOTS LEVEL

Meghalaya Enterprise Architecture Project (MeghEA) was launched in the state of **Meghalaya** recently.

Highlights:

- The project aims to **improve service delivery** and **governance** for the people using power of Digital technologies.
- The initiative is spread across **6 pillars** i.e. Governance, Human Resources, Entrepreneurship, Primary Sector, Infrastructure and Environment, and envision to make Meghalaya a high-income state by 2030.

MeghEA was conceived to support the following digital government goals:

- **Coordinate all ICT initiatives** to get a better holistic perspective, boost IT planning effectiveness and optimize costs and investments for better returns.
- Ensure that state government applications and systems **provide end-users with information** they need to make decisions and influence government operations.
- Craft an ecosystem for the digital economy to **boost shared prosperity**, by leveraging ICT for employment and growth.

MYGOV LAUNCHES PLANETARIUM INNOVATION CHALLENGE FOR INDIAN START-UPS AND TECH ENTREPRENEURS

Looking forward to a repeat of the ISRO Quiz, Planetarium Innovation Challenge was launched by **MyGov India** on **11th September 2021**.

- The challenge aims to **bring together the tech firms and Start-ups** (based out of India) with the potential to build an indigenous planetariums system software using latest technologies including **Augmented Reality (A.R.), Virtual Reality (V.R.) and Merged Reality (M.R.)**.

Genesis:

- Inspired by the Chandrayaan launches, Indian Space Research Organization conducted the **ISRO Quiz competition 2019** in collaboration with MyGov.
- Prime Minister was accompanied by the Quiz winners from across the country to **watch Chandrayaan 2 lunar landing live** from the ISRO control room.

Planetarium Innovation Challenge:

Applicants and assessments:

- It is open to **experts from all domains of Planetarium Technology**; it includes Start-ups,

Indian Legal Entities; and Individuals (or Teams) also.

- The application will be **evaluated on different parameters** including Approach towards problem-solving, Product Idea, Degree of Innovation, Novelty of Approach.
- The participants will be **evaluated by a Grand Jury** based on parameters including Innovation, Replicability, Scalability, Usability, and Ease of deployment/roll-out and potential risks involved in implementation of the solution.

Prizes:

- First winner, second winner and third winner under the contest will get the cash prizes of **Rs.5 lakh, Rs.3 lakh and Rs.2 lakh respectively**.
- In addition to that the winners and participants will **get the opportunity to meet peers in the field and get to know the latest advancement** in the Ecosystem.
- A high viewership platform will provide them the opportunity to showcase/promote their Innovation.

KVIC LAUNCHES SERIES OF SCHEMES TO EMPOWER ARTISANS IN VARANASI

Khadi and Village Industries Commission (KVIC) launched a unique Scheme called **SPIN (Strengthening the Potential of India)** and set up a **pottery cluster under SFURTI Scheme** in Varanasi to empower the

marginalized potters' community on the occasion of "Sewa Diwas".

- The day is celebrated on the birthday of Prime Minister Shri Narendra Modi.

SPIN (Strengthening the Potential of India) scheme:

- The scheme aims at infusing **self-sustainability** in the Indian **pottery sector**.
- It is a **no-subsidy** program.
- It enables potters to **get a direct loan from the banks under Pradhan Mantri Shishu Mudra Yojana**.
- **KVIC is acting as a facilitator** for financial aid to potters through **RBL bank** and also providing training to the artisans.
- No financial burden on the exchequer.
- Beneficiaries can repay the loans in easy installments.

Kashi Pottery Cluster:

- KVIC set up **“Kashi Pottery Cluster”** at Village Bhatti in Varanasi under the **SFURTI** Scheme.
- The cluster has provided **direct employment to 340 pottery artisans** who have been trained by KVIC.
- The cluster is **equipped with modern equipment** like furnaces, electric potter wheels, blunger machines, pug mills and other modern equipment for higher production of clay pottery.

ENTREPRENEURSHIP IN JAMMU & KASHMIR TO INCREASE INCOME OF FARMERS

Integrated Aroma Dairy Entrepreneurship for Jammu & Kashmir has been proposed to augment the income of farmers.

NATIONAL R&D LABS BRING LIVELIHOODS TO ODISHA’S POOREST DISTRICT

CIMAP’s high-yielding **curcuminoid-rich variety of turmeric** named ‘CIM-Pitamber’, and the NBRI’s ‘Keshari’ variety of turmeric have been introduced in Nabarangpur of Odisha.

- In 2019, a consortium of **12 national research and development laboratories** joined hands in a rare effort to transform livelihoods in Odisha’s Nabarangpur.
- Central Institute of Medicinal and Aromatic Plants (CIMAP) in Lucknow is one of the five Council of Scientific and Industrial Research laboratories involved in the effort.

Highlights:

- Women SHGs have been asked to **donate seeds after the annual harvest to prospective farmers**, which would lessen their dependency on the market.
- CIMAP is promoting **cultivation of lemon grass, Japanese mint and vetiver**, and seeing the promise of a better return, farmers here are **replacing eucalyptus plantations with the aromatic plants**.

Highlights:

- Jammu & Kashmir has abundant stock of **Animal Husbandry and Dairy resources**.

- The resources can be effectively integrated with **Aroma Mission** which was launched in J&K by **Council of scientific and Industrial Research**.
- It will pave the way for **integrated Aroma Dairy Entrepreneurship**, ensuring sustainable growth, increased income, and fresh avenues of livelihood for farmers.
- The focus will be on **productivity** rather than production.

Mission Aroma?

- The CSIR Aroma Mission is envisaged to **bring transformative change** in the aroma sector through desired interventions in the areas of agriculture, processing, and product development for the growth of aroma industry and **rural employment**.
- It will promote the **cultivation of aromatic crops** for essential oils that are in great demand by the aroma industry.
- **Launch:** 2016
- **Aim:**
 - To develop superior **aroma crop varieties** and their **Agro-technologies** and assessment of their suitability for the large-scale cultivation in specific Agro-climatic regions.

Objectives of the Mission:

- Promotion of cultivation and processing of aromatic crops.
- Skill development activities
- Intellectual property generation, valuation, and management
- Entrepreneurship development/Spin-offs
- Business development

Nodal laboratories for the Mission:

- CSIR-Central Institute of Medicinal and Aromatic Plants (CSIR-CIMAP), Lucknow
- CSIR-Institute of Himalayan Bioresource Technology (CSIR-IHBT), Palampur
- CSIR-Indian Institute of Integrative Medicine (CSIR-IIIM), Jammu
- CSIR-National Botanical Research Institute (CSIR-NBRI), Lucknow.
- CSIR-North-East Institute of Science and Technology (CSIR-NEIST), Jorhat.

Significance:

- It enables Indian farmers and aroma industry to become global leaders in the production and export of other essential oils on the pattern of **menthol mint**.
- Provide **substantial benefits** to the farmers in achieving higher profits, utilization of waste lands and protection of their crops from wild and grazing animals.
- It will improve **availability of quality material** on sustainable basis for growth herbal industry based on essential oils.

Possible Outcomes:

- To bring 5500 hectares of additional area under captive cultivation aromatic cash crops particularly **targeting rain-fed** /degraded land across the country.
- Provide **technical and infrastructural support** for distillation and values-addition to farmers all over the country.
- Enabling effective buy-back mechanisms to **assure**

remunerative prices to the farmers.

- Value-addition to essential oils and aroma ingredients for their

integration in global trade and economy.

DFPD ISSUES UNIFORM SPECIFICATIONS FOR PROCUREMENT OF FORTIFIED RICE STOCKS

The Department of Food and Public Distribution (DFPD), under the Consumer Affairs Ministry has issued **uniform specifications for fortified rice kernels** for Grade A and common rice for procurement of fortified rice stocks.

- The uniform specifications of food grains for Central Pool procurement for the ensuing Kharif Marketing season (KMS) 2020-21 has also been issued.

Highlights:

- 1 per cent of fortified rice kernels should be blended with normal rice stocks.
- These specifications as per standard practice have been issued in respect of **Paddy, Rice and other coarse grains** namely Jowar, Bajra, Maize, Ragi.
- It also includes standards of rice for issue to States/Union Territories for distribution under targeted public distribution scheme and other welfare schemes **based on the uniform specifications of rice for kharif marketing season.**
- The **fortified rice is to be distributed** under various government schemes, including the public distribution system (PDS) and midday meals in schools, **by 2024.**

- The State Governments are requested to ensure that wide **publicity of the Uniform Specifications is made among the farmers** to ensure that they get due price for their produce and any rejection of the stocks is completely avoided.
- All states and Union Territories, as well as the Food Corporation of India, are advised to carry out the **procurement during KMS 2020-21 in accordance with the uniform specifications.**

Fortification as per FSSAI norms:

- Fortification refers to **deliberately increasing the content of essential micronutrients** in a food so as to improve the **nutritional quality of food** and to provide public health benefit with minimal risk to health.
- 1 kg fortified rice will contain iron (28 mg-42.5 mg), folic acid (75-125 microgram) and Vitamin B-12 (0.75-1.25 microgram).
- Rice may also be fortified with micronutrients, singly or in combination, with zinc (10 mg-15 mg), Vitamin A (500-750 microgram RE), Vitamin B1 (1 mg-1.5 mg), Vitamin B2 (1.25 mg-1.75 mg), Vitamin B3 (12.5 mg-20 mg) and Vitamin B6 (1.5 mg-2.5 mg) per kg.

Key Facts:

- **Every second woman in the country is anaemic** and every third child is stunted.

- India ranks 94 out of 107 countries and is in the **‘serious hunger’ category** on the Global Hunger Index (GHI).

LAGGARD BIHAR RANKS FOURTH AMONG STATES IN PROVIDING TAP WATER IN RURAL AREAS

Bihar’s **Har Ghar Nal Ka Jal** (tap water in every home) scheme was launched in September 2016.

- It has so far **provided drinking water** to 152.16 lakh tap connections.
- It aims to **provide piped clean drinking water** to every citizen of Bihar in the homes of approximately **2 crore** households in the state, without any discrimination.

• It is a cluster of **four state schemes:**

1. Mukhyamantri Gramin Peyjal Nishchay Yojana
2. Mukhyamantri Gramin Peyjal Nishchay Yojana (Gunvatta Prabhavit Kshetr)
3. Mukhyamantri Gramin Peyjal Nishchay Yojana (Gair Gunvatta Prabhavit Kshetr)
4. Mukhyamantri Shahri Peyjal Nishchay Yojana.

CENTRE, EC, GOVT. TOLD TO REPLY TO PLEA SEEKING AAP DERECOGNITION

The Delhi High Court asked the Centre, Delhi government and Election Commission (EC) to respond to a petition regarding derecognition of the Aam Aadmi Party for organizing Ganesh Chaturthi using public money.

Highlights:

- Any funding to temple, mosque, religious persons/ trust, and religious function by the state government is **unconstitutional**.
- The Ganesh Puja organised by the Delhi government was unconstitutional.

Recognition as a State Party:

For any political party to be eligible for recognition as a State Party in a state, it must satisfy any of the five conditions stated below:

- Secure at least **6%** of the valid vote & win at least 2 seats in an **Assembly General Election**.
- Secure at least 6% of the valid vote & win at least 1 seat in a **Lok Sabha General Election**.
- Win at least **3%** of the seats or at least 3 seats, whichever is more, in an Assembly General Election.
- Win at least 1 out of every 25 seats from a state in a **Lok Sabha General Election**.
- Secure at least 8% of the total valid vote in an Assembly or a Lok Sabha General Election.

Recognition as a National Party:

For any political party to be eligible for recognition as a National Party, it must satisfy any of the three conditions given below:

- Secure at least **6%** of the valid vote in an **Assembly** or a Lok Sabha General Election in any four or more states and won at least **4 seats** in a Lok Sabha General Election from any State or States.
- Win at least 2% of the total Lok Sabha seats in a Lok Sabha General Election and these seats must be won from at least 3 states
- The party is recognized as a State Party in at least **four states**.

Advantages:

- A party recognized as a state party gets a **reserved symbol** within the state.
- All the candidates contesting from that party will get the same symbol throughout the state.
- **For National Parties**, the reserved symbol can be used **across the**

country by its contesting candidates.

- **Subsidized land** for party offices
- **Free air time** on Doordarshan & All India Radio.
- Supply of **electoral roll copies** free of cost during elections.

Key Facts:

National Parties of India:

1. Bahujan Samaj Party (BSP)
2. Bharatiya Janata Party (BJP)
3. Communist Party of India (CPI)
4. Communist Party of India (Marxist) (CPM)
5. Indian National Congress (INC)
6. Nationalist Congress Party (NCP)
7. All India Trinamool Congress (AITC)
8. National People's Party (NPP)

SINGLE WINDOW SYSTEM LAUNCHED, TO IMPROVE EASE OF DOING BUSINESS

Ministry of Commerce and Industry launched the National Single Window System for investors and businesses.

Highlights:

- The portal will become a **one-stop-shop for investors** for approvals and clearances.
- It will bring **transparency**, accountability and responsiveness in the ecosystem and all relevant information will be available on a single dashboard.
- The portal hosts approvals across **18 Central Departments** and 9 States under phase (I).
- Another 14 Central departments and 5 states will be added by December 2021 under phase (II).

Services Provided by the Scheme:

1. Know Your Approval (KYA):

- It generates a **list of approvals** required by any business to commence operations.
- It does so by asking the investor a series of **dynamic questions** about their planned business activities and identifies the applicable approvals based on responses.
- It was launched in 2021 with over 500 approvals across 32 Central Departments and over 2000 approvals across 14 states.

2. Common Registration Form:

- To ensure the submission of information and documents across Ministries and States, a unified **information capturing**

system along with a common registration form has been introduced.

- Information is auto-populated on forms, eliminating the need to fill in the same information again.

3. State Registration Form:

- It enables an investor to have seamless single click access to respective State Single Window System.

4. Applicant Dashboard:

- Provides a single online interface to apply, track and respond to the queries pertaining to approvals and

registrations across ministries and States.

5. Document Repository:

- An online centralized storage service for investors to enable one-time document submission and use the same across multiple approvals.
- It eliminates the need to submit documents at multiple portals.

6. E-Communication Module:

- Enables online response to queries and clarification requests related to applications by Ministries and States.

GOVT REDUCES PATENT FEES FOR EDUCATIONAL INSTITUTIONS BY 80 PERCENT

The Central Government introduced **Patents (Amendment) Rules, 2021** to reduce the fee for patent filing and prosecution for educational institutions by 80 percent.

Highlights:

- The move aims to strengthen **innovation and creativity** in the knowledge economy.
- While applying for patents, innovators had to **apply for these in the name of institutions** that were required to **pay exorbitant patenting fees**.
- **High patenting fee** was a **hindrance** for educational institutions in getting newer research and technologies patented. It worked as a **disincentive** for the development of newer technologies.
- Hence, the official fees payable in reference to the Patents Rules, 2003 **have been reduced** through

the Patents (Amendment) Rules, 2021.

Key initiatives by the government:

- The government has also amended the patent rules in 2016, 2017, 2019 and 2020 to **remove procedural inconsistencies** and unnecessary steps in the processing of patent applications.
 - These have **helped expedite** the grant, registration and final disposal process, and make these more efficient, user-friendly, and compatible for e-transactions.
- **The initiatives include:**
 - Augmentation of manpower by recruiting new examiners
 - Making the patenting process completely online
 - Hearing of patenting cases through video-conferencing for speedy and contact-less proceedings
 - Dynamic redesigning of the website and real-time based hassle-free

dissemination of IP information to stakeholders.

- Mechanism of **lodging feedback** and complaints regarding the functioning of IP offices has been set up on the IPO website.
- **Expedited Examination System** has been introduced where an application for grant of patent is decided within one year of filing.
- The time for final disposal of patents, has been reduced to an average of **48 months**.
- It will be reduced further to an average of 24-30 months by the end of 2021.

- The Department for Promotion of Industry and Internal Trade is working to promote greater collaboration between **industry and academia**.
- The Controller General of Patents, Designs & Trade Marks (**CGPDTM**) is engaged in the dissemination of information to IP stakeholders through awareness activities in IPR conducted for schools, universities, enforcement agencies, and other stakeholders.

CENTRE NOTIFIES SCHEME FOR PROMOTION OF 'MEDICAL DEVICE PARKS'

The Government of India has launched the "**Promotion of Medical Device Parks**" scheme to support the **medical devices industry** to reach its potential.

Objectives:

- **Easy access** to standard testing and infrastructure facilities.
- Creation of world class common **infrastructure facilities** for increased competitiveness.
- **Reduction in the cost of production** of medical devices leading to better availability and affordability in the domestic market.
- Reaping the benefits arising due to optimization of resources and economies of scale.

Highlights:

- **Initiative of:** Ministry of Chemicals and Fertilizers
- **16 States and Union Territories** were received under the scheme. The selection of the states

and union territories (UTs) is based on the challenge method **based on the parameters** such as:

- Utility charges, State policy incentives, total area of the park, land lease rate, connectivity of the park, ease of doing business ranking, availability of technical manpower etc.
- The Government of Himachal Pradesh, Tamil Nadu, Madhya Pradesh, and Uttar Pradesh have given "**in-principle**" approval under the scheme.
- The total financial outlay of the scheme is Rs 400 crores and the tenure is from FY 2020-2021 to FY 2024-2025.
- The **financial assistance** to a selected Medical Device Park would be **70%** of the project cost having infrastructure facilities.

- In the **North-Eastern** and the Hilly States, the assistance would be **90%** of the project cost.
- Maximum assistance for one Medical Device Park would be limited to Rs 100 crores.

- The Parks will provide **common infrastructure facilities** at one place, creating a robust **ecosystem** for the medical device manufacturing and reducing the cost significantly.

PUNJAB CM CHARANJIT SINGH CHANNI'S SEAT CHAMKAUR SAHIB: SIKH HISTORY, CURRENT POLITICS

The newly elected Chief Minister of **Punjab** represents the Assembly constituency of **Chamkaur Sahib**, in Punjab which is of significance in **Sikh history** as well as contemporary politics.

Chamkaur Sahib:

- At this place, **Guru Gobind Singh** lost two of his **elder sons** in the **Battle of Chamkaur**.
- The **Battle of Chamkaur** was fought between the **Khalsa**, led by **Guru Gobind Singh**, against the coalition forces of **Mughal army** and Ajmer Chand's league of **Rajput Hill** Chieftains.
- The period of this battle is 21,22 and 23 December **1704**.
- Guru Gobind Singh gave an **account of the battle** in **Zafarnama**, his letter to **Aurangzeb**.

Genesis:

- **May 1704:** The coalition forces led by **Wazir Khan**, the Nawab of Sirhind, had laid siege to **Anandpur Sahib** in the hope of capturing Guru Gobind Singh.
- **December 1704: After seven months** of fighting and heavy losses, the coalition forces **offered a safe passage** to the Guru and his followers.

- The heads of the coalition pledged they **would not harm the Guru**, his family, or his soldiers, with a **peace treaty** sent in the name of Emperor **Aurangzeb**.
- But when **Gobind Singh** and his followers stepped out of **Anandpur Sahib fort** on the night of December 20, they were attacked. They **fled towards Ropar** and the swollen **Sarsa** river.

The Battle:

- The Guru, accompanied by **panj piaras**, his elder sons **Ajit Singh** (18) and **Jujhar Singh** (14), and around 40 soldiers, **regrouped** in a fortress-like two-storey house.
- They were **surrounded by an army** commandeered by Wazir Khan and Sher Mohammed Khan, the younger brother of **Malerkotla's** chieftain.
- The Guru sent out soldiers in small squads for hand-to-hand combat. Two such attacks were led by his sons, **both of whom died fighting**.
- Three of the **panj piaras** — Mohkam Singh, Himmat Singh and Sahib Singh — too died fighting.

How did the battle conclude?

- When very few soldiers were left, at the **Chamkaur ki garhi** (fort) on December 22 the **panj piaras** issued

an **edict** (hukumnama) ordering the Guru to leave.

- This was the **first edict issued by panj piaras** after the formation of the Khalsa on April 13, 1699.
- Five days later, Guru Gobind Singh's **two younger sons**, aged

nine and seven, were bricked alive for refusing to **convert to Islam**.

- Every year, a **shaheedi jor mela**, marked by prayers and langar, is held to **commemorate the martyrdom** of Guru Gobind Singh's young sons and his soldiers.

INDIA'S TEESTA-V HYDROPOWER STATION AWARDED 2021 IHA BLUE PLANET PRIZE

National Hydroelectric Power Corporation's 510 MW Teesta-V Power Station in Sikkim has been conferred with the prestigious **Blue Planet Prize** by International Hydropower Association.

Highlights:

- The award was announced during the **World Hydropower Congress, 2021**.
- The award had been conferred to **Teesta-V Power Station** based on its sustainability assessment using the Hydropower

Sustainability Assessment Protocol (HSAP) of IHA.

- The IHA membership includes leading hydropower owners, developers, suppliers, and consultants.
- The Blue Planet Prize is awarded to **hydropower projects** that demonstrate excellence in sustainable development.
- The HSAP is the leading international tool for measuring the **sustainability** of hydropower projects.

AN INSTITUTION'S RIGHT TO GOVT. AID IS NOT A FUNDAMENTAL RIGHT: SC

According to the Supreme Court, the right of an institution, whether run by a majority or minority community to get government aid is not a fundamental right.

- Both have to equally follow the rules and conditions of the aid.

Highlights:

- **Article 30(2)** States that, an institution is under the minority, whether based on religion or language, grant of aid to that educational institution cannot be discriminated against, if other

educational institutions are entitled to receive aid.

- If the government made a policy call to withdraw aid, an institution cannot question the decision as a **"matter of right"**.
- A grant of government aid comes with accompanying conditions. An institution is free to choose to **accept the grant with the conditions** or go its own way.
- An institution can **never be allowed** to say that the grant of aid should be on its own terms.

Why institutions cannot do so?

- Government aid is a **policy decision**. It depends on factors including the interests of the institution and the ability of the government to understand the exercise.
- **Financial constraints** and deficiencies are the factors which are relevant in taking any decision.
- Right to get an aid is not a **fundamental right**, the challenge to a decision made in implementing it, shall only be on restricted grounds.
- When a policy decision is made to withdraw the aid, an institution **cannot question** it as a matter of right.

Article 30?

- **Article 30** of the Indian Constitution states the right of minorities to establish and administer educational institutions.
- **It says:** "All minorities, whether based on religion or language, shall

have the right to establish and administer educational institutions of their choice."

- It was adopted on December 8, 1948.

Features:

1. **Article 30(1)** says, all minorities whether based on religion or language, shall have the right to establish and administer educational institutions of their choice.
2. **Article 30(1A)** deals with the fixation of the amount for acquisition of property of any educational institution established by minority groups.
3. **Article 30(2)** states that, the government should not discriminate against any educational institution on the ground that it is under the management of a minority, whether based on religion or language, while giving aid.

ANTI-DEFECTION LAW, FOR INDEPENDENT LEGISLATORS

An independent MLA from Gujarat has changed his political party and joined the Congress.

- The Tenth Schedule of the Constitution, **the anti-defection law**, specifies the circumstances under which changing of political parties invites action under the law.

Anti Defection Law:

- When a member elected on the ticket of a political party "**voluntarily gives up**" membership of such a party or votes in the House against the wishes of the party.

- When a legislator who has won his or her seat as an **independent candidate** joins a political party after the election.
 - Under both Circumstances the legislator **loses the seat** in the legislature on changing a party.
- In case of Nominated MPs, the law gives them six months to join a political party, after being nominated.
 - If they join a party after such time, they stand to lose their seat in the House.

Disqualification:

- The power to decide the disqualification of an MP or MLA rests with the **presiding officer** of the legislature.
- The law does not specify a time frame in which such a decision has to be made.

- Speakers of legislatures have sometimes acted very quickly or have delayed the decision for years and have been accused of political bias in both situations.

WHAT IS MUMBAI CIVIC BODY'S 3D MAPPING INITIATIVE?

The Brihanmumbai Municipal Corporation has completed the first three-dimensional mapping of an administrative ward in Mumbai.

Highlights:

- It will help the city in better **urban governance**, upgradation of infrastructure, disaster management, etc.
- The BMC completed 3D mapping of G-south ward, one of the administrative wards in Mumbai. It covers areas like Worli, Mahalaxmi, Elphinstone Road.
- **Information regarding** the population, civic facilities, houses are available in 3D and can be used in planning of development works.
- The map will be accessible to **different departments** of the corporation on web application.

3D Mapping?

- It is the process of preparing a map of the **city's natural areas** like water bodies, open spaces, trees and map of **man-made features** like

roads, buildings, and infrastructure facilities in digital format.

Technology used in Mapping:

- Geospatial Technology was used which is a combination of Global Positioning System (GPS), Geographic Information System (GIS) and Remote Sensing (RS).
- Mobile street imagery vehicles mounted with Light Detection & Ranging (LiDAR) sensors were part of the virtual model.
- The technology will further help in analysis, simulation, visualization, and modelling.

Benefits of the Project:

- It will help in **development plan**, detection of unauthorized changes, building plan approval system.
- It will help in **infrastructure planning** of roads, bridges, flyover, and urban flood modelling.
- **It can assist city planners** in reaching local climate resilience, economic development, and housing goals.

UNION MINISTER DR JITENDRA SINGH LAUNCHES AMRIT GRAND CHALLENGE PROGRAM TO IDENTIFY 75 INNOVATIONS IN TELEMEDICINE, AI, DIGITAL HEALTH, BIG DATA BY STARTUPS, ENTREPRENEURS

Union Minister of State, Science & Technology has launched the Amrit Grand Challenge Program titled “**जिFCARE**”.

Highlights:

- It will identify **75 Start-Up Innovations** in Telemedicine, Digital Health, Block Chain, mHealth with BIG Data, Artificial intelligence, and other technologies.
- Launch of Grand Challenge coincides with the **Azadi Ka Amrit Mahotsav**.
- 75 Chosen Start-ups will be an asset for India to lead it in the next 25 years.

10th Biotech Innovators Meet

- It was organised by Biotechnology Industry Research Assistance Council (**BIRAC**) in New Delhi.
- **Theme- “Vigyan se Vikash”**.

- The minister directed the BIRAC to reach out to Young Start-ups for their help and support.
- **Young Innovations** will get priority with respect to help, support and hand-holding than the established industrial hubs.

India’s Bio-Economy

- Bio-Economy in India is on way to achieve 150-billion-dollar target.
- Sunshine Biotech Sector is set to become more than double from 70 billion dollar to 150 billion dollar by 2025.

Contribution of BIRAC in Bio-Economy:

- BIRAC has established 60 world class Bio-incubators in India.
- It engages with more than 5000 Start-ups and young entrepreneurs.

POWER MINISTRY REDESIGNS RENEWABLE ENERGY CERTIFICATE MECHANISM

The Ministry of Power has decided to make amendments in the Renewable Energy Certificate (REC).

Highlights:

- The aim is to align the mechanism with the emerging changes in the power scenario and to promote **new renewable technologies**.
- It will provide flexibility to the players, additional avenues, rationalization and addressing the RECs validity period uncertainty issues.

Features of Amendments in REC Mechanism:

- Validity of REC would be perpetual till it is sold.
- **Floor and forbearance prices** are not required to be specified.

- Central Electricity Regulatory Commission to have monitoring and the surveillance mechanism to ensure there is no hoarding of RECs.
- The **Renewable Energy** generator, will be eligible for issuance of RECs for the period of Power Purchase Agreement as per the prevailing guidelines.
- Technology multiplier will be introduced for promotion of new and high priced RE technologies.
- **No REC** to be issued to the beneficiary of subsidies.
- Allowing traders and bilateral transactions in REC mechanism.

Renewable Energy Certificate?

- These are a **market-based instrument** that certifies the bearer

owns one megawatt-hour of electricity generated from a renewable energy resource.

- Once the power provider has fed the energy into the grid, the REC received can then be sold on the open market as an energy commodity.

Key Takeaways:

- They provide a proof that the owner of an energy market instrument

owns one MWh of **renewable energy**.

- They can be sold for profit to **speculators** betting on the value of energy credits.
- REC swaps consist of trading RECs to profit from the disparity between the buy and sell price.



WHAT IS THE C.1.2 VARIANT OF COVID-19, AND WILL VACCINES WORK AGAINST IT?

Recently, the **scientists in South Africa** have announced that they have found a **new variant of Covid-19 i.e. C.1.2 variant** which is mutating at a rapid pace and can be extremely portent in evading the protection offered by antibodies.

Detection of C.1.2 variant of COVID-19

- The National Institute for Communicable Diseases in South Africa has named the **new variant as C.1.2 variant**.

- It was **first detected in May** and has now spread to “the majority of the provinces in **South Africa** and in seven other countries spanning **Africa, Europe, Asia and Oceania**”.
- It was first detected in the **Mpumalanga and Gauteng provinces** of South Africa in May 2021.
- In June 2021, it was also detected in the **KwaZulu-Natal and Limpopo provinces of South Africa** as well as in England and China.

- It has been detected in **six South African provinces** (including the Eastern Cape and Western Cape), **the Democratic Republic of the Congo, Mauritius, New Zealand, Portugal and Switzerland.**

C.1.2 Variant of COVID-19?

- It has “**mutated substantially**” in comparison to C.1 variant, which was one of the **dominant lineages during the spike** in infections during the first wave in South Africa.
- It is the **speed at which it has been mutating** which sets the C.1.2 variant apart from other Covid-19 strains.
- The study found that **C.1.2 is undergoing 41.8 mutations per year**, which is approximately 1.7-fold faster than the current global rate and 1.8-fold faster than the initial estimate of SARS-CoV-2 evolution.

Scientists have a close look on C.1.2 Variant of COVID-19?

- The variant has drawn the attention of scientists because of the **rapid rate at which it is changing and the mutations within its genome.**
- The study states that the **short period of increased evolution compared to the overall viral evolutionary rate** was also associated with the emergence of the Alpha, Beta and Gamma variants.
- The study also found that there were **consistent increases in the number of C.1.2 genomes in South Africa each month**, rising from 0.2 per cent of the genomes

sequenced in May to 1.6 per cent in June and then to 2 per cent in July.

- The study further states that the **C.1.2 has accumulated a number of substitutions** beyond what would be expected from the background SARS-CoV-2 evolutionary rate.

Key mutations that the C.1.2 carries?

- Scientists have found that **C.1.2 carries some of the mutations** that were previously seen in the C.1 variant.
 - But it has picked up additional mutations within the **ORF1ab, spike, ORF3a, ORF9b, E, M and N proteins.**
- The **T478K mutation** which was seen in some of the C.1.2 variants is also found in Delta.
- C.1.2 contains many mutations that have been identified in all **four VOCs (Alpha, Beta, Delta and Gamma)** and **three VOIs (Kappa, Eta and Lambda).**
- It also has key additional mutations like **Y449H at its receptor-binding domain** and **N679K adjacent to its fur in cleavage site.**

Classification of Variants

- **Variant of Interest (VOI):** A variant with specific genetic markers that have been associated with changes to receptor binding, reduced neutralization by antibodies generated against previous infection or vaccination, reduced efficacy of treatments, potential diagnostic impact, or predicted increase in transmissibility or disease severity, according to US Centers for Disease Control and Prevention.

- **Variant of Concern (VOC):** A variant for which there is evidence of an increase in transmissibility, more severe disease (like increment in hospitalizations, death rate, etc), a significant reduction in neutralization by antibodies generated during previous infection or vaccination, reduced effectiveness of treatments or

vaccines, or diagnostic detection failures.

- **Variant of High Consequence (VOHC):** A variant of high consequence has clear evidence that prevention measures or medical countermeasures (MCMs) have significantly reduced effectiveness relative to previously circulating variants.

SCRUB TYPHUS: MANY KIDS DIAGNOSED WITH NEW MYSTERY FEVER IN WESTERN UP

Mathura in western **Uttar Pradesh** have reported cases of a mystery fever, identified as **scrub typhus**.

Scrub Typhus:

- Scrub typhus or bush typhus is a disease caused by a bacterium **Orientia tsutsugamushi**.
- It is spread to people through bites of infected **chiggers (larval mites)**.
- It is prevalent in many parts of India, including outbreaks in the **sub-Himalayan belt**, from Jammu to Nagaland.

Symptoms:

- Fever, headache, body aches, and sometimes, rash.
- Dark, **scab-like region** can be noticed at the site of the chigger bite.

- **Mental changes** ranging from confusion to coma or enlarged lymph nodes.
- People with severe illness may develop **organ failure and bleeding**.

Treatment:

- **Antibiotics** are most effective if given soon after symptoms begin.
 - It should be treated with the antibiotic **doxycycline**.
- People who are treated early with the antibiotic recover quickly.

Prevention:

- Reduce the risk of getting scrub typhus by **avoiding contact** with infected chiggers.
- When travelling to areas where the disease is common, **avoid areas** with lots of vegetation and bush where chiggers may be found.

IIA BENGALURU RESEARCHERS DECIPHER THE FORMATION OF BLUE STRAGGLERS STAR FORMATION - BIGGER AND BLUER STAR FORMED WHEN ONE STAR EATS UP ANOTHER

Indian researchers have carried out the first-ever **comprehensive analysis** of **blue stragglers**.

Blue straggler:

- Blue stragglers are a **class of stars** on open or globular clusters

that are **bigger and bluer** than the rest of the stars at the **main sequence turnoff point** for the cluster.

- **Main sequence** is the stage where a star spends most of its existence.
- The **turnoff point** for a star refers to the point where it **leaves the main sequence** after the exhaustion of its main fuel.
- Blue stragglers were first discovered by **Allan Sandage** in 1953 while performing photometry of the stars.

Genesis:

- A **bunch of stars** born at the same time from the same cloud form a **star cluster**. As time passes, **each star evolves differently** depending on its mass.
- The **most massive and bright stars** evolve and **move off the main sequence** creating a bend in their track, known as the **turnoff**.
- Stars above this bend or brighter and hotter stars are **not expected in a cluster**, as they leave the main sequence to become **red giants**.
- But in 1953, it was found that **some stars** seem to be hotter than the turnoff of the parent cluster. These **stars** present in the **clusters** were straggling above the turnoff and termed **Blue Stragglers**.
- The only probable way these stars can **still be present in these clusters** is if they have **somehow**

acquired extra mass along the way while on the **main sequence**.

Highlights:

- **The researchers** compared the mass of blue stragglers to **the mass of turnoff stars (which are the most massive 'normal' stars in the cluster) and predicted the formation mechanisms of blue stragglers.**
- **Blue stragglers** stars are primarily present in the **older and massive** star clusters. Due to their **large mass**, they are segregated towards the centre of the clusters.

Scientists have found that:

- **Half of the blue stragglers** in their sample are formed through **mass transfer** from a close binary companion star.
- **One third** are likely formed through **collisions** of two stars.
- **Remaining** are formed through **interactions** of more than two stars.

Facts:

- The **main sequence** is the stage where a **star spends** most of its existence. Relative to other stages in a star's life, main sequence stage is extremely long.
- Our Sun took about **20 million years** to form but will spend about **10 billion years** as a main sequence star before evolving into a **red giant**.

WHAT IS THE Mu COVID VARIANT? WILL THERE BE MORE VARIANTS LIKE THIS?

Researchers have come across a **new variant** of COVID-19 termed **Mu**. It has been branded as the “**variant of interest**” by World Health Organisation (WHO).

Highlights:

- This mutant virus was first found in **Colombia** in January 2021. Its presence has been reported in about **39 countries** across the globe.
- The **genomic structure** of the Mu variant is different from the original strain of the virus.
- It can **easily evade** the protection provided by the COVID-19 vaccines being administered across the globe.

Why does virus mutate?

- A variant of the virus occurs when there is a **change or mutation** in the original genomic structure of the virus.

- It is the **general nature of the RNA** of the virus including coronavirus to **evolve** and change structure over time.
- That may happen due to **geographic separation**. All viruses including flu and cold mutate over time.

Variant of interest?

- Viruses are generally categorised under **two sections**- 'variant of concern' and 'variant of interest.'
- The Mu variant has been termed as the **variant of interest**, which means it has the **potential to cause greater harm**.
- Apart from this new variant, the WHO has branded **four other variants -Eta, Iota, Kappa and Lambda-** as the variants of interest.

INSPIRESat-1 PRIMED FOR LAUNCH, SAYS INDIAN INSTITUTE OF SPACE SCIENCE AND TECHNOLOGY

INSPIRESat-1 is a small satellite set to be launched in ISRO’s upcoming PSLV mission.

Highlights:

- **INSPIRESat-1 CubeSat**, is developed under the International Satellite Program in Research and Education (INSPIRE).
- It weighs **less than 10 kg** and will be launched on upcoming

(**PSLV**) mission of the Indian Space Research Organisation (ISRO).

- It is a collaborative effort by the Laboratory for Atmospheric and Space Physics (**LASP**) at the University of Colorado Boulder in the U.S.
- The satellite will be placed in a **low earth orbit**, is equipped with a **Compact Ionosphere Probe** for studying the **earth's ionosphere**.

EXPLAINED, WHY ARE ‘BREAKTHROUGH’ INFECTIONS A CONCERN?

The rise in daily infections of COVID-19 among the States which have a high rate

of vaccination, raise concerns in ‘breakthrough infections’.

- A 'breakthrough infection' refers to the **virus being able to penetrate the protective barrier of antibodies.**
- If a person gets **infected with the SARS-CoV-2 virus 14 days after the second shot** of the vaccine, it is called a 'breakthrough infection'.
- The two-week window is the **time it takes for the body to produce**

necessary antibodies following a shot of the vaccine.

Key Facts:

In clinical trials, all vaccines available have reported **efficacy rates between 70% and 90%**. This implies that **between 10% and 30% of a vaccinated population will be vulnerable to infection.**

RAJASTHAN: FOOTPRINTS OF 3 DINOSAUR SPECIES FOUND IN THAR DESERT

Footprints of three species of dinosaurs have been found in **Thar desert** in Rajasthan.

Discovery:

- The findings in western Rajasthan are estimated to be **200 million years old.**
- It provides the presence of dinosaurs in western part of the State, formed at the seashore to the Tethys Ocean during the **Mesozoic era.**
- The footprints belong to three species of dinosaurs — **Eubrontes giganteus, Eubrontes glenrosensis and Grallator tenuis.**
- The dinosaur species have distinguishing features of **hollow bones and feet with three digits.**
- All the three species belonged to the early Jurassic period, were **carnivorous.**

Features:

- Eubrontes could have been 12 to 15 metres long and weighed between 500 kg and 700 kg.
- Height of the Grallator is estimated to have been two metres, as much as a human.

- Grallator tenuis footprint, had narrow toes, long claws, and strong similarities to the early Jurassic ichnogenus of Stenonyx.

Thar Desert:

- Thar Desert or Great Indian Desert is **located** partly in **Rajasthan** and partly in **Punjab** and **Sindh** provinces, Pakistan.
- The north-eastern part of the **Thar Desert** lies between the Aravalli Hills.
- It stretches to Punjab and Haryana to the north, the Rann of Kutch along the western coast and the alluvial plains of the Indus River in the northwest.

Protected Areas of Thar desert:

- **Desert Natural Park:** About 3162 km² in the area. One of the largest of the Thar Desert ecosystems, includes 44 villages with a wide selection of flora and fauna
- **Tal Chhapar Sanctuary:** Covering 7 km², it is in the Churu district. The sanctuary is home to a large population of foxes, blackbuck, partridge etc.

- **Sundha Mata Conservation Reserve:** The reservation covers 117.49 km² (45.36 sq mi) and is in the Jalore District.

Fauna in the Desert:

- Blackbuck, Chinkara, Indian Wild Ass, Caracal, Red Fox, Peacock, Wolf, Sand Grouse, Leopard, Asiatic Wild Cat etc.

Further Facts about the Desert:

- It is the world's 17th-largest desert, and the world's 9th-largest hot subtropical desert.

- About 80% of Thar desert is in India and the remaining part is in Pakistan.
- Thar desert hosts around 141 species of migratory and resident birds of the desert.
- 23 species of lizards and 25 species of snakes are **endemic** to the region.
- 40% of the total population of Rajasthan lives in the Thar Desert. The main occupation of the people is agriculture and animal husbandry.

SUSTAINABLE AGRICULTURAL PRACTICES USING MICROBIAL STRAINS FOR CROP PRODUCTION

Microbes can be used to **improve crop quality and quantity**, and contribute to sustainable agriculture practices.

Rhizobacteria:

- Rhizobacteria are **root-associated bacteria** that form symbiotic relationships with many plants. (Rhiza in Greek means root).
- Some rhizobacteria ward off **plant pathogens** that cause diseases of the root, or trigger systemic resistance to a pathogen throughout the plant.

Nitrogen fixation:

- **Nitrogen fixation** is one of the most beneficial processes performed by rhizobacteria.
- Nitrogen is a **vital nutrient to plants**. Gaseous nitrogen (N₂) is not available to plants due to **high energy required** to break **triple bonds** between two Nitrogen atoms.
- Rhizobacteria through nitrogen fixation are able to convert gaseous nitrogen (N₂) to **ammonia** (NH₃)

making it an available nutrient to enhance plant growth.

- The rhizobacteria require **oxygen to metabolize**, so oxygen is provided by a haemoglobin protein called **leghaemoglobin** which is produced within **root nodules**.
- **Legumes** are well-known **nitrogen-fixing crops** and used to maintain health of the soil.

Mycorrhiza:

- Mycorrhiza is a **non-disease-producing association** in which the **fungus** invades the root to absorb nutrients.
- A large number of **fungi infect the roots of plants** by forming an association with plants called **mycorrhiza**.
- About **90 percent of land plants** rely on **mycorrhizal fungi**, especially for mineral nutrients (i.e., phosphorus), and in return the **fungus receives nutrients** formed by the plant.

- The trees and their seedlings can use **fungal mycelium** to exchange nutrients and chemical messages.

ODISHA: KORAPUT'S MANDA BUFFALO GETS UNIQUE, INDIGENOUS TAG

The **National Bureau of Animal Genetic Resources (NBAGR)** has recognised the **Manda buffalo** as the **19th unique breed of buffaloes** found in India.

- Two breeds of buffalo– Chilika and Kalahandi, along with four breeds of cattle– Binjarpuri, Motu, Ghumusari and Khariar–and one breed of sheep, Kendrapada, have already received NBAGR recognition.

Manda buffalo:

- It is found in the **Eastern Ghats** and plateau of **Koraput region of Odisha**.
- The Manda is **resistant to parasitic infections**, less prone to diseases and can live, produce and reproduce at low or nil input system.
- The small, sturdy buffaloes are used for ploughing in their native habitat of Koraput, Malkangiri and Nabarangpur districts.
- It has **ash grey and grey coat** with copper-coloured hair.
- The lower part of the legs up to elbow is light in colour with copper colour hair at the knee. Some animals are silver white in colour.
- Horns are **broad and emerge slightly laterally**, extending backward and inward making half circles. Jaws and nostrils are wide and prominent.
- Manda buffaloes get **matured at around 3 years** and drop the first

calf at around 4 years. Every 1.5 to 2 years they give birth to a calf for the whole life of around 20 years.

- Average calving interval of these buffaloes is 18 months with **gestation period of 307 days**.
- They are moderate milk yielders having lactation milk yield of around 700 lt.
- The average milk yield of these buffaloes is **2 to 2.5 litre in single milking** with more than **8% fat**. However, a few of those yield up to 4 litres.
- These animals are **famous for longevity**, hard work and length of working life.

National Bureau of Animal Genetic Resources (NBAGR)

- The National Bureau of Animal Genetic Resources and National Institute of Animal Genetics were **merged in 1995** to function as a single unit in the form of National Bureau of Animal Genetic Resources.
- It acts as an organization which could undertake the responsibility of evaluating, certifying and conserving the rich and varied germplasm resources available in the country and whose genetic base is shrinking fast.
- Identification, Evaluation, Characterization, Conservation and sustainable Utilization of Livestock and Poultry Genetic Resources.

- Coordination and capacity building in animal genetic resources management and policy issues.

Objectives:

- To conduct systematic surveys to characterise, evaluate and catalogue farm livestock and poultry genetic resources and to establish their National Data Base.
- To design methodologies for ex situ conservation and in situ management and optimal utilization of farm animal genetic resources.
- To undertake studies on genetic characterisation using modern biological techniques such as molecular cytogenetics, Immunology, DNA Fingerprinting, RFLP analysis etc.
- To conduct training programmes as related to evaluation,

characterisation and utilisation of animal genetic resources.

Role and Responsibility:

- It is basically be a centre for **information regarding the genetic resources** in the country and will act as a link between ICAR Institutes, Agricultural Universities, Government or Private Agencies, national and international organizations which are concerned with livestock.
- It also supports such agencies to maintain rare species and breeds of animals which are in danger of extinction.
- Wherever information is not available or existing performance data are scanty, the Bureau will help in setting up herds and flocks for the purpose of evaluating the breeds and strains.

E-CIGARETTES WITH NICOTINE CAUSE BLOOD CLOTTING, INCREASED BLOOD PRESSURE: STUDY

According to research, **using e-cigarettes** containing **nicotine** causes an **immediate increase** in the **formation of blood clots**.

- It causes **deterioration** in the ability of small blood vessels to expand and dilate, as well as raised heart rate and blood pressure.
- These effects are similar to those caused by **smoking traditional cigarettes** and with long-term use;

they could result in a heart attack or stroke.

Nicotine:

- Nicotine is the **addictive substance** (chiral alkaloid) found in **tobacco** plant/products.
- The drug can affect a person's brain function and is known to **increase levels of hormones** such as **adrenaline** in the body, which in turn can increase formation of blood clots.

POLLEN CALENDAR: TRACKING AIRBORNE POLLEN TO PREVENT ALLERGY

By studying airborne pollen and its seasonal variations, researchers have

created a **pollen calendar for Chandigarh**, the first for any city in India.

Highlights of the study:

- The study titled, '**Pollen calendar to depict seasonal periodicities of airborne pollen species in a city situated in Indo-Gangetic plain, India**', was recently published.
- It highlights the variability of crucial pollen types in different seasons.
- **Spring and autumn** are two seasons when airborne pollen dominate.

pollen Calendar?

- Pollen calendars represent the **time dynamics of airborne pollen** present in a particular geographical area.
- They yield readily accessible visual details about **various airborne pollen present throughout the year** in a single picture.
- Such calendars are **location-specific**, as pollen concentrations are closely related to locally distributed flora.

Significance:

- A pollen calendar provides a **clear understanding to identify the potential allergy triggers** and help to limit their exposure during high pollen load season.
- The early **advisories can be prepared** and disseminated through media channels to the citizens so that they can use **protective gear during the period** when the concentration of allergic pollen will be high.

Airborne pollen and allergy:

- Pollen grains are **male biological structures** with the primary role of fertilisation, but when inhaled by humans, they may strain the **respiratory system and cause allergies**.
- Pollen found suspended in air can cause widespread upper respiratory tract and **naso bronchial allergy** with manifestations like asthma, seasonal rhinitis, and bronchial irritation.
 - About 20-30 per cent of the population suffers from allergic rhinitis/hay fever in India, and approximately 15 per cent develop asthma.
- Pollen is considered a **major outdoor airborne allergen** responsible for allergic rhinitis, asthma, and atopic dermatitis in humans.
- This is one of the **major environmental concerns** that had not been addressed for the Indian cities.
- **Europe, UK and the US** are using regional pollen calendars in a big way to prevent and diagnose allergic rhinitis/hay fever and predict the timing and severity of the pollen season.

What is Pollen?

- Pollen grains are scientifically known as '**microgametophytes**' of seed plants and are **responsible for producing male gametes**.
- The granules find their **way to the female parts** (female 'stigma') of the same plants, eventually resulting in fertilization.

- Pollination is the natural way for plants **to create offspring for the next generation**. The seeds contained in pollen grains contain

the genetic code required to produce a new plant.

- Pollen typically gets moved around by insects, wind, and water.

THE MISSION THAT NEVER ENDED: KNOW ALL ABOUT SIGNIFICANT FINDINGS BY CHANDRAYAAN-2

The Orbiter part of **Chandrayaan-2** has gathered a wealth of information about the Moon and its environment.

About the Information gathered:

Water Molecule:

- **Imaging Infra-Red Spectrometer (IIRS)** has been able to distinguish between hydroxyl and water molecules.
- It has found **signatures of water** at all latitudes, in the **Polar Region of Moon**.
- The IIRS characterized **hydration features** in the north polar region on the far side of the Moon and quantified the hydration within a crater.
- **Dual Frequency Synthetic Aperture Radar** has reported unambiguous detection of potential water ice at the poles.

Minor Elements:

- Large Area Soft X-Ray Spectrometer (**CLASS**) has detected minor elements chromium and manganese through remote sensing.
- The finding can lay the path for understanding **magmatic evolution** on the Moon and deeper insights into the nebular conditions.
- **CLASS** has mapped nearly 95% of the lunar surface in X-rays.
- Sodium, a minor element on the Moon surface, was detected without any ambiguity.

Studying the Sun:

- Solar X-ray Monitor (**XSM**), has collected information about solar flares.
- XSM has observed many microflares outside the active region.
- This has great implications on the understanding of the mechanism behind heating of the solar corona.

Chandrayaan-2:

- It is the second lunar mission of India after the success of Chandrayaan 1.
- It was conducted for the understanding of the Moon's origin and evolution.
- It was launched from **Satish Dhawan Space** on July 22, 2019, by **GSLV Mk III-M1**.

Highlights of Chandrayaan 2:

- Fostered the findings of Chandrayaan 1 reported by the ISRO.
- The mission targeted the **South Polar region** of the Moon which was completely unexplored.
- Focused on the **extensive mapping of the lunar surface** for studying variations in its composition and tracing the Moon's origin and evolution.

The mission consisted of three main modules:

1. Lunar orbiter

2. Vikram lander (named after **Vikram Sarabhai**, the father of India's space program)
3. Lunar rover named Pragyan

Significance of Chandrayaan 2:

- On October 14, 2019, Chandrayaan-2 detected the presence of **Argon-40** in the lunar exosphere.
- On July 30th, 2020 Chandrayaan-2 imaged the **Sarabhai Crater** located on the north-east quadrant of the moon.

South Pole of the moon:

- Due to the moon's axis, few regions on the **South Pole** always remains

dark especially the craters and have higher chances of containing water.

- The craters might have never received sunlight and thus, increasing the chances of **presence of ice on such surfaces**.
- The **lunar surface area** at the south pole of the Moon that remains in shadow is thus making moon's South Pole interesting.
- This increases the probability of the **existence of water** in permanently shadowed areas around it.

CAN A SOLAR STORM DISRUPT AN INTERNET CONNECTION?

According to a new study, **powerful solar storm** can cause a **disruption of the internet**, damage submarine cables and communication satellites.

- There is a 1.6 to 2% chance of an **extreme space weather event** happening within the next decade.

Solar storm?

- Solar storm or Coronal Mass Ejection is an ejection of **highly magnetised particles** from the sun.
- These particles can travel **several million km per hour** and can take about **13 hours to five days** to reach Earth.
- The atmosphere of **Earth** protects us from these particles. But the particles can interact with Earth's **magnetic field**, induce **strong electric currents** on the surface and affect man-made structures.

- At ground level, **solar storm-induced geomagnetic variations** can induce large currents in networks that can conduct electricity, which is potentially harmful.

Solar activity:

- Sun goes through an **11-year cycle** – cycles of high and low activity. It also has a longer **100-year cycle**.
- During the last three decades when the **internet infrastructure** was booming, it was a **low activity period of Sun**.
- Soon, in either in this cycle or the next cycle, will be the peak of the **100-year cycle**.
 - It is highly likely to see one **powerful solar storm** during in coming decades.
 - **Longer submarine cables** and the **countries in lower latitudes** are at a much lower risk.

Past incidences:

- **1859:** First **recorded solar storm**, it reached Earth in about 17 hours. It affected the **telegraph network** and many operators experienced electric shocks.
- **1921:** A solar storm impacted **New York telegraph and railroad systems**.
- **1989:** Small-scale storm collapsed the **power grid** in Quebec, Canada.
- As per an estimation, if a storm like 1859 hits the US today, about 20-40 million people could be without power for 1-2 years, and total economic cost will be \$0.6-2.6 trillion.

India vs Internet:

- Modelling studies show that as compared to the US, the majority of cables connecting **India will be unaffected**.
- Even under the **high-failure scenario**, some international connectivity remains (e.g., India to Singapore, Middle East, etc.).

How to save internet?

- A **temporary Internet shutdown** can protect equipment **during a solar event** and ensure the continuation of services.
- The probes of **NASA** and the **European Space Agency** can detect a solar storm, and issue warning prior to 13 hours.

ATAL INNOVATION MISSION LAUNCHES SPACE CHALLENGE IN COLLABORATION WITH ISRO & CBSE ACROSS INDIA

Atal Innovation Mission and Atal Tinkering Labs jointly with Indian Space Research Organisation (**ISRO**) and Central Board of Secondary Education (**CBSE**) have launch **ATL Space Challenge 2021** for young students during **World Space Week** from October 4 to 10.

Objective:

- To enable young innovators of schools across India to learn and engage in creating new, efficient and innovative solutions for specific, real-world challenges in the space sector and develop solutions which address the key problem areas of the challenge.

Themes:

Each team participating in the challenge needs to **select one problem** which falls under one of these categories given below:

1. **Explore Space:** gaming technology, app development, robotics
2. **Reach Space:** 3D technology, artificial intelligence or machine learning in space, space apps
3. **Inhabit Space:** 3D technology, healthcare, AI/ML in space
4. **Leverage Space:** geospatial technology, drone Technology, visualize data

Eligibility:

- Students from both ATL and non-ATL schools from **Classes 6 to 12** can submit their entries in the space challenge.

TECH BASED ON CRISPR TO CONTROL GROWTH OF MOSQUITOES

Leveraging advancements in **CRISPR-based genetic engineering**, researchers have created a system-**“precision-guided sterile insect technique” (pgSIT)** to restrain populations of mosquitoes that infect millions each year with debilitating diseases.

precision-guided sterile insect technique (pgSIT):

- pgSIT is a new **scalable genetic control system** that uses a **CRISPR-based approach** to engineer deployable mosquitoes that can suppress populations.
- The technique-pgSIT, **alters genes linked to male fertility**– creating sterile offspring and **female flight in Aedes aegypti**.
 - Aedes aegypti is responsible for spreading diseases including dengue fever, chikungunya and Zika.
- The pgSIT **uses CRISPR to sterilise male mosquitoes** and render female mosquitoes (which spread disease) flightless.
 - pgSIT **differs from “gene drive” systems** that could suppress disease vectors by passing desired genetic alterations indefinitely from one generation to the next.

Features:

- The **system is self-limiting** and is not predicted to persist or spread in the environment.
- pgSIT **eggs can be shipped to a location threatened by mosquito-borne disease** or developed at an

on-site facility that could produce the eggs for nearby deployment.

- Once the pgSIT eggs are released in the wild, sterile pgSIT males will emerge and eventually mate with females, driving down the wild population as needed.

CRISPR:

- **CRISPR** stands for "clusters of regularly interspaced short palindromic repeats."
- It is a **specialized region of DNA** with two distinct characteristics:
 - Presence of nucleotide repeats and spacers.
 - Repeated sequences of nucleotides (building blocks of DNA) are distributed throughout a CRISPR region.
 - Spacers are bits of DNA that are interspersed among these repeated sequences.

CRISPR technology:

- CRISPR is a gene editing technology and is **used in correcting genetic defects** and treating and **preventing the spread of diseases**.
- It allows to **easily alter DNA sequences** and **modify gene function**.
- CRISPR is shorthand for "**CRISPR-Cas9**." CRISPRs are specialized stretches of DNA.
- The **Cas9 protein** is the most widely used by scientists.
 - The protein Cas9 (or "CRISPR-associated") is an **enzyme that acts**

like a pair of molecular scissors, capable of cutting strands of DNA.

- This protein can easily be programmed to find and bind to almost any desired target sequence.

Applications:

- It has been adapted to do things such as **turning genes on or off without altering their sequence.**
- It can also be used to make precise changes such as **replacing faulty**

genes – true genome editing – but this is far more difficult.

- It is already widely used for scientific research.
- It has the potential to **transform medicine.**
- CRISPR is being used for **all kinds of other purposes too**, from fingerprinting cells and logging what happens inside them to directing evolution and creating gene drives.

A NEW METHOD DEVELOPED TO CONVERT POULTRY FEATHER & WOOL WASTE TO ANIMAL FEED & FERTILIZER

Indian scientists have developed a **new sustainable and affordable solution** for converting keratin waste such as human hair, wool, and poultry feathers to **fertilizers, pet, and animal feeds.**

- These wastes are inexpensive sources of **amino acids and protein**, underlining their potential to be used as animal feed and fertilizer.

- The key technology behind this involves **pre-treatment** followed by **hydrolysis of keratin** using a technique called **Hydrodynamic Cavitation.**
- Hydrodynamic cavitation is the process of **vaporisation**, bubble generation and bubble implosion which occurs in a flowing liquid as a result of a decrease and subsequent increase in local pressure.

SCIENTISTS ATTEMPT TO TURN EDIBLE PLANTS INTO VACCINES

The scientists from the University of California are studying if they can **turn edible plants** like lettuce into **mRNA vaccine factories.**

Genesis:

- **Messenger RNA** or mRNA technology, used in Covid-19 vaccines, works by teaching our cells to recognize and protect us against infectious diseases.
- The challenge with this technology is that it must be **kept cold** to

maintain stability during transport and storage.

- If the project is successful, plant-based mRNA vaccines — which can be eaten — can be **stored at the room temperature.**

About the project:

- The project is backed by a **US \$500,000 grant** from the US National Science Foundation.
- It has **three goals:**
 1. Showing that DNA containing the mRNA vaccines can be successfully

- delivered into the part of plant cells where it will replicate
2. Demonstrating the plants can produce enough mRNA to rival a traditional shot
 3. Determining the right dosage.
- The project will utilise nanotechnologies to deliver **genetic material** to the **chloroplasts**.

1. Chloroplasts are **small organs in plant cells** that convert **sunlight into energy** the plant can use.
 2. They are also an **untapped source** for making desirable molecules.
- A single plant would **produce enough mRNA** to vaccinate a single person, with long term goal of people growing it in their own gardens.

QUALITY COUNCIL OF INDIA (QCI) LAUNCHES PROF. S.K. JOSHI LABORATORY EXCELLENCE AWARD

Quality Council of India launched the Prof. S.K. Joshi Laboratory Excellence Award on 16th September 2021.

Highlights:

- The Award has been instituted to promote **Laboratory Quality** and performance improvement in the country.
- It will ensure the laboratory's commitment to **achieve excellence** in providing high precision testing and calibration services with the national/international quality systems legislations, including Health, Safety & Environment.
- It is open to all operational Laboratories pertaining to Testing,

Calibration & Medical including their Proficiency Testing Providers & Reference Material Producers located in India.

Prof. S.K. Joshi:

- Late Prof. S.K. Joshi was a luminary in the field of Science and Academia.
- He made a significant contribution in improving scientific research in India by serving as President-INSA, DG-CSIR, Director-NPL and Chairman-NABL.
- Prof. Joshi was felicitated with **Padma Bhushan, Padma Shri, CV Raman Medal** of INSA and other prestigious awards.

HOW RESEARCHERS FOUND WHERE TO LOOK FOR PLANET NINE

Scientists from California Institute of Technology have found the evidence for a distant giant planet and named it as **Planet Nine**.

- According to the paper- **The Astronomical Journal**, Planet Nine has a mass of **6.2** (+2.2/-1.3) Earth masses.

- The paper explains about Planet Nine's **semimajor axis**, inclination, and perihelion.
- The data only talks about the **orbital path** of Planet Nine but not where in the orbital path it is located.

- The planet Nine is likely to be very reminiscent of a **typical extrasolar** super-Earth.

Planet nine?

- Planet Nine also known as **Planet X**, is a massive, hypothetical object in an elliptical orbit far beyond Pluto, at a distance that would take 10,000 to 20,000 Earth years for it to complete a single trip around the Sun.
- **No direct observations** have been made of an object fitting the description of Planet Nine.
- Unexpected patterns in the orbits of other, smaller objects in the icy outer reaches of the Solar System

could be explained by the gravitational pull of such a body.

- The evidence of an undiscovered planet in the farthest reaches of our Solar System remains this clustering, along with a strange inclination of their orbits.

What might Planet Nine look like?

- A likely scenario explaining the body's far-flung position puts its origins somewhere between the orbits of **Jupiter to Neptune**.
- Despite its large, slow orbit, enough time should have passed since the dawn of the Solar System for it to have cleared its orbit of frozen chunks of dust and rock.

EXPLAINED: HOW HUMAN BEINGS LOST THEIR TAILS

A **team of scientists** in New York have **pinpointed** the **genetic mutation** that may have led to our tail to disappear.

Highlights:

- The researchers began with the reasoning that our ancestors **lost their tail after mutation** altered **one or more of a set of 30 genes** that are involved in the development of tails in various species.
- To search for those mutations, they **compared the DNA of six species** of tail-less apes to nine species of tailed monkeys.
- Eventually, they discovered a mutation that is **shared by apes and humans**, but is missing in monkeys—in a gene called **TBXT**.

- TBXT was **one of the first genes** to be identified by scientists nearly a century ago, the mutation had not been observed before.
- It consisted of 300 genetic letters in the middle of the TBXT gene.

Conclusion:

- The researchers **genetically engineered mice** with the **TBXT mutation** that is carried by humans. Many of the mice failed to develop a tail; others grew a short one.
- The researchers have proposed that this mutation randomly struck **an ape** some 20 million years ago. This tail-less animal survived and thrived, and **passed on the mutation** to its off-spring.

GENETIC STUDY REVEALS HOW ANCIENT SEAFARERS SETTLED VAST POLYNESIA

A genetic study has deciphered the timing and sequence of ancient seafarers who traversed vast Pacific Ocean expanses to reach the far-flung islands of **Polynesia**.

Highlights:

- **Genomic data** from 430 people from 21 Pacific Island populations helped unveil Polynesia's genetic history.
- As per the study, **Easter Island** (Rapa Nui) was settled in about 1210 AD after an open-sea voyage covering roughly 2,575 kms.
- The first voyages were found to have been from **Samoa to Fiji and Tonga** and then to Rarotonga in the Cook Islands in the **9th century AD**.
- In the **12th and 13th centuries** seafarers from Mangareva in the Gambier Islands reached (Marquesas Islands), Rapa Nui and Raivavae.
- The voyagers brought with them crops like the **root vegetable taro** and food sources such as chickens.
- The people of the **megalith islands** were found to be genetically

connected, settled from a common Tuamotu origin.

- When the maritime culture of the **Tuamotu Archipelago** was discovered, it gave rise to widely dispersed monumental sculpture-building populations.

Polynesia:

- Polynesia is a group of islands in the **Pacific Ocean**. It covers an area of over 800,000 square miles with **New Zealand, Hawai'i, and Easter Island**.
- The name Polynesia means "**many islands**" since it is made up of more than 1,000 islands. Most of the Polynesian islands are volcanic.
- Polynesians were excellent shipbuilders, navigators, and fishers.
- They use well-known **methods of navigation** such as the stars and the movement of the sun in the sky, they were well-versed at reading the wind and the waves.
- The **Maori** are the indigenous Polynesian people of New Zealand. The name means "**natural**" and was used to distinguish ordinary mortal humans from deities and spirits.

INDIA'S HIGHEST ALTITUDE INSTITUTE IN LADAKH GETS LiFi NETWORK FOR FASTER INTERNET

Students' Educational and Cultural Movement of Ladakh (SECMOL) has become the first-of-its-kind institute in the Union Territory to have an internet connection using **Light Fidelity** (Li-Fi) technology.

- With the Li-Fi setup, the **faculties and students would get faster and safer internet** connections over the existing electric power lines for various educational purposes.

Light Fidelity (Li-Fi) technology:

- Li-Fi is a **wireless communication technology** which **utilizes light** to transmit data and position between the devices.
- The bidirectional wireless system **transmits data** via LED or infrared light through open space in outdoor and indoor environments.
- Unlike Wi-Fi, which uses **radio frequency**, Li-Fi technology **only needs a light source** with a chip to transmit an **internet signal** through light waves.
- Li-Fi multiplies the speed and bandwidth of Wi-Fi, 3G and 4G. **Li-**

Fi has band frequency of **200,000 GHz**, versus the maximum **5 GHz** of the **Wi-Fi**. Hence, Li-Fi is **100 times faster** and can transmit much more information per second.

- Li-Fi systems **provide ultra-fast data connections**, and are especially useful in urban areas where radio spectra are congested and also in rural areas wherein Fiber Optic Cables or networks are not reachable.
- The technology is **environment-friendly**, it goes with the vision to make a pollution-free and green world.

WINGED MICROCHIP IS 'SMALLEST HUMAN-MADE FLYING STRUCTURE'

North-western University engineers have created an **electronic microchip** with the capability of flight. It is the smallest-ever human-made flying structures.

- About the size of a **grain of sand**, the new flying microchip (or microflier) **does not have a motor** or engine. It **catches flight** on the wind and **spins like a helicopter** through the air towards the ground.
- The microflier's aerodynamics have been optimised to ensure that when dropped at a high elevation it **falls**

at a slow velocity in a controlled manner.

- This behaviour **stabilizes its flight**, ensures dispersal over a broad area and increases the amount of time it interacts with the air, making it ideal for **monitoring air pollution and airborne disease**.
- It can be packed with **ultra-miniaturised technology**, including sensors, power sources, antennas for wireless communication and embedded memory to store data.

PROPORTION OF ALL CANCER CASES HIGHER IN MEN: ICMR REPORT

The Indian Council of Medical Research's (ICMR) '**Clinicopathological Profile of Cancers in India: A Report of the Hospital Based Cancer Registries, 2021**' has been released.

- The proportion of all cancer cases was **higher in males (52.4%) than females (47.4%)** with gynaecological cancers, including breast cancer, comprising over half of all cancers in females.

- Childhood (0-14 years) cancers constitute 7.9% of all cancers.
- **Cancers of the head and neck** region accounted for nearly **one third (31.2%)** of the cancers among males.
- The **highest proportion** of cancer from all sites was reported in the **45 to 64 years age group**, except for prostate cancer in males, which was higher in those over 65 years.
- Cancers in sites **associated with tobacco** use comprised **48.7% of cancers among males** and **16.5% among females**.
- The relative **proportion of site-specific cancers** was higher in males than females, except for thyroid cancer (2.5% in females versus 1% in males) and gallbladder cancer (3.7% in females versus 2.2 % in males).
- Over **one-third of patients** with cancers of the tongue, larynx, thyroid, corpus uteri, kidney (including children), bladder and retinoblastoma had localised disease.
- **Chemotherapy was the most typical treatment** modality for many cancers regardless of the clinical extent of disease at presentation, including cancers of the liver, gallbladder, stomach, lung and childhood cancers and **regardless of the organ site and clinical extent**, most cancer patients, were initiated on cancer-directed **treatment within 8 to 30 days of diagnosis**.
- Over **half the patients with cancer of the brain and nervous system**, and about one-third of the patients

of lung, prostate, bladder and thyroid cancer with localised disease diagnosed at the reporting institution, were **initiated on cancer directed treatment on the same day**.

Cancer:

- Cancer is a disease in which some of the body's **cells grow uncontrollably and spread to other parts** of the body.
- Cancer can **start almost anywhere in the human body**, which is made up of trillions of cells.
- Normally, human cells grow and multiply (through a process called cell division) to form new cells as the body needs them. When cells grow old or become damaged, they die, and new cells take their place.
- Sometimes this **orderly process breaks down**, and abnormal or **damaged cells grow and multiply** when they shouldn't.
- These cells may **form tumors**, which are **lumps of tissue**. Tumors can be cancerous or not cancerous (benign). Cancerous tumors may also be called **malignant tumors**.
- Many cancers form solid tumors, but cancers of the blood, such as leukemias, generally do not.

Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases and Stroke:

- Considering the rising burden of Non-Communicable Diseases (NCDs) and common risk factors to major Chronic NCDs, Government of India initiated an integrated National Programme for Prevention and Control of Cancers, Diabetes, Cardiovascular Diseases and Stroke

(NPCDCS) under the National Health Mission.

- It links ongoing interventions of NHM such as National Tobacco Control Programme (NTCP), National Mental health Programme and National Programme for Health Care of Elderly (NPHCE) for NCDs
- It also convergence with programmes dealing with communicable diseases like TB, RCH, and Adolescent/School Health etc.

Aim:

- Optimization of scarce resources and provision of seamless services
- Operating through NCD cells constituted at State and District level

Objectives:

- Health promotion through involvement of community, civil society, organizations, media etc.
- Population based and opportunistic screening at all levels from sub-centre and above for early detection of diabetes, hypertension and common cancers
- To prevent and control chronic NCDs (common Cancer, Diabetes and Hypertension)
- Capacity building for prevention, early diagnosis, treatment, rehabilitation, IEC/BCC and operational research
- Diagnosis and cost-effective treatment at all three levels of healthcare

- Development of database of NCDs through Surveillance System
- NCD morbidity, mortality and risk factors monitoring

Funding:

- To States under NCD Flexi-Pool through State PIPs, with Centre to State ratio of 60:40
- For North-Eastern and Hilly States, share is 90:10

Health facility under NPCDCS:

- Sub centre
- Primary healthcare (PHC)
- Community Health Centres / First Referral Units (CHC/FRU)
- District Hospital
- Medical College
- Tertiary Cancer Centre

Non-Communicable Diseases (NCDs)?

- A non-communicable disease (NCD) is a disease that is not transmissible directly from one person to another.
- NCDs include Parkinson's disease, autoimmune diseases, strokes, most heart diseases, most cancers, diabetes, chronic kidney disease, osteoarthritis, osteoporosis, Alzheimer's disease, cataracts, and others.
- They are long duration diseases and generally slow in progression.
- They are result of a combination of genetic, physiological, environmental and behavior factors.

EXPLAINED: WHAT IS DARK ENERGY, AND HAVE SCIENTISTS FINALLY DETECTED IT?

The scientists have reported the first putative **direct detection of dark energy** by the XENON1T experiment.

XENON1T experiment:

- The **XENON1T experiment** is the world's most **sensitive dark matter experiment**. It could also be used to detect **dark energy**.
- It was operated **deep underground** at the INFN Laboratori Nazionali del Gran Sasso in **Italy**.
- It noticed **certain unexpected results** in an underground experiment, and predicted that dark energy may be responsible for it.

Dark energy Vs Dark matter:

- Everything we see – the planets, moons, massive galaxies etc.– makes up **less than 5%** of the universe.
- About **27%** is dark matter and **68%** is dark energy. While **dark matter attracts** and holds galaxies together, **dark energy repels** and causes the expansion of our universe.

Dark Energy:

- **Einstein** was the first person to **predict dark energy**.
- Roughly **68%** of the universe is dark energy. It tends to **accelerate** the expansion of the universe.
- It is **distributed evenly** throughout the universe and its effect is **not diluted** as the universe expands.

Dark Matter:

- Dark matter makes up about **27% of the universe**.
- As per the common view- **dark matter** is not baryonic, but made up **more exotic particles** like axions or WIMPS (Weakly Interacting Massive Particles).
- It is **not an anti-matter** because it does not produce gamma rays which are produced by the anti-matter.
- Unlike normal matter, dark matter **does not interact** with the electromagnetic force. This means it does not absorb, reflect or emit light, making it extremely hard to spot.

THE PRESTIGIOUS SHANTI SWARUP BHATNAGAR PRIZE FOR SCIENCE AND TECHNOLOGY (2021) HAS BEEN ANNOUNCED.

- Jeemon Panniyammakal, of **Achutha Menon Centre for Health Science Studies (AMCHSS)**, Sree Chitra Tirunal **Institute for Medical Sciences and Technology (SCTIMST)** won the award in the discipline of medical sciences.

About the award:

- It is awarded to scientists **annually for outstanding research work**, applied or fundamental.

- It is instituted by the **Council of Scientific & Industrial Research (CSIR) India**, in the name of its late founder-director Dr (Sir) Shanti Swarup Bhatnagar.
- It carries a cash award of **₹ five lakhs**.
- **Age of the nominee** ought to **not be more than 45 years** as on 31 December 2020.

AIRSPACE MAP FOR DRONE OPERATIONS RELEASED: KNOW WHERE ALL YOU CAN FLY THEM

The Aviation Ministry released **India's airspace map for drone operations** which clearly **demarcates where all can drones be flown** (green zone), not flown (red list) or flown with previous clearance (yellow zone).

- The drone airspace map is available on DGCA's **digital sky platform** to all without any login requirements.

Drone airspace map:

- The drone airspace map is an interactive map of India that **demarcates the yellow and red zones across the country.**

Green zone:

- Airspace **upto 400 feet** that has not been designated as a red or yellow zone; and upto 200 feet above the area located between 8-12 km from the perimeter of an operational airport.
- In green zones, **no permission whatsoever is required** for

operating drones with an all-up weight upto 500 kg.

Yellow zone:

- Airspace **above 400 feet** in a designated green zone; above 200 feet in the area located between 8-12 km from the perimeter of an operational airport and above ground in the area located between 5-8 km from the perimeter of an operational airport.
- Permission from the concerned air traffic control authority – AAI, IAF, Navy, HAL etc. is required.
- Reduced from 45 km earlier to 12 km from the airport perimeter.

Red zone:

- 'No-drone zone' within which **drones can be operated only after a permission** from the Central Government.



IMPLEMENTATION OF NATIONAL TRUST ACT, 1999 IN JAMMU & KASHMIR AND LADAKH

Recently, the **Ministry of Social Justice & Empowerment** had organized a meeting with Govt. Officials, NGOs, parents and professionals from UTs of Jammu & Kashmir and Ladakh for implementation of **National Trust Act, 1999** in the Union Territories.

National Trust?

- The National Trust is a **statutory body** of the Ministry of Social Justice and Empowerment.
- It is set up under the “**National Trust for the Welfare of Persons with Autism, Cerebral Palsy, Mental Retardation and Multiple Disabilities**” Act 1999.
- It works towards providing opportunities for **capacity development of Persons with Disability and their families**, fulfilling their rights, facilitating and promoting the creation of an enabling environment and an inclusive society.
- Its aim is to **create an enabling environment**, i.e. providing opportunities for Persons with Disabilities through comprehensive support systems.
- The National Trust works for the **welfare of persons** with any of the following four disabilities:
 - Autism
 - Cerebral Palsy
 - Mental Retardation
 - Multiple Disabilities

Objectives of National Trust

- The objectives of the National Trust in particular are:
 - to enable and empower persons with **disability to live as independently and as fully as possible** within and as close to the community to which they belong;

- to strengthen facilities to **provide support to persons with disability** to live within their own families;
- to extend support to **registered organisations to provide need based services** during period of crisis in the family of persons with disability;
- to deal with **problems of persons with disability** who do not have family support;
- to promote **measures for the care and protection of persons with disability** in the event of death of their parents or guardians;
- to evolve procedure for the **appointment of guardians and trustees for persons with disability** requiring such protection; and
- to facilitate the realisation of **equal opportunities, protection of rights and full participation** of persons with disability

Composition of National Trust

- **A Chairperson to be appointed by the Central Government** from amongst the persons having expertise and experience in the field of autism, cerebral palsy, mental retardation and multiple disability;
- **Nine persons to be appointed in accordance with such procedure as may be prescribed** from amongst the registered organisations out of which three members each shall be from voluntary organisations, associations of parents of persons with autism, cerebral palsy, mental retardation and multiple disability and from associations of persons with disability, members;

- **Eight persons not below the rank of Joint Secretary to the Government of India nominated by the Government** to represent the Ministries or Departments of Social Justice and Empowerment, Women and Child Development, Health and Family Welfare, Finance, Labour, Education, Urban Affairs and Employment and Rural Employment and Poverty Alleviation, Members, ex officio;
- **Three Persons to be nominated by the Board** representing the associations of trade, commerce and industry engaged in philanthropic activities, members;
- The **Chief Executive Officer**, who, shall be of the **rank of Joint Secretary** to the Government of India, Member-Secretary, ex officio.

GRANT-IN-AID AMOUNTING TO RS. 13,385.70 CRORE RELEASED TO RURAL LOCAL BODIES

Ministry of Finance released an amount of Rs. 13,385.70 crore to 25 States for providing grants to the Rural Local Bodies.

- The grants have been released as per the recommendations of **15th Finance Commission**.

Aim:

- To improve sanitation and maintenance of **open-defecation free** (ODF) status.
- To improve supply of drinking water, rain water harvesting and water recycling.

Highlights:

- Out of the **total Grant-in-aid** allocated for Panchayati Raj institutions, 60 percent is '**Tied Grant**'.
- It is meant for **national priorities** like drinking water supply, rainwater harvesting and sanitation.
- Tied grants are meant to **ensure availability** of additional funds to the Rural local bodies over and above the funds allocated by the

Centre and the State for sanitation and drinking water under the Centrally Sponsored Schemes.

- Remaining **40 percent** is 'Untied Grant' and is to be utilized at the **discretion of Panchayati Raj institutions** for location specific felt needs, except for payment of salaries.
- The States are required to transfer **grants to Rural local bodies** within 10 working days of their receipt from the Union Government.
- Any delay beyond 10 working days requires the State Governments to release the grants with interest.

Finance Commission:

- Constitutional body set up by the President of India **every five years** to decide the share of the Union government and state governments in the divisible pool of **tax revenue**.
- Decides **the share of each state** from the share of states in the divisible pool.

- **Recommends** the share of funds and grants to be transferred to local bodies.
- In the Union Budget, these transfers are called '**Finance Commission Grants**' and '**Other Transfers**'.

Finance Commission Grants:

Grants for rural local bodies:

- The Finance Commission recommendations ensure that the Gram Panchayats are adequately funded.
- Nearly half of the Finance Commission Grants in Union Budget goes to village local bodies.

Grants for urban local bodies:

- Urban local bodies like municipal councils receive the largest chunk of Finance Commission Grants.

Assistance to SDRF:

- Central government also provides funds to **State Disaster Relief Funds** in addition to funding the National Disaster Management Authority (NDMA).
- The assistance is provided as per the recommendations of the **Finance Commission**.

Post devolution Revenue Deficit Grants:

- About a **third** of total revenue collected by the Centre is directly transferred to states as their share in the divisible pool.
- Finance Commission also provides a mechanism for compensation of any loss incurred by states, which is **called post-devolution revenue deficit grants**.
- This Grant forms the second largest chunk of Finance Commission transfers after the assistance to local rural bodies.

Other transfers to states:

- Assistance to states from **NDRF**.
- Central pool of resources for north-eastern region and Sikkim.
- Externally aided project grants.
- Externally aided project loans.
- Schemes for north-east council.
- Schemes under **Article 275 (1)** of the Constitution.
- **Special assistance under the demand:** Transfers to states. Special central assistance to scheduled castes and special central assistance to tribal area.

POSHAN MAAH 2021: 'ESTABLISH NUTRITION GARDENS TO FIGHT MALNUTRITION,' UNION MINISTER SMRITI IRANI URGES DISTRICTS

Union Minister for Women and Child Development has urged all state governments to ensure that all aspirational districts in India have a poshan vatika (nutrition garden) at anganwadi centres during the Nutrition Month which starts from September 1. The Focus will be on three key areas – Poshan 2.0, Vatsalya mission and Shakti mission.

Poshan Vatika:

- All districts of the country have to establish a Poshan Vatika (nutrition garden). It is for the protection of Severe Actual Malnourished (SAM) children.
- Its main objective is to ensure supply of nutrition through organically home-grown vegetables and fruits simultaneously ensuring that the soil must also remain healthy.

- Plantation drives for Poshan Vatikas would be taken up by all the stakeholders in the space available at anganwadis, school premises and gram panchayats.

Poshan Maah:

- Month of September is celebrated as POSHAN Maah since 2018 to improve nutritional outcomes for children, adolescent girls, pregnant women, and lactating mothers.
- It includes a month-long activity focused on antenatal care, optimal breastfeeding, Anaemia, growth monitoring, girls' education, diet, right age of marriage, hygiene and sanitation and eating healthy.
- The activities focus on Social and Behavioral Change Communication (SBCC) and are based on Jan Andolan Guidelines.
- SBCC is the strategic use of communication approaches to promote changes in knowledge, attitudes, norms, beliefs and behaviors.

Need for the move:

- An ASSOCHAM study revealed that a loss of 4 per cent GDP annually for the country due to malnutrition.
- Children suffering from malnutrition grow up and start earning, they earn 20 percent less than those who have had healthy childhoods.
- Covid-19 is pushing millions into poverty, disproportionately affecting

the economically disadvantaged. Such people are vulnerable to malnutrition and food insecurities.

Poshan Abhiyaan:

- Poshan Abhiyaan or National Nutrition Mission (NNM) was launched in 2018.
- **Aim:** To tackle the problem of malnutrition prevalent in India.

Key Points:

- **Objective:** To reduce the level of under-nutrition and enhance the nutritional status of children in the country.
- It is a multi-ministerial initiative and aims at removing malnutrition from the country by 2022.
- It focusses to improve the nutritional outcomes of adolescents, children, pregnant women and lactating mothers.
- The mission leverages technology and convergence between various modules and departments.
- The programme has specific targets for reducing stunting, anaemia, under-nutrition and low birth weight.
- For Anganwadi centres, the mission envisage:
- Giving incentives to Anganwadi Workers (AWWs) for using IT-based tools.
- Elimination of registers used by AWWs.
- Measuring the height of children at Anganwadi centres.

SC CONCERNED OVER COMMUNAL TONE OF NEWS CHANNELS, SOCIAL MEDIA'S LACK OF ACCOUNTABILITY

The Supreme Court expressed serious concern over the fact that false news is

spread through social media platforms and digital portals with few checks.

Highlights:

The SC was hearing petitions highlighting how some media outlets aired communal content linking the spread of the coronavirus to a Tablighi Jamaat meet held at Nizamuddin in Delhi.

The CJI remarked that:

- Certain sections of the media communalised everything and this would ultimately result in giving the country a bad name.
- There is a lack of accountability on the part of social media platforms.
- The social media platforms only responded to powerful people, while complaints made by ordinary people, institutions and judges over content were ignored.
- Role of Media in promoting communal harmony:
- Media acts as a fourth pillar of the society. It reaches people widely and is the source of information for society regarding any issue be it local, regional or global.
- Media acts as an influential and instrumental tool with regards to building confidence or promoting mistrust among people on issues related to national security
- The primary responsibility of the Media is of creating an informed citizenry in order to empower society and strengthen democracy.
- It should play an active role in enhancing social, religious and

communal harmony for the betterment of the community, the society and the nation.

Recommendations:

- Adopt appropriate language to raise awareness: Increasing awareness will likely deter manipulative behaviours and increase pressure on platforms to take action.
- Creation of media evaluation tools: Media evaluation tools can provide information on media bias and news quality. Information on bias/quality can help citizens make informed news-related choices.
- Training journalists: Journalists could be trained to reduce instances of inadvertent amplification or manipulation.
- Transparency of social media platforms: Increasing the transparency of social media platforms and fixing accountability in case of manipulation.

Facts:

- The Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021, provide a redressal mechanism and timely resolution of grievances of users of social media and over-the-top platforms.
- The rules require these platforms to appoint a grievance redressal officer who is a resident of India.

MINISTRY CONSTITUTES COMMITTEE TO REVIEW GUIDELINES OF JOURNALIST WELFARE SCHEME - ASHOK KUMAR TANDON COMMITTEE

Ministry of Information and Broadcasting has constituted a ten-member Committee headed by Shri Ashok Kumar Tandon to look at the

existing guidelines of **Journalists Welfare Scheme**.

Highlights:

- The decision is taken in the light of the several changes that have taken place in the media eco space.
- It includes the loss of large number of journalists due to COVID-19 and the broad basing of the definition of the “**Working Journalists**”.
- The Ministry of Information and Broadcasting granted **ex-gratia**

payment to the families of journalists who unfortunately died due to COVID-19.

- Assistance has been given in over 100 cases @ **Rs.5 lakh** each.
- The Committee is expected to give its report in a time-bound manner within **two months**.

AJAY PRAKASH SAWHNEY COMMITTEE - TO DEVELOP ‘ECOSYSTEM’ FOR STARTUPS, ACCELERATORS, IT MIN FORMS COMMITTEE

- Ministry of Electronics and Information Technology (**MeitY**) has formed a **10-member panel** led by Secretary Ajay Prakash Sawhney.
- It will formulate a process to **support existing and upcoming**

start-up accelerators, which would then select information technology-based start-ups to scale for solving India’s problems creating positive social impact.

37% STUDENTS IN RURAL AREAS, 19% IN URBAN NOT STUDYING AT ALL: SURVEY

The **School Children’s Online and Offline Learning (SCHOOL) survey reveals** that the learning ability poor rural children has been hit by COVID-19 induced lockdown.

About the survey:

- The survey was conducted in August 2021 in 15 states and union territories, including Maharashtra, UP, West Bengal and Karnataka.
- It was a **joint effort** of nearly 100 volunteers across the country.
- The sample was drawn from **deprived hamlets** and **bastis** where most children attend government schools.

Highlights of the survey:

- The **digital divide** has hurt the lower income groups and

marginalised grievously, especially in rural areas.

- In **rural areas**, **37%** of the sample students were **not studying** at all— and **only 8%** were studying online regularly.
- 19% students in **urban areas** were not studying at all.
- **48%** of the rural children surveyed were **not able to read** more than a few words.
- About **65%** of parents in the sample whose children were studying online felt their child’s **ability to read and write had declined** since the lockdown began.
- **Only 4%** of rural scheduled caste and tribe children were studying online regularly compared

with **15%** among other rural children.

- **Only 51%** of rural households surveyed had a smartphone. Other issues of online access are poor

connectivity and **lack of money for data**.

- As many as 90% of urban parents and 97% of rural parents in the sample wanted schools to reopen.

NALCO NAMASYA MOBILE APP -PROVIDING AN INNOVATIVE PLATFORM FOR SUPPORTING MSEs

NAMASYA is a **bi-lingual App** to support micro and small-scale industries to carry out their businesses.

Highlights:

- National Aluminium Company Ltd (NALCO) unveiled **Namasya** (NALCO Micro & Small enterprise Yogayog Application) for the micro & small enterprises.

- The App provides a **platform** and **support** to micro and small-scale industries to carry out their businesses.
- The App empowers MSEs with required information about vendor registration process and supports vendor development and training programmes of NALCO.

SHIKSHAK PARV: PM MODI LAUNCHES 5 NEW EDUCATION INITIATIVES, ALL YOU NEED TO KNOW

The **Prime Minister of India** launched several academic initiatives which are expected to play an important role in shaping the country's future.

Major Initiatives under Shikshak Parv:

1. Indian Sign Language (ISL) Dictionary:

- The Dictionary is launched by **Indian Sign Language Research and Training Centre**, an Institute under the Department of Empowerment of Persons with Disabilities (Divyangjan).
- The 3rd edition of the ISL Dictionary contains a total of **10,000 terms** of everyday use, academic terms, legal & administrative terms, medical terms, and agricultural terms.
- The Dictionary contains **regional signs** used in different parts of the country.

- **1st edition** of the ISL Dictionary was launched on 23rd March 2018 with 3000 terms.
- **2nd edition** with 6000 terms (including earlier 3000 terms) was launched on 27th February 2019.

2. CBSE School Quality Assessment and Assurance (SQAA):

- School Quality Assessment and Assurance (SQAA) is launched by Central Board of Secondary Education to provide global parameters of attainment as standards in schools affiliated to it.

Aim:

- To enhancement of quality, recognition of excellence, promotion of accountability, across a range of descriptors or indicators of assessment.

Key Takeaways:

- It captures the **unique ethos** of an institution such as nurturing and promoting excellence in sports etc.
- This will provide a degree of choice to a student or parent looking for specific qualities.
- **SQAA** is easily implementable, objective, and carries with it a measure of credibility and acceptability.

3. Vidyanjali 2.0:

- Vidyanjali is an initiative taken by the Ministry of Education, Government of India.

Aim:

- To strengthen Schools through community and private sector involvement in schools across the country.

Major Highlights:

- The initiative will connect schools with varied volunteers; young professionals, school alumni, in service and retired teachers / Government officials.
- **Vidyanjali has two verticals:** “Participate in school Activity” and “Assets/Material/Equipment”
- Volunteer can support and strengthen the government and government aided schools.

4. National Digital Education

Architecture (NDEAR):

- Union Budget 2021-22 has announced setting up of a National Digital Educational Architecture (NDEAR).

Aim:

- To provide a digital infrastructure for Education.

Key Points:

- Digital Architecture will support teaching and learning activities as

well as educational planning, governance administrative activities.

- It will provide education eco-system architecture for development of digital infrastructure, that will ensure autonomy of all stakeholders, especially States and UTs.

5. NISHTHA Teachers Training Programme:

- National Initiative for School Heads and Teachers Holistic Advancement (NISHTHA) is a national mission to improve learning outcomes at the elementary level.

Objective:

- To motivate and equip teachers to encourage and foster critical thinking in students and teachers will get awareness and develop their skills on various aspects.

Expected outcomes:

- Improvement in learning outcomes of the students.
- Creation of an enabling and enriching inclusive classroom environment.
- Teachers are trained as first level counselors to be alert and responsive to the social, emotional, and psychological need of students.
- Teachers are trained to use Art as pedagogy leading to increased creativity and innovation among students.
- Teachers are trained to develop and strengthen personal-social qualities of students for their holistic development.

6. Shikshak Parv:

- The Ministry of Education is organizing **Shikshak Parv** from 8th

of September to 25th of September, 2021.

- **Theme:** National Education Policy, for Principals, Teachers, students, schools.

DELHI GOVT TO PROVIDE FUNDS TO SCHOOL CHILDREN FROM SEPT 7 TO START THEIR OWN BUSINESS

The Delhi Government announced that it will provide **start-up funds to students of Government schools**.

- The Government termed this fund as **seed money** and the programme as **'Business Blasters'** to help young students in starting their own business.

Seed Money Project:

- **Business Blaster Program (BBP)** was started at the **School of Excellence, Khichripur** under a pilot project.

- **Aim:** To inculcate the belief in children that whatever work they do, they should do it with an entrepreneurial mindset.
- **Objective:** To encourage children to adopt an entrepreneurship mindset when taking up any kind of job.
- A seed money amount of **Rs 2000 will be provided** to every student of **class 11th and 12th** to start a business.

COAL MINING, WASTE DISCHARGE, ENCROACHMENT: RIVER BHOGDOI HAS BEEN DYING A SLOW DEATH

The rampant coal mining in Nagaland, coupled with waste discharge from tea estates and encroachment are contaminating waters of River Bhogdoi in Assam.

In 2019, the Ministry of Environment, Forest and Climate Change declared **Bhogdoi** as one of the **most polluted rivers** in Assam and 351st among the polluted rivers in the country.

Key Points

About:

- It originates from Mokokchung in Nagaland where it is also known as Tsujenyong nullah and is the south bank tributary of the River Brahmaputra.
- It is an inter-state river (flowing between Assam and Nagaland) and

joins Dhansiri river near its confluence with Brahmaputra.

Issues:

- Coal mining in Nagaland introduced high levels of manganese in the river.
- Chemical waste from the tea gardens is turning the river poisonous and polluted.
- The drains carry industrial and residential wastes. The river has become heavily silted, reducing its carrying capacity.
- The high BOD (Biological Oxygen Demand) indicates low water quality and less oxygen for aquatic life.
- The massive encroachments along the river bank have been not only making the river narrower but also increasing the filth and garbage.

- Disposing human excreta and cremating dead bodies along the river bank are gradually contaminating the soil and water of the region. This is increasing the threat of water-borne diseases.

Brahmaputra River:

Brahmaputra River originates under the name of Siang or Dihang, from the Chemayungdung glacier of the Kailash range near the Mansarovar lake (Tibet). It enters India west of Sadiya town in Arunachal Pradesh.

- Tributaries: Dihing River, Dibang River, Lohit River, Dhansiri River, Kolong River, Kameng River, Manas River, Beki River, Raidak River, Jaldhaka River, Teesta River, Subansiri River.
- The total catchment area of the inter-state river is 1,545 square kilometres and travels **160 kilometres before joining Dhansiri river** near its confluence with Brahmaputra.

Biochemical Oxygen Demand (BOD)

- Water pollution by organic wastes is measured in terms of BOD.
- BOD is the amount of Dissolved Oxygen (DO) needed by bacteria in decomposing the organic wastes present in water. It is expressed in milligrams of oxygen per litre of water.
- The higher value of BOD indicates low DO content of water.
- Since BOD is limited to biodegradable materials, it is not a reliable method of measuring water pollution.

Chemical Oxygen Demand (COD)

- COD measures the amount of oxygen in parts per million required to oxidise organic (biodegradable and non-biodegradable) and oxidizable inorganic compounds in the water sample.

GOVERNMENT CONSTITUTES TASK FORCE, EXPERT COMMITTEE ON COAL-BASED HYDROGEN PRODUCTION

The Ministry of Coal has constituted **2 Task Force and Expert Committee** to Prepare Road Map for Coal based Hydrogen Production.

- This is **aimed for contributing to PM** agenda of a hydrogen-based economy in a clean manner.

V.K. Tiwari Committee mandates:

- Identification of role to be played by each stakeholder Ministry.
- Coordination with Stakeholder Ministries.

- Monitoring of activities towards achieving coal-based Hydrogen production and usage.
- Setting up sub committees to achieve the objective.
- To coordinate with Coal Gasification Mission and NITI Aayog.

R.K. Malhotra Committee mandates:

- Identifying experts in India and co-opting as members.
- Desk based review of progress in hydrogen technology and also review ongoing research projects in Hydrogen technology.

- Coordinate with various national/international technology institutions in hydrogen.
- Prepare a road map for coal based Hydrogen production and usage including economic viability, environmental sustainability and policy enablers required.
- Identifying activities for implementation of coal based hydrogen production and usage.
- Assisting Task force in implementation of Coal based Hydrogen production.

PMGDISHA CAMPAIGN FOR 100 PERCENT DIGITAL LITERACY IN DIGITAL VILLAGES

Ministry of Electronics & IT graced the launch Program of **'PMGDISHA Drive & Announcement of 100% Digital Literacy of all digital villages'** under **AzadiKaAmritMahotsav**.

- Under the campaign, a **three-day certification drive** for rural citizens especially women and disadvantaged communities will be conducted.

PMGDISHA scheme:

- Pradhan Mantri Gramin Digital Saksharta Abhiyaan is a **flagship Digital Literacy scheme** of the Government for rural areas introduced in February, 2017.
- It is proposed to make all the **Digital Villages 100 percent Digital Literate**.
- The Scheme envisages to make six crore persons in rural areas digitally literate, **reaching to around 40% of rural households** by covering one member from every eligible household by 31st March, 2020.
- **Aim:** To **bridge the digital divide**, specifically targeting the rural

population including the marginalised sections of society like Scheduled Castes (SC)/ Scheduled Tribes (ST), Minorities, Below Poverty Line (BPL), women and differently-abled persons and minorities.

- **Objective:** To make a person digitally literate, so that he/she can operate digital devices (like Tablets, Smart phones etc.) send and receive emails & browse Internet for information and undertake digital payment etc.
- **Eligibility Criteria:** Nominated digitally illiterate person from every eligible rural household.
- **Age:** 14 to 60 years
- **Course Duration:** 20 Hours (Minimum 10 Days and Maximum 30 Days)
- **Implementing authority:** CSC e-Governance Services India Limited, a Special Purpose Vehicle (SPV) incorporated under the Companies Act 1956.

GUJARAT ROLLS OUT 'VATAN PREM YOJANA' FOR RURAL DEVELOPMENT

Gujarat government launched the 'Vatan Prem Yojana', that encourages the donations from Non-Resident Indians (NRIs) with Gujarati origins **to fund development projects** in their native villages.

Vatan Prem Yojana':

- It is a unique **public-private participation scheme**.
- Donors with Gujarati origins can provide **funding of minimum 60 per cent** or more for such projects in their native village and the

balance **up to 40 per cent will be provided by the State government**.

- Under this scheme, the State government looks to create development projects worth **₹1000 crore by December 2022**.
- Development projects will include school classroom renovations, public infrastructure works such as surveillance systems, drainage, water recycling, sports complex among others.

CLEANLINESS SURVEY FOR VILLAGES ACROSS INDIA LAUNCHED

The Minister of State for Jal Shakti presided over the **e-launch** of **Swachh Survekshan Grameen 2021** under Swachh Bharat Mission (Grameen) Phase -II.

Highlights of SSG:

- The Department of Drinking Water and Sanitation (DDWS) will undertake **Swachh Survekshan Grameen (SSG) 2021**.
- DDWS had commissioned **SSG** in 2018 and 2019.
- SSG 2021 will **support acceleration** of ODF Plus interventions, improving ODF Sustainability, and Solid and Liquid Waste Management activities across the villages in the country.
- **SSG 2021 Protocol document**; SSG 2021 Dashboard and the mobile App for Citizens feedback was released.
- The SSG 2021 mobile App will be available in major **local Indian languages**.
- In **Phase 2** of Swachh Bharat Mission (Grameen), the **SSG** will

focus on cleanliness, transparency, and people's participation.

Significance:

- The **Surveskshan** provides a great opportunity to give the necessary momentum to **ODF Plus** activities.
- It will engage **districts and states** in enhancing the sanitation, overall cleanliness, and waste management.
- The **findings of the Survey** will help in bridging the gaps by identifying challenges on ground and working with all states. The survey will be monitored with regular field visits.
- It will help to **overcome the challenges** occurred due to Covid pandemic and achieve **ODF Plus** status by the villages in near future.

Swachh Bharat Mission (Rural)-Phase 2:

- The second phase of **Swachh Bharat Mission (Rural)** was approved in February 2020, with an estimated central and state budget of Rs 52,497 crore.

- The second phase will be implemented between 2020-21 and 2024-25.
- It will focus on **Open Defecation Free Plus** (ODF Plus), which includes ODF sustainability and solid and liquid waste management (SLWM).
- The ODF Plus programme will converge with **MGNREGA**, especially for grey water management, and will complement the Jal Jeevan Mission.
- The programme will ensure that **everyone** uses a toilet.
- The **fund sharing pattern** between the Centre and States will be:
 - 90:10 for North-Eastern States, Himalayan States and UT of J&K
 - 60:40 for other States
 - 100:0 for other Union Territories.

Swachh Bharat Mission-Grameen:

- Launched on 2nd October, 2014 to accelerate the efforts to **achieve universal sanitation** coverage and to **focus on sanitation**.

Aim:

- To achieve a **clean and open defecation free** (ODF) India by October 2, 2019.
- **Implementation:** Ministry of Drinking Water and Sanitation.

Objectives:

- To improve the level of **cleanliness** in rural areas through Solid and Liquid Waste Management.
- Making **Gram Panchayats** Open Defecation Free (ODF), clean and sanitized.

Significance of the mission:

- The **rural sanitation Programme** was started in October 2, 2014, when the sanitation coverage in the country was 38.7 per cent.
- More than 10 crore individual toilets have been constructed since the launch of the mission.
- Rural area in all the States have declared themselves ODF on 2nd October, 2019.

MoHUA launches 'Main Bhi Digital 3.0' to leverage Digital Onboarding & Training of Street-Vendors

Ministry of Housing and Urban Affairs (MoHUA) and Ministry of Electronics & Information Technology (MeitY) launched '**Main Bhi Digital 3.0**'.

- It is a special campaign for Digital Onboarding and Training for **street vendors** under **PM SVANidhi scheme** launched across 223 cities in the country.

Highlights:

- The **Bharat Pe**, **Mswipe**, **Phone Pe**, **Paytm**, **Ace ware** will participate in

this drive to issue UPI IDs, QR code and provide digital training.

- Digital Payment Aggregators will help the street vendors to bring enhanced adoption of **digital transactions** and behaviour change.
- To promote digital transactions the **Lending Institutions** will train the beneficiaries for conducting digital receipt and **payment transactions**.

Key Fact:

- Out of 22.41 lakh digitally on-boarded street vendors, 7.24 lakh

street vendors are digitally active and have recorded 5.92 Cr number of digital transactions.

25 YEARS ON, BILL SEEKING 33% WOMEN IN PARLIAMENT AWAITS NOD

Women's Reservation Bill:

- Women's Reservation Bill [108th Constitution Amendment Bill] is one of the **longest pending legislations** in the Indian Parliament.
- The Bill seeks to **reserve 33.33% seats** in the **Lok Sabha** or the Lower House of Indian Parliament and in the **State Legislative Assemblies** for women.
- This would be in accordance with the **73rd and 74th Constitutional Amendments** which reserved the same percentage of seats for women in rural and urban local bodies respectively.
- The Bill was **initially launched in 1996**, and has been introduced in the Indian Parliament **several times**. However, the status of the bill remains undecided primarily due to **lack of political consensus**.

Highlights of the Bill:

- The Constitution Bill seeks to **reserve one-third** of all seats for women in the **Lok Sabha** and the **State Legislative Assemblies**.
- The **allocation of reserved seats** shall be determined by such authority as prescribed by the Parliament.
- **One third** of the total number of seats reserved for **Scheduled Castes** and **Scheduled Tribes** shall be reserved for women of those

groups in Lok Sabha and State Legislative Assemblies.

- Reserved seats may be **allotted by rotation** to different constituencies in the States or Union Territories.
- Reservation of seats for women shall **cease to exist 15 years after** the commencement of this Amendment Act.

Arguments in favour of the Bill:

- Proponents of the bill stress the **necessity of affirmative action** to improve the condition of women.
- Some recent **studies on panchayats** have shown the positive effect of reservation on empowerment of women and on allocation of resources.
- Major political parties are **reluctant** to give **more tickets** to women candidates.
- Majority of the female candidates contested as **independents** or from smaller parties in 2019 Lok Sabha elections.
- While women made up **only 9%** of the candidates in 2019, they **won 14%** of the seats, indicating that women significantly outperformed men.

Arguments against the Bill:

- The Bill would benefit **only women from privileged strata** of the society. The reservation should contain **33%** reservation within the women's category for women belonging to Scheduled Castes,

Scheduled Tribes and Other Backward Classes.

- The Bill would **only help female relatives** of current politicians to enter public space and thereby defeat the very purpose of the Bill.
- There are instances of women being **used as proxies** by men to win elections.
- Women in modern India **do not need reservation**. It would be perceived that they are **not competing** on merit.

- Rotation of **reserved constituencies** in every election may **reduce the incentive for an MP** to work for his constituency as he may be **ineligible to seek re-election** from that constituency.

Key Facts:

- The **first Lok Sabha** (constituted on 17 April 1952) only had 24 women members.
- There are **78 women MPs** in the 2019 **Lok Sabha**, highest number in the history of the House.

NCRB REPORT FINDS 28% JUMP IN REGISTRATION OF CASES IN 2020

According to a National Crime Records Bureau (NCRB) report, there was a 28% increase in the registration of cases in 2020, primarily owing to the violations of COVID-19 norms across India.

Highlights:

- 8,272 cases were instituted for offences against **Scheduled Tribes**.
- Simple hurt (2,247) accounted for 27.2%, followed by rape with 13.7% and assault on women with intent to outrage her modesty with 10.7%
- The cases of **sedition** declined from 93 in 2019 to 73 last year, with Manipur reporting 15 cases, Assam 12, Karnataka 8, Uttar Pradesh 7, Haryana 6, Delhi 5, and Kashmir 2 cases.
- The States reporting high **charge-sheeting rate** under IPC crimes were Gujarat (97.1%), Kerala (94.9%) and Tamil Nadu (91.7%).

Cases of Disobedience against Government:

- A major increase was seen in the cases registered under disobedience

to the order promulgated by public servant, **under Section 188 of the IPC**, to 6,12,179 cases.

- Under the Special and Local Laws category, more cases were registered under **“Other State Local Acts,”** leading to a steep rise from 89,553 to 4,14,589 cases.

Offences affecting the human body:

- A total of 10,47,216 cases of offences affecting the human body were registered, accounted for 24.6%.
- **“Hurt”** as an offence accounted for maximum cases (55.3%), followed by causing death by negligence (12.1%) and assault on women with intent to outrage her modesty (8.2%).

Cases of murder and Kidnapping:

- It showed a marginal increase of 1% to 29,193.
- A total of 91,458 **kidnapped**, including both male and female were found alive

and recovered, while 281 persons were found dead.

Crime against Women:

- There was an 8.30% decline in cases of crime against women.
- Most of the cases were related to **“cruelty by husband or his relatives”** (30.0%), followed by **“assault on women with intent to outrage her modesty”** (23.0%), **“kidnapping & abduction of women”** (16.8%) and **“rape”** (7.5%).
- The crime rate registered per lakh women population is 56.5 in 2020.

Cases against Juveniles:

- A total of 29,768 cases were registered against **juveniles**, showing a decrease of 7.8%.
- Most of the juveniles apprehended under the IPC and SLL crimes were in the 16-18 age group.

Economic Offences:

- 1,45,754 cases of economic offences were registered, showing a decrease of 12%.
- There was a decline of 27% in cases under the **Prevention of Corruption Act** from 4,244 to 3,100.
- With 50,035 cases, cybercrimes recorded an 11.80% increase.

Offence of Human Trafficking:

- Human trafficking cases declined from 2,208 to 1,714.
- The agencies rescued 4,680 victims and arrested 4,966 persons.
- The number of **missing persons** decreased by 15%. Over 3.32 lakh persons, including 2.24 lakh female and 142 transgenders, were traced, or recovered.

FOOD POVERTY GROWING AMONG OLDER ADULTS IN INDIA: LASI STUDY

According to a study by **Longitudinal Ageing Study in India (LASI)**, food insufficiency among older adults aged **45** and above is a great concern.

Highlights:

- Of older individuals in India **aged 45 years and above**, studied:
 - Nearly 6% consumed smaller portions or skipped meals
 - 5.3% did not eat even when they were hungry
 - 3.8% went a full day without eating because the food was unavailable.
- A high percentage of older adults residing in **rural areas** reduced their meal size, were hungry but did

not eat compared to their urban counterparts.

- In most of **east India** and **central states** and **Tamil Nadu**, more than 6% of older adults were hungry but did not eat.
- The proportion of older persons **who did not eat for a complete day** was less than 5% in most states/UTs, except in Madhya Pradesh (6.8%), Bihar (6.2%) and Uttar Pradesh.

Food insecurity & MDG goal:

- Food insecurity is defined as the **limited or uncertain availability** of nutritionally adequate and safe foods, or the limited or uncertain ability to get

appropriate foods in socially acceptable ways.

- A 2015 report on progress towards **UN Millennium Development Goals (MDGs) target 1** indicated that in developing world, food insecurity dropped to 12.9% in 2014-16 from 23.3% in 1990-91.
- **MDG Target 1** aimed to halve the proportion of people who suffer from hunger between 1990 and 2015.

Concerns:

- The degree of food insecurity is **relatively high in South**

Asia and the pace of **eradication** of food insecurity has been slow.

- India had the **second-highest** estimated number of **undernourished individuals** in the world from 2003-04 to 2012-13.
- Food insecurity among elderly would **exacerbate their existing health problems** and add to emotional and financial stress.
- It is often linked with a higher risk of chronic diseases as well as disabilities.

WHO: INDIAN WOMEN'S HEALTHY LIFE EXPECTANCY SE ASIA'S LOWEST

A WHO report is recently released on the region's progress in achieving universal health coverage and the health-related sustainable development goals.

Highlights:

- Females in India can on average **expect to live just over 60 years of a healthy life** unhampered by disabling illness or injuries.
- It is the **lowest healthy life expectancy among 11 countries** in the World Health Organisation's South East Asia region.
- For men, there are just **two countries in this region**, Timor-Leste and Myanmar, that are worse off in terms of healthy life expectancy.
- The **mortality rate of children under five years** is the **highest in Timor-Leste and Myanmar** being again even worse off than India.

- In the countries with the **best performance in the region**, Sri Lanka, Thailand and Maldives.
- Health expenditure as a share of total government expenditure is among the highest in the region.
- Estimated share of **spending on health in total government spending is the lowest in India** (3.4%), Bangladesh (3%) and Myanmar (3.5).
- Consequently, in these three countries, **out-of-pocket expenditure**, that is people spending from their own savings **constitutes between 63% in India** and 76% in Myanmar compared to just 11% in Thailand.
- Bangladesh and India also have the **highest proportion of their population**, 7% and 4.2% respectively, **being pushed into poverty** because of having to spend on healthcare.

- They also have the highest proportions of people who spent more than 10% of their household's total expenditure on healthcare, a situation that is described as catastrophic health expenditure.
- Almost a quarter of the population in Bangladesh and over 17% in India are estimated to face catastrophic expenditure due to healthcare.
- Some people were able to "live healthier lives and have better access to health services than others - entirely due to the conditions in which they are born, grow, live, work and age.

Universal Health Coverage?

- Universal health coverage (UHC) ensures all people, everywhere, can **access the quality health services** they need **without suffering financial hardship**.

- It is a **fundamentally political goal** rooted in the human right to health.
- **On 12 December 2017**, the United Nations proclaimed 12 December as International **Universal Health Coverage Day (UHC Day)** by resolution 72/138.
- UHC strategies enable everyone to **access the services that address the most significant causes of disease and death** and ensures that the quality of those services is good enough to improve the health of the people who receive them.

SDGs:

- Achieving UHC will **accelerate efforts to end extreme poverty**, reduce burdens of infectious and noncommunicable diseases, promote economic growth and job creation, achieve gender equality and realize all Sustainable Development Goals.

GOVT TO PROMOTE PEARL FARMING IN TRIBAL AREAS

The Tribal Co-operative Marketing Development Federation of India inked an agreement with the Jharkhand-based Purty Agrotech for the promotion of pearl farming in tribal areas.

Highlights of the Agreement:

- Purty Agrotech pearls will be sold through 141 Tribes India outlets, apart from various e-commerce platforms.
- The agrotech centre will be developed into a **Van Dhan Vikas Kendra Cluster (VDVKC)**.
- There is a plan to develop **25 VDVKCs** for pearl farming in Jharkhand.

- The **breeding of oysters** and development of pearls is a sustainable business and can be easily practiced by tribals who have access to nearby water bodies.
- The Trifed has signed an MoU with e-grocery platform Big Basket to promote and sell natural '**Van Dhan**' products.

What is Pearl Farming?

- Pearls are the **only gemstones** in the world that come from a **living creature**.
- Mollusks such as **oysters and mussels** produce these precious jewels.

- Freshwater pearls are pearls that are grown on pearl farms using **freshwater mussels**.
- Mussels are the organic hosts, the pearls can grow up to 10 times bigger than those made by saltwater oysters, naturally.

Benefits of Pearl Farming:

- Pearl farming is **eco-friendly**. Being Filter feeder oysters purify the water.
- **Shellfish** farming provides habitat for fish and improves species diversity.

- **Reduces turbidity**, improves light penetration, improves water quality reduces anoxia and nitrification
- A **single oyster** clears over 15 gallons of water a day, retaining particles as small as 2 microns.
- A small **oyster farm** clears 30 to 100 million gallons of water each day.
- The industry promotes **foreign exchange** earnings to the country.
- It supports **tourism**, its technology and the product are of interest to tourist.

‘MODEST CHANGE’, BUT INDIAN MUSLIM POPULATION GREW FASTER DUE TO FERTILITY DIFFERENCES: STUDY

An analysis by US-based Pew Research Center published recently, titled **‘Religious Composition of India’**.

- The study was based on data sourced from **India’s decennial census** and the **National Family Health Survey (NFHS)**.
- It looked at the **three main factors** that are known to **cause changes in religious composition of populations** — fertility rate, migration, and conversions.

Highlights:

- The religious composition of India’s population since Partition has **remained largely stable** showing not only a marked decline but also a **convergence in fertility rates**.
- It includes the two largest religious groups- Hindus and Muslims.
- Every religious group in India has seen its **fertility fall**, including the majority Hindu population and

Muslim, Christian, Sikh, Buddhist and Jain minority groups.

- While **Muslims have the highest fertility rate** among India’s major religious groups, their total fertility rate has declined dramatically.
- There are usually **three factors** that cause religious groups to shrink or expand– migration, religious conversion and fertility.
- **Migrants leaving India outnumber immigrants** three-to-one, and religious minorities are more likely than Hindus to leave.
- **Religious conversion** had a “relatively small impact” on India’s overall composition, with 98 per cent of Indians still identifying with the religion in which they were raised.
- **Sex selective abortions** have caused an estimated deficit of 20 million girls compared with what would naturally be expected between 1970 and 2017.

- Women in **central India tended to have more children**, with Bihar and Uttar Pradesh showing a total fertility rate (TFR) of 3.4 and 2.7 respectively, in contrast to a TFR of 1.7 and 1.6 in Tamil Nadu and Kerala respectively.

Growth rates:

- **Between 1951 and 1961**, the Muslim population expanded by 32.7%, 11 percentage points more than India's overall rate of 21.6%.
- From 2001 to 2011, the difference in growth between **Muslims (24.7%)** and Indians overall (17.7%) was **7 percentage points**.
- India's **Christian population grew at the slowest pace** of the three largest groups in the most recent census decade– gaining 15.7% between 2001 and 2011.
- It shows lower growth rate than the one recorded in the decade following Partition (29.0%).

In terms of absolute numbers:

- In percentage terms, between 1951 and 2011, **Muslims grew by 4.4 percentage points** to 14.2% of the population, Hindus **declined by 4.3 points** to 79.8%.
- Hindus comprised **84.1 per cent of the population in 1951**, and 79.8 per cent in 2011, while Muslims comprised 9.8 per cent of the population in 1951, and 14.2 per cent in 2011.
- All the **six major religious groups**–Hindus, Muslims, Christians, Sikhs, Buddhists, and Jains– have grown in absolute numbers.
- **Parsis** are in exception, whose number halved between 1951 and 2011, from 110,000 to 60,000.

On fertility rates:

- **Gaps in fertility rates** between India's religious groups have **shrunk over the years**.
- Fertility rate refers to the **average number of children born to a woman** in childbearing age (15-44 years).
- While Muslim women were expected to have an average of 1.1 more children than Hindu women in 1992, the gap had shrunk to 0.5 by 2015.
- If all the women had an average amount of wealth and education, were the same age and lived in the same places, **Hindu women would be predicted to have 0.9 fewer children than their Muslim counterparts**, on average.
- Analysed using **multilevel mixed-effects analysis**- a statistical technique.
- All religious groups have shown a **major decline in fertility rates between 1992 and 2015**.
- Muslims have the highest fertility rate, followed by Hindus. This reflects a long-standing pattern since 1992.

Christians may be undercounted:

- India's population has **more than tripled since Partition** and, accordingly, all religious groups have grown in size.
- **Indian Christian rose to 2.8 crore from 0.8 crore**, siting this could be an undercount.
- People who indicate that they are Christian on the census are **not able to also identify as belonging to Scheduled Castes**.

- Members of Scheduled Castes are eligible for government benefits, reportedly prompting some people in that category to identify as Hindu when completing official forms.

- **Dalits who identify as Christians and Muslims can't avail of reservation** benefits and remain excluded from the Constitution (Scheduled Castes) Order, 1950.

3RD STATE FOOD SAFETY INDEX

Food Safety and Standards Authority of India (**FSSAI**) has released the 3rd State Food Safety Index to measure the performance of States across **five parameters** of food safety.

Highlights:

- With an **overall score of 72%**, **Gujarat** has been adjudged the **best performing state** among major states of the country.
- The index **ranks States** on food safety parameters.
 1. **Gujarat, Kerala and Tamil Nadu** are the top three States in **large States** category.
 2. **Goa, Meghalaya and Manipur** are the top three States in the **smaller States** category.
 3. Among **UTs**, Jammu & Kashmir, Andaman & Nicobar Islands and New Delhi secured the top ranks.

Ranking parameters:

- The index ranks States on **five parameters** of food safety including:
 - Human resources and institutional data
 - Compliance
 - Food testing facility

- Training and capacity building
- Consumer empowerment

Other details:

- The results of **PAN-India survey** for identifying the presence of **industrially produced trans fatty acid** content in the selected foods was released.
- Samples of various packaged food items under **six pre-defined food categories** were collected from 419 cities/districts across 34 States/UTs.
- Overall, only 84 samples, i.e., **1.34%** have more than 3% industrially produced trans fats from the total of 6245 samples.
- Various innovative initiatives by FSSAI were released including:
 - **Eat Right Research Awards** and Grants to encourage and recognize high-quality research in the area of food safety and nutrition in India
 - **Logo for Vegan Foods** for easy identification and distinction from non-vegan foods for empowering consumers to make informed food choices.

NATIONAL STEERING COMMITTEE FOR DEVELOPMENT OF NATIONAL CURRICULUM FRAMEWORKS FORMED

The Ministry of Education has formed the **National Steering Committee for the development of National**

Curriculum Frameworks on 21-9-2021.

Terms of Reference of the Committee:

- As per the perspectives of the NEP 2020, the Committee will **develop four National Curriculum Frameworks**:
 - National Curriculum Framework for School Education,
 - National Curriculum for Early Childhood Care and Education,
 - National Curriculum Framework for Teacher Education,
 - National Curriculum Framework for Adult Education.
- Discuss **different aspects of School Education**, Early Childhood Care and Education (ECCE), Teacher Education and Adult Education keeping in focus all the recommendations of NEP 2020 related to these four areas for proposing curriculum reforms.

- Discuss the position papers finalised by the National Focus Groups on different aspects of all the above four areas.
- Draw inputs from State Curriculum Frameworks received on the Tech Platform for the National Curriculum Frameworks.
- Finalise National Curriculum Frameworks after incorporating suggestions received from various stakeholders, i.e., states/UTs and also in the meetings of Executive Committee (EC) and General Body (GB) of the NCERT and Central Advisory Board on Education (CABE).
- Tenure of the National Steering Committee will be **three years from the date of its notification**.
- Director NCERT shall assist the SC to complete its module.

HOW ASSAM'S BODO COMMUNITY USED INDIGENOUS KNOWLEDGE TO TACKLE DECADES-OLD WATER SUPPLY PROBLEM

Dong is a decades-old **water management system** practised by people in rural Assam using indigenous knowledge.

Dong system:

- **Traditional water management system** is practised by the **Bodo community** in rural Assam used to channelise river water into villages.
- Such structures are popular on the **Pagladiya river**, flowing along the Indo-Bhutan border of Assam. The water from the **river is diverted towards** the villages through earthen canals.
- The diverted water is **stored in ponds** locally called **pukhuri**.

Sometimes, the water is directly lifted from the earthen canals for irrigation.

- The mountainous rivers are **captured in these canals** and at that point **convex dams are created** so that the flow of water in the canals can be regulated.
- The dams are made up of tree branches, stones and boulders. The dams also help in **increasing the water level at the feeder point**. This ensures enough water in the canals.
- Several sub-canals called **shakhas** and **prakhashas** are constructed from the main canal.

The network thus created **ensures water** to every corner of the village.

- There is a **fixed time for the release of water** into these sub-canals from the main canal, normally done twice a day by the communities in charge of the canals.

Administration of Dong system:

- The administration of the Dong system is democratic. The region's **Dong committees** administer and handle operations and management of the water resources supplied through dongs.

- **Water distribution**, canal repair, labour mobilisation from each village, conflict resolution and other activities that fall under the **command area** of the individual major canal is done by the group committees.
- The **funds requirement** for operations and maintenance of dongs is met by fees paid by the village communities. They are required to pay **Rs 10 per 'bigha'** of agricultural land per year.
- **Paddy** is the main crop sown in the region which requires a lot of water for irrigation, supplied by dongs.

AROUND 66% CHILDREN BELOW 2 YEARS DON'T GET NUTRITIOUS DIET: UNICEF

A **Child Nutrition Report 2021** was released by United Nations Children's Fund (**UNICEF**) recently.

Highlights:

- As per the report, **two in every three children** between six months and two years did not get the nutritious diet needed for healthy growth.
- Around **27%** of children **aged six-eight months** were not fed any solid food.
- Among children aged **6-23 months**, around half were **not fed the minimum number of meals** or snacks.
- The diet of the world's children **below the age of two years** has not improved in the last decade, and continues to get **inadequate nutrients**.
- The quality of children's diets **varies widely** among regions.

- As many as 62% of children aged 6-23 months in Latin America and the Caribbean were fed a minimally diverse diet in 2020.
- In South Asia and two sub-Saharan African regions, the share was less than 25%.
- Children in rural areas, poorer households and disadvantaged regions within countries have the **least diverse diets**.
- Around **one in every three young children** in Australia, Ethiopia, Ghana, India, Mexico, Nigeria, Serbia and Sudan were fed at least one processed or ultra-processed food or drink daily.

About the report:

- The report is a flagship report of **United Nations Children's Fund**.
- It examined the latest data and evidence on the status, trends and

inequities in the diets of children **aged 6–23 months** and barriers to nutritious diets.

- The analysis used data from the **UNICEF Global Database** on Infant and Young Child Feeding.
- The repository collated data from **607 nationally representative surveys** conducted in 135 countries and territories, representing **more than 90%** of all children under 2 years of age globally.

Key Recommendations:

To deliver a nutritious, safe and affordable diet to every child, the report recommended the following actions:

- Increasing the availability and affordability of nutritious foods. Design **social transfers** – cash, food

and/or vouchers – that support nutritious and safe diets in early childhood.

- Implementing **national standards** and legislation to protect young children from unhealthy processed food and drink. Ending harmful marketing practices targeting children and families.
- Position young children’s **right to nutritious and safe diets** as a priority in the national development agenda and ensure coherent policy support and legislation.
- **Expand caregiver access** to quality counselling and support on young child feeding by investing in the recruitment, training, supervision and motivation of community-based counsellors and health workers.

At least one in three children suffer from one or more of the most visible forms of malnutrition

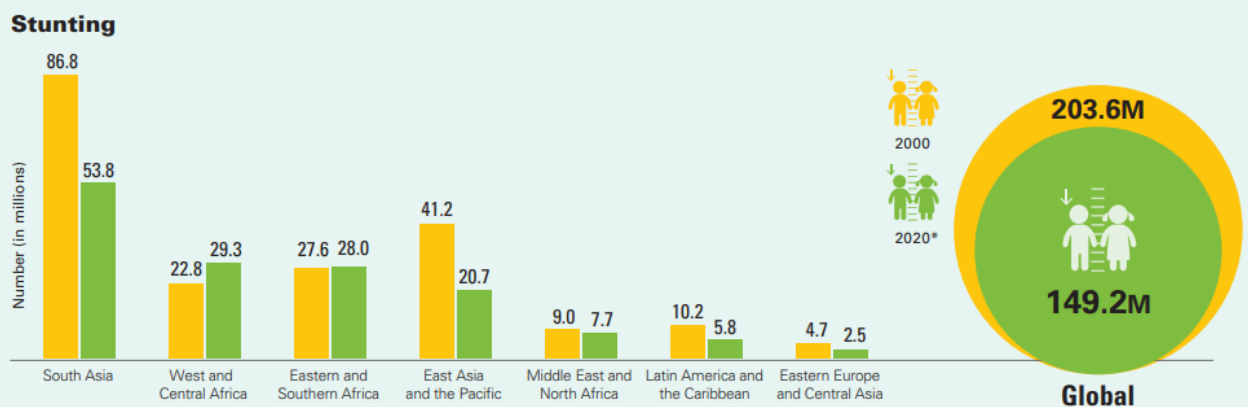


FIGURE 1
Trends in number (millions) of children under 5 with stunting, by UNICEF region and global, 2000 and 2020*
Note: *The collection of household survey data on child height and weight were limited in 2020 due to the physical distancing measures required to prevent the spread of COVID-19. Only four national surveys included in the database were carried out (at least partially) in 2020. The estimates are therefore based almost entirely on data collected before 2020 and do not take into account the impact of the COVID-19 pandemic.

Concerns:

- **Policies and programmes** to improve young children’s diets are **not prioritised** and are being further eroded by the COVID-19 pandemic.
- Nearly **83% countries** reported considerable disruptions in the

coverage of services to promote nutritious and safe diets for young children at the peak of the first wave of the pandemic in April 2020.

- **No country** has a **comprehensive set of policies**, legal measures and programmes to improve young children’s diets.

KVIC SETS UP TUSSAR SILK YARN PRODUCTION CENTRE IN ODISHA TO BOOST LOCAL INDUSTRY, CREATE EMPLOYMENT

Khadi and Village Industries Commission (KVIC) will set up **Odisha's** first ever **Tussar Silk Yarn Production Centre** at Choudwar in Cuttack district.

- This silk yarn production centre will **ensure local availability** of Tussar Silk yarn, create local employment and reduce the silk production cost.

Tussar silk:

- Tussar silk is one of the **finest varieties of Silk** distinguished by its coarseness and porous weave that give it a rugged and rustic appearance.
- It is produced from **larvae of several species of silkworms** belonging to the moth

genus *Antheraea*. These silkworms **live in the wild forests** in trees belonging to Terminalia species, Sal, jamun and oak tree found in South Asia.

- The silk is valued for its **rich texture** and natural, deep-gold colour. Various varieties are produced in countries including China, India, Japan, and Sri Lanka.
- India is the **second-largest producer** of tussar silk, and the exclusive producer of Indian tussar (known as tropical tussar).
 - Much of it is produced in **Bhagalpur** (called Bhagalpur silk) in **Bihar**, Malda district of **West Bengal** and in **Odisha**.

IGNCA TO START CULTURAL MAPPING IN 75 VILLAGES SOON

The Indira Gandhi National Centre for the Arts will start a trial run of **culture mapping** in 75 villages in October 2021.

Highlights:

- The **Culture Ministry** approved the mission in 2017 with a ₹469 crore budget.
- Currently, the mission is with **Indira Gandhi National Centre for the Arts (IGNCA)**.
- Creating a database for **folk arts** and mapping of the **heritage of villages** would be carried out over five years.
- Volunteers from the **Nehru Yuva Kendra Sangathan**, the **National Service Scheme**, and sociology

students will collect data on the art forms and heritage of the areas from the villages.

- Approved budget: ₹89 crore
- The IGNCA would aim to complete **mapping in 5,000 villages** by the end of the financial year 2021-2022.

National Mission on Cultural Mapping:

- Established in 2015. The mission is a project of the Ministry of Culture, Government of India.
- **Aim:** To address the necessity of **preserving the threads** of rich **Indian Art and Cultural Heritage**.

Significance of the mission:

- It can create a **database** that is easily accessible, thus becoming a resource for the media, researchers, and funders.
- It will identify, collect, and record **cultural assets** and resources.
- This database can be used to **preserve culture** and provide or facilitate livelihoods.

Objectives:

- To address the necessity of preserving threads of rich Indian Art and Cultural Heritage.
- To **convert widespread cultural canvass** into an objective Cultural Mapping.
- To **design** a mechanism to fulfil the aspirations of the artist community of the nation.
- To **preserve the rich cultural heritage** of the country for future generations.
- To create a strong **“cultural vibrancy”** throughout the nation.

Importance:

1. Fostering Cultural Awareness

- Awareness about the heritage and rich culture of the country is reducing day by day, resulting in:
- **weak linkage** between cultural legacy and our day-to-day life

- **feeble binding force** within the society.

2. Cultural Preservation

- The cultural footprint of the country is narrowed down to the individual aspirations like State, language, cast urban/rural, etc.
- Many arts forms are becoming extinct because of non-existence of resources for the promotion of arts and culture.

3. Sustainable Employment

- Culture & Creative Industries employs 45-48% of the total workforce.
- Developing a revenue-generation model which could be self-sustainable is a big challenge.

4. Optimal Resource Allocation and Utilization

- There is no centralized, comprehensive **cultural mapping data** of the country and whatever
- The database of artistes is totally based on **personal contacts**.
- In the absence of data, the resource utilization is non-optimal, and the outcome is dismal.
- There is **no relationship** between processes for cultural development and grant allocation.

HUNARBAAZ AWARDS

The National Institute of Rural Development and Panchayati Raj presented Hunarbaaz Awards to 75 **diyangjan** candidates from 15 states.

Highlights:

- The awards are given to the candidates who were trained

through Deen Dayal Upadhyaya Grameen Kaushalya Yojana (**DDU-GKY**) and Rural Self Employment Training Institutes (**RSETI**) schemes.

- It will expand the scope of organizations to get

appropriate **skilling**, placement, and mentorship for youth with disabilities in rural India.

- The objective is to **promote inclusivity** in which youth from all sections of the society can come forward and participate in making India the skill hub of the world.

- A more **sympathetic approach** is needed to mainstream the needs of PWD youth.
- **Robust processes** must be established in which they become part of the skill ecosystem.

POLICE TO LAUNCH DIGITAL DE-ADDICTION CENTRES

The **Kerala Police** will launch **digital de-addiction centres** to rid youngsters of cell phone and online gaming addiction.

- A centralised facility would soon be established and the service would be **extended to all districts later**.

- Also, 20 police stations were declared as "**child-friendly**", taking the total of such stations to **126** in the state.

UNION INFORMATION & BROADCASTING MINISTER INSPECTED THE ZOJILA AND Z -MORH TUNNEL PROJECTS IN THE UNION TERRITORY OF JAMMU AND KASHMIR.

Highlights:

- **Zojila Tunnel** is of a significant importance about national security, development and tourism for J&K and Ladakh Union Territories.
- The project site of Zojila tunnel is being constructed at the cost of **4500** crore rupees.
- It is located at the **national highway (NH-01)** starting from Sanamarg in J&K and ending at Minamarg in Ladakh.

- The Tunnel will **promote** the Tourism Sector of Ladakh and Jammu & Kashmir Union territories besides ensuring all-weather connectivity.
- The minister laid the foundation stone for the development of playfield at **Kijpora in Kangan area**.
- He Inaugurated **Bonibagh-Kangan** road constructed under Pradhan Mantri Gram Sadak Yojna.

AMID CENSUS CALLS, DATA SHOW NEARLY HALF OF RURAL HOMES OBC

According to a study of National Statistical Office, **44.4 percent** of 17.24 crore rural households in the country are from **Other Backward Classes** (OBCs).

- The data is part of Situation Assessment of **Agricultural Households** and Land Holdings in Rural India, 2019, by the Ministry of

Programme Implementation and Statistics.

Highlights:

- The data shows an estimated 17.24 crore **rural households**.
- **44.4% were OBCs**, 21.6% Scheduled Castes, 12.3% Scheduled Tribes and 21.7% other social groups.
- Of the total rural households, **54%** are **agricultural households**.
- Highest proportion of **rural OBC** households is in **Tamil Nadu (67.7%)** and the lowest in Nagaland (0.2%).
- In Bihar (58.1%), Telangana (57.4%), Uttar Pradesh (56.3%), Kerala (55.2%), Karnataka (51.6%), Chhattisgarh (51.4%), OBC households account for **more than half** of the rural households.
- **Rajasthan** (46.8%), Andhra Pradesh (45.8%), Gujarat (45.4%) and Sikkim (45%) have a higher share of rural OBC households than the all-India figure of 44.4%.
- States like **Madhya Pradesh**, Jharkhand, Maharashtra, Manipur, Odisha, Haryana, Assam, Uttarakhand etc., have a lower share of rural OBCs households compared to the national average.

Average monthly income:

- The average monthly income of a farm household at all-India level stood at Rs 10,218 during 2018-19.
- It was lower for **OBC agricultural households** (Rs 9,977), SC households (Rs 8,142), ST households (Rs 8,979).
- Agricultural households of **'Other Social Groups'**, recorded an

average monthly income of Rs 12,806.

- For states, the average monthly income ranged between Rs 5,009 and Rs 22,384.
- Of the 23 states, **Uttarakhand** recorded the highest average monthly income while Odisha was at the bottom.

Who are OBCs?

- OBC category contains communities that **continue to face oppression** and social, economic, and educational isolation, but do not fall into the Scheduled Castes or Scheduled Tribes list.
 - **Article 340** gives the President the power to constitute a committee to investigate the conditions of backward classes in India
 - It recommends measures for their welfare, upliftment, and development.
 - **The Mandal Commission** was constituted in 1978, under **Article 340** of the Constitution, to identify backward communities in India and recommend policy initiatives for their upliftment and welfare.
 - The Commission listed **11 criteria**, falling under social, economic, and educational categories, to identify and classify communities as Backward Classes.
 - The National Commission for Backward Classes places Backward Classes within the expression of the term **"Scheduled Castes."**
- Law about OBCs:**
- **Articles 15 and 16** of the Constitution apply to members of the Other Backward Class communities as well.

- The Mandal Commission submitted its report in 1980.
- early **52% of India's population** fell under **OBC** category.
- it recommended seat reservations for OBCs, in addition to the existing seat reservations for SCs and STs, in educational institutions and avenues of public employment.

Times of India (TOI) Report 2015:

- It stated that the actual number of OBC employees in government ministries, statutory bodies and departments stands at under 12 percent.
- This equates to roughly 9,040 OBC employees out of over 79,483 posts.

MOFPI, IN ASSOCIATION WITH THE MINISTRY OF HOUSING AND URBAN AFFAIRS, VIRTUALLY LAUNCHED THE PMFME SCHEME SEED CAPITAL MODULE

The **Ministry of Food Processing Industries** under the Pradhan Mantri Formalization of Micro food processing Enterprises Scheme, launched the **Seed Capital Module** for Self Help Groups in India.

Highlights:

- The scheme will provide **seed capital assistance** to members of urban Self-Help Groups working in the food processing sector in India.
- Seed capital is the **money raised** to begin developing an idea for a business or a new product.
- **SHGs will be sensitized** and motivated about the Pradhan Mantri Formalization of Micro food processing Enterprise scheme to avail the benefits of seed capital for purchasing small tools and working capital.

PMFME Scheme:

- It is a centrally sponsored scheme launched under the Aatma Nirbhar Bharat Abhiyan
- **Aim:** To enhance the competitiveness and promote formalization of the unorganized micro—food processing enterprises in India.
- It will **provide financial**, technical, and business support to 2,00,000 micro food processing units.

Objectives:

- Seed capital support of Rs.40,000 per SHG member.
- Credit linked subsidy for capital investment up to 35% with a ceiling of Rs. 10 lakhs.
- Credit linked grant support up to 35% for establishing common infrastructure.
- Capacity building and training support.

MID-DAY MEAL SCHEME RENAMED PM POSHAN

The flagship Midday Meal Programme at government and aided schools has

been **renamed** as PM Poshan Shakti Nirman Scheme.

Highlights:

- The scheme will offer **hot cooked meals** to **pre-primary classes** and Balvatika centres.
- The scheme will benefit about 11.80 crore children studying in 11.20 lakh schools.
- Introduction of **Tithi Bhojan**, social audit, school nutrition gardens, and will boost learning, and nutrition outcomes.
- It will involve **Follow on Public Orders and women SHGs** in the implementation of the scheme.
- Development of nutrition gardens on school campuses. The gardens will provide additional micro-nutrients to students.
- **Cooking competitions** will be encouraged from village level to the national level to promote innovative menus based on locally available ingredients.
- **Special provision** is made for providing supplementary nutrition

to children in districts with high prevalence of anaemia.

Structural Changes in the Scheme:

- The **Centre and the states** will bear the cost of the scheme in 60:40 ratio, with the Centre taking care of the cost of grains.
- Students from **private schools** will be encouraged to share their meals with children from marginalised sections
- States will organise community programmes in which people provide special food to children.
- The ministry will engage **college and university students** to monitor the scheme at a local level.

Tenure:

The scheme will continue for next 5 years with a financial outlay of Rs 54,061.73 crores from the central government and Rs 31,733.17 crore from state governments.



AHEAD OF BIODIVERSITY MEET, STUDY FINDS AMPHIBIANS FACE HIGHEST RISK OF EXTINCTION

A key event on biodiversity recently published a study to generate **global maps of the six major threats** to terrestrial amphibians, birds and mammals. Marseille, France will host the IUCN World Conservation Congress from September 3-11, 2021. The event is **organised every four years** and is one of the **biggest of its kind for biodiversity**.

- Information from the International Union for Conservation of Nature (IUCN) Red List on threats to 23,271 species representing all terrestrial amphibians, birds and mammals was used.

Highlights of the report:

- Amphibian species were most likely to suffer extinction among all life forms, followed by mammals and birds.
- Amphibians were most likely to get extirpated **due to agriculture, hunting and trapping, logging, pollution, invasive species and climate change**.
- **Agriculture posed the greatest threat** for amphibians, with the

highest probability of impact in **44 per cent of the mapped area**.

- For birds, hunting and trapping was the most prevalent threat, constituting 50 per cent of the mapped range.
- For mammals, it was **73 per cent of the mapped area**.

Areas:

- Areas threatened by logging, hunting and trapping, agriculture, invasive species and climate change had greater than 50 per cent risk for amphibian, mammals and bird species.
- The islands of **Sumatra and Borneo and Madagascar** exhibited high probabilities of impact across all threats and life forms.
- **Europe was impacted** by a combination of agriculture, invasive species and pollution, making it a region with high impact probabilities.
- The polar region, the east coast of **Australia and South Africa** showed the highest impact probabilities for climate change, especially with respect to birds.

- Agriculture and logging were pervasive in the tropics.
- Hunting and trapping was the most geographically widespread threat to mammals and birds.

Principle treats:

- **Six principal threats:** logging (a) agriculture (b), hunting and trapping (c), pollution (d), invasive species and diseases (e), and climate change (f).
- **Agriculture had the highest average impact probability,**

followed by hunting and trapping and then by logging.

- The probability of being impacted by **pollution was low** in most parts of the terrestrial world.
- The probability of a species being impacted by **invasive species was on average low** for amphibians, mammals and birds.
- But it was more in some areas for birds and amphibians.

MIGRATORY SPECIES MOST VULNERABLE TO PLASTIC POLLUTION, FINDS UN REPORT

Plastic pollution poses a threat to **migratory species** on land and in freshwater habitats, especially in the Asia-Pacific region.

Highlights of the Report:

- Plastic pollution impacts **migratory and resident species** that live in freshwater environments including fish.
- Migratory species are likely among the **most vulnerable** to plastic pollution.
- **Ingestion** of microplastics can impact species along the food web.
- **Ganges and Mekong River basins**, together contribute 200,000 tonnes of plastic pollution to the Indian Ocean and the Pacific Ocean every year.
- **Gangetic dolphins** were the among most vulnerable species at risk of entanglement.
- **Dugong** is often seen to drown after getting entangled in fishing nets.

Impact on animals on Land:

- Plastics increases the **vulnerability** of

already **endangered species** such as Gangetic and Irrawaddy dolphins, Asian elephants, and Black-footed Albatrosses.

- **Migratory seabirds**, such as Black-footed Albatrosses and Laysan Albatrosses, can accidentally eat floating debris or **making nests** out of plastics, using fishing lines, and shipping debris.
- Plastic could build up in their guts and nests can cause **entanglement** of their chicks.

Major Threats:

- **Discarded fishing gear** and kite strings are among the major threats.
- Not only aquatic species, but **also mammals and birds** encounter these discarded materials on land.
- **Kite strings** are been estimated as the second-most frequent source of plastic hazards.

Key Facts:

Convention on Migratory Species:

- CMS is an **environmental treaty** of the UN.

- The pact was signed in 1979 in **Germany** and known as **Bonn Convention**.
- Provides a global platform for **conservation and sustainable** use of migratory animals and their habitats.
- **Appendix I** of the Convention lists **'Threatened Migratory Species'**.
 - It strives towards strictly **protecting** these animals, conserving or restoring the places where they live, mitigating obstacles to migration and controlling other factors that might endanger them.
- **Appendix II** lists **'Migratory Species requiring international cooperation'**.

India and CMS:

- India has been a party to the **CMS** since 1983.
- India is a temporary home to several migratory animals and birds.
- Indian sub-continent is also part of the major **bird flyway network**, i.e., the Central Asian Flyway (CAF) that covers areas between the Arctic and Indian Oceans.
- India launched the **National Action Plan** for the conservation of migratory species under the Central Asian Flyway.
- India has MoUs with the CMS on the conservation and management of **Siberian Cranes**, Marine Turtles, Dugongs and Raptors.

ATLAS OF MORTALITY AND ECONOMIC LOSSES FROM WEATHER, CLIMATE AND WATER EXTREMES (1970-2019).

World Meteorological Organization has released an **Atlas of Mortality and Economic Losses from Weather, Climate and Water Extremes** (1970 – 2019).

Atlas:

- The is the most **comprehensive review** of mortality and economic losses from weather, water and climate extremes ever produced.
- It surveys some **11,000** disasters occurring between 1979-2019.

Highlights:

- The **number of disasters** has increased nearly **fivefold** from 1970s to 2019, with frequent occurrences of extreme weather events due to global warming.
- The growing frequency is attributed to both climate change and improved disaster reporting.

- Costs from the events have surged from **\$175.4 billion** in 1970s to **\$1.38 trillion** in 2010s.
- The **annual death toll** has fallen from more than 50,000 in 1970s to around 18,000 in the 2010s, suggesting better disaster preparedness.
- **Improved multi-hazard early warning systems** have led to a significant reduction in mortality.
- More than **91%** of the **2 million deaths** occurred were reported from developing countries.
- Only half of the WMO's 193 members have multi-hazard early warning systems.
- **Ethiopia's 1983 drought** was the single most fatal event with **300,000** deaths.

- **Hurricane Katrina** in **2005** that was the costliest, with losses of \$163.61 billion.

Impacts in Asia:

- In Asia, 3454 **disasters** were recorded from 1970–2019, with 975622 lives lost and \$ **1.2 trillion** in reported economic damages.
- Asia accounts for nearly **one third** (31%) of weather, climate and water-related disasters reported globally.
- It accounted for nearly **half of deaths** (47%) and **one third** (31%) of associated economic losses.
- Most of these disasters were associated with **floods** (45%) and **storms** (36%).
 - Storms had the highest impacts on lives lost.
 - Floods led to the greatest economic losses.

Significance:

- The report would help governments to **develop policies** to better protect people.

World Meteorological Organization:

- WMO is an **intergovernmental organization** originated from

the **International Meteorological Organization (IMO)**.

- **Established by:** Ratification of the **WMO Convention** on 23 March 1950.
- It is a **specialized agency** of the United Nations responsible for promoting international cooperation on:
 - Atmospheric science
 - Climatology
 - Hydrology
 - Geophysics
- **It facilitates the "free and unrestricted" exchange of data, information, and research between the respective meteorological and hydrological institutions of its members.**
- **It collaborates with non-governmental partners and other international organizations on matters related to environmental protection, climate change, resource management, and socioeconomic development.**
- **Members: 193 Member States and Territories**
- **Headquarters: Geneva**

BGCI LAUNCHES THE STATE OF THE WORLD'S TREES REPORT

The **State of the World's Trees report** was released by London-based **Botanic Gardens Conservation International**.

Highlights of the report:

- The world has **58,497** tree species.
- **Neotropics** (Central and South America) have the largest number of **tree species** with 23,631 tree species.

- **Indo-Malaya** is second with 13,739 species and **Afrotropics** have 9,237 species.
- **Nearctic** and **Oceania** have the lowest number of tree species.
- 142 of the world's tree species have become extinct and **29.9%** are threatened.

- **Madagascar** is one of the countries with the highest number of threatened trees.
- After **Indo-Malaya** and **Oceania**, the **Afrotropics** (Africa south of the Sahara, including Madagascar) have the highest proportion of threatened tree species.
- **Palaearctic** and **Nearctic** (North America) realms mostly have tree species that are not threatened.
- **18 per cent** or 469 of India's **2603 tree species** are threatened with extinction.

- India is home to **650 endemic tree** species not found anywhere else.
- India is a part of **Indo-Malaya** (Tropical Asia) biogeographic realm.

Major threats faced by trees:

- Agriculture (29%) > logging (27%) > livestock farming > residential and commercial development > fire and fire suppression > energy production and mining > wood and pulp plantations > invasive and other problematic species > climate change.

BIRDS OF PREY ARE THREATENED WITH GLOBAL DECLINE DUE TO HABITAT LOSS AND POISONS FIND IUCN

The new analysis by International Union for the Conservation of Nature (IUCN) and BirdLife International was published recently.

Highlights:

- Around 30 per cent of the 557 raptor species around the world are threatened by extinction to some degree.
- Of them, 18 species are critically endangered, 25 are endangered, 57 are vulnerable and 66 are near-threatened.
- The Philippine eagle, the hooded vulture and the Annobon scops-owl were among the 166 species facing some degree of threat.
- The population of Philippine eagles, the largest variety of eagles in the world, decreased rapidly in the last decades due to extensive deforestation.
- The distribution range for each of the 557 species is identified based on richness, endemism,

geographic spread, conservation status and population trends.

- Threats to the birds: habitat loss, pollution, human-wildlife conflicts and climate change.
- Raptors prey on a wide range of vertebrates and thus, facilitate long-distance seed dispersal. This indirectly increases seed production and pest control.

Region wise declination:

- Indonesia had the most raptor species, followed by Colombia, Ecuador and Peru.
- Some vulture populations have declined by over 95 per cent in Asian countries such as India because of the widespread use of diclofenac, a non-steroidal anti-inflammatory drug.
- Particularly West Africa, vulture populations have decreased by an average of 95 per cent in rural areas over the last 30 years.

- **Threats:** Shooting and poisoning through feeding on carcasses of livestock treated with diclofenac.
- The Annobon scops-owl was recently classified as 'critically

endangered' because of rapid habitat loss and degradation.

- Population is fewer than 250 and it is restricted to Annobon Island off West Africa.

INDIA TO BE THE FIRST ASIAN COUNTRY TO LAUNCH A PLASTICS PACT

A new platform called '**India Plastic Pact**' was launched by British High Commissioner to India.

Major Highlights:

- The **India Plastics Pact** is a collaboration between **World Wide Fund for Nature** and **Confederation of Indian Industry (CII)**.
- It is supported by **WRAP**, a global NGO based in the **United Kingdom**.
- WRAP is providing operational and technical support to many other Plastics Pacts, as well as running the UK Plastics Pact.
- It will provide a **platform** for collaboration, learning and tangible action to stop- Plastic pollution.

Mission:

The India Plastics Pact is **uniting** businesses, the government, NGOs non-profits and other stakeholders to:

- Set a collective, national strategy to transition to a **circular economy for plastics in India**.
- Develop a roadmap to reach the targets and stimulate progress through collaborative **action-oriented workstreams**.

- Empower businesses, government and stakeholders to **reduce plastic packaging** from their value chain.
- Catalyse **effective policy** to accelerate progress, and measure and report progress.
- Engage citizens in the practice of **reuse, recycle and reduction** of plastics.

Targets to be achieved by 2030 include:

- Defining a list of unnecessary or problematic plastic packaging and items and take measures to address them through redesign and innovation.
- About **100%** of plastic packaging to be reusable or recyclable.
- **50%** of plastic packaging to be effectively recycled.
- Use of **25%** average recycled content across all plastic packaging.

Need for a Plastics Pact:

- India generates **9.46** million tonnes of plastic waste annually.
- 40% plastic waste goes uncollected.
- 43% all plastics produced in India is **used for packaging**, majority of them being single-use.

Key Fact:

- The UK is India's **biggest European research partner**, with £400 million of joint investment since 2008.

BEHLER TURTLE CONSERVATION AWARD

Indian **biologist Shailendra Singh** has been awarded the Behler Turtle Conservation Award for bringing three critically endangered turtle conservation species back from the brink of extinction.

- The three species being conserved at:
 - Red-crowned Roofed Turtle (Batagur kachuga)- Sunderbans
 - Northern River Terrapin (Batagur baska)- Chambal
 - Black Softshell Turtle (Nilssonia nigricans)- different temples in Assam
- The award has been bestowed by **several global bodies involved**

in turtle conservation such as Turtle Survival Alliance, IUCN/SSC Tortoise and Freshwater Turtle Specialist Group, Turtle Conservancy, and the Turtle Conservation Fund.

- The **Behler Turtle Conservation Award** was **established in 2006** to recognise outstanding achievements, contributions and leadership excellence in international turtle conservation and biology.
- There are **29 species** of freshwater turtles and tortoises in the country.

'28% OF 138,000 ASSESSED SPECIES FACE EXTINCTION'

Habitat loss, overexploitation and illegal trade have endangered global wildlife populations.

Highlights:

- **28%** of the 1,38,374 species assessed by the **International Union for the Conservation of Nature (IUCN)** for its **survival watchlist** are now at high risk of extinction.
- The major reasons are **habitat loss, overexploitation** and **illegal trade** and **climate change**.
- Indonesia's Komodo dragons were listed as **endangered**.
- The species is increasingly threatened by **the impacts of climate change** with rising sea levels expected to shrink its tiny habitat by at least 30% over the next 45 years.

- 37% of the 1,200 shark and ray species are directly threatened by **extinction**.

Komodo Dragon:

- Komodo dragon is the largest extant **lizard species**.
- It occurs on **Komodo Island** and a few neighboring islands of the **Lesser Sunda Islands** of Indonesia.
- The lizard's large size and predatory habits has allowed this endangered species to become an ecotourist attraction.
 - The lizard grows to **3 metres** (10 feet) in total length.
- They can run swiftly and occasionally attack and kill human beings.
- **IUCN status:** Endangered.

IUCN Green Status of Species:

- The **IUCN Red List of Threatened Species** is the global standard for assessing the risk of extinction that individual species of animal, fungus, and plant faces.

Genesis:

- The **Green Status of Species** was developed in response to Resolution WCC-2012-RES-41.
- IUCN called for the development of '**Green Lists**' of Species, Ecosystems and Protected Areas.
- In 2012, a Green List of Protected and Conserved Areas was launched, and the development of the Green Status of Species began under the name 'Green List of Species.'

How Does the Green Status of Species Define Recovery?

The Green Status assesses species against three essential facets of recovery.

- A species is fully recovered if it is present in all parts of its range, even that are no longer occupied but were occupied prior to major human impacts.
- It is viable in all parts of the range.
- It is performing its ecological functions in all parts of the range.
- These factors contribute towards a "**Green Score**" ranging from 0–100%, which shows how far a species is from its "**fully recovered**" state.

A BIO SOLUTION FOR PUNJAB'S RICE STUBBLE BURNING PROBLEM

Indian Agriculture Research Institute (IARI) has come up with a **bio enzyme** (Pusa decomposer) that can decompose the rice stubble as an alternative to farmers burning it.

- IARI has tied up an agritech start-up called **nurture farm** to distribute the bio enzyme to farmers in stubble burning states **for free**.

Pusa Decomposer:

- The Pusa Decomposer comprises of **seven species** of fungi.
 - Most of these fungi **live in the soil** and are known for their ability to **decompose paddy straw**.
- This is **sprayed on the paddy straw** after it is harvested, and takes **25 to 30 days** to decompose the straw.
- This is a **long-term sustainable solution** for keeping good soil health and controlling pollution.

Issue of Stubble burning:

- **North-western plains** (which includes Punjab, Haryana and western Uttar Pradesh) follow cropping cycle where rice followed by the wheat crop.
- There is not **much gap** between the period when rice is harvested and wheat is sowed. If the sowing is delayed, the **wheat output comes down significantly**.
- Therefore, farmers **resort to burning paddy stalks** and get the fields ready quickly. This happens towards the **end of October** and the **first week of November**.
 - This causes major air pollution issue, especially for **Delhi** in winters.

Key Facts:

- **Punjab** grows rice on **3 million hectares** of land

- and **Haryana** grows rice in **1.2 million hectares** of land.
- About **15 to 20 million tonnes of paddy biomass** is produced on three million hectares of land, which is huge.
 - Machine substitutions for baling, happy seeders and super seeders can aid stubble burning.

- **Air (Prevention and Control of Pollution) Act, 1981** puts ban on stubble burning and action against those burning crop residue.
- In 2020 around 76,590 cases of farm fire occurrence were reported in Punjab.
- In 2019 there were 52,991 such incidents, while in 2018, 51,766 incidents were recorded.

SUPERCOMPUTER SIMULATES WHAT WILL HAPPEN TO EL NIÑO, LA NIÑA IN A WARMER WORLD... RESULTS ARE WORRYING

Research conducted on climate model simulations to understand ENSO's response to global warming suggested that climate change can cause extreme and more frequent El Niño and La Niña events.

- The team used one of South Korea's fastest supercomputers, **Aleph** for the study.

Findings of the research:

- Increasing atmospheric carbon dioxide can cause a **weakening of future simulated ENSO sea surface temperature variability**.
- They note that the intensity of the ENSO temperature cycle can **weaken as CO₂ increases**.
- The **future El Niño events will lose heat to the atmosphere** more quickly due to the evaporation of water vapour.
- Also, in the future **there will be a reduced temperature difference** between the eastern and western tropical Pacific, inhibiting the development of temperature extremes during the ENSO cycle.

El Nino and La Nina:

- El Nino and La Nina, the two natural climate phenomena occurring across the **tropical Pacific Ocean**, influence the weather conditions all over the world.
- While the El Nino period is characterised by **warming or increased sea surface temperatures** in the central and eastern tropical Pacific Ocean, a La Nina event causes the water in the eastern Pacific Ocean to be colder than usual. Together, they are called **ENSO or El Nino-Southern Oscillation**.

El Niño:

- During El Niño, **trade winds weaken**. Warm water is pushed back east, toward the west coast of the Americas.
- El Niño means **Little Boy**, or Christ Child in Spanish.
- El Niño can affect our weather significantly. The warmer waters cause the Pacific jet stream to move south of its neutral position. With this shift, **areas in the northern**

U.S. and Canada are dryer and warmer than usual.

- But in the U.S. Gulf Coast and Southeast, these periods are **wetter than usual** and have increased flooding.
- The full name they used was **El Niño de Navidad**, because El Niño typically peaks around December.
- El Niño has a **strong effect on marine life** off the Pacific coast. During normal conditions, upwelling brings water from the depths to the surface; this water is cold and nutrient rich. During El Niño, **upwelling weakens or stops altogether**.
- Without the nutrients from the deep, there are **fewer phytoplankton off the coast**. This affects fishing.

La Niña:

- La Niña is characterized by the **opposite process**: the **trade winds strengthen**, and warm water and rainstorms are **pushed to the**

far western equatorial Pacific over Indonesia.

- La Niña means **Little Girl** in Spanish.
- This results in **cooler surface water** in the equatorial Pacific Ocean, **dry conditions in Pacific coastal South America**, and much **wetter conditions in northern Australia** and southeast Asia.
- During a La Niña year, **winter temperatures are warmer** than normal in the South and cooler than normal in the North.
- La Niña can also lead to a more **severe hurricane season**.
- During La Niña, waters off the Pacific coast are **colder and contain more nutrients** than usual. This environment supports **more marine life** and **attracts more cold-water species** to places like the California coast.

AIR GUN SURRENDER PROGRAMME SPINS HOPE FOR CONSERVATION IN ARUNACHAL

In Arunachal Pradesh, where **hunting has been a community practice** steeped in history and culture, the 'Air gun Surrender Abhiyan' is spinning a new hope for conservation with over **2000 weapons** given up voluntarily.

- The programme was **launched on March 17, 2021** at Lumdung village

in East Kameng district by the Minister of Environment & Forests.

- It is **completely voluntary** and is aimed at gradually easing the people into the concept of conservation.
- Guns were surrendered and in return, the person **got a certificate of appreciation**.

MESOAMERICA, ORIGIN OF SEVERAL GLOBAL CROPS, FACES FLORISTIC BIODIVERSITY LOSS: STUDY

A study published titled 'Extinction risk of Mesoamerican crop wild relatives' recently concluded that Mesoamerica, where several important crops such as maize, beans, squash, chilli peppers and vanilla originated, is **witnessing a decline in their wild relatives**.

Highlights of the study:

- 35 per cent of these wild species were threatened with extinction, according to the International Union for the Conservation of Nature (IUCN).
- Reasons for the decline:
 - Conversion of wild habitats into farms
 - Shift from traditional to mechanised agriculture
 - Use of pesticides and insecticides
 - Invasive species
 - Contamination from genetically-modified crops
 - Over-collection and logging
- The wild plant groups at **highest risk of extinction** are **Vanilla** with all eight species in the region.
 - They are listed as **'endangered'** or **'critically endangered'** on the IUCN Red List of Threatened Species
- It is followed by **cotton (Gossypium)** (92 percent at risk) and **avocado (Persea)** (60 percent threatened).
- Two groups related to **maize, Zea and Tripsacum**, are 44 per cent and 33 per cent threatened respectively.
- 31 per cent of bean species, 1 out of 4 chilli pepper species, 23 per cent of potato species, 12 per cent of husk tomato species and nine per cent of squash species are further threatened with extinction.

- At least **16 wild crops** included in it, had been used to breed food crops that were more **resilient to the changing climate**, extreme weather and other threats.
 - Mesoamerican people had been managing wild and cultivated plants for thousands of years using a diverse range of agricultural and in situ vegetation management techniques.
- The solution was to **return to and maximise traditional and more diverse** and sustainable production systems.
- This had to **include the improvement of smallholder yields**, supported through policies oriented to improve economic and social mechanisms as well as gaining better understanding of their multi-crop food production systems.

Mesoamerica:

- The term Mesoamerica is derived from the Greek and means **"Middle America."**
- It refers to a **geographical and cultural area** which extends from **central Mexico down through Central America**, including the territory which is now made up of the countries of Guatemala, Belize, Honduras, and El Salvador.
- For thousands of years, this area was populated by groups such as the Olmec, Zapotec, Maya, Toltec, and Aztec peoples.
- These cultures developed **complex societies**, reached high levels of technological evolution, built

monumental constructions, and shared many cultural concepts.

- Cultural traits that define the region include the domestication of maize, beans, avocado, and vanilla, and a common architectural style.

Features of the ancient civilizations of Mesoamerica:

- A diet based on corn, beans, and squash
- Similar myths of origin
- Calendar system
- Writing systems

- A ball game played with a rubber ball
- Religious practices of bloodletting and sacrifice

Key Facts:

- The **potato is the third most important food crop** in the world after **rice and wheat** in terms of human consumption.
- More than a billion people worldwide eat potato, and global total crop production exceeds 300 million metric tonnes.

GIVE RIVERS THEIR RIGHTS, ACTIVISTS TELL IUCN WORLD CONSERVATION CONGRESS

Environmental activists have demanded to accord “**Rights to Rivers**” at the International Union for the Conservation of Nature **World Conservation Congress** in Marseille, **France**.

Universal Declaration of Rights of Rivers:

- Universal Declaration of Rights of Rivers was formally declared in 2020.
- It is a civil society initiative to define the basic rights to which all rivers are entitled.

It declares that:

1. All rivers are **living entities** that possess **legal standing** in a court of law.
2. All rivers shall possess the following Fundamental Rights:
 - Right To Flow
 - Right To Perform Essential Functions within its Ecosystem
 - Right To Be Free from Pollution

- Right To Feed and be Fed by Sustainable Aquifers
 - Right to Native Biodiversity
 - Right To Regeneration and Restoration
3. Rights are intended not only to ensure the health of rivers, but also health of watersheds and river basins of which rivers are a part.
 4. **Indigenous communities** will be represented in river guardianship.
 5. All states will implement these rights and provide the resources necessary to ensure they are realized.

Rights recognised for rivers around the world:

- The rights to recognise river as living entities rather than mere human property started in 2008.
- In 2008, **Ecuador** became the first country to constitutionally recognize the Rights of Nature,

In 2017:

- Treaty agreement between **Whanganui Iwi** (a Māori tribe) and **New Zealand** government recognised the **Whanganui River** as a legal person.
- Constitutional Court decision in **Colombia** recognised the rights of **Atrato river**.
- **Uttarakhand** High Court recognised the **Ganga** and **Yamuna rivers** as legal persons with rights. This was later stayed by the Supreme Court.

Other examples include:

- Boulder Creek watershed in the United States
- Magpie river in Canada
- Waterways in Orange County in the US
- Alpayacu river in Ecuador
- Parana river and its wetlands in Argentina

Opportunities and challenges ahead:

1. There is a **fundamental contradiction** between the current

approach of **'development'** and the **rights of nature**. Any policy or law for the protection of rights must maintain the balance between conservation and development.

2. Rivers **do not follow** human-made political boundaries. Hence, the conservation approach and laws must demand a **cross-boundary approach** and collaborations between neighbouring countries on ecological grounds.
3. There is very **limited understanding** globally on implementation of the rights of rivers. The policy solutions must answer the question of ensuring custodianship, restitution, compensation etc.

Key Fact:

- Only 37% of rivers **longer than 1000 km** still flow freely due to dams being built on them.

PRANA PORTAL LAUNCHED TO REGULATE AIR POLLUTION IN 132 CITIES

Union Ministry of Environment, Forests and Climate Change has launched **PRANA Portal** for the regulation of air pollution in 132 cities across the country.

PRANA Portal:

- It is a **national portal** for **Regulation of Air Pollution** in Non-Attainment Cities.
- PRANA under National Clean Air Programme (NCAP) would support tracking of physical and financial status of city air action plan implementation.

- The portal has a dashboard of **7 thematic areas** of city air action plans, PM10 performance, ambient air monitoring network, public grievance redressal portal, etc.

Utility:

- It would **disseminate information** on air quality to the public.
- It will provide **all information** related to various policies/programmes/schemes/activities of the stakeholders along with **progress made towards**

improvement in air quality across the country.

- It will be a platform for **monitoring and feedback** on all efforts made for air quality improvement.
- These new varieties have helped over **25 million smallholder farmers** and crops have become **more resilient** to climate change & pest and disease outbreaks.

About the prize:

- The award carries a **cash prize** of **\$100,000**.
- It recognises outstanding African individuals and institutions for their efforts in:
 - Transformation Of Africa's Foods Systems
 - Promoting sustainable agricultural practices.

NEW REPORT SUGGESTS HOW LAND-USE FOR RENEWABLE ENERGY IN INDIA CAN BE ENVIRONMENTALLY SUSTAINABLE

A new report on how land-use for renewable energy in India can be environmentally sustainable was released recently.

- The report called for optimising the size of land used, its location and impact on human habitation, agriculture and conservation of natural resources to reduce environmental damage.

Highlights of the report:

- India will use significant stretches of land by 2050 to install renewable energy generation capacities and the land-use increase may have an impact on the environment.
- Around **50,000-75,000 square kilometres of land** will be used in 2050 for solar energy generation and for an additional 15,000-20,000 sq km for wind energy projects.
- The resulting land cover changes, including indirect effects, will likely cause a **net release of carbon up to 50 grams of carbon dioxide per kilowatt-hour** (gCO₂ / kwh).
- The amount of carbon release will depend on the region, scale of

expansion, solar technology efficiency and land management practices at solar parks.

- Unlike coal-based power, renewable energy generation **does not fundamentally change** the character of land.

Pressure on land and ecosystems:

- In India, electricity generation has to compete with alternative uses for land such as agriculture, urbanisation, human habitation and nature conservation.
- **Open Natural Ecosystems (ONE)**, classified as wastelands, covered around 300,000 sq km (10 per cent) of India's land surface.
 - The largest stretches are found in Rajasthan, Madhya Pradesh, Maharashtra, Andhra Pradesh and Gujarat.
- These have the "**highest densities and diversity of large mammalian fauna**" and also support livelihoods of local populations.
- These habitats should be excluded when considering location of renewable energy projects.

- There has also been a steady decline in common land and so, consensus is needed for land requirements for renewable energy.

Suggestions:

Policy:

- **Developing Land Utilization Policy:** As land is constitutionally placed in the state list, its conservation and management is to be taken care of by the respective state government.
- **Digitization of land records** is required in order to modernise the land record system.
- **Prioritizing use of Wasteland:** The state governments, can identify waste/barren land and superimpose it on the Solar and Wind Atlas to earmark areas for setting up of solar and wind projects.
- **Model Land Lease Policy:** It improves the project profitably as the expenditure incurred towards procurement of land decreases.
- **Time limits for Project Development:** Create land banks

across different states and regions, which are then offered to solar and wind project developers for investment purposes.

- **Using Brownfield Sites:** Degraded land can be suitably utilized for solar and wind power projects based on techno-commercial feasibility.

Technology:

- Land Zonation Exercise
- Use of GIS Technology
- Setting up Wind-Solar Hybrid Projects
- Promoting Land Neutral Technologies

Social:

- Undertaking Social Impact Assessment
- Exploring Community Business Models

Key Facts:

The Supreme Court April 19, 2021 directed **all power lines of solar power units** passing through Great Indian Bustard habitats in Rajasthan and Gujarat to be laid underground - as the **overhead transmission lines could threaten the endangered species.**

CLIMATE CRISIS IN NORTH EAST INDIA: MONSOON VARIATIONS SHOULD RING ALARM BELLS

The climate of **North East India** is changing- **rainfall patterns** over the region in the last century have considerably changed, resulting in its **overall drying up.**

Highlights:

- Many factors have caused **changes in rainfall patterns** in the NE region, which include drying of the land and increased snowfall in Eurasian region.

- Climate change has **induced water problem** in NE, visible by **drying up of mountain springs**, which feed every other water source in the region.
 - As many as **200 mountain springs**-direct primary sources of water have dried up due to a decrease in rainfall.
- Due to climate change and rising temperatures, there is **rise in**

rainfall intensity and reduction in its **temporal spread** as well as a marked **decline in winter rain**.

- Drying of springs may be because of **human-induced geological** and **land use** changes, along with the impact of climate change, especially rainfall.

Consequences:

- There is **grim situation** for all mountainous regions of NE states as they are mostly **dependent** on the springs.
 - People in plains, especially in Assam, will **also be affected** by drying up of the springs.
- Among the **top five states** most vulnerable to climate change in the Himalayan region, **four are from North East India**.
- Among the **top seven states** with the highest increase in **land degradation** in the last 10 years, **six** are in the North East.
 - Nagaland has **47%** of its land area under degradation.
- In the **top eight states** of India with **soil acidification**, **seven** are in the northeast.
 - Highest among these is **Nagaland**-almost 7.5 lakh hectares of land area is acidic (around 45% of the total area of the state), followed by **Manipur**.

Issue in Assam:

- In Assam, the **groundwater levels** are closely related to the flow of water in the **Brahmaputra**.
- So, if there is **little rainfall** in the catchments it will **affect the flow of the rivers** and along with that the **ground water levels** will also be impacted.

- Soils of the Brahmaputra are **mostly sandy** and their **water retention capacity is low**, which creates a scare of **water scarcity**.
- **Assam** has the **least area** under irrigation, **least forest** area available per 1,000 rural households and the **second lowest per capita** income among the Indian Himalayan states.
 - This makes it the **most vulnerable Himalayan state** to climate change, followed by **Mizoram**.
- **Riverine islands** of Brahmaputra have been identified as the **most vulnerable** to health impacts of climate change owing to **frequent floods** caused by heavy rainfall in the region and in upstream areas.

Key Facts:

- Assam experienced **major floods** in 1954, 1962, 1972, 1977, 1984, 1988, 1998, 2002, 2004 and 2012.
- Assam suffers losses of **Rs 200 crore** or more every year due to floods.

Soil Acidification:

- Acidification of soil or land takes place when the **pH balance of the soil shifts towards acidic nature** due to an excessive presence of hydrogen ions.
 - Acidity is measured in terms of the **concentration of hydrogen ions** (pH) in the soil as they are essential for formation of all acids.
- Soil acidity increases when **metallic minerals** such as calcium, magnesium, potassium and sodium are **lost** from the soil and only hydrogen ions remain.
- These minerals get removed from soils due to **heavy rainfall and**

flooding. They also get removed with **crop residue** or **harvest hay.**

- Land in the North East is **naturally acidic** because it receives **heavy rainfall** every year.

- Climate change-induced **high frequency of heavy rainfall** events will further exacerbate the acidification, which will decrease the quality of soil.

THE WORLD'S CORAL REEFS HAVE SUFFERED TERRIBLY IN 30 YEARS, BUT ARE RESILIENT: STUDY

A report titled **Status of Coral Reefs of the World: 2020**, prepared by the Global Coral Reef Monitoring Network, along with the Australian government was released recently.

Highlights:

- Coral reefs have suffered terribly in the past three decades. Yet, **they are resilient and would be able to withstand** challenges posed by a warming world.
- Reducing local pressures on coral reefs to maintain their resilience would be critical in the years to come. Monitoring data collected in the field was also essential to understand the status of the trends in coral reef condition.
- Ongoing investment in the **development of methodological approaches, new technologies, capability and capacity** that expands geographic coverage and enhances the quality, accessibility and interoperability of data is essential.

Facts:

- 1998 coral bleaching event killed eight per cent of the world's coral.
- Subsequent events between 2009 and 2018 killed 14 per cent of the world's coral.

- Most declines in global coral cover were associated with either **rapid increase in sea surface temperature (SST)** anomaly or sustained **high SST anomaly.**
- There was **20 per cent more algae on the world's coral reefs** in 2019 than in 2010. The increase in the amount of algae, was associated with **declines in the amount of hard coral.**
- Since 2010, almost all regions had exhibited a decline in average coral cover.
- **Increases in global coral cover between 2002 and 2009** and in **2019** offered hope. It showed that coral reefs globally remained resilient and could recover if conditions permitted.
- Coral reefs in **east Asia**, which has 30 per cent of the world's coral reefs, had more coral on average in 2019 than they did in 1983. This, despite the area being affected by large-scale coral bleaching events during the last decade.
- This showed that high coral cover and diversity might confer **a degree of natural resistance** to elevated sea surface temperatures.

Coral Reef:

- Coral reefs are **large underwater structures** composed of the **skeletons of colonial marine invertebrates** called coral.
- Other species of corals that are not involved in reef building are known as **“soft” corals**.
- Naturally, the **dominant organisms in coral reefs are corals**. Corals consist of both algae (**zooanthellae**) and **tissues of animal polyp**.
- Since reef waters tend to be **nutritionally poor**, corals obtain nutrients through the algae via photosynthesis and also by extending tentacles to obtain plankton from the water.
- The coral species that build reefs are known as **hermatypic**, or **"hard,"** corals because they extract calcium carbonate from seawater to create a hard, durable exoskeleton that protects their soft, sac-like bodies.
- Also, several species of microorganisms, invertebrates, fishes, sea urchins, octopuses, and sea stars are found.
- Coral reefs are often found in **warm, clear, shallow water** where there's plenty of sunlight to nurture the algae that the coral relies on for food.
- They can be found as **barriers along continents** (e.g., the Great Barrier Reef off Australia), fringing islands, and atolls.
- Coral reefs are the primary habitat for more than 4000 species of fish, 700 species of coral and thousands of other plants and animals.

Distribution:

- Corals are found all over the world's oceans.
- The biggest coral reefs are found in the clear, shallow waters of the **tropics and subtropics**.
- The largest of these coral reef systems, **the Great Barrier Reef in Australia**, is more than 1,500 miles long (2,400 kilometers).

Global Coral Reef Monitoring Network (GCRMN):

- The Global Coral Reef Monitoring Network (GCRMN) was established to support the International Coral Reef Initiative (ICRI)'s **Call to Action and Framework for Action** in 1995.
- The GCRMN **worked through regional networks**, comprising a variety of institutions.

Aim:

- Strengthening the provision of the best available scientific information and communication on the status and trends of coral reef ecosystems, for their conservation and management.

Mandates:

- Initially the primary task is of reporting on the condition of the world's coral reefs in the context of the development of the ICRI 'Call to Action'.
- Since then, GCRMN has produced a range of global, regional and thematic reports on coral reef status and trends.
- Tracking and reporting on coral reef status and trends is needed to understand the extent and rate of change, and to inform appropriate responses.

- **Preparation of regional periodic assessments** which draw on monitoring, research and other data.
- Establishment of regional GCRMN committees which are linked to existing Regional Seas mechanisms.
- Provide coral reef data, aggregating from national to regional levels, and then to a global level.

SUPER TYPHOON CHANTHU THREATENS PHILIPPINES, TAIWAN

Philippine state weather agency has issued warned of destructive winds due to **Chanthu typhoon** in Santa Ana town and the eastern part of **Babuyan Islands**.

Babuyan Islands:

- Babuyan Islands are a group of **volcanic islands** forming the northern extension of the **Philippine** Archipelago, located in the Pacific Ocean.
- They are made up of **five principal islands** and a collection of smaller islands surrounding them.

Location:

- The Babuyan Islands are situated in the **Luzon Strait**, to the north of Luzon Island and to the south of the Batanes archipelago.

Channel:

- These islands are separated from the **Balintang Islands** in the northeast by the Balintang Channel and from the Luzon Island by the Babuyan Channel in the south.

8 CRITICALLY-ENDANGERED ORIENTAL WHITE-BACKED VULTURES FLY TOWARDS SURVIVAL FROM HARYANA

Eight critically endangered Oriental white-backed vultures released a year ago into the wild for the first time in India have **blended well into the untamed habitat** outside the aviary.

Genesis:

- In October 2020, the vultures were released from the **Jatayu Conservation and Breeding Centre (JCBC)** situated at the **Bir Shikargah Wildlife Sanctuary** in Shivalik ranges of the Himalayan foothills in Haryana's Pinjore.
- The Oriental white-backed vultures that were **released in the wild are**

resident birds and **not migratory**, so they largely stay within a radius of 50-100 km of the breeding centre.

- All eight vultures were deployed with **satellite tracking devices on their back**, and **orange-coloured wing tags** on both wings.
- They have been **bred in captivity** so they will gradually adjust in the wild.
- They are **flying well and have managed to locate water**. Also, they have managed to join the wild

flock with other vultures such as the Himalayan griffon.

About Oriental white-backed vultures:

- It is also known as **Indian White-backed Vulture**, White-rumped Vulture with a scientific name *Gyps bengalensis*.
- The adult vulture is a **medium-sized vulture**. It has blackish upperparts with **silvery-grey flight feathers**. Lower back and rump are pure white.
- The underparts are brownish-black, finely streaked creamy-white. On the underwings, coverts are all white, well visible in flight. Undertail coverts are black.
- Head and neck are **dark brown with pinkish-white downy** crown and nape.
- The hooked bill is **brownish-black with darker cere**. Eyes are brown. Legs and feet are black.
- Both sexes are similar in look.
- It reaches the **adult plumage at 4-5 years of age**.

Habitat:

- It can be seen in parks and it is often closely associated with human.
- It also may be found **in lowlands, and foothills up to 1500 metres of elevation**. Vultures often **gather at slaughterhouses and rubbish-dumps** near towns and cities.

Range:

- Found in SE Iran, Afghanistan and Pakistan, through Nepal and India to SC China, Indochina and N Malay Peninsula.

Behaviour:

- It feeds exclusively **on carrion, mainly remains of cattle**.

Unfortunately, this food caused large declines in vultures' populations since the 1990s.

- The **veterinary use of Diclofenac** leaves traces in the cattle carcasses, involving poisoning for vultures and other scavengers.
- They are social animals, living in flocks year-round, often with other vulture species. They breed in loose colonies.
- Breeding season occurs from October to March-April.
- Female lays **one white egg tinged bluish-green**. Incubation lasts about **45 to 48 days**, shared by both parents. Fledging period may last up to three months.

Conservation:

- **Critically Endangered** under the IUCN Red List of threatened species.

Bir Shikargah Wildlife Sanctuary:

- Bir Shikargah Wildlife Sanctuary is situated in **Panchkula district of Haryana state**.
- It houses Vulture Conservation and Breeding Centre, Pinjore.
- Haryana of Government has officially notified this as Wildlife Sanctuary 29 May 1987. In 2009, the government of India declared it an **eco-sensitive zone (ESZ)**.
- The wild species include Indian leopard, Asiatic elephant, Chital (spotted deer), Sambar deer, Wild boar, Rhesus macaque, Gray langur, Striped hyena, Indian jackal, Jungle cat, Indian gray mongoose, Indian fox and Indian jackal.
- Bir Shikargah Wildlife Sanctuary and Khol Hi-Raitan Wildlife Sanctuary are only 3 kilometres

aerial distance from each other, both are also only few km away from **Kalesar National Park**, all of

which lie in the **Shivalik hills of Haryana**.

WHAT A NEW STUDY SAYS ABOUT FOSSIL FUEL EXTRACTION AND GLOBAL WARMING

A new study conducted by researchers from University College London says about fossil fuel extraction and global warming.

Highlights of the study:

- The global oil and gas production should **decline by three per cent per year until 2050** to keep global warming to below 1.5 degrees Celsius, which is the target set by the **2015 Paris Climate Agreement**.
- Global fossil fuel extraction needs to go down.
- As of now, both planned and operational fossil fuel extraction projects are not conducive to meeting the targets set out by the climate agreement signed in 2015.
- A substantial number of regions in the world have already reached their peak fossil fuel production and that **any increase in fossil fuel production will have to be offset by a decline elsewhere**, if the goal wants to be achieved.
- The required unextracted reserves need to be 58 percent for oil, 59 percent for fossil methane gas and 89 percent for coal by 2050.
- These percentages of fossil fuels need to remain unextractable if global warming targets are kept in mind.

- Specifically for coal, the unextractable estimates show **less variation across regions**.
- They are lowest in those regions that utilize most coal in the next 30 years, notably India, China and other parts of Asia (ODA).

Paris Climate Agreement:

- The Paris Climate Agreement that was **signed by 195 countries in 2015** has set out a goal to limit climate change in the coming decades.
- **Aim:** To slow the process of global warming by making efforts to hold the increase in the **global average temperature to well below 2 degrees** above pre-industrial levels and to pursue efforts to **limit the temperature increase to 1.5 degrees** above pre-industrial levels.
- The agreement came into force on **November 4, 2016**.
- As of now, human activities have **already caused global temperatures to rise by about 1 degree Celsius** above pre-industrial levels (1950-1900).

Key Facts:

- The global cost of air pollution from fossil fuels was around \$2.9 trillion per year, or \$8 billion per day, which was 3.3 per cent of the world's GDP at the time.

- India is estimated to bear a cost of **\$150 billion from air pollution** caused by fossil fuels.

INDIA'S LARGEST OPEN-AIR FERNERY WAS INAUGURATED AT RANIKHET IN UTTARAKHAND'S ALMORA DISTRICT.

- The fernery is home to **many fern species**, some of which are endemic to the state, some hold medicinal value while some are threatened species.

The Ranikhet fernery:

- The fernery has the **largest collection of fern species**, second to Jawaharlal Nehru Tropical Botanical Garden and Research Institute (TBGRI), Thiruvananthapuram.
- It spreads over **four acres** of land at an altitude of 1,800 metres.
- It provides an **apt location** for developing an open-air fernery.
- It has been developed by the **Research Wing of Uttarakhand Forest Department**. Central Government's CAMPA scheme.

Biodiversity:

- It has **120 different** types of ferns.
- The fernery has a mix of species from the western Himalayan region, the eastern Himalayan region, and the Western Ghats.
- It houses **several rare species**, including Tree Fern, a threatened species by the State Biodiversity Board of Uttarakhand.
- It houses around **30 species of medicinal ferns** such as Hansraj, which has huge importance in Ayurveda as a remedy for ailments.

What Are Ferns?

- Ferns are **non-flowering pteridophytes**. They generally reproduce by producing spores.
- Ferns are the first plant with a fully developed **vascular system**.
- About 9% of the world's Pteridophytes occur in **India**.
- Ferns are the **second largest group of plants** in Indian flora, are represented by 33 families 130 genera and 1,267 species.
 - 70 species among these are endemic to India.

The structure of a fern:

- Ferns have 3 major parts – **the rhizome, the fronds and the reproductive structures** called sporangia.

1. Rhizome: The rhizome is the stem of the fern plant. It comes in 3 basic forms:

- **An erect rhizome:** It is a solid mass that gives rise to a tuft of fronds. It can be found on a king fern or a crown fern.
- **A laterally growing rhizome:** creeps along the ground. It may even climb up a tree. Hound's tongue and thread ferns are examples of a fern with a creeping rhizome.
- **A vertical rhizome:** This can grow into a short or a tall trunk. The trunk of the ponga (silver fern) is a vertical rhizome.

2. Fonds:

- The fronds are the leaves of the fern. There is usually a stalk with a flat blade often divided into segments.
- Fronds have a dual function. They are present for **photosynthesis** and for reproduction.

Ferns are unique:

- Ferns are unique amongst land plants in that they have 2 separate living structures in their reproductive cycle – **the sporophyte** and **the gametophyte**.

Importance of Ferns:

- They are used for **medicinal and edible purposes**.

- The indicators of moisture, ferns, clean the ecosystem and are good **nitrogen fixating** agents.
- They are used to **filter heavy metals** from polluted waters and are a bioindicator for the health of an ecosystem.
- Ferns provide **microhabitats**, as well as shelter and shade to small animals, are a source of food or medicine for animals, including people.

IPCC ISSUES DIRE WARNING ON GLOBAL WARMING

The latest **Intergovernmental Panel on Climate Change** report has warned that **increasing global warming** will result in **reductions in Arctic permafrost**.

- The **thawing of the ground** is expected to **release greenhouse gases** like methane and carbon dioxide.

Permafrost:

- Defined as **ground** (soil, rock and any included ice or organic material) that remains at or **below zero degree Celsius** for at least two consecutive years.
- It is **spread across** an area of over 23 million square kilometres, covering **about 15%** of the land area of the globe.

Impacts of Permafrost Thaw:

- It would affect countries where **roads or buildings** were constructed on permafrost. **Ex:** The Russian railways.

- If the permafrost begins to thaw, **organic material** will become available for **microbiota** to break down.
- The biota will **release carbon dioxide and methane** (about 25 to 30 times more potent than carbon dioxide).
- The **total quantity of carbon** buried in the permafrost is estimated at about **1500 billion tonnes** and the top three meters of the ground has about **1000 billion tonnes**.
 - The **world** currently emits approximately **10 billion tonnes** of carbon a year into the atmosphere.
 - If the permafrost thaws and releases **even only 1%** of the frozen carbon in any one year, it will exceed industrial emissions.

Thawing permafrost and microbes:

- There are concerns that the **thawing permafrost may release** new bacteria or viruses.

- Mammoths were found in the permafrost in Russia recently. When these carcasses begin to **degrade again**, it may **reveal bacteria** that were frozen thousands of years ago.
- The environment is so much more suitable than during the Ice Age for evolution or development of **viruses and bacteria**.

HOW AND WHY THESE TIGERS IN ODISHA CHANGED THEIR STRIPES

An estimated **37%** of tigers in the **Similipal Tiger Reserve** are **pseudomelanistic** i.e., characterised by wide, merged stripes.

Mutation of gene:

- This is the result of a **rare mutation** in one gene-Transmembrane Aminopeptidase Q or Taqpep.
- They **recessively inherited** variants of which are **responsible for the marks** in domestic cats and king cheetahs.
- The mutation (Taqpep p.H454Y) is **likely absent** or **extremely rare** in tigers outside of Similipal.
- With shrinking habitats, the **tiger population** becomes **increasingly isolated**. This causes **inbreeding**, resulting in a lack of genetic variation, and inheriting the **mutated gene**.

Population bottleneck and Founder Effect:

- The **primary reasons** for prevalence of pseudomelanistic tigers in Odisha are: Population Bottlenecks and founder effects.

1. Population bottleneck:

- Population bottlenecks occur when a **population's size is reduced** for at least one generation.
- Because **genetic drift** acts more quickly to reduce genetic variation in small populations, undergoing a

bottleneck can **reduce a population's genetic variation** by a lot.

- This population **may not be able to adapt** to new selection pressures, such as climatic change or a shift in available resources.
- This is because, due to reduced genetic variation that selection would act on may have **already drifted out** of the population.

2. Founder effects

- A founder effect occurs when a **new colony** is started by a **few members** of the original population.
- This **small population size** means that the colony may have:
 - **reduced genetic variation** from the original population.
 - a non-random sample of the genes in the original population.

Similipal Tiger Reserve:

- Similipal National Park is a **national park** and a **tiger reserve** in the Mayurbhanj district in **Odisha**.
- It is part of the **Mayurbhanj Elephant Reserve**, which includes three protected areas — Similipal Tiger Reserve, Hadgarh Wildlife Sanctuary and Kuldiha Wildlife Sanctuary.
- It derives its name from the abundance of **red silk cotton trees** (simal tree) growing in the

area. It is the 7th largest National Park in India.

- **Fauna:** Bengal tiger, Asian elephant, gaur, and chausingha

- It hosts beautiful waterfalls like **Joranda** and **Barehipani Falls**.
- This protected area is part of the **UNESCO World Network of Biosphere Reserves** since 2009.

CLIMATE CHANGE COULD SEE 200 MILLION MOVE BY 2050

As per the latest report by the **World Bank**, climate change could push more than **200 million** people to leave their homes in the next three decades and create migration hot spots.

Major Highlights:

Climate migrants:

- The impacts of slow-onset climate change such as water scarcity, decreasing crop productivity and rising sea levels could lead to millions of "**climate migrants**" by 2050.
- **Migration hot spots** could appear within the next decade and intensify by 2050.
- **North Africa**, is predicted to have the largest proportion of **climate migrants**.
 - Accounting to 19 million, due to increased water scarcity in northeastern Tunisia, northwestern Algeria, western and southern Morocco.

Climate scenarios:

- The report examined how the **impacts of slow-onset climate change** such as water scarcity, decreasing crop productivity and rising sea levels could lead to "**climate migrants**" by 2050 under **three different scenarios**. These scenarios are:

1. Pessimistic Scenario:

- With a high level of **emissions** and unequal development, up to 216 million people will move within their own countries across the six regions.
- **These regions are** Latin America; North Africa; Sub-Saharan Africa; Eastern Europe and Central Asia; South Asia; and East Asia and the Pacific.
- In South Asia, Bangladesh is particularly affected by flooding and crop failures, leading to half of the predicted climate migrants.
 - Around **19.9 million people**, including an increasing number of women, moving by 2050.

2. Climate-friendly Scenario:

- With a **low level of emissions** and inclusive, sustainable development, the world could see 44 million people being forced to leave their homes.

3. Worst-case Scenario:

- **Sub-Saharan Africa** - The most vulnerable region due to desertification, and the population's dependence on agriculture - would see the most migrants.
 - Up to 86 million people moving within national borders.

World Bank:

- World Bank Group is an international partnership

comprising 189 countries and five constituent institutions.

- **Established:** July 1994
- **Headquarters:** Washington DC United States

Institutions under World Bank Group (WBG):

1. International Bank for Reconstruction and Development (IBRD):

- It is the **world's largest development bank** with a membership of 189 countries.
- It provides loans, guarantees, advisory services, and risk management products to middle-income and creditworthy low-income countries.
- Middle-income countries represent more than 60% of the IBRD's portfolio.
- Finances investments across all sectors and offers technical support and expertise at every stage of a project.
- It assists governments in augmenting the investment climate of countries, removing service delivery bottlenecks, and strengthening institutions and policies.
- Sources most of its funds from the world's financial markets.

2. International Development Association (IDA):

- IDA is an international financial institution which offers **concessional loans** and **grants** to the world's **poorest** developing countries.

- It was established in 1960 to complement the existing IBRD by lending to developing countries.
- Together, the IDA and IBRD are **collectively known** as the **World Bank**.

3. International Finance Corporation (IFC):

- IFC is a sister organization of the World Bank.
- It is the largest international development institution focused on the private sector in developing countries.
- It functions as the **private sector arm** of the WBG.
- It works for economic development by investing in for-profit and commercial projects for poverty reduction and augmenting development.
- It engages in mobilizing **third-party resources** for the projects.

4. Multilateral Investment Guarantee Agency (MIGA):

- **Aim:** To enhance cross-border investment in developing countries by giving guarantees to lenders and investors.
- The agency's guarantees to protect investments against non-commercial risks.
- It emphasizes on Fragile and Conflict-affected States.
- Coverage against losses due to war, terrorism, and civil disturbance.
- Coverage against expropriation by governments.
- Protection against losses arising from an inability to legally convert local currency into hard currency.

- Credit enhancement – protection when governments fail to honor financial obligations.
- India became a member of the MIGA in 1994.

5. International Centre for Settlement of Investment Disputes (ICSID):

- ICSID engages in international investment dispute settlement.
- It settles disputes between investors and governments.

- It provides for settlement of disputes by arbitration, conciliation, or fact-finding.
- It disseminates information on international law on foreign investment.
- India is **not a member** of the ICSID because it claims that the ICSID's functioning and structure are biased towards the developed countries.

J&K TO IMPLEMENT FOREST RIGHTS ACT, 2006

Jammu and Kashmir government has decided to **implement the Forest Rights Act, 2006.**

- This will **elevate the socio-economic status of a sizeable section** of the population of tribals and nomadic communities in the Union Territory.

Forest Rights Act, 2006:

- The **Scheduled Tribes and Other Traditional Forest Dwellers** (Recognition of Rights) Act (or the Forest Rights Act or FRA) was enacted in 2006 and **came into force in 2008.**
- The Act was enacted to protect the marginalised socio-economic class of citizens and balance the right to environment with their right to life and livelihood.
- It **confers individuals' title to habitat**, and also aims to **protect their tradition and culture** by recognising their collective ownership over a larger landscape within or outside their traditional village territories.

- It provides for **two kinds of rights to tribals and other forest dwellers.**

1. Individual rights over the dwelling and cultivation lands under their occupation.
 2. The community tenure/ rights over 'community forest resources' on common forest land within the traditional and customary boundaries of the village.
- However, the implementation of the Act in general and especially **in Protected Areas (PAs) has been negligible.**

Objectives:

- To undo the historical injustice occurred to the forest dwelling communities.
- To ensure land tenure, livelihood and food security of the forest dwelling Scheduled Tribes and other traditional forest dwellers.
- To strengthen the **conservation regime of the forests** by including the responsibilities and authority on Forest Rights holders for sustainable use, conservation of

biodiversity and maintenance of ecological balance.

Features:

- The Act **encompasses Rights of Self-cultivation and Habitation** which are usually regarded as Individual rights; and Community Rights.
- It also provides rights to allocation of forest land for developmental purposes to fulfil basic infrastructural needs of the community.
- In conjunction with the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Settlement Act, 2013 **FRA protects the tribal population from eviction without rehabilitation and settlement.**
- Under FRA, the **rights of forest dwellers can recognised in protected areas** including: national parks, wildlife sanctuaries, conservation and community reserves.

Bakarwals:

- The Bakarwals are known to be **part of the larger ethnic group known as Gujjars** who dominate large parts of Northern India, Pakistan and Afghanistan.
- In 1991, the Jammu and Kashmir government added the community to the list of Scheduled Tribes. **In 2001**, the Indian government officially declared them as a **Scheduled Tribe.**
- The Bakarwals of Jammu & Kashmir are predominantly **Muslims** and their way of life, language and customs are strikingly different as compared

to their counterparts settled mostly in the plains of the state.

- A nomadic tribe, the Bakarwals are a migratory group, often recognised by the **hundreds of kilometers long journey** they take with their cattle every summer to Kashmir and Ladakh and back to Jammu in the winters.
- They rear sheep and goats.

Gaddis:

- The Gaddis tribes is mainly found on **both sides of the Dhauladhar Range** of the state of **Himachal Pradesh.**
- It's also dwell mainly in the **Brahmaur region of Chamba District**, in the higher regions of the Ravi River and also the valleys of the Budhil River.
- The main occupation of Gaddi tribes is **shepherding** and they make their livelihood by rearing and selling **sheeps, goats, mules and horses.**
- **Semi-nomadic**, the Gaddi migrate with their livestock during summers and wait out winters in their homes.
- They are considered to have **descended from the persecuted escapees of Mughal emperor Aurangzeb's reign.**
- Both Hindu and Islam religions customs are practiced by huge population of Gaddi Tribal Community.
- The most important thing for any Gaddi Tribe is the **25 yards long strand** that is tied to their wrist worn by both men and women which serves as the **symbol of the Tribe.**

CLIMATE CHANGE CAN FORCE 216 MILLION PEOPLE TO MIGRATE WITHIN THEIR OWN COUNTRIES BY 2050

The World Bank's updated **Groundswell report** was released recently.

- It examined how the **impacts of slow-onset climate change** such as water scarcity, decreasing crop productivity and rising sea levels could lead to millions as "climate migrants" by 2050.
- The Groundswell report is a stark reminder of the **human toll of climate change**, particularly on the world's poorest who are contributing the least to its causes.
- It also clearly lays out a **path for countries to address some of the key factors** that are causing climate-driven migration.

Highlights of the report:

Region specific:

- Up to 216 million people moving within their own countries across the six regions analyzed.
- Those regions are Latin America; North Africa; Sub-Saharan Africa; Eastern Europe and Central Asia; South Asia; and East Asia and the Pacific.
- In the most climate-friendly scenario, with a low level of emissions and inclusive, sustainable development, the world could still see **44 million people being forced to leave their homes**.
- In the worst-case scenario, **Sub-Saharan Africa would see the most migrants**, with up to 86 million people moving within national borders.

- Sub-Saharan Africa is the most vulnerable region due to desertification, fragile coastlines and the population's dependence on agriculture.
- **North Africa** is predicted to have the **largest proportion of climate migrants**, with 19 million people moving, equivalent to roughly 9% of its population.
- Due mainly to increased water scarcity in northeastern Tunisia, northwestern Algeria, western and southern Morocco, and the central Atlas foothills.
- **In South Asia**, Bangladesh is particularly affected by flooding and crop failures, accounting for almost half of the predicted climate migrants, with 19.9 million people, including an increasing number of women.
- Total south Asia could see 40 million internal climate migrants.
- By 2050, East Asia and the Pacific could see 49 million; North Africa 19 million; Latin America 17 million; Eastern Europe and Central Asia 5 million internal climate migrants.

Other Facts:

- **Hotspots of internal climate migration** can emerge as early as **2030** and continue to spread and intensify by 2050.
- **Immediate and concerted action** to reduce global emissions and support green, inclusive and resilient development, **could reduce**

the scale of climate migration by as much as 80 per cent.

- **Climate change is a powerful driver** of internal migration because

of its impacts on people's livelihoods and loss of livability in highly exposed locations.

WHAT ARE THE TARBALLS THAT HAVE RESURFACED ON MUMBAI'S BEACHES?

Cuffe Parade shoreline, a district in South Mumbai saw **black oil-emanating balls** lying on the shore.

- Earlier, several beaches in Goa, including Anjuna, were covered with the black sticky carpet.
- The **Brihanmumbai Municipal Corporation** (BMC) has removed over 20,000 kg of tarballs from Juhu and Versova beaches.

Tarballs:

- Tarballs are dark-colored, **sticky balls of oil** that form when crude oil floats on the ocean surface.
- They are formed by **weathering of crude** oil in marine environments.
- According to **National Institute of Oceanography** (NIO), they are transported from the open sea to the shores by sea currents and waves.
- Some of the balls are as big as a basketball while others are smaller globules.

- They are usually **coin-sized** and found **strewn** on the beaches.
- The tarballs can stick to the cleaning machinery and are difficult to wash off.

Formation of Tarballs:

- According to NIO wind and waves tear the **oil slick** into smaller patches that are scattered over a much wider area.
- Various physical, chemical, and biological processes (weathering) change the appearance of the oil.

Why tarballs are formed during monsoon?

- It is examined that the oil comes from the large cargo ships in the deep sea and gets pushed to the shore as tarballs, during monsoon due to **wind speed and direction**.
- All the oil spilt in the Arabian sea eventually gets deposited on the western coast in the form of tarballs in the monsoon season.

DISCOVERY OF NEW SPECIES OF HYBODONT SHARK FROM JURASSICS OF JAISALMER, RAJASTHAN

In a rare discovery, teeth of **new species of hybodontshark of Jurassic age** have been reported for the first time

from Jaisalmer by a team of the Geological Survey of India (GSI), Jaipur.

About the new species:

- It is named as **Strophodus jaisalmere nsis**.
- The genus *Strophodus* has been identified for the first time from the Indian subcontinent and is only the **third such record from Asia**, the other two being from **Japan and Thailand**.
- The new species has been included in the **Shark references.com**, an international platform operating in association with **International Union for Conservation of Nature (IUCN)**, **Species Survival Commission (SSC)**, and Germany.
- .

About Hybodonts:

- Hybodonts, an **extinct group of sharks**, was a dominant group of fishes in both marine and fluvial environments during the **Triassic and early Jurassic time**.
- Hybodont sharks started to **decline in marine environments** from the Middle Jurassic onwards until they formed a relatively minor component of open-marine shark assemblages.
- Hybodonts finally **became extinct at the end of the Cretaceous time** 65 million years ago

NITI AAYOG, RMI, AND RMI INDIA LAUNCH 'SHOONYA' CAMPAIGN

NITI Aayog, with RMI and RMI India's support, launched **Shoonya— an initiative to promote zero-pollution delivery vehicles** by working with consumers and industry.

- **Aim:** To accelerate **adoption of electric vehicles (EVs)** in the urban deliveries segment and create consumer awareness about the benefits of zero-pollution delivery.
- As part of the campaign, a **corporate branding and certification programme** is being launched to recognise and promote industry's efforts towards transitioning to EVs for final-mile deliveries.
- An **online tracking platform** will share the campaign's impact through data such as vehicle

kilometers electrified, carbon savings, criteria pollutant savings and other benefits from clean delivery vehicles.

- EVs emit **no tailpipe emissions**, which can contribute immensely to an improved air quality.
- They emit 15-40 percent less CO₂ in their manufacturing compared to their internal combustion engine counterparts and have lower operational cost.

Key Facts:

- Urban freight vehicles account for **10 percent of freight transportation-related CO₂ emissions** in India, and these emissions are expected to grow by **114 percent by 2030**.

ARSENIC NOW IN WHEAT, POTATO — AND MORE THAN THAT IN DRINKING WATER — IN RURAL BIHAR

A recent study has found that Arsenic has found its **way into the food chain**—mainly rice, wheat and potato.

- The study was a part of the project **Nature and nurture in arsenic induced toxicity of Bihar** jointly funded by the British Council in the United Kingdom and Department of Science and Technology in India.

Highlights:

- Arsenic content in food items was higher than that in drinking water in Bihar. The concentration was higher in cooked rice compared to raw rice.
- At least **77 per cent of households had an arsenic concentration** in drinking water below the WHO guideline value of 10 µg / L.
- At least **37 per cent used some form of improved water for drinking**, indicating that a significant proportion of drinking water may have had arsenic levels lower than 10 µg / L.
- The median **contribution of food to overall arsenic exposure was 36 per cent** when drinking water exposure was below 10 µg / L.
- Food was found to contribute more to arsenic poisoning than drinking water by **6 per cent** when the arsenic concentration in drinking water was above 10 µg / L.
- The presence of high arsenic concentrations in water **may result in higher total arsenic concentrations in the food** which could be due to **both increased arsenic in cooking and naturally**

high total arsenic content in grains and potato.

Severity of arsenic contamination:

- Out of its 38 districts, 22 were reported to have arsenic in drinking water above the WHO provisional guide value of 10 µg / L.
- More than nine million people were estimated to be drinking water with arsenic above 10 µg/L and 33 per cent of the tested hand tube wells samples normally used for drinking water had arsenic above the WHO provisional guide value.

Arsenic and Arsenic Poisoning:

- Arsenic is a natural element that can be found in rocks and soil, water, air, and in plants and animals.
- Arsenic is found naturally in **Earth's crust and its inorganic form is highly toxic.**
- Arsenic is one of the **World Health Organisation's 10 chemicals** of major public health concern.
- Arsenic is highly toxic in its inorganic form.
- Inorganic arsenic is naturally present at high levels in the groundwater of a number of countries, including **Argentina, Bangladesh, Chile, China, India, Mexico, and the United States of America.**
- People can be exposed to arsenic in the environment from some agricultural and industrial sources.

Diseases:

- Short term impact includes **vomiting, abdominal pain and diarrhoea.**
- Long-term effects include **skin lesions, hyperkeratosis and skin cancer.**
- Arsenic exposure on **cognitive development, intelligence, and memory.**
- Arsenic compounds are carcinogenic to humans. This is based on sufficient evidence in humans that these compounds can cause:
 - Lung cancer
 - Bladder cancer
 - Skin cancer

MURA-DRAVA-DANUBE AS THE WORLD'S FIRST 'FIVE-COUNTRY BIOSPHERE RESERVE'

Recently, the UNESCO designated **Mura-Drava-Danube (MDD)** as the world's first 'five-country biosphere reserve'.

Highlights:

- MDD's recognition was a **mandate to all five countries to jointly advance the protection and revitalisation** of the Mura-Drava-Danube area and boost sustainable business practices.

Biological richness:

- The reserve is home to **floodplain forests, gravel and sand banks, river islands, oxbows and meadows.**
- It is home to continental **Europe's highest density of breeding white-tailed eagle**, as well as endangered species such as the **little tern, black stork, otters, beavers and sturgeons.**
- It is also an important annual resting and feeding place for more than **250,000 migratory birds.**
- Almost **900,000 people live** in the biosphere reserve.

Conservation efforts:

- The reserve represented an important contribution to

the **European Green Deal** and contributes to **the implementation of the EU Biodiversity Strategy** in the Mura-Drava-Danube region.

- The strategy's aim is **to revitalise 25,000 km of rivers** and protect **30 per cent of the European Union's land** area by 2030.
- Additional projects for nature and people are already being implemented in the area.
 - These projects put **river revitalisation, sustainable business practices** enhancing cross-border cooperation into focus.
- **Interreg Danube Transnational Programme:** funded Amazon of Europe Bike Trail, a long-distance cycling trail following the Mura, Drava and Danube river landscapes for over 1,250 km.

Mura-Drava-Danube (MDD):

- This transboundary biosphere reserve **stretches along the Drava, Mura and Danube Rivers, which are separated by flood prevention dykes** into an inundation area and a flood-controlled side.
- The biosphere reserve provides **an important tool in learning**

different approaches to floodplain management.

- The biosphere reserve **covers 700 kilometres of the Mura, Drava and Danube rivers** and stretches across **Austria, Slovenia, Croatia, Hungary and Serbia**.
- The total area of the reserve in the **'Amazon of Europe'**, makes it the **largest riverine protected area** on the continent.

Mura River:

- Located in the eastern part of the country, this biosphere reserve includes the **largest preserved complex of floodplains in Slovenia**, where the interweaving of natural factors and human presence has created an exceptional cultural riverine landscape.
- The area of the biosphere reserve belongs to the Continental Biogeographic Region.
- The core area is a mosaic of well-preserved characteristic habitats of the middle sections of dynamic river floodplains.

Drava River:

- The Drava River is both the **fourth largest and fourth longest Danube tributary** rising in Italy.
- It drains from the southern side of the Alps to the Danube and the Black Sea.
- The Drava flows through **Austria, Slovenia and Croatia**. It forms the **border between Croatia and Hungary**, before heading back into Croatia again to meet the Danube near Osijek, where it is 320 metres wide.
- The Drava River is a **typical fluvio-glacial river**, which means that

its **highest flow is in July** during the melting of glaciers, while the majority of other rivers are already showing signs of summer drought.

Danube River:

- The longest river in the European Union, the Danube River is the **second-longest river in Europe** after Russia's Volga.
- It begins in the **Black Forest region of Germany** and runs through 10 countries (Germany, Austria, Slovakia, Hungary, Croatia, Serbia, Romania, Bulgaria, Moldova and Ukraine) on its way to the Black Sea.
- 19 countries share the Danube River Basin, which makes it the world's most international river basin.

UNESCO Biosphere Reserves:

- Biosphere reserves are **'learning places for sustainable development'**.
- They are sites for testing interdisciplinary approaches to understanding and managing changes and interactions between social and ecological systems, including conflict prevention and management of biodiversity.
- They are **places that provide local solutions** to global challenges.
- Biosphere reserves include **terrestrial, marine and coastal ecosystems**.
- Each site promotes solutions reconciling the **conservation of biodiversity with its sustainable use**.
- Biosphere reserves are **nominated by national governments** and remain under **the sovereign**

- jurisdiction of the states** where they are located.
- Biosphere Reserves are **designated under the intergovernmental MAB Programme** by the Director-General of UNESCO following the decisions of the **MAB International Coordinating Council (MAB ICC)**.
 - Their status is **internationally recognized**. Member States can submit sites through the designation process.

- UNESCO biosphere reserves are central to education, research and awareness-raising work to foster innovative sustainable development practices and combat the loss of biodiversity.
- The network supports **local and indigenous communities** and Member States' understanding, and the protection of the natural environment.

WORLD OZONE DAY 2021: THEME, HISTORY, SIGNIFICANCE AND ALL YOU NEED TO KNOW

16th September 2021 is observed as **International Day for the Preservation of the Ozone Layer** or World Ozone Day.

History of the Day:

- In order to curb the existence of all substances that add to the ozone depletion, **Montreal Protocol** was adopted in 16 September, 1987, where countries from across the globe decided to curb substances such as: Aerosols, Chlorofluorocarbon and Halons
- In 1994, the UN General Assembly proclaimed this day as the **World Ozone Day**.

Theme for 2021:

- **KEEPING US, OUR FOOD AND VACCINES COOL.**
- The Day is celebrated every year to spread **awareness** among people about the **depletion of Ozone Layer** and the measures taken to preserve it.
- Ministry of Climate Change has been celebrating the World Ozone

Day since 1995 at the National and State levels.

Ozone Layer:

- Ozone layer, is a region of the **upper atmosphere** above Earth's surface, containing relatively high concentrations of **ozone molecules (O₃)**.
- 90 percent of the atmosphere's ozone occurs in **the stratosphere, region**.
- The ozone layer effectively blocks almost all solar radiation of wavelengths from reaching Earth's surface, including **ultraviolet (UV)** and other forms of radiation that could harm most of the living things.

Kigali Amendment to the Montreal Protocol:

- The Kigali Amendment to the Montreal Protocol was finalized in 2016.
- **Aim:** Parties to the Montreal Protocol will phase down production and consumption of Hydrofluorocarbons, or HFCs.

- Government of India has **decided to ratify** the Kigali Amendment to the Montreal Protocol.
- Focus will be on developing a national strategy for phase down of Hydrofluorocarbons.

Initiatives taken by Government of India:

Indian Cooling Action Plan:

- The Ministry of Climate Change has developed **India Cooling Action Plan (ICAP)**.
- It is aimed to look for synergies in actions having the potential to provide socio-economic and environmental benefits, to reduce **refrigerant use**, climate change mitigation and Sustainable Development Goals.
- The ICAP recommends synergies with government programmes and schemes like- housing for all, the Smart Cities Mission, Doubling Farmers Income and Skill India

Mission, to maximize socio-economic co-benefits.

Controlled use of Harmful Compounds:

- India has phased out Chlorofluorocarbons, Carbon tetrachloride, Halons, Methyl Bromide and Methyl Chloroform for controlled uses in line with the Montreal Protocol.

Hydrochlorofluorocarbons Phase out Management Plan:

- (HPMP) Stage-I has been successfully implemented from 2012 to 2016.
- (HPMP) Stage-II is under implementation from 2017 and will be completed by 2023.
- (HPMP) Stage-III will be commenced soon which will phase out the use of **HCFC-22**, a refrigerant used in Refrigeration and Air-conditioning manufacturing.

TN'S VINISHA AMONG 15 FINALISTS FOR PRINCE WILLIAM'S EARTHSHOT PRIZE

A 14-year-old Tamil Nadu schoolgirl's **solar-powered ironing cart project** and a Delhi entrepreneur's **agricultural waste recycling concept** were named among 15 finalists for the first-ever **Earthshot Prize 2021**.

- They will now **receive tailored support** and resources from the Earthshot Prize Global Alliance Members, a network of private sector businesses around the world.

EARTHSHOT PRIZE:

- The **most prestigious global prize for the environment** was launched

by Britain's **Prince William** in 2020, with a fund of **50-million-pound**.

- **Aim:** To fund the **most innovative solutions** to the world's most pressing **environmental challenges**.
- It is **centred around five Earthshots** goals:
 - Protect and restore nature,
 - Clean our air,
 - Revive our oceans,
 - Build a waste-free world and
 - Fix our climate.

- Five prizes worth of **one million-pound prizes** will be **awarded each year for the next ten years**, providing **at least 50 solutions to the world's greatest environmental problems** by 2030.
- Each Earthshot is underpinned by scientifically agreed targets including UN Sustainable Development Goals and other internationally recognised measures.

HOW ARE HUMBOLDTS DIFFERENT FROM OTHER PENGUINS?

Mumbai's Byculla Zoo has announced the addition of two new **Humboldt penguin** chicks.

Humboldt Penguins:

- Humboldt penguin is a **South American** penguin. It grows about 26 to 28 inches long and weighs about 10.4 pounds.
- It has blackish-gray upperparts, white underparts, a black breast band, and a black head with white stripes running from the eyes around the ear-coverts to join beneath the chin.
- The penguins have the ability to **withstand warmer climates**.

Habitat:

- It nests on islands and rocky coasts and feeds in surrounding waters. Its habitat is highly influenced by the cold, nutrient-rich Humboldt Current flowing northward from **Antarctica**.

Location:

- They live along the coasts of **Chile** and **Peru** in the southeastern Pacific Ocean.

Life Cycle:

- The lifespan is about **20 years**.

Feeding:

- They feed primarily on fish, especially anchovies, herring and smelt.

Threats:

- They were first devastated by the **mining of guano deposits** in which the species prefers to nest for fertilizer.
- The penguin is threatened by intense commercial fishing and oil pollution.

Conservation:

- **IUCN status:** Vulnerable
- **CITES:** Appendix I

THIS VISAKHAPATNAM STARTUP IS TACKLING THE MENACE OF GHOST NETS IN COASTAL ANDHRA PRADESH

In the waters of Bay of Bengal off Visakhapatnam coast, a 'ghostly' menace is threatening the existence of several marine species, some critically endangered.

Ghost net?

- Ghost net is fishing gear which are **lost, voluntarily abandoned or dumped at sea by fishermen**.
- These inevitably go on to **kill marine life for several years**,

making it the most-deadly form of marine plastic debris.

Ghost Gear Upcycling:

- Based on the aim to address this growing issue, Visakhapatnam-based **Greenwaves Environmental Solutions** is working at coastal Andhra Pradesh along with **WWF India**.
- The project was initiated in Visakhapatnam in June 2021.
- The discarded fish nets and glass bottles collected during beach clean-ups are untangled and segregated as per type, size and colour

- It upcycles these nets to make products like bracelets, pouches, doormats and pots.
- The concept of upcycling fish nets is aimed at **reducing the impact of marine pollution** and also provides **alternative livelihoods for fisherwomen**.

Key Facts:

- The International Union for Conservation of Nature estimates that at least **eight million tons of plastic waste** are discarded into the ocean every year.
- This is said to be **80% of the marine debris**.

COAST GUARD SEIZES 2000 KG SEA CUCUMBER

The Indian Coast Guard (ICG) team at Mandapam, Tamil Nadu seized **two tonnes** of sea cucumber, a banned marine species, valued at about **8 Crores INR**.

About the species:

- Sea cucumbers are **marine animals** with a leathery skin and an elongated body containing a single, branched gonad.
- They are found on the **sea floor** worldwide. Many of these are gathered for **human consumption** and some species are cultivated in aquaculture systems.

- They serve a useful role in the marine ecosystem as they **help recycle nutrients**, breaking down organic matter after which bacteria can continue the degradation process.
- Sea cucumber in India is treated as an **endangered species** listed under **schedule I** of Wildlife Protection Act of 1972.
- It is primarily **smuggled** from Tamil Nadu to Sri Lanka in fishing vessels from Ramanathapuram and Tuticorin districts.
 - Sea cucumbers are in **high demand** in China and Southeast Asia.

EXTREME WEATHER EVENTS IN INDIA MADE WOMEN, CHILDREN MORE VULNERABLE TO MODERN SLAVERY, FLAGS REPORT

International Institute for Environment and Development and **Anti-Slavery**

International in a recent report has warned that Climate change-induced **extreme weather events** put

women, children and minorities at risk of modern slavery and human trafficking.

Highlights:

- As per the report, **Modern slavery** — including debt bondage, bonded labour, early / forced marriage and human trafficking converge with climate change, particularly climate shocks and climate-related forced displacement and migration.
- The report established **close relationship** between lack of resources, alternative livelihoods, safety nets and the protection against loss and damage as well as debt and exploitation.

The Case of Sundarbans:

- The report observed that the **Sundarbans delta region** is characterised by intense, recurrent and sudden onset disasters and **ecological degradation**.
- Rising sea levels, erratic rainfall, increased frequency of cyclones, tidal surges and floods would mean that **millions of people** across Sundarbans are unable to work for most of the year.
- These events can leave locals **vulnerable to traffickers** and drive them into forced labour, particularly women

and children who are at the risk of **trafficking, hard labour** and **prostitution**.

Recommendations:

- Policymakers should **develop targeted actions**, at national and international levels, to address the issue of trafficking and slavery risks due to **climate shocks**.
- **Several ongoing initiatives** including Warsaw International Mechanism Task Force on Displacement, Sendai Framework, etc. should be coordinated to increase understanding of growing risks of climate-induced migration/displacement and exposure to modern slavery.
- Recognising **slavery as a mainstream policy issue** alongside poverty and climate change will help to:
 - Develop understanding of the underlying drivers that push disadvantaged communities into slavery.
 - Identify risky migration pathways that lead to exploitative work situations.
 - Identify gaps in existing climate and development policies that leave communities facing climate crises exposed to slavery.

TWO MORE BEACHES IN INDIA AWARDED PRESTIGIOUS ‘BLUE FLAG’ TAG

Two more beaches in India have been awarded “**Blue Flag**” certification, taking the total number of such beaches in the country to 10.

Key Points:

- The two beaches to receive the certification are **Kovalam** in Tamil Nadu and **Eden** in Puducherry.
- The **Foundation for Environment Education (FEE)**, Denmark gave re-

certification for eight nominated beaches in 2020.

- The Beaches are:
 1. Shivrajpur in Gujarat
 2. Ghoghla in Daman & Diu
 3. Kasarkod beach in Karnataka
 4. Padubidri beach in Karnataka
 5. Kappad in Kerala
 6. Rushikonda in Andhra Pradesh
 7. Golden beach of Odisha
 8. Radhanagar beach in Andaman and Nicobar

Blue Flag Certification:

- Blue Flag is one of the world's most recognised **voluntary eco-labels** awarded to beaches, marinas, and sustainable boating tourism operators.
- To qualify for the Blue Flag, a series of stringent environmental, educational, safety, and accessibility criteria must be met and maintained.
- There are **33 criteria** that must be met to qualify for a Blue Flag certification, such as the water meets certain quality standards, waste disposal facilities, being disabled-friendly, first aid equipment etc.
- **Blue Flag Programme** for beaches and marinas is run by the international, non-governmental Organisation FEE (the Foundation for Environmental Education).
- FEE was established in **France** in 1985.
 - Spain tops the list with 566 such beaches.

BEAMS:

- India has launched its own **eco-label BEAMS** (Beach Environment & Aesthetics Management Services) under **ICZM** (Integrated Coastal Zone Management) project.
- It is launched by the Ministry of Environment, Forest, and Climate Change (MoEFCC).

Objectives of BEAMS:

- Abate pollution in coastal waters,
- Promote sustainable development of beach facilities,
- Protect & conserve coastal ecosystems & natural resources,
- Strive and maintain high standards of cleanliness,
- Hygiene & safety for beachgoers in accordance with coastal environment & regulations.

Integrated Coastal Zone Management Plan:

- It is a process for the management of the coast using an integrated approach, regarding all aspects of the coastal zone, including geographical and political boundaries, to achieve sustainability.
- It was established in 1992 during the **Earth Summit**.

Implementation:

- It is a **World Bank** assisted project and is implemented by the Ministry of Environment, Forests and Climate Change (MoEFCC).
- The National Centre for Sustainable Coastal Management (**NCSCM**), Chennai, provide scientific and technical inputs.

WORLD RHINO DAY: WHY ASSAM IS BURNING NEARLY 2,500 ONE-HORNED RHINO HORNS

Assam marks World Rhino Day-September 22- with a special ceremony **by burning a stockpile of nearly 2,500 horns** of the one-horned rhinoceros.

- This was announced by the state Cabinet after weeks of **'rhino horn reverification' exercises** by the Forest Department across the state.

Purpose:

- The ceremony scheduled in Kaziranga National Park (KNP) has been publicised as a **"milestone towards rhino conservation"** aimed at **"busting myths about rhino horns"**.
- The destruction of horns is in compliance with **Section 39(3)(c) of the Wildlife (Protection) Act of 1972**.

World Rhino Day:

- World Rhino Day is observed on **September 22 every year** to celebrate all **the five species of rhinoceroses** - black and white (in Africa), and greater one-horned, Sumatran and Javan (in Asia).
- Both African species and the Sumatran rhinoceros have two horns, while the **Indian and Javan rhinoceros have a single horn**.
- **Aim:** To raise awareness about the African and Asian species of rhinos and encourage people to take steps for their conservation.
- World Rhino Day was **announced by World Wildlife Fund** -South Africa in 2010.
- The day got **international recognition in 2011**.
- **World Rhino Day 2021 theme:** 'Keep the Five Alive'.

One-horned rhinoceros:

- The greater one-horned rhino (or "Indian rhino") is the **largest of the rhino species**.

Description:

- The greater one-horned rhino is **identified by a single black horn about 8-25 inches long** and a grey-brown hide with **skin folds**, which gives it an **armor-plated appearance**.
- The species is **solitary**, except when adult males or rhinos nearing adulthood gather at wallows or to graze.
- Males have **loosely defined home ranges** that are not well defended and often overlap.
- They **primarily graze**, with a diet consisting almost entirely of grasses as well as leaves, branches of shrubs and trees, fruit, and aquatic plants.
- Gestation lasts approximately **15 – 16 months**, and mothers give birth to one calf every 2 – 3 years.

Habitats: Tropical and Subtropical Grasslands, Savannas, and Shrublands

Distribution:

- Northern India and southern Nepal, in riverine (floodplain) grasslands and adjacent woodland.

Conservation status:

- Listed as Vulnerable under IUCN Red list.
- Listed in **Appendix I** with convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).
- Listed in **Schedule I in Wildlife Protection Act, 1972**.

Key Facts:

- Ground rhino horn is used in traditional Chinese medicine to cure a range of ailments, from cancer to hangovers, and also as an aphrodisiac.

- In Vietnam, possessing a rhino horn is considered a status symbol.
- In 2019, the Assam government constituted a dedicated “**Special Rhino Protection Force**” to keep a check on rhino poaching and related activities at KNP.

WHO TIGHTENS AIR QUALITY GUIDELINES FOR FIRST TIME SINCE 2005

The World Health Organization (WHO) has tightened its **air quality guidelines for the first time** since 2005.

- It warned that air pollution is **one of the biggest environmental threats** to human health, causing seven million premature deaths a year.

Highlights:

- Harms from air pollution **begin at much lower levels** than previously thought, hence, **lowered acceptable thresholds for several pollutants**, including **ultrafine PM2.5**.
- These guidelines are **not legally binding** on countries, but are meant to provide guidance to help reduce levels of air pollution.
- It **does not include** recommendations about **pollutant mixtures or the combined effects of pollutant exposures**.

Thresholds:

- **Average 24-hour exposure:**
 - **PM2.5** must remain **below 15µg/m³**, down from 25µg/m³.
 - **PM10 particles** has been **lowered from 50 to 45µg/m³**.
- **Exposure over a year-long period:**
 - PM2.5 has been brought down from **10 to 5µg/m³**.

- PM10 has been brought down from **20 to 15µg/m³**.
- In comparison, **India’s thresholds are many folds higher**.
- **According to the 2009 National Ambient Air Quality Standards** still in force, the acceptable PM2.5 exposure limit **over 24 hours is 60µg/m³** (four times the new WHO limit) and for exposure over a **year-long period, 40µg/m³** (eight times the revised WHO threshold).
- There are also standards for a host of chemical pollutants including **sulphur dioxide, lead and nitrogen dioxide**.

Improvements in air quality:

- Despite some improvements in air quality, the global toll in deaths and lost years of healthy life has **barely declined since the 1990s**.
- Air quality has markedly improved in high-income countries, it has generally **deteriorated in most low- and middle-income countries**, in step with large-scale urbanization and economic development.

Important observations:

- As per the new guidelines, among 100 global cities, Delhi’s annual PM2.5 trends in 2020 was **16.8**

times more than WHO's revised air quality guidelines.

- Annual average PM_{2.5} levels in Delhi ranged from 114-145 $\mu\text{g}/\text{m}^3$ in 2020.
- Mumbai's exceeded 8-fold, Kolkata 9.4, Chennai 5.4, Hyderabad 7 and Ahmedabad exceeded 9.8 fold.
- Large parts of the Indo-Gangetic Plains region, including several cities in Uttar Pradesh, West Bengal, Punjab, Haryana, had very high concentrations of PM_{2.5} and PM₁₀.

Air pollution impacts in India:

- Every year, exposure to **air pollution is estimated to cause 7 million premature deaths** and result in the loss of millions more healthy years of life.
- **In children-** reduced lung growth and function, respiratory infections and aggravated asthma.
- **In adults-** ischaemic heart disease and stroke, other effects such as diabetes and neurodegenerative conditions.
- State of Global Air (SOGA 2020) estimated that over **116,000 infants in India died within a month after their birth due to exposure to severe air pollution** in 2019.
- India had the **highest burden of infant deaths due to air**

pollution followed by Nigeria, Pakistan, Ethiopia and the Democratic Republic of Congo.

- India released **National Clean Air Programme (NCAP)** in January 2019 which aims to achieve a **20% to 30% reduction in PM 2.5 concentrations** over 2017 annual levels in over a hundred cities **by 2024**.
- NCAP does **not have a legal mandate**.

Other Facts:

- **90% of the entire global population** is breathing polluted air.
- Both **PM_{2.5} and PM₁₀** are capable of penetrating deep into the lungs but **PM_{2.5} can even enter the bloodstream**, primarily resulting in **cardiovascular and respiratory impacts**.
- PM is primarily generated by **fuel combustion in different sectors** including transport, energy, households, industry and from agriculture.
- In 2013, **outdoor air pollution and particulate matter were classified as carcinogenic** by WHO's International Agency for Research on Cancer (IARC).

HOW RARE SPECIES OF SUNDARBANS ARE THREATENED BY HUMAN ACTIVITIES

There is a continuous loss of biodiversity across the shorelines of settlement zones in **Indian Sundarbans**.

Highlights:

- The rare species of Sundarbans are threatened by **human activities**.
- **Small patches of mangroves** are being lost gradually due to

indiscriminate destruction for coastal development. The patches are enriched habitats of several rare and **threatened flora and fauna**.

- Continuous **loss of shoreline mangrove ecosystems** has created **fragile mangrove habitats** for the inhabitant species and framed barriers to their movement and dispersal.
- There is a rampant conversion of shoreline for **shrimp and pisciculture farming**, at the cost of frequent **clearing of the shorelines** occupied by native mangrove species.
 - The diverse molluscs and crustacean from Sundarbans are disappearing due to the **polluted discharges from shrimp ponds**, harming the native habitat and breeding activities of these species.
- The **building of dykes** for the protection of coastal villages from tidal aggression/storm surges is another major cause for destruction of shorelines in Sundarbans.

Sundarbans:

- Sundarbans is vast contiguous **mangrove forest ecosystem** in the coastal region of Bay of Bengal spread across India and Bangladesh.
- It covers 10,000 square kilometers of area of which 60% is in Bangladesh and remaining in India.
- **Location:** It is in delta region of **Padma, Meghna and Brahmaputra** River basins.

- It is the largest **tidal halophytic mangrove** forest in the world.
- It was recognized as **UNESCO World Heritage Site** in 1987.
- It is famous for the **Royal Bengal Tiger** and other species of animals, including Chital Deer, Crocodile and Snakes.

Sundarbans National Park:

- It is a national park, and biosphere reserve in **West Bengal**, India.
- The delta is densely covered by mangrove forests, and is one of the largest reserves for **the Bengal tiger**.
- Declared as the core area of **Sundarban Tiger Reserve** in 1973 and a **wildlife sanctuary** in 1977. In 1984 it was declared a **national park**.
- It is considered as a World Network of Biosphere Reserve from 1989.

Mangrove Forest of Sundarbans:

- It lies across India and Bangladesh on the delta of **the Ganges, Brahmaputra and Meghna** rivers on the Bay of Bengal.
- The forest is a complex network of **tidal waterways**, mudflats, and small islands of salt-tolerant mangrove forests.
- The area is known for its wide range of fauna.
- Including **260 bird species**, the Bengal tiger, and other threatened species such as the **estuarine crocodile** and the **Indian python**.

RIISING CO₂ CONCENTRATION THREATENS ALL 17 SDGS, SAYS WMO REPORT

The World Meteorological Organization has published a new report on **Climate Indicators and Sustainable Development: Demonstrating the Interconnections**.

- **Aim:** To demonstrate the **connections between the global climate and the SDGs**, which go far beyond SDG 13 for climate action.
- It **highlights seven climate indicators** whose impacts span the SDGs:
 - Carbon dioxide concentration
 - Temperature
 - Ocean acidification
 - Ocean heat content
 - Sea-ice extent
 - Glacier mass balance
 - Sea-level rise

Highlights:

- The rising concentration of carbon dioxide (CO₂) will impact **all of the 17 United Nations-mandated Sustainable Development Goals (SDGs)**.
- The report was prepared on seven climate indicators— CO₂ concentration, temperature, ocean acidification and heat, sea ice extent, glacier melt and sea-level rise.
- The rising CO₂ concentration due to human activities was a key driver of global climate change. Along with increasing global temperatures, it would **negatively impact efforts to combat climate change** under the SDG 13.
- This, in turn, would pose a **significant threat to the achievement of the 16 SDGs** other than SDG 13, by 2030.

- Uncontrolled rising CO₂ emissions would be indirectly **responsible for risks related to the remaining six climate indicators**, namely temperature, ocean acidification and heat, sea ice extent, glacier melt and sea-level rise.
- Rising concentrations of CO₂:
 - **In atmosphere:** reductions in nutrient content, affecting food security or the SDG indicator 2.1.2.
 - **In water:** ocean acidification, directly affecting SDG indicator 14.3.1 which addresses marine acidity.
- Significant changes or losses in marine biodiversity due to rising acidity will **reduce fishing yields**, potentially leading to **reduced or diminished livelihoods** (SDG target 1.4)
- This would also **result in food insecurity (SDG indicator 2.1.2)**.
- Both food insecurity and loss of livelihood may **drive conflicts related to resource management**, thus threatening **regional peace and stability (SDG 16.1)**.
 - Thus, ocean acidification caused by rising CO₂ may **threaten progress of several SDGs** besides the **SDG 14** about life below water.
- Extreme events attributed to rising temperature **affect rainfall patterns and groundwater availability**.
- This leads to a **higher risk of water scarcity**, directly affecting **SDG 6 on access to water** and specially the targets 6.1 and 6.4.31.

Recommendations:

- The WMO recommended improved education (SDG 4), global

partnerships (SDG 17) and sustainable consumption (SDG 12) to mitigate climate risks.

- The international weather agency had demonstrated the **connections between global climate and the SDGs**, which went far beyond SDG 13 for climate action.

World Meteorological Organization (WMO):

- The World Meteorological Organization (WMO) is a **specialized agency of the United Nations**.
- It is the UN system's authoritative voice on the **state and behaviour of the Earth's atmosphere**, its interaction with the oceans, the climate it produces and **the resulting distribution of water resources**.
- It is an **intergovernmental organization** with a membership of 193 Member States.
- It originated from the International Meteorological Organization (IMO), the roots of which were planted at the **1873 Vienna International Meteorological Congress**.
- Established by the **ratification of the WMO Convention on 23 March 1950**, WMO became the specialised agency of the United Nations for meteorology (weather

and climate), operational hydrology and related geophysical sciences.

- **Headquarters:** Geneva
- **Headed by:** Secretary-General
- Supreme body: **World Meteorological Congress**
- It contributes to policy formulation in these areas at national and international levels.

Mandates:

- Establishment of an **integrated Earth System observation network** to provide weather, climate and water-related data.
- Establishment and maintenance of data management centres and telecommunication systems.
- Creation of standards for observation and monitoring in order to ensure adequate uniformity in the practices and procedures employed worldwide.
- Provision of weather, climate and water-related services to reduce disaster risks and contribute to climate change adaptation.
- Activities in **operational hydrology** as well as closer cooperation between **National Meteorological and Hydrological Services** in states and territories where they are separate.
- Coordination of research and training in meteorology and related fields.

IISC BANGALORE STUDENTS CREATE LOW-COST SUBSTITUTE TO SINGLE-USE PLASTIC

Researchers from Department of Material Engineering, Indian Institute of Science, Bengaluru (IISc) have found a way to make a substitute for single-use plastic that can **help mitigate the**

problem of accumulating plastic waste in the environment.

- The polymers were developed **using non-edible oil and cellulose**

extracted from agricultural stubble can be moulded into sheets.

Procedure:

- Non-edible Castor oil reacts with the cellulose and di-isocyanate compound.
- **All precursors are mixed in toluene solvent** and heated at **80 degree for 8 hours**. Solution mixture is then poured in a teflon sheet and allowed the toluene to evaporate.
- After 12 hours, nice polyurethane sheet is obtained because of the crosslink between the functional groups present in the precursors.
- The sheets are then **moulded in compression moulding** to make the articles.

Characteristics:

- Bio-degradable, leak-proof and non-toxic.
- The sheets passed **leaching test and thermal stability** tests meaning that the material can be used for **food packaging**.
- Suitable for making bags, cutlery or containers.

- Sheets can be produced with **different properties based on proportions** of cellulose to non-edible oil.
- **Flexibility:** more cellulose and less non-edible oil will give stiffer material which is suitable for tumblers and cutlery.
- **Greater the proportion of oil,** the **more flexible** was the material and it could be moulded into sheets for making bags.

Key Facts:

- According to Central Pollution Control Board of India, for the year 2018-2019, **3.3 million metric tonnes of plastic waste** are generated by Indians.
- All the plastic waste produced in the world, **79% enters the environment**. Only 9% of all plastic waste is recycled.
- Accumulation of plastic waste is detrimental to the environment and when this waste finds its way into the sea, there can be major harm to aquatic ecosystems, too.

ONLY A THIRD OF SEWAGE GENERATED PER DAY IN INDIA TREATED, REPORTS CPCB

According to the latest report of the Central Pollution Control Board, sewage treatment plants in India **can treat a little more than a third of the sewage** generated per day.

- The report is based on the information received from the **state pollution control boards**.
- The data has been carried out with respect to **installed capacity,**

operational capacity, and actual utilization.

Highlights:

- India generated **72,368** million liters per day (MLD) whereas the installed capacity of **sewage treatment plants** (STP) was 31,841 MLD.
- Out of total 72,368 MLD sewage generated every day, only 20,235 MLD is treated.

- In terms of proportion of sewage waste treated to generated ratio the states and UTs are performing well.
 - Delhi (72%)
 - Punjab (72%)
 - Haryana (71%)
 - Gujarat (54%)
 - Maharashtra (47%)
- Arunachal Pradesh, Bihar, Assam, Chhattisgarh, Jharkhand, Kerala, **utilise 0-1%** of sewage.
- West Bengal, Odisha and Jammu and Kashmir treat **2-7%** of sewage.

Skewed Distribution:

- Maharashtra, Gujarat, Uttar Pradesh, Delhi, and Karnataka, account for **60%** of the total installed treatment capacity of the country.
- Madhya Pradesh, Haryana, Punjab, Tamil Nadu, and Rajasthan, alone constitute **86%** of the total installed capacity.
- **Bihar** has a small installed capacity of STPs. But on the operational front, they score a zero.
- **Assam generates** 809 MLD of sewage, it does not have a single

operational STP. **Septic tanks** are used in the state.

- **Chandigarh** ranks first in terms of total sewage generated to what is treated.
- It generates 188 MLD of sewage and has an operational capacity to treat 271 MLD.

Reuse of Sewage:

- Treated sewage water can be reused for **horticulture**, irrigation, washing activities, fire-fighting, industrial cooling, and gardening.
- The proportion of the reuse of treated sewage is maximum in **Haryana (80%)**.
 - followed by Puducherry (55%), Delhi (50%), Chandigarh (35%), Tamil Nadu (25%), Madhya Pradesh (20%) and Andhra Pradesh (5%).
- The reuse of treated sewage can reduce the **demand of water** from aquatic sources like rivers, ponds, lakes, and groundwater sources.
- Less consumption of **raw water** will help in conserving natural water resources.

CSIR-CMERI SOLAR DC COOKING SYSTEM- A STEP TOWARDS A GREEN & POLLUTION FREE INDIA

CSIR-CMERI has handed over the “CSIR-CMERI developed Solar DC Cooking System” to Asansol Braille Academy in **West Bengal** on September 22, 2021.

CSIR-CMERI Solar DC Cooking System:

- It is a “**Solar Energy based Cooking System**”, comprises of solar PV panel, battery bank, charge controller and cooking oven.

- It provides a **Clean Cooking Environment**, uniform heating, and Inverter-Less Direct Operation.
- It has a potential to save **1 ton Carbon Dioxide emissions** per year per household.
- It has 20-25% better efficiency and more Economical as compared to the Conventional Solar based Cooking Systems.

Significance:

- The system will help in curbing the **Carbon Dioxide emissions**.
- Widespread usage of the System will play a crucial role in achieving the target of **200 GW of Solar energy**.

Central Mechanical Engineering Research Institute (CSIR-CMERI):

- It is a public engineering **research and development**

institution located in Durgapur, **West Bengal**.

- It is a constituent laboratory of Indian Council of Scientific and Industrial Research (**CSIR**).
- **Established:** February 1958
- **Aim:** To develop engineering technology, to help Indian industries.

ONE THIRD OF GLOBAL CROPLAND WILL BE DROUGHT-HIT BY 2040 IF EMISSIONS DON'T STOP: REPORT

According to a report by **Chatham House**, the average proportion of global cropland affected by **drought will likely rise by a third by 2040** if global **greenhouse gas emissions continue to increase**.

- The Institute published **Climate change risk assessment 2021** ahead of the **UN Climate Change Conference (CoP 26)**, Glasgow, in November 2021.

Highlights:

- **Agriculture** will need to **produce nearly 50% more food** by 2050 to feed a **growing global population**.
- The **United States, China, Brazil, and Argentina**, which grow **87%** of the **world's maize**, could suffer a **steep drop** in their maize production by 2040.
- There is a 50% chance of **synchronous crop failure**, the failure of a single crop in multiple regions simultaneously.
- By 2050, global cropland areas will be impacted by reductions in crop duration periods of at least 10 days exceeding 60% for winter wheat,

40% for spring wheat, and 30% for rice.

- **700 million people** each year will likely be exposed to prolonged severe droughts of at least six months by 2040.
- North Africa, West Asia, western and central Europe, and Central America will see more than 10% of their populations impacted by **severe drought**.
- East and South Asia will be hard hit, with 230 million people subjected to drought.
- **Outside Asia**, Africa will likely have the greatest number of people facing drought, exceeding 180 million by 2050.
- The governments of **highly emitting countries** should accelerate emissions reductions through ambitious revisions of their Nationally Determined Contributions (NDCs).
- It will lead to **cheaper energy** and avert the worst climate impacts.
- **Paris Agreement signatories** must meet their NDCs. If they fail to do so, the probability of extreme

temperature increases is non-negligible.

- If emissions follow the trajectory of NDCs, there is a less than 5% chance of keeping temperatures below 2°C relative to pre-industrial levels.

- Focus should be on net-zero pledges; the implicit assumption of these targets will avert climate change.
- Unless NDCs are dramatically increased, the impacts are likely to be locked in by 2040

THE SOCIAL LIFE OF A VAMPIRE BAT

Researchers attached small devices to **50 vampire bats** to track the social life and foraging habits in Panama.

Highlights:

- Each bat maintains its network of close cooperative **social bonds**.
- The social bonds formed in roosts extended into the hunt.
- They are the only mammals with a **blood-only diet**.
- They have **heat sensors** in their snouts that help them find a spot to make a bite.

Key Facts:

- Vampire bats live in dark places in colonies, such as caves, old wells, hollow trees, and buildings.

- These creatures are **nocturnal** and most active in the early night.
- They roost alone, in small groups, or colonies of thousands.
- Female vampire bats form associations with one another that can last for many years.
- These small mammals drink the blood of other animals for survival.
- They feed on blood from **sleeping cows**, pigs, horses, and birds.
- Their bites can cause nasty **infections** and disease.
- They have strong hind legs and a unique thumb that helps them take off after feeding.

BLUE FOODS HAVE POTENTIAL TO BECOME MORE SUSTAINABLE: RESEARCH

A report titled “**Environmental performance of blue foods**” was published as part of the **Blue Food Assessment (BFA)**.

- The BFA is a **collaboration between** Sweden-based Stockholm Resilience Centre, United States-based Stanford University and the non-profit EAT.

Highlights:

- The authors analysed **reporting data** from more than 1,690 fish

farms and 1,000 unique fishery records worldwide.

- As per the report, **aquatic or blue foods** can be **made more environmentally sustainable** than they are now.
- **Seaweeds and farmed bivalves**, such as mussels and oysters, generated the **fewest greenhouse gas** and **nutrient emissions** and used the least land and water.

- **Capture fisheries** also resulted in **few nutrient emissions** and use limited land and water.
- Capture fisheries refers to all kinds of harvesting of naturally occurring living resources in **both marine and freshwater** environments.
- Capture fisheries had the potential to **reduce greenhouse gas emissions** through improved management and optimising gear types.
- The **greenhouse gas emissions** in such fisheries ranged from relatively low, such as for sardines and cod, to relatively high for flatfish and lobsters, compared to farmed fish.
- Many subsectors among **blue foods** such as **carp and milkfish** had the **potential to improve** their environmental performance through improved farm management, reduced feed conversion ratios and innovative technological interventions.

Blue foods and its significance:

- Blue food is the **food derived from aquatic animals**, plants or algae that are caught or cultivated in freshwater and marine environments.
- They can **help end malnutrition**, build nature-positive resilient food systems and be a part of the **climate solution**.
- It is a **critical element** to meet the UN Food Systems Summit vision to “launch bold new actions, solutions and strategies” to deliver progress on Sustainable Development Goals.
- They can make **key contributions to diet-related health challenges** – by reducing **micronutrient deficiencies**, improving heart, brain and eye health, and replacing consumption of less healthy red and processed meats.
- They can contribute to **community resilience**, good jobs, gender equity, and poverty alleviation.

CYCLONE GULAB: HEAVY RAINS BATTER ANDHRA DISTRICTS; NO MAJOR IMPACT IN ODISHA

Cyclone Gulab made landfall in coastal regions of **Andhra Pradesh** and **Odisha** recently.

- Gulab is the **second cyclone to hit Odisha** in four months after **Cyclone Yaas** in May 2021.
- Cyclone 'Gulab' was named by **Pakistan**. “Gulab” refers to **Rose** in English.

Naming of Cyclone:

- The name Gulab is from the **list of cyclone names** that is maintained by the **World Meteorological Organisation/United Nations**

Economic and Social Commission for **Asia and the Pacific** (WMO/ESCAP) Panel on Tropical Cyclones (PTC).

- The panel comprises **13 countries** namely, India, Bangladesh, Myanmar, Pakistan, Maldives, Oman, Sri Lanka, Thailand, Iran, Qatar, Saudi Arabia, United Arab Emirates, and Yemen. They choose the names of cyclones in the region.
- The names are chosen keeping in mind they are **simple to use**, do not

carry any inflammatory meaning, should be neutral to politics, political figures, religious beliefs, cultures, and gender.

Key Facts:

- There are **six regional specialised meteorological centres** (RSMCs)

and **five regional Tropical Cyclone Warning Centres** (TCWCs) across the globe, which monitor cyclogenesis, issue advisories and name cyclones.



MS DHONI TO BE PART OF DEFENCE MINISTRY'S EXPERT PANEL TO REVIEW NCC CURRICULUM

Ministry of Defence has constituted a **High Level Expert Committee**, under the chairmanship of former Member of Parliament **Shri Baijayant Panda**.

The committee has been tasked:

- For a comprehensive **review of National Cadet Corps (NCC)** in order to make it more relevant in changed times.

- To suggest measures to empower NCC cadets to contribute more effectively towards nation building
- To propose ways for gainful engagement of NCC Alumni for betterment of the organisation
- To recommend best practices of similar international youth organisations for inclusion in NCC curriculum